



Creating awareness and generating sales for CowView

GEA Farm Technologies



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PREFACE

In order to complete the International Marketing Management bachelor program of the Hogeschool Utrecht I did my graduation internship and research at GEA Farm Technologies. The internship and research covered the period from February until June 2013. Here I supported my colleagues with daily activities and researched how GEA Farm Technologies should market CowView in order to create customer awareness and stimulate sales. This report contains my research findings and recommendations.

In this preface I would like to thank several persons who helped me during my internship and research. These persons played an important role by helping and supporting me.

- First of all I would like to thank my company supervisor Maren Lüth, for giving me the opportunity to do my graduation internship and research within GEA Farm Technologies. Additionally I would like to thank her for all the effort and input she gave over this period. This made my time at GEA Farm Technologies an educational and valuable experience.
- Susanne Klimpel, product manager CowView, for her helpful insights, effort and support during my research.
- I would like to thank Ruud Verschuur, my supervisor of the Hogeschool Utrecht for his helpful suggestions, feedback and guidance during this internship.
- Also I would like to thank all my colleagues at GEA Farm Technologies, in particular Sandor van de Weerd, Jose Laporte and Kim Schmitz, for helping me with my research and making me feel at home.
- Finally I would like to thank all PILOT Farmers who participated to the online survey. These farmers gave me interesting and helpful insights. This group of farmers was of great inspiration for the final recommendations of this research.

When I look back at my time at GEA Farm Technologies I can say that it was a very educational, interesting and pleasant time, where I was able to further develop my personal and professional skills.

Joris Oosterlaken

Bönen, 19 July 2013

EXECUTIVE SUMMARY

This report is discussing the recommended strategy to create awareness and generate sales for CowView, a new product by GEA Farm Technologies.

Nowadays, many farmers are increasing their scale to stay more competitive and with the focus on the milk quota abolishment in 2015. The main challenges in the market are raising feed prices, volatile milk prices and increasing environmental legislation. Despite tough market conditions, increasing farm scale is perceived to be the most suitable strategy as the world population is growing and dairy demands are rapidly increasing.

As GEA FT is already settled in the dairy farming equipment industry for many years, the future outlook seems positive. New entrants are not a great threat to established brands like GEA Farm Technologies and the risk of substitute products is minimal. Established companies are aiming to differentiate from each other, increase brand awareness and customer loyalty. Customer power is perceived to be higher as the dairy farming equipment industry is largely a custom-made industry. Therefore most suppliers work with standardized and custom-made products. Manufacturers are very often directly selling their products to their dealers. This form of forward integration gives manufacturers more control over which distributors are selling their brand. Despite there are only five major players in the market the degree of rivalry can be seen as moderate to strong.

GEA Farm Technologies was founded in 1926 and is located in Bönen, Germany. Nowadays it is one of the leading global suppliers of dairy farming equipment and is part of the GEA Group Aktiengesellschaft. GEA Farm Technologies is divided into three business units, Milking & Cooling, Farm Equipment and Farm Services.

After doing the SWOT analysis an interesting option which might have good market potential came out. This is the combination of GEA Farm Technologies' innovative character and the increasing importance of animal welfare. As animal welfare is becoming more important it brings up the opportunity to develop a new technology which benefits animal welfare. In order to utilize this opportunity GEA Farm Technologies developed CowView.

CowView is a new product which allows farmers to track, localize and assess animal behavior on a real time basis. This module focusses on lameness detection. Lameness is an underestimated health problem which is costing €10,500,- to €14,700,- on an annual basis in a 200-cow herd. CowView will lead to a healthier herd which results in saving time and money. The product is most suitable for large scale farmers who find herd optimization important and are willing to adapt new technologies.

The initial target market for CowView should lie within the European Union. This allows GEA Farm Technologies to gradually launch the product in their 'home market'. Germany, UK, the Netherlands, Denmark and Sweden are the most interesting countries. This is because farmers in these countries often operate on a large scale and are using modern technologies.

When this product launch has been successful, moving to the US should be considered. This market definitely has potential as there are many modern large scale farms.

In order to get a good understanding of what farmers know about lameness and what measures are taken, an online survey was set up. This online survey shows that there is a lacking awareness for lameness issues in all countries. Farmers in the UK tend to have the 'highest' knowledge about lameness, which is most likely the outcome of the lameness control programs organized in the UK.

Colleagues and personal experience are the most used sources of information. On the other hand, consultants are least used.

Regarding the product concept, farmers prefer to set up their own lameness treatment strategy.

CowView should be positioned as a premium product. The product should be linked to the following brand values innovation, premium, high quality, convenience, maximize animal welfare, Efficient and effective herd management, reliable and accurate.

The goals of the communication strategy are to create awareness and demand for CowView. This should be done by sending out two types of messages. The first group of messages should be product related, e.g. animal welfare, convenience and saving time and money. The second group of messages should be lameness related, e.g. costs involved and the amount of lameness. Channels that should be used for this communication strategy are product endorsement, customer testimonials, trade fairs/symposiums and print and digital media.

It is recommended to display all lame cows in order to provide farmers with the ability to set up their own treatment strategy. However, in order not to overwhelm farmers who are new to the system, a filter which only shows the severest cases should be included. This filter can be switched off later on or adapted to farmers' preferences.

CowView should only be sold through the existing dealer network and launched in Germany, UK, the Netherlands, Denmark and Sweden.

In order to support CowView's premium image a slightly higher price should be charged. However a market skimming strategy is not recommended as it would scare away potential customers.

During the product launch CowView should be promoted. This could be done by not charging service fees for a limited time or giving away a free tablet.

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CHAPTER 1 – WHY THIS THESIS IS WRITTEN

It is estimated that 25 to 35% of all lactating cows in Europe and North America are lame (BCSPCA, 2010). Each case of lameness costs about €210,- (Delfra, 2008). This means that in a herd of 200 cows lameness costs between €10,500,- and €14,750,- on an annual basis. Seeing these numbers it can be concluded that lameness is a costly issue. However, farmers often do not know how much money they are losing because of lameness. Additionally many farmers are not even aware of the amount of lame animals in their herd. They often think that 6,9% of their herd is lame, however when a veterinarian checks it turns out to be near 36% (Leach, et al., 2010). Therefore it can be concluded that lameness is an underestimated problem with lacking awareness.

Recently GEA Farm Technologies (hereafter called GEA FT) has developed a new product called CowView. It is software that enables farmers to track, localize and measure the individual behavior of a cow on a real time basis. The goal of CowView is to increase animal health and herd efficiency. Increasing animal health also leads to an increase in herd efficiency. In order to track animal health, in particular lameness, the CowView lameness module is developed. This module detects lameness by analyzing the behavior of the animals.

The biggest challenge of this project is the lacking awareness for the problem. As long as farmers do not have an understanding of this problem they will not consider buying such a system. This thesis will focus on how to communicate and position the CowView lameness module. It will investigate the following research question and sub-questions.

Problem definition:

- How should GEA Farm Technologies market CowView in order to create customer awareness and generate sales?

Sub-questions:

- What is the target market of CowView?
- Who is the target group of CowView?
- What is the current awareness about lameness?
- How should CowView be positioned?
- What should the message look like?
- What types of communication media are most suitable?

At the end of every chapter a text box is included. This text box displays the takeaways from that particular chapter.

CHAPTER 2 – THE DAIRY MARKET & GEA FARM TECHNOLOGIES

This chapter will start off with an explanation of the dairy sector and its current trends. It will be followed with an overview of the dairy market which will be written according to Porter's Five Forces model. After the market is described an analysis of GEA Farm Technologies will be made. This analysis will make use of McKinsey's 7s Model and examine what type of company GEA FT is and how it operates. Finally the market overview and the company analysis will be brought together into a SWOT analysis.

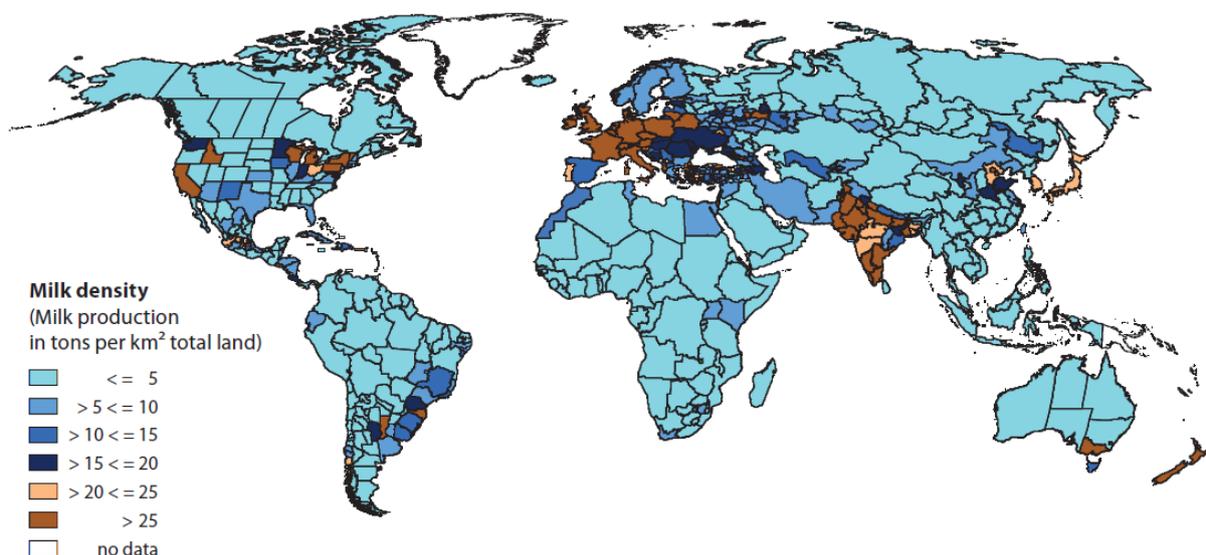
2.1 THE GLOBAL DAIRY MARKET

As the general dairy market and the dairy farming equipment market are closely related this market research includes both elements.

2.1.1 THE DAIRY SECTOR IN GENERAL

Dairy farming has been done for many years all over the world. In 2012 the global milk production was approximately 760 tons, a growth of 3% compared to the year before (Food and Agriculture Organization, 2012). Figure 1 shows the global milk density. The main production regions are the European Union, United States and New Zealand. When looking at different regions it can be concluded that each region has their own methods of dairy farming. In some regions, like the EU, U.S and New Zealand, dairy farming is mostly done on a large scale and in a very professional way. In other regions it is done on a small scale and is only self-sufficient. These very small-scale farms are mostly found in less developed regions like India.

Milk density world-wide



Data: 2010 or if not available 2009 data was taken for CN, IN, TR, 2008 data for AR. Country data in ECM, regional data in natural fat and protein content.

Source of data: National statistics, FAO, for some countries estimates.

Calculation: Milk production divided by km² total land.

Figure 1: World dairy production map

Source: (IFCN, 2012)

It is expected that in the near future the demand for dairy will rapidly increase as middle classes around the world are growing, raising urbanization and changing diet habits (Ai, 2012). These elements are the main growth drivers of the dairy market.

The milk market is a global market with volatile prices. After the high milk prices in 2008 a strong drop in 2009 followed. This was a very tough year for farmers around the globe as low milk prices barely covered the feeding costs. Many farmers made losses and were forced to sell parts of their herd (Plume, 2009). However, by 2011 milk prices recovered due to the import of milk powder by South East Asia, Mexico and North Africa (OECD, 2011). Fluctuating milk prices are caused by increasing demand in specific regions, lower milk production due to shortage of feed.

Nowadays farmers face several challenges which might threaten their existence. Some key topics are raising feeding prices, fluctuating milk prices, raising health costs and sustainable operations.

2.1.2 TRENDS

- There is a shift going on in the scale of farming. Currently the number of farmers is decreasing and the herd size is increasing. This means that farming is increasingly done on a larger scale (Cernansky, 2010).
- Currently the milk prices are quite high. In May 2013 the milk price was 52,4 US-\$/100kg (IFCN, 2013). It is expected that the general milk price will remain high or further increase in the future. This is due to the fact that demand is increasing faster than production (Beldman, Daatselaar, Galama & Prins, 2010).
- Different middle classes are rapidly growing around the globe. The most obvious examples are China and Latin America. The Chinese middle class is expected to reach 40% of the total Chinese population by 2020 (Ai, 2012). Regarding the Latin American middle class, this class grew with 50% from 2003 until 2009 and it is expected to increase with 51% in 2020 (Isla, 2012). The first effects of this are already visible with the Nutrilon milk powder shortage in the Netherlands (BBC News, 2013).
- According to a report of the National Farmers' Union (2010), cow welfare is becoming more important. Farmers start to become aware of the importance and impact of cow welfare issues. Several programs to reduce lameness and mastitis have been set up.
- In 2015 the European Union will abolish the milk quota. This means that fixed production quantities belong to the past and that farmers can choose how much to produce (Patton et al., 2008).
- In the near future the production costs for dairy farmers will increase in the European Union and United States (Thorrold & McCall, n.d.). Feeding prices will increase as land becomes scarce and weather conditions are becoming more extreme.
- Due to growing demand and higher consumer awareness, running a business sustainably becomes more important (Bauman & Capper, 2011; Beldman, Daatselaar, Galama & Prins, 2010).

- Subjects like climate neutral production and fresh and biological products are becoming more important in the near future (Land- en Tuinbouw Organisatie Nederland, 2011). Currently FrieslandCampina is already paying an additional bonus to farmers whose cows have access to pasture (FrieslandCampina, 2013).
- Cows are spending less time outside and are more inside (Land- en Tuinbouw Organisatie Nederland, 2011). One of the reasons for this is that farmers want more control over their herd. By keeping the cows inside farmers can set up precise feeding strategies and better monitor their activities. Another reason for this is the lack of pasture around the barn in combination with large herds makes it unable for dairy farmers to keep herds outside.

Many farmers are increasing their scale to stay more competitive and with the focus on the milk quota abolishment in 2015. Main challenges in the market are raising feed prices, volatile milk prices and increasing environmental legislation. Despite tough market conditions increasing farm scale is the perceived to be the most suitable strategy as the world population is growing and dairy demands and rapidly increasing.

2.2 MARKET OVERVIEW

2.2.1 THREATS OF NEW ENTRANTS

It is relatively hard for new suppliers to enter the dairy farming equipment industry. This is because of several reasons.

First of all, new entrants require a large amount of capital as initial investments are high. Additionally, once the business has been set up there is a substantial amount of fixed costs. Therefore it is important that large quantities can be produced/sold in order to reach economies of scale. As the dairy farm equipment industry is a hi-tech industry it is key that businesses possess the right knowledge. Another difficulty for new entrants is that many ideas are patented by the current suppliers. This makes it very hard to enter the market without a unique idea.

In order to gain knowledge and market share the existing players are active in acquiring new businesses and technologies (West, 2000). Due to a growing demand for dairy products the market is expected to grow in the near future.

Over the last few years there has been an increased market concentration. The dairy farming equipment market is dominated by five large organizations. These organizations will be mentioned in chapter 2.2.4. As a result of this these organizations strongly focus on product innovation, brand value and increasing their global presence. By doing this companies are aiming to increase brand awareness and create customer loyalty. Customer loyalty is also created by the global dealer networks which focus on a close customer relationship. This is essential as the number of dairy farmers is declining and therefore competition is increasing.

Regarding the hi-tech products it can be concluded that the threat of new entrants can be considered low. Market segments which are more standardized are facing a higher level of competition on regional levels.

2.2.2 THREAT OF SUBSTITUTE PRODUCT

When running a dairy farm, farmers make use of many different products. These are products like advanced milking- and feeding systems, barn equipment, manure management equipment, animal hygiene, etc. The products that are traded in the dairy farming equipment industry are hard to substitute. This is due to the fact that the products are all used for the same purposes and therefore there are no clear substitute products.

When looking further down the value chain there is a potential risk of a substitute product. At this point we are not talking about the dairy farming equipment anymore but about the dairy itself. When dairy prices are rising too much people might choose for switch to alternative products like soy products. In this case the dairy industry might suffer which might result in a decline in dairy farming equipment. This might happen as farmers have less money to invest into new equipment and are due to a stagnating dairy market less likely to expand businesses.

Overall the threat of substitute products can be considered low.

2.2.3 BARGAINING POWER CUSTOMERS

In the dairy farming equipment industry it is common that goods are sold via distribution networks. Each supplier has its own distributors which are chosen based on their skills and qualities and on their geographical location. This means that every area has its own distributors. As a result of this, the end user can choose among different distributors who are carrying different brands.

Nowadays there is a shift in farming size. The number of dairy farmers is declining and the scale of operations is increasing (Cernansky, 2010). This results in a smaller group of customers. Due to the reduction of customers the power per existing customer increases as competition becomes fiercer. Additionally an increasing scale results in larger customers; this also increases the power per customer. However as there are many different kinds of farms, buyers are fragmented. Despite the fragmentation, suppliers often try to adapt products to customer demands.

Backward integration is not a realistic option for customers. This is due to the high starting costs and the specific knowledge required producing these products.

Many farmers European Union, United States and New Zealand are operating on a large scale and can be seen as potential customers. However, in other countries farm sizes are much smaller and are demanding a different approach with different products. According to DairyCo (2013), the European Union-27 counts 985,538 dairy farmers. This is 5,1% less than the year before. The total herd size of dairy farmers in the European Union-27 is 22,8 million cows (EU Commission, 2012).

In the United States there are over 51,000 dairy farmers with an average herd size of 115 cows (Dairy Farming Today, n.d.). However, only 10,000 dairy farmers are responsible for 80% of the total U.S. milk production (Geiger, 2013). Despite the large number of farmers and cows, there are only a view states that are responsible for these outputs. These states are California, Wisconsin, Idaho, New York and Pennsylvania.

Dairy farmers are facing several challenges nowadays, like rising energy costs, water scarcity, increasing labor costs, increasing vet costs, more focus on animal welfare and productivity. Probably one of the biggest challenges is the increase of feeding costs (Lutey, 2013). This is partially caused because land to grow food is getting scare. Additionally, certain regions are coping with severe drought and harvests are disappointing which leads to higher feeding costs as farmers have to buy more food.

According to a study done by Harbor, Marshall & Akrigde (2006), 39% of the farmers are brand loyal. Therefore it is important for suppliers invest in long-term relationships once the customer is acquired.

Overall the bargaining power of customers can be considered as moderate.

2.2.4 BARGAINING POWER SUPPLIERS

There are several players active in the dairy farming equipment market. The main players with a global focus are DeLaval, GEA Farm Technologies, Lely, BouMatic and Fullwood. Of these five suppliers GEA FT and DeLaval are the only suppliers who offer the complete range of dairy products. However all companies have an overlap in their product range. The products in this overlap often serve similar purposes but are developed according to own preferences and with a different focus. By doing this, suppliers try to differentiate from competitors.

Regarding switching costs there is a difference between the distributor and the end-user. Suppliers and distributors often work with fixed contracts where the distributor can only carry one main brand. This makes distributors less flexible and switching costs are relatively high. On the other hand, the end-users are more flexible. They are not limited by contracts and can choose their supplier freely. Additionally, most systems that are provided by suppliers are stand-alone-systems which mean that they are compatible with systems from different suppliers. However, this flexibility is limited by the fact that farmers are dependent of specific suppliers for service and repairs. For the end-users switching costs are relatively low.

Forward integration is often used by suppliers. Many suppliers sell their products directly to the distributors instead of selling it to importers first. This means that it allows suppliers to better track who is selling their products and how it is done.

In general the power of suppliers is moderate.

2.2.5 INTENSITY OF COMPETITIVE RIVALRY

As mentioned in chapter 2.2.4, the dairy farming equipment market consists of several suppliers. For this competitor analysis the suppliers will be divided into two groups, the general suppliers and the suppliers with a product which is similar to CowView.

General suppliers

Besides GEA FT there are four other main suppliers. These suppliers are DeLaval, Lely and BouMatic and Fullwood. Next to these four companies, there are several smaller companies who are also supplying dairy farming equipment.

DeLaval

DeLaval was founded 1883 in Sweden. With net sales of €955 million and 4,415 employees, DeLaval is the world market leader (DeLaval, 2013). Currently DeLaval is part of the TetraLaval which consists of three segments who are all active in the food processing and packaging industry.

DeLaval offers a wide product range which is divided into nine segments. The product range of DeLaval is all-round as it includes, milking-, feeding-, manure-, herd management- and barn equipment technologies. Although DeLaval's products are different from the GEA FT products, their scope of products is quite similar. DeLaval positions themselves as a sustainable and innovative company (DeLaval, 2013).

Lely

Lely was founded in 1948 in the Netherlands by the Dutch family van der Lely. In 1992 Lely introduced automated milking. Nowadays Lely has an annual turnover of €565 million, employs approx. 2,000 people and is globally active. Lely has a wide range of products which includes milking-, feeding-, forage harvesting- and barn equipment technologies. This product range has overlap with GEA FT's product range but there are also certain differences. Lely does not have conventional milking systems in their product range and only a small focus on herd management and animal hygiene. On the other hand the forage harvesting product line differentiates Lely from GEA FT. Lely positions themselves as a dynamic and innovative company (Lely, 2013).

BouMatic

Boumatic is an U.S. company which was founded in 1928. Nowadays BouMatic is positioned as an innovative company with a global presence. Regarding the range of products BouMatic is offering, it can be concluded that the largest extent of it has overlap with the one of GEA FT and DeLaval. However, there are some differences for example BouMatic does not have manure management solutions and barn equipment.

Fullwood

Fullwood was founded approximately 70 years ago in England and is part of the Fullwood Packo Group. Nowadays Fullwood is offering different solutions regarding milking and cooling. This product range is similar to GEA FT's business unit milking and cooling. These solutions are sold via a dealer network in Europe and the U.S.

Product specific suppliers

The second group of suppliers consists of companies that supply a product which is similar to GEA FT's CowView.

Nedap – Lactivator

Nedap is a Dutch company founded in 1929 who is operating in different business units. The business unit that is interesting for this research is the Livestock Management business unit. The Livestock Management business unit develops and produces automatic solution for livestock farming. Nedap is developing products for over 30 years and their products are sold globally.

The product that Nedap has developed is called the Lactivator. The Lactivator is very similar to CowView. It keeps track of cows individually and monitors their activity. This allows farmers to determine the ideal insemination time and to keep track of cows' health status.

There are two versions of the Lactivator, the InTime and RealTime Lactivator. The InTime Lactivator sends out signals at fixed locations, for example when the cow enters the milking stand. This product is available in a neck and leg version.

The other version is called the RealTime Lactivator. This version is most similar to CowView as it is not dependent on fixed locations but sends out signals 24/7.

Nedap is using a different communication strategy than GEA FT. The communication strategy of Nedap focusses strongly on heat detection where GEA FT also focuses on animal health.

Boumatic – StepMetrix™

The lameness detection system developed by Boumatic is called the StepMetrix™. This system has a total different approach than CowView and the Lactivator. With the Boumatic StepMetrix™ cows are not tracked but they are walking over a bridge after they are milked. This bridge has pressure plates which measures the pressure and the duration of the step. Than a score is calculated which expresses the lameness degree. One drawback of this system is that it only measures the hind legs of the cow. As the StepMetrix™ only measures lameness; it is also fully positioned as a lameness detection system.

As GEA FT is already settled in the dairy farming equipment industry for many years the future outlook seems positive. New entrants are not a great threat to established brands like GEA FT and the risk of substitute products is minimal. Established companies are aiming to differentiate from each other, increase brand awareness and customer loyalty. Customer power is perceived to be higher as the dairy farming equipment industry is largely a custom-made industry. Therefore most suppliers work with standardized and custom-made products. Manufacturers are very often directly selling their products to their dealers. This form of forward integration gives manufacturers more control over which distributors are selling their brand. Despite there are only five major players in the market the degree of rivalry can be seen as moderate to strong.

2.3 GEA FARM TECHNOLOGIES

GEA Farm Technologies, founded in 1926, is one of the world's leading manufacturers/providers in dairy farming equipment. Currently GEA FT is active on every continent of the world and its headquarters are located in Bönen, Germany. GEA FT is part of the GEA Group Aktiengesellschaft which is a German system provider for food and energy processes. The group employs about 24,500 and is one of the largest suppliers for the food processing industry and other industries. In 2012 the GEA Group Aktiengesellschaft had consolidated revenue of €5.7 billion (GEA Group, 2013). The GEA Group Aktiengesellschaft consists of six segments:

- Food Solutions
- Farm Technologies
- Heat Exchangers
- Mechanical Equipment
- Process Engineering
- Refrigeration Technologies.

Over the years, GEA FT has acquired different companies with different specialisms in the dairy farming process. These acquisitions enable GEA FT to operate as a Total Solutions provider. This means that GEA Farm FT is able to provide the full range of products from the milking process to manure management to animal welfare.

GEA FT has divided their product portfolio into three business units, Milking and Cooling, Farm Equipment and Farm Services.

2.3.1 FACTS AND FIGURES

The GEA Group

Revenue	:	€ 5.7 billion
Number of employees	:	Approx. 25,000
R&D budget	:	€ 96.5 million
Headquarters	:	Düsseldorf, Germany

GEA Farm Technologies

Revenue	:	€ 581 million
Number of employees	:	Approx. 2,300
Headquarters	:	Bönen
Production facilities	:	22
R&D facilities	:	9
Dealerships	:	>1,700
Markets	:	>100
Sales locations	:	>65

Source: (GEA Farm Technologies, 2013)

2.3.2 MCKINSEY'S 7S FRAMEWORK

In order to describe the internal analysis, McKinsey's 7s framework will be used. McKinsey's 7s framework describes seven elements of a business. All these seven elements are linked to each other and therefore it is important that they are well structured. When looking at McKinsey's 7s model three hard elements (structure, strategy, systems) and four soft elements (style, staff, skills, shared values) can be defined. The hard elements are elements which can directly be influenced by the company. On the other hand, the soft elements are more abstract and cannot be influenced directly (ScienceProgress, n.d.).

Structure

GEA FT is making use of a matrix organizational structure. As mentioned before, the organization is divided into three business units, milking & cooling, farm services and farm equipment. These business units are based on the type of products. Then the organization is divided into seven sales regions, North America, Latin America, Brazil, Western Europe, Eastern Europe, Asia/Pacific and Africa Middle East & India. GEA FT has a decentralized organizational structure as key decisions and responsibilities lie at several places in the organization. This enables GEA FT to make optimal use of employees' specialisms. Within the organizations different departments often work closely together on projects.

Dividing the organization by product type enables GEA FT to have the right knowledge and skills at the right place. Additionally, employees will have specific in-depth knowledge which will be beneficial for the whole organization.

Regarding the external structure, GEA FT is making use of a large global dealer network, with many dealers who are selling the products to the end user.

Strategy

The strategy of GEA FT is built up according a pyramid. The GEA Group strategy is listed at the top of this pyramid.

According to the GEA Group website (2013), the GEA Group's strategy consists of four elements. The first element is 'market leadership and focus'. GEA strives to obtain a leading position in all markets that they are active in. This leadership should be obtained via innovative solutions, which is the second element. These innovative solutions should set GEA apart from its competitors. The third element is 'strong focus on bottom line'. This means a decentralized organizational structure and achieving cost leadership. As GEA is active all over the world it is important that local divisions have the authority to adapt their business to the local market. The fourth and final element is 'calculated risks'. This element aims on spreading risks through diversification. Additionally, project risks are carefully assessed.

The second layer describes the values of the GEA Group. These values were explained at the shared values.

The third layer is formed by the mission of GEA FT. The mission of GEA FT is communicated via a concept call the Farm of the Future. This concept discusses all challenges dairy farms are facing today and in the future. It discusses sustainable methods to overcome these challenges.

The fourth layer consists of the key targets of GEA FT. These key targets are foster an innovative culture, focus on key competencies, distribution channel optimization and focus on key markets.

The fifth layer of the pyramid is closely related to the third layer. In the fifth layer the strategies are discussed. The strategy of GEA FT is to sell total solutions. This means that they want to supply dairy farmers with solutions to multiple processes on the farm. Total Solutions concept is inspired by the Farm of the Future.

The sixth and final layer contains the action plans of GEA FT. This forms the practical side of the strategic pyramid.

Next to these strategic elements of the GEA Group, GEA Farm FT also has a specific sales strategy. This sales strategy is "to build upon a global network of specialist dealers and sales and service partners" (GEA, 2013).

Systems

Within GEA FT both top-down and bottom-up communication is used. This is a result of the matrix-structure that is used within GEA FT. As employees have specific knowledge and work in cross-functional teams the bottom-up and top-down communication ensures that this information also reaches other layers of the organizations.

Besides telephone and email there are different systems used for communication within GEA FT. Intranet is a webpage were GEA Group wide information is provided. Within GEA FT many departments have their own portal website. Also FT-Update and GEA Life are used for internal purposes. These are sort of newsletters which provide GEA Group information. For external communication and information sharing, GEA FT is using Extranet.

Style

A fairly informal setting is created within the largest parts of GEA FT. The power distance between managers and employees is kept relatively small. However, as GEA FT is a large organization the power distance between the employees and the senior managers is larger. Most often a democratic leadership style is used. As mentioned at systems, both bottom-up and top-down communication forms are used. At meetings and discusses all participants are encouraged to share ideas. Although a democratic leadership style is often used, the manager is the one who makes the final decision.

Staff

When comparing the employee profiles many differences can be discovered. The employee profile is dependent on the activities that are carried out and the department the employee is in. Important elements of many profiles are an international character and team work. Besides that the GEA Values which are explained at the shared values are applicable to all employees.

Personal development is an important topic within GEA FT. Therefore the GEA Group Academy and the GEA FT Academy are offering training courses to staff members.

Skills

GEA FT has different core qualities. One of these qualities is the innovative character of GEA FT. Over the years GEA FT has developed many innovative products which placed the organization ahead of its competitors. Additionally, high quality and user friendliness are important standards within GEA FT.

Shared values

As shown in figure 2, a set of five values are shared throughout the whole GEA Group.

These values are:

- Excellence
- Passion
- Integrity
- Responsibility
- GEA-versity



Figure 2: GEA Values

Excellence

Excellence consists of three elements. The first element is helping customers to improve themselves.

The second element is to stimulate creativity and innovation. The third and final element is continuously improve own technologies and professional skills.

Passion

This element is all about working with enthusiasm and being proud of what is achieved. Here it is important that the personal, customers', colleagues' and investors' needs are balanced.

Integrity

One part of integrity is treating other people with respect. Additionally, integrity covers standing up for your beliefs and commitments. Finally, all messages that are communicated internally and externally should be the same at all times.

Responsibility

All decisions are made carefully and when consequences are known upfront. When decisions are made the results will be communicated openly.

GEA-versity

Accept opinions of others. Foster teamwork and sharing of knowledge and people regardless cultures and borders.

2.4 SWOT ANALYSIS

The elements included in the internal part of the SWOT analysis (strengths, weaknesses) are included as these points set GEA FT apart from its main competitors. As mentioned in chapter 2.2.5, GEA FT's main competitors are DeLaval, Lely, BouMatic and Fullwood.

2.4.1 STRENGTHS

- (S1) GEA FT is aiming for product excellence. This has resulted in a strong innovative focus. Over the last few years GEA FT has developed several revolutionary products. As a result of this GEA FT was awarded with one golden- and silver medal for innovation of the year at EuroTier (EuroTier, 2012). EuroTier is one of the largest and most important fairs for animal production in the world.
- (S2) As one of the six segments, GEA FT is part of the GEA Group. This results in a strong financial position. In 2011 GEA Group had an revenue of over €5,7 (GEA, 2013).

2.4.2 WEAKNESSES

- (W1) Over the years GEA FT has acquired several organizations. The idea behind these acquisitions is to strengthen the market position in a specific area or product range. However, acquiring new organizations means that they have to be integrated in the GEA FT structure and culture. This is causing integration difficulties for some organizations which are recently acquired. As a result of this, these organizations operate according to previous habits and cultures. This is harming the one GEA team as collaboration is not optimized.
- (W2) As GEA FT is a large organization it is sometimes less flexible. Making important decisions involves many different people. In order to keep things organized within the organization, certain procedures must be followed. Although this necessary, it delays decisions making processes.
Also certain decisions have consequences for large parts of the organization. When such decisions are made the employees involved need to be informed or trained.

2.4.3 OPPORTUNITIES

- (O1) As mentioned earlier, in 2015 the European Union will abolish the milk quota (Patton et al., 2008). This will have tremendous consequences of the dairy farming industry. Farmers are able to expand their herd size in order to increase the milk productivity. Research has show that in for example the Netherlands the production will go up with 21% (Helming & Beerikum, 2008) and in Ireland the expected milk output will increase with €1,3 billion (Lynch, 2012). These enormous growth rates will result in an increasing demand for new equipment.
- (O2) As mentioned at the trends, the number of farms is declining. However, the size of the existing farms is growing. This means that dairy farming is increasingly done on a larger scale. Farming on a larger scale means that farmers need new equipment as current equipment can no longer keep up with production. This results in market potential for GEA FT.

- (O3) Due to the increasing awareness of cow welfare, farmers are starting to take actions. Healthcare products like feet or udder care are becoming more important. Additionally countries like the UK, Germany, France and the Netherlands have already developed a label for animal welfare (Katsarova, 2013). The European Union also did a study on the feasibility of animal welfare labeling and the results were positive (FCEC, 2009).
- (O4) The growing global population will boost the demand for dairy products (Beldman, Daatselaar, Galama & Prins, 2010). Additionally middle classes are growing which means that an increasing amount of people have more money to spend. This means that farmers should increase production which often comes with an expansion of their business.

2.4.4 THREATS

- (T1) Due to economic crisis it is getting more difficult for farmers to get a loan from their bank. By not getting loans, agricultural growth will be limited as farmers do not have the financial capacity to expand (Mooney, 2012). This will mean that buying new technologies, like animal tracking systems, will be postponed.
- (T2) Although increasing demand is providing opportunities, it is also forming threats. With the rising demand, the milk prices will also raise. When this happens, milk might become unaffordable to many people. Therefore people might switch to cheaper alternatives like soy milk. This is what happened during the extreme high milk prices in 2007/2008 (Beldman, Daatselaar, Galama & Prins, 2010).
- Such a shift in demand can also cause the milk price to drop tremendously. When this happens the farmers can end up with liquidity problems as the food prices remain high but milk prices are low (Beldman, Daatselaar, Galama & Prins, 2010).
- (T3) Milk scandals can be a serious threat for the dairy farming industry. A clear example of this is the milk scandal in China in 2008. At that time thousands of babies were sickened by poisoned milk. This scandal has caused that farmers had to dump their milk (Barboza, 2008). Additionally, the national milk market is ruined as Chinese people do not buy national milk anymore (Yang, 2012). Due to the losses that the farmers made, they were not able to invest in new farm equipment.
- (T4) As a result of scale increases, smaller dairy farmers are coming to a point where they should expand their business or end their existence. Due to this many dairy farmers are forced to end their business now or in the near future. As the number of dairy farms is decreasing the suppliers are now focusing on a smaller target group. This means that competition is growing.

In table 1 an overview of all SWOT elements mentioned on the previous page is displayed.

Table 1: SWOT Analysis

Strengths		Weaknesses	
▪ Innovative character		▪ Integration difficulties of acquired organizations	
▪ Strong financial position		▪ Reduced flexibility due to large firm size	
Opportunities		Threats	
▪ Abolishment milk quota EU		▪ Reduced investments in dairy sector	
▪ Increased farming scale		▪ Unaffordable milk prices	
▪ Increasing importance of animal welfare		▪ Liquidity problems due to low milk prices	
▪ Growing demand for dairy		▪ Ruined local milk markets due to scandals	
		▪ Growing competition	

2.4.5 CONFRONTATION MATRIX

This SWOT confrontation matrix will examine how strengths, weaknesses, opportunities and threats are related to each other and where challenges and opportunities lie. The confrontation matrix is based on the three most important strengths, opportunities and threats.

Table 2: Confrontation Matrix

		Opportunities				Threats				
		O1	O2	O3	O4	T1	T2	T3	T4	
Strengths	S1	1	2	2	2	-1	0	0	2	8
	S2	0	0	0	0	0	0	0	1	1
Weaknesses	W1	0	0	0	0	0	0	0	-1	-1
	W2	0	0	0	0	0	-2	-1	-2	-5
		1	2	2	2	-1	-2	-1	0	

Table 2 displays the outcome of the SWOT confrontation matrix. After having done the SWOT confrontation matrix, some clear focus points and challenges are arising.

The key strengths of GEA FT are their complete product range and highly innovative products. This allows GEA FT to be competitive when market situations are changing and to use upcoming opportunities. For example when the milk quota will be abolished in 2015 the demand for new farming equipment might increase. In such a case the Total Solutions concept allows GEA FT to offer a solution that covers most elements on a dairy farm.

In general it can be concluded that the strengths will be able to avert the threats. When looking at the matrix we see that the threat of increasing competition (T4) can be averted by GEA FT's complete and innovative product range (S1). The biggest challenge at this part of the confrontation is to be able to offer affordable solutions as farmers have difficulties to finance their business (T1). However, due to the wide product range GEA FT can offer various solutions in different price categories.

Overall the influence of the weaknesses is not that large that it will hurt the opportunities. Although weaknesses will put pressure on making use of opportunities, most of these challenges are compensated by the strengths. For example GEA FT's lower flexibility (W2) will make it more difficult to anticipate to changing market trends (O3). However, GEA FT's large product range (S1) allows them to anticipate to such a trend. As a less flexible organization it is important that the market is carefully analyzed and outline a clear strategy for the future. When this is done it will be easier to respond to changes in the market.

Averting threats with weaknesses will cause challenges at several points. The main weakness of GEA FT is its lower flexibility. Rapidly changing market environments will require a change in strategy. Changing this strategy and getting all the employees on the same page takes a little longer than in smaller organizations. Additionally, with the changing market environment and increasing competition it is important that all GEA FT employees are operating according the guidelines of GEA FT (W1).

Overall it can be concluded that the strengths of GEA FT are strong enough to make use of opportunities and to avert the threats. However, as mentioned before it is important that the market is monitored carefully in order to adapt to changing market trends. The main point of focus is the wide and innovative product range which is able to serve different and changing markets.

When looking at the SWOT confrontation there is one option which is very interesting and might have good market potential. This is the combination of GEA FT's innovative character (S1) and the increasing importance of animal welfare (O3). As animal welfare is becoming more important it brings up the opportunity to develop a new technology which benefits to animal welfare. In order to utilize this opportunity GEA FT developed CowView.

CHAPTER 3 – LAMENESS & TARGETING

This chapter will start with an overview of what dairy lameness is and its consequences. After that the product concept CowView lameness module will be explained. As the CowView lameness module is not suitable for every type of farmer a customer profile is set up. Finally, the target market and target group are defined.

3.1 WHAT IS LAMENESS?

Lameness is one of the most occurring and expensive welfare issues in the herd. It is estimated that 25 to 35% of all lactating cows in Europe and North America are lame (BCSPCA, 2010). Lameness is a response to pain caused by a hoof problem (Leach et al., 2010). When a cow is lame it will limp and have a reduced gait. The degree of limping and reduced gait depends on the degree in lameness. The degree of lameness can be ranked according the Locomotion Scoring System (LMS). This system consists of five levels, from level 1 (healthy) to level 5 (severe lameness). Cows are rated on their posture and gait when walking (Zinpro, 2013).

Lameness results in less food intake, lower milk yield, lower reproduction and early culling (BCSPCA, 2010). One case of lameness costs around the €210,-. This means that in a 200-cow herd it would cost between €10,500,- and €14,700,- on an annual basis. Additionally, once a cow has suffered from lameness there is a higher chance that it will suffer from it again in the future (Delfra, 2008).

With a lameness case there are different costs involved. Not only does it cost money to treat the cow but there is also an economic loss. In table 3 all type of costs involved with lameness are mentioned.

Table 3: Costs of lameness

Direct costs	Indirect costs
Veterinary treatments	Increased culling
Reduced milk yield	Extended calving intervals
Discarded milk	Poor/reduced fertility
Reduced lactation yield	
Farmers time (extra labor input)	

Source: (CAFRE, 2006)

Despite the high economic costs involved with lameness, this issue is still lacking awareness. Many farmers are not aware of all the costs that are involved in a lameness case. Also many farmers do not realize how high the lameness rate in their own herd is. A clear example of this is a study done by Leach et al. (2010) where 222 UK dairy farmers were asked about the percentage of lameness in their herd. According to the farmers, 6.9% of the herd was lame; however veterinarians registered 36% of the herd to be lame.

3.2 COWVIEW LAMENESS MODULE

3.2.1 PRODUCT DESCRIPTION

Recently GEA FT has developed a new product called CowView. CowView enables a farmer to localize, track and assess a cow's behavior in real time. The system provides a full and continuous analysis of the location of an individual cow and the activities that are carried out. For example it measures time spent with feeding, in cubicles and alleys and distances walked. These activities are analyzed by a system and allow farmers to see where a cow is in its heat cycle and what their state of health is.

In order to track animal health, and in particular lameness, a special lameness module is developed. This module alerts farmers which cows are lame and need treatment. Using CowView helps farmers to improve health and reproduction management as individual cow information is provided on a real-time base. When there are any abnormalities in a cow's behavior, the system sends out a warning signal and the farmer can act on it.

Another product functionality is the search and find modus. This allows farmers to locate the exact position of the cow. When using this function, farmers no longer have to scan through the whole barn when searching a specific animal.

The benefit of the system is that it is a time saving tool. Now farmers do not have to spend fixed times in the barn to observe animal behavior. Additionally, CowView is more reliable regarding heat detection and analyzing health status than when checking manually. With this system illnesses will be detected in an earlier stage which results in lower treatment costs and reduces economic losses. All the data that is generated by the system are sent through an Ultra wideband connection to a server. The farmer can access these results via their smartphone, tablet or computer.

CowView consists of two different parts, the tag and the receiver. The tag is mounted on the collar of the cow. These tags allow the receivers to localize the cow. In order to identify the activities, a barn must be configured with separate functional areas. This means that there are separate areas for feeding, milking and resting.

3.2.2 CUSTOMER PROFILE

CowView will not be suitable and profitable for every type of farmer. Therefore, a special profile needs to be made with the specifications of the desired farmer. This profile forms the target group for CowView.

First of all, the farmer must be interested in new and modern technologies and be willing to use these technologies. This is because the technique that is incorporated into CowView is new to the market and it requires a different form of management. Due to growing herd sizes it is not always possible anymore for farmers to pick up every signal of every cow manually. With CowView, farmers receive an alert when action needs to be taken. This means that part of the herd management is done from a distance. It does not mean that there is less animal contact as farmers can address actions more efficiently and effectively. This is a new way of farming which is not widely accepted by every farmer. However, this way of farming is timesaving and therefore ideal for farmers who work with large herds and where time is a limiting factor. The system allows farmer to better monitor their herd and identify those cows that have specific needs.



Figure 3: Logo CowView

Secondly, the farmer must have a strong focus on herd optimization and animal-welfare. This trait is important as CowView is decreasing lameness incidences and is detecting heat.

CowView will be most profitable for large scale farmers who have >200 cows and a free stall barn design with cubicles and a high roof. As CowView is an automated system whose results can be accessed via a computer, smartphone or tablet, changing or not well trained personnel is not a limiting factor anymore. Now the farmer can easily check his complete herd on health status without the risk of different interpretation.

CowView is a 'stand-alone system' which means that it is not dependent on other products. The system will be connected to the herd management system and correspond with all other animal related data in order to provide the best overview for the farmer. As a result of this, it is able to function together with products of a different supplier.

CowView is a new product of GEA FT which allows farmers to track, localize and assess animal behavior on a real time basis. This module focusses on lameness detection. Lameness is an underestimated health problem which is costing €10,500,- to €14,700,- on an annual basis in a 200-cow herd. CowView will lead to a healthier herd which results in saving time and money. The product is most suitable for large scale farmers who find herd optimization important and are willing to adapt new technologies.

3.3 SEGMENTATION AND TARGETING

There are many different ways of segmentation. In order to identify the most suitable target group for CowView, a combination geographical and demographical segmentation will be used. The reason why this type segmentation will be used is because CowView will be used on large scale dairy farms to a great extent and not every region is appropriate. Additionally, CowView is an innovative high-end product which will require a substantial investment. Therefore, the initial markets for CowView will be the developed markets/regions.

3.3.1 SEGMENTATION

As mentioned before, CowView is a high-end product which requires a substantial investment. This means that farmers have to be able to make the investment in order to acquire the product. Therefore, CowView would have the biggest chance of succeeding in developed regions. These developed regions are the European Union, United States and New Zealand. However, New Zealand is mainly a pasture farming country and therefore not suitable for a product like CowView. Because of this the European Union and the United States will be further investigated regarding segmentation.

European Union

As shown in figure 4, Europe is one the regions in the world with the highest milk density. According to the EU Commission (2012), in 2011 the European Union-27 counted 22,842,000 dairy cows spread over 985,538 dairy farms (DairyCo, 2013). Figure 4 shows that Germany, France, Poland, UK, Italy and the Netherlands have the highest number of dairy cows. Although there are many cows and dairy farms in the European Union not all of them will be interesting. Many farms in Eastern Europe have very small herd sizes and are using traditional milking methods. Therefore, the focus for this segmentation lies on the Western European market as farms have larger herd sizes and are further developed.

Selected EU cattle numbers, Nov/Dec 2011

	Total cattle			Dairy cows			Beef cows		
	2010 000 head	2011	% change	2010 000 head	2011	% change	2010 000 head	2011	% change
France	19,654	19,142	-2.6	3,718	3,678	-1.1	4,178	4,108	-1.7
Germany	12,706	12,528	-1.4	4,182	4,190	0.2	707	684	-3.3
United Kingdom	9,896	9,675	-2.2	1,847	1,800	-2.5	1,660	1,642	-1.1
Italy	5,833	5,898	1.1	1,746	1,755	0.5	372	390	4.8
Irish Republic	5,918	5,925	0.1	1,027	1,055	2.8	1,071	1,063	-0.7
Spain	6,075	5,923	-2.5	845	798	-5.6	1,920	1,821	-5.2
Poland	5,562	5,501	-1.1	2,529	2,446	-3.3	107	122	14.1
Netherlands	3,960	3,912	-1.2	1,518	1,504	-0.9	118	107	-9.3
Belgium	2,510	2,472	-1.5	517	511	-1.3	495	489	-1.3
Austria	2,013	1,977	-1.8	533	527	-1.0	261	257	-1.6
EU-27	87,437	86,231	-1.4	23,122	22,842	-1.2	12,306	12,096	-1.7

Figure 4: Selected EU cattle numbers

Source: (EU Commission, 2012)

According to a research done by Tacken (2009), the UK, France, Denmark, Germany, the Netherlands and Sweden have the most innovative dairy industries of Europe.

United States

As shown in table 4, the U.S. dairy industry is mainly focusses on a few regions. The biggest dairy producing states are California, Wisconsin, New York, Pennsylvania and Idaho. California has by far the biggest dairy farming industry as it is responsible for 21,3% of the total U.S. milk production (Dairy Farming Today, n.d.). The total dairy herd size of the U.S. is 9,2 million dairy cows (Plain, 2013). California and Wisconsin are the two biggest dairy cattle states. Together they hold approximately 33% of all U.S. dairy cows (Progressive Publish, 2012).

Table 4: U.S. top 5 dairy producing states

State	Total number of dairy cows (in thousands)	Average herd size	Number of farms >200 dairy cows
California	1,769	1,056	1,173
Wisconsin	1,265	105	968
New York	610	112	545
Pennsylvania	541	75	290
Idaho	578	1,005	242

Sources: (Progressive Publish, 2012) (Dairy Policy Analysis Alliance, 2011)

Table 4 shows that California and Wisconsin are the most interesting states for a system like CowView. Initially targeting at California and Wisconsin would mean that the total U.S. target group would consist of 2,141 potential buyers. When networks are established and the product is selling well, it can be considered to expand to the other states.

3.3.2 TARGET MARKET

After analyzing both regions listed above, it can be concluded that the European Union would be the most suitable target market to launch CowView. In particular countries like Germany, UK, the Netherlands, Denmark and Sweden would be suitable countries for the initial product launch. As mentioned in chapter 3.2.2 the target group are farmers with >200 cows and who find animal welfare important.

There are several reasons why these countries are the best option. First of all, as GEA FT is a German company, these countries can be seen as part of GEA FT's home market. Launching a new product in a home market has several advantages. First of all launching a product in a home market means that the physical distance is minimal. This allows GEA FT to react quickly to new developments. Additionally, as GEA FT is operating in this market for many years they have great market knowledge and close contacts with dealers and farmers.

Not only does GEA FT know the market well, GEA is also a well-known brand in these countries. Due to the already established brand equity of GEA, farmers might be more inclined to buy the product. The brand name GEA FT will add reliability and credibility to the product.

As mentioned in chapter 2.2 the awareness for animal health is becoming more important to farmers. Currently there already are lameness control programs in these countries. The aim of these programs is to create awareness and reduce the lameness incidences (Leach & Whay, 2008). These changing perceptions are creating potential for CowView.

Once the initial product launch has been successful, entering the US market is an interesting option as the US has many modern large scale farms. The advantage here is that GEA FT already gained experience with launching CowView. This experience comes of good use when setting out the product launch strategy for the US.

The initial target market for CowView should lie within the European Union. This allows GEA FT to gradually launch the product in their 'home market'. Germany, UK, the Netherlands, Denmark and Sweden are the most interesting countries. This is because farmers in these countries often operate on a large scale and are using modern technologies. When this product launch has been successful, moving to the US should be considered. This market definitely has potential as there are many modern large scale farms.

CHAPTER 4 – GEA FT LAMENESS SURVEY

In order to get a good overview of farmers' perception about lameness, their practices towards it and their opinion about automated detection tools, an online survey has been conducted. This chapter will explain which methods are used for the online survey, what the results are, what do they mean and how it relates to existing literature.

4.1 METHODOLOGY

In order to get insights of what farmers do to increase animal health, in particular lameness prevention and detection, an online survey was conducted. This online survey tested what is currently done, how satisfied farmers are and what farmers think of an automated detection system. The reason for using an online survey is because it is easy to use when doing international surveys. An online survey enables research in different countries in a consistent way. The title of the online survey was 'Pilot farmer survey 2013' and was conducted in Germany, Austria, France and the UK.

The population for this survey consists of future oriented and innovative dairy farmers in Germany, Austria, France and the UK. As it is impossible to interview all dairy farmers in these four countries a sample was set up. For the sample a fixed group of farmers were used. Within GEA FT these farmers are called 'PILOT farmers' and are regularly used for surveys. The PILOT farmer sample represents the typical farm structure of each country. The questions that were asked in the online survey are included in appendix I.

Initially, 1,350 farmers were invited to participate to this online survey. In order to stimulate participation incentives and a lottery were included. After the initial invitation two reminders were sent out. As a result of this 333 farmers participated to the online survey. This is a response rate of 26,6%. All participants were either owner of a dairy farm or herd manager at a dairy farm with herd sizes varying from 6 to 1,150 cows. In the table below an overview of the sample is displayed.

Table 5: Sample online survey

Country	Number of farmers	Average herd size
Germany	159	133,38
Austria	56	35,47
France	68	79,46
United Kingdom	50	223,94
Total	333	118,06

Source: (GEA FT Lameness Survey, 2013)

The first step in the process of developing an online survey was to define the goals. The goal of this online survey was to find out how farmers currently cope with lameness, how satisfied they are with their current situation, what their knowledge about lameness is and what they think of an automated detection tool and how it should be offered. The hypothesis of this online survey is 'lameness is an underestimated problem with lacking awareness'. This hypothesis will be answered in the conclusion at chapter 4.3.

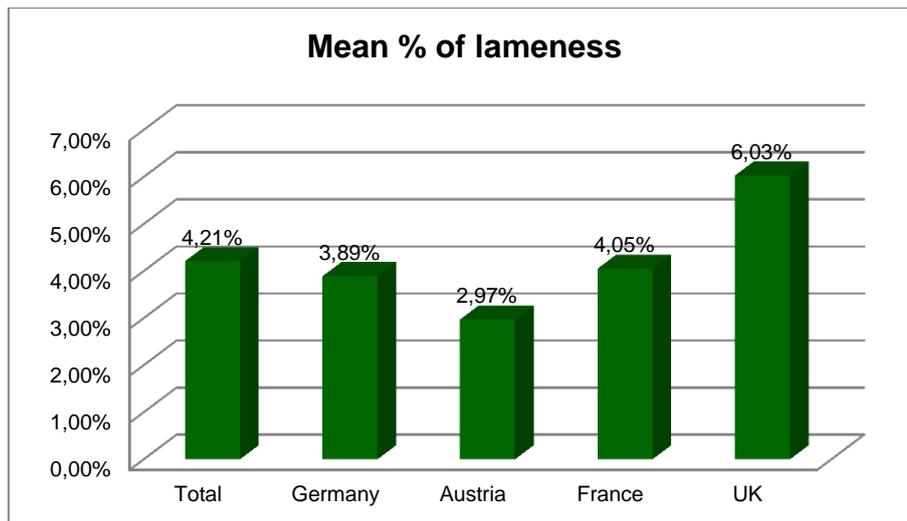
All results were gathered through the online survey tool. Once the online survey was closed the results were processed into a datasheet in SPSS 21. Different analyses were executed based on country of origin and herd sizes. This was done in order to investigate whether there are differences between countries or large and small scale farmers. When separating according to herd size the cutoff was made at 80 cows.

4.2 RESULTS

The results of the online survey will be divided into three categories which are the current awareness of lameness, current behavior of farmers and the results which are related to the CowView lameness module. As mentioned before the meaning of the results will be discussed in chapter 4.3.

Current awareness of lameness

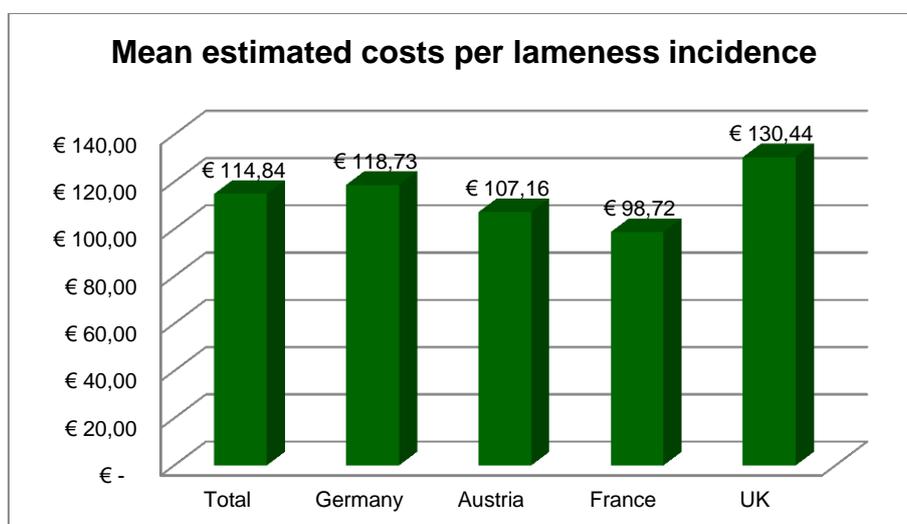
According to the survey, the UK reported the highest percentage of lameness (6,03%). As shown in figure 5 other countries appear to have slightly less lameness, in particular Austria (2,97%).



Source: (GEA FT Lameness Survey, 2013)

Figure 5: Mean % of lameness per country

Regarding the costs per lameness incidence, estimated by farmers, countries' averages vary between €98,72 and €130,44. An overview of the estimated costs is displayed in figure 6. Again the UK records the highest estimated costs. As mentioned in chapter 3.1, the costs of a lameness incidence consist of different elements. During the online survey, farmers included most frequently reduced milk yield, treatment costs and extra work costs. Veterinarian costs and insemination costs were least included.

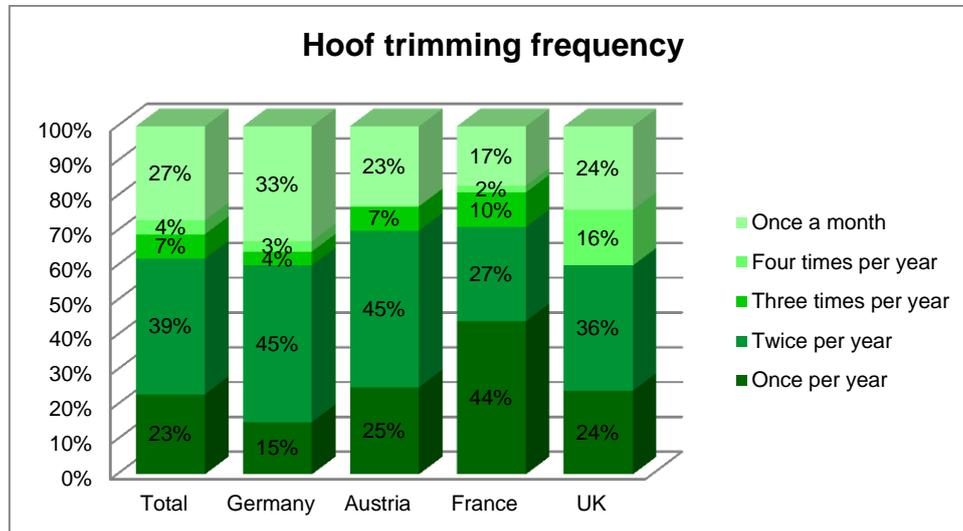


Source: (GEA FT Lameness Survey, 2013)

Figure 6: Mean estimated costs per lameness incidence

Current behavior of farmers

An important part in managing dairy lameness is hoof trimming. According to the online survey 89,1% of all farmers do regular hoof trimming. This makes frequent hoof trimming the most common preventive measure for lameness.

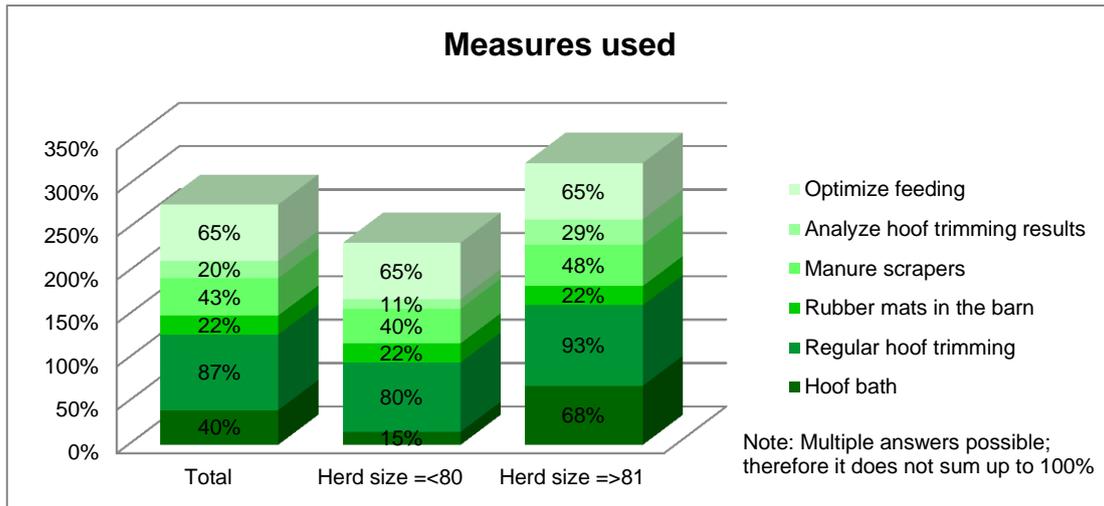


Source: (GEA FT Lameness Survey, 2013)

Figure 7: Hoof trimming frequency

As shown in figure 7, in general hoof trimming is done most often twice (38,7%) and three times per year (27%); but more frequent treatments are also performed (11%). Still 6,9% of the farmers do not do any regular hoof trimming. When taking a closer look at the countries separately it becomes clear that the largest group of French farmers trims hoofs only once a year where farmers in other countries most frequently trim twice a year. Other than that there are not significant differences. Hoof trimming is executed by different people. 52.3% of the farmers hire a hoof trimmer who takes care of the trimming. There is also a substantial number (40,8%) of farmers who do the hoof trimming themselves or have a designated employee for this. Together with frequent hoof trimming there are also other measures taken by farmers to prevent lameness. Other measures which are frequently used are optimizing feeding (64.7%), manure scrapers (43%) and hoof baths (40,2%). Manure scrapers are used to keep walking aisles “free” of manure. This provides dryer surfaces which is better for animal welfare (Shearer, 2007). A hoof bath is often used after milking and will kill bacteria which can cause infectious hoof diseases. These four measures are the most frequently used measures to protect cows against lameness. In figure 8 on the next page, a complete overview of the measures taken by farmers with large and small herd sizes is displayed. What stands out is that farmers with larger herds tend to take more measures to prevent lameness than farmers with smaller herd sizes. Hoof baths in particular are more frequently used by farmers with larger herds.

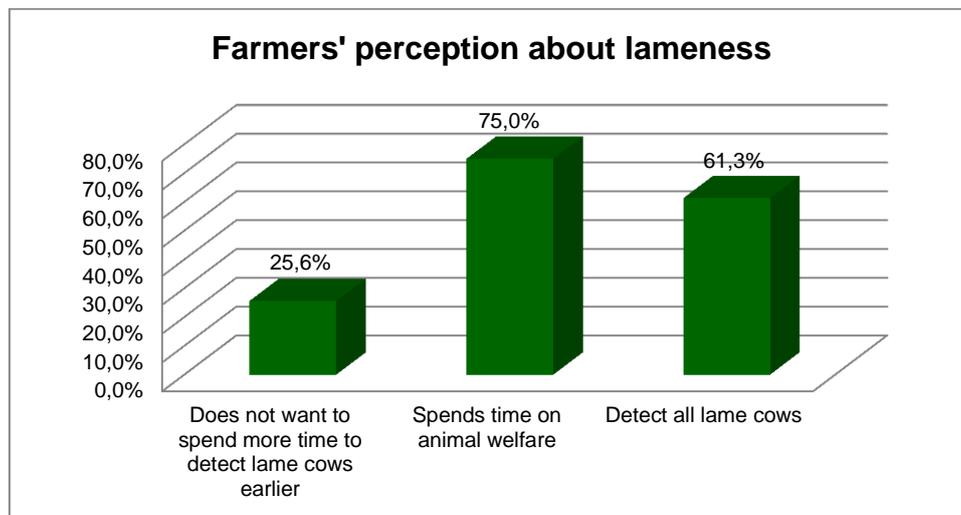
According to the online survey 99.7% of the farmers detect lameness through visual observation. On average farmers spend 31 minutes per day on detecting lameness. 66,8% of the farmers believe that these 31 minutes are enough to detect all lame cows.



Source: (GEA FT Lameness Survey, 2013)

Figure 8: Measures taken

Most farmers are satisfied (60%) to very satisfied (13%) with detecting lame cows in time and 61,3% wants to make sure that they detect all lame cows. Although most farmers are satisfied with the way they detect lameness, figure 9 shows that 25,6% of the farmers find time a limiting factor. This withholds them from detecting lameness at an earlier stage as it is more time consuming. In general 75% of the farmers spend time and attention on animal welfare.

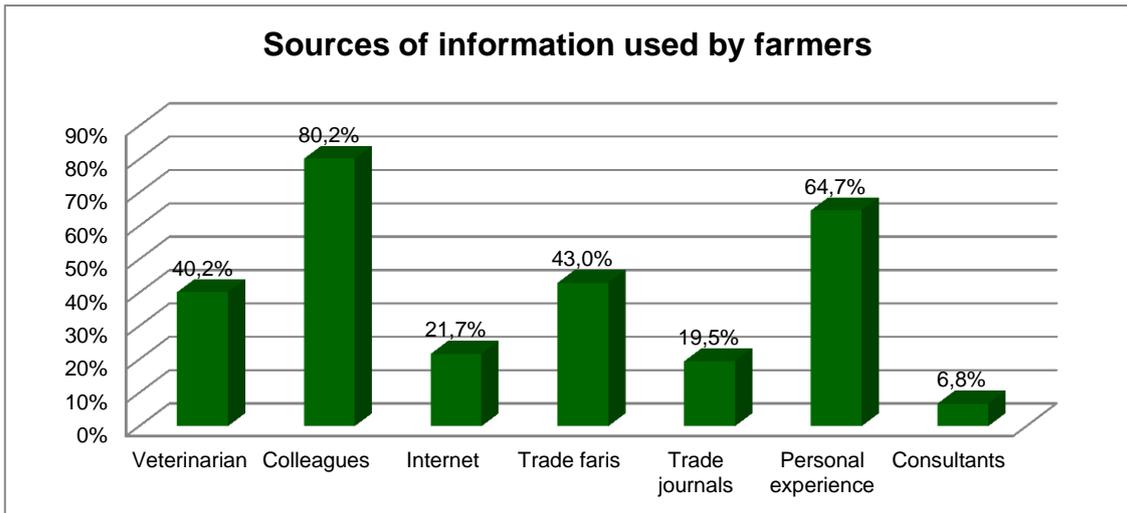


Source: (GEA FT Lameness Survey, 2013)

Figure 9: Farmers' Perception about lameness

One of the elements that is measured at the online survey was when farmers perceive a cow to be lame. It turns out that 56,6% of the farmers would perceive a cow with a locomotion score of 2 (mildly lame) to be lame and 32,5% perceives a cow with a score of 3 (moderately lame) to be lame. Once a lame cow has been detected 85,1% of the farmers would treat the cow without being dependent on a minimum amount of lame cows or fixed times. This means that about 15% of the farmers do not necessarily treat lame cows immediately.

Regarding the search for information, farmers prefer to use sources close to their own environment. On the next page, figure 10 shows that consulting colleagues (80,2%) and personal experiences (64,7%) are the most important sources of information. The least favorable source of information are consultants (6,8%) as farmers perceive these sources of information to be biased.



Source: (GEA FT Lameness Survey, 2013)

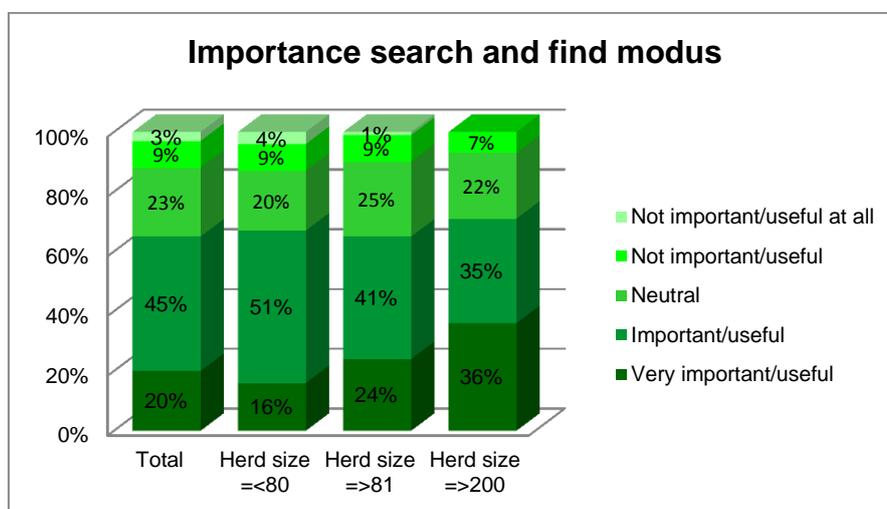
Figure 10: Sources of information used by farmers

CowView lameness module

47,3% of the farmers is convinced (43%) to highly convinced (4,3%) that a system like the CowView lameness module will help them to reduce lameness in their herd.

The largest group of farmers (62,3%) prefers to see all lame cows and set up their own strategy. This allows farmers to adapt working routines to personal preferences. Another common method which is preferred by 24,2% of the farmers is to see all cows from a certain degree or higher. Other less preferred options were, only show most severe lame cows (3,9%) and show lame cows by allocated time (6,5%) or money (3,2%).

65% of all farmers are enthusiastic about the search and find modus of the CowView lameness module. As shown in figure 11 when separating farmers by herd sizes at the cutoff point of 80, there are no significant differences in importance/usefulness. However farmers with herd sizes of ≥ 200 have a stronger preference for this function. Overall, the amount of farmers that need conviction remains almost the same at all herd-sizes. In general the number of skeptical farmers is not very large and therefore this function might be interesting to use in the marketing/communication strategy.



Source: (GEA FT Lameness Survey, 2013)

Figure 11: Importance search and find modus by herd size

4.3 CONCLUSION

This online survey confirms that lameness is an underestimated problem with lacking awareness. Therefore the hypothesis can be confirmed. A clear example of the unawareness is that farmers estimate 4% to 6% of this herd to be lame. However, literature says that when a veterinarian checks for lameness it turns out that 36% of the herd is lame (Leach et al., 2010).

Although farmers in all four countries are lacking awareness, there is a difference among the countries. When analyzing the results it seems that UK farmers have higher lameness percentages and costs. This does not have to mean that there is a higher lameness rate in the UK or that it is more expensive. It is more likely that UK farmers have a slightly higher knowledge about lameness. This is most likely the result of lameness control programs which are organized in the UK (DairyCo, 2013). Although it seems like UK farmers have a higher knowledge about lameness, their outcomes are still significantly lower than literature, written by Leach et al. (2010), suggests.

There are many farmers who do not know what type of costs are involved with lameness. The most frequent type of cost mentioned is the reduced milk yield, followed by treatment costs. This is very similar to earlier research. In general there is still a lot of work to do to create awareness about lameness. According to research done by Leach et al. (2010), 42% of the farmers suggest that providing information on costs of lameness would encourage farmers to reduce lameness. As the online survey has shown, lameness control programmes like those in the UK are starting to pay off. Therefore these programmes are of great importance for a successful launch of the CowView lameness module.

According to the online survey, most farmers are satisfied with detecting all lame cows and detecting them in time. However, as mentioned in the previous paragraph, it is very likely that farmers do not detect all lame cows although they think they do.

The online survey has shown that 25,6% of the farmers see time as a limiting factor in lameness detection. According to research that has been done by Leach et al. (2010), lack of time is the most common barrier of lameness control. This is followed by the lack of skilled personnel. The farmers who find time a limiting factor form an interesting group for the CowView lameness module as this module saves valuable time.

The combination of 99,7% visual observation and 61,3% of the farmers wanting to detect all lame cows is an interesting outcome. Visual detection is time consuming and less accurate in detecting all lame cows. Also farmers want to detect lameness at a very early stage (score 2), where the consequences are often hardly visible by visual observation. Therefore an automated detection system might form the perfect outcome for this group of farmers. An example of this is that most farmers are treating lame cows as soon as possible. The reason for spending time on animal welfare and detecting and treating lameness differ. According to research done by Leach et al. (2010) the main reasons for controlling lameness in the herd are pride in a health herd, feeling sorry for lame cows, lame cows lose money, public image and feeling guilty about lame cows.

Farmers most often seek for information at colleagues and from their own experiences. These results are quite similar to results of earlier studies. Research done by Leach et al., (2010) says that 57% of the farmers does not seek for advice or information when it comes to lameness control and only 5% consults sales representatives. These results show that farmers operate in a closed environment when it comes to seeking for information. Farmers tend to rely on their own experience and find it hard to take advice from external sources. This makes it more difficult for a company like GEA FT to reach farmers. It requires a carefully planned strategy which will be explained in the recommendations.

The online survey shows two important elements regarding the product concept. First of all, farmers prefer to set up their own lameness treatment schedule. As many farmers have different routines standardized treatment plans might not be relevant.

Additionally, interviews show that finding a specific cow in the barn is time consuming (Steinmann, 2013). Therefore, the larger part of the farmers perceive the search and find modus important/useful. When looking at the results it can be concluded that farmers with a herd size of ≥ 200 have a stronger preference for the search and find modus than smaller farmers. The most obvious reason for this is that it is estimated that farmers with less than 150 to 200 cows can recognize and separate their cows visually. When having a herd of over 200 cows this is hardly possible anymore. Therefore it takes these farmers much more time to find a specific cow manually as their barn is larger and farmers have to check more cows. For this group of farmers time savings would be the highest.

Currently almost half of the farmers are already convinced that an automated detection system will help them reducing lameness. However the majority of the farmers still needs conviction. This is where the challenge lies for the marketing and communication strategy.

The GEA FT Lameness survey shows that there is a lacking awareness for lameness issues in all countries. Farmers in the UK tend to have the 'highest' knowledge about lameness, which is most likely the outcome of the lameness control programs organized in the UK. Colleagues and personal experience are the most used sources of information. On the other hand, consultants are least used. Regarding the product concept, farmers prefer to set up their own lameness treatment strategy.

CHAPTER 5 – STRATEGIC RECOMMENDATIONS

As CowView is new to the market, a positioning and communication strategy should be set out. This chapter will discuss the recommended positioning and communication strategy for CowView. The positioning strategy will describe the position of CowView in the market and the related product values. The second part of this chapter will discuss the communication strategy. Firstly the objectives will be discussed. This will be followed by points of focus, what message to send out and via which channels. After having discussed the positioning and communication strategy, a recommended marketing mix for the initial markets will be described.

Finally this chapter will end with an implementation plan and the costs involved.

5.1 POSITIONING

As CowView is one of the first products of its kind, highly innovative and offered throughout the whole industry in the starting countries, a differentiation strategy should be used. This strategy should focus on the product attributes and benefits of it. It should be positioned as a premium product and strongly associated with increasing animal welfare.

In order to support its high quality and innovative image a slightly higher price should be charged.

In general the positioning of CowView should have a positive focus. By positive focus is meant focusing on the aspects that have positive outcomes for farmers and animals, like increased animal welfare and time and money savings instead of focusing on lameness issues like costs, extra work and animal suffering. Below further details of the positioning strategy are explained.

5.1.1 PRODUCT VALUES

In order for CowView to succeed it is important that customers recognize the brand and the product. Also customers must link the product CowView to the brand GEA. This should be done through linking CowView to specific brand values. When doing this it is important to keep in mind the general GEA brand values as CowView needs to tie into the general brand. Additionally, GEA is already a strong brand with high customer recognition, which will be useful when positioning a new product.

The following product values are detected for CowView:

- Innovation
- Premium
- High quality
- Convenience
- Maximize animal welfare
- Efficient and effective herd management
- Reliable
- Accurate

Innovation is one of the characteristics that apply to both GEA and CowView. In general GEA has a strong focus on product innovation. This is also one of the reasons why CowView has been developed. As CowView is one of the first products in its category it is a highly innovative product and new in the market.

CowView should be positioned as a premium product. What makes CowView a premium product are the different features, like health management, optimized reproduction, animal localization and its reliability and accuracy. These features are partly new to the market or distinguish from existing tools by more sophisticated and reliable functionalities.

Next to the product features the product design is also innovative and very functional. When positioning a product as a premium product, the brand value high quality is somewhat automatically

attached. As there are still many farmers that need to be convinced of the product concept, the high quality brand value is very important and ties in well with the overall GEA brand.

Convenience is a value which is not directly related to the product itself but more to the consequences of it. When using CowView, farmers will be better able to allocate time according to own preferences which will make them more flexible.

Maximize animal welfare relates to the system's ability to better monitor animal health. This is also an important value which should appeal to many farmers as the online survey shows that 75% of the farmers spend time on animal welfare. Additionally, the system allows farmers to detect lameness at an early stage which supports farmers to detect mildly lame cows (LMS score 2).

The online survey shows that there is a substantial amount of farmers who find time a limiting factor. Because of this fact, effective and efficient herd management plays an important role. CowView allows farmers to reduce lameness, detect lameness at an earlier stage, find the optimal insemination time and locate specific animals. As a result of this farmers will save valuable time and money.

A common reason for farmers to reject new technologies is because they often do not trust the reliability and accuracy of the technology. Farmers often think that they can do it better manually. Therefore the product characteristics reliable and accurate are very important in the communication strategy. When farmers get the feeling that this system is actually supporting them and is highly reliable they will start considering buying the product.

The reason why customers should buy CowView is because it increases animal welfare and therefore farmers save time and money.

In order to support the premium product image, the product must also appear as a premium product. Therefore it is important that the product design, especially the software, has a luxury and premium design.

CowView should be positioned as a premium product. In order to support this image a slightly higher price should be charged without using a market skimming strategy. The product should be linked to the following brand values innovation, premium, high quality, convenience, maximize animal welfare, Efficient and effective herd management, reliable and accurate.

5.2 COMMUNICATION

5.2.1 COMMUNICATION OBJECTIVES

The main goal of the communication activities is to create awareness and demand for CowView and its functionalities. This should lead to farmers buying the product. However, a communication strategy that would only focus on the product itself would not be sufficient in this case. This is due to the lacking awareness of the lameness issue. As long as customers do not have a full understanding of the problem they will not buy the product. In that case, GEA FT might risk that customers see CowView as a gadget without major functional use. Therefore it is important that the communication strategy also focusses on creating awareness for the negative outcomes of lameness.

Therefore the general goals of this communication strategy are creating awareness about CowView and about the negative outcomes of lameness.

An important element to keep in mind is that all communication activities must be in line with the positioning strategy and the general GEA FT values.

5.2.2 POINTS OF FOCUS

Regarding the positioning strategy a combination of positive and negative focus is used. In this case the positive points will be product related and the negative points will be lameness related.

The positive focus in this case means the same as with the positioning strategy. There are several reasons why a positive focus is suitable for this situation. The following positive focus points are recommended:

- Animal welfare
- Saving time
- Saving money
- Convenience

As the online survey has shown, 75% of all farmers are spending time on animal welfare in order to increase it. Focusing on increasing animal welfare might strongly appeal to these farmers.

Another important point of focus is the time saving element. As mentioned before farmers can save valuable time by using CowView. Due to the increasing farming scales, time is often seen as a limiting factor by farmers. It is expected that this will further increase in the future. The online survey shows that currently more than 25% of the farmers do not want to spend more time on lameness detection. Therefore saving time will also be appealing to farmers.

The third positive point of focus is saving money. When using CowView farmers will save money in different ways. First of all, using the system will reduce lameness and therefore lower the costs involved. Additionally, for farmers who hired personnel, saving time might also mean less hours of hired labor.

The fourth point of focus is convenience. Using an automated detection tool will provide a certain form of freedom to farmers. Farmers do not have to spend fixed times in the barn detecting lameness. Now farmers can analyze the results at any given time.

Negative focus points entail negative outcomes for farmers and animals. These points are not directly related to CowView but more to the lameness situation and used to create awareness about this problem. These negative points are:

- General amount of lameness in the herd
- Costs involved

As the online survey and literature has shown, there is still lacking awareness about lameness. Many farmers are not aware of how many cows are actually lame. Therefore it is important that the communication strategy also includes these numbers. However this has to be communicated very carefully as it might scare away farmers when only mentioning that 25 to 35% of all cows are lame. This message might come across as a reproach that farmers do not detect lameness very well.

There is a similar situation regarding the costs involved. Most of the farmers do not have a good understanding of what a lameness incidence costs and what type of costs are involved. The focus should especially lie on the amount of money farmers are paying/losing on lameness.

The focus on how to treat and prevent lameness should be minimal. This communication strategy will only focus on the product, its gains and the economic losses of lameness.

5.2.3 THE MESSAGE

The type of messages that will be send out can be divided into two groups, messages related to CowView and messages related to lameness. The messages that are discussed here will be used by the different communication channels mentioned in chapter 5.2.4.

First the messages related to CowView will be discussed.

- As mentioned before, animal welfare is an important part of the positioning strategy. Therefore it should play an important role in the communication strategy. The main message that should come across here is that CowView will allow farmers to detect almost all lameness cases and at an earlier stage. This results in healthier animals with less pain and inconvenience.
- CowView allows farmers with large herds to have an individual animal focus. This is not possible without the CowView system.
- The high quality receivers throughout the barn make the systems reliable and accurate.
- According to CowView's product manager, farmers who use CowView will on average spend 50% less time on detecting lameness. This allows farmers to spend more time on other activities. Here the main message is achieving more in less time. Additionally, farmers with hired labor might be able to reduce payroll costs.
- Farmers who use the CowView lameness module will on average save €162,- per cow/year. This means the ROI is within three years (with a herd size of 450).
- A very important benefit of CowView is the increased convenience for farmers. Here it should clearly come across that farmers do not have to detect lameness anymore. The time that farmers had to spend fixed hours in the barn observing are over. Now lameness is detected automatically and farmers only have to check the alerts. This can be done at any given time.
- Another element that increases the convenience is the search and find modus. Finding a specific cow is now easier than ever before. There is no need to search through the entire barn. With the search and find modus the exact location of the cow is shown. Farmers who use the search and find modus will find a specific cow 72% faster (GEA Farm Technologies, 2013).
- CowView is a standalone system. Therefore it can be installed in every barn no matter which other technologies are already installed.

When there is more information available about the reliability and accuracy in a later phase, this should be communicated.

The second group of messages will be the messages related to lameness.

- Detecting lameness at an early stage is often difficult and time consuming. CowView offers the solution with an automated lameness detection system.
- Research shows that in an average herd 25 to 35% of the lactating cows are lame.
- On average the costs per lameness incidence are €210,- This means that in a herd of 200 cows it would cost between €10,500,- and €14,700,- on an annual basis. Farmers perceive discussing costs is to be the most effective message to encourage colleagues to treat lameness Leach et al. (2010).

5.2.4 COMMUNICATION CHANNELS

Communicating a message can be done via different channels. Each of the following options will support the message and/or the product values behind it.

Product endorsement

As mentioned in the SWOT analysis, nowadays several labels are (being) developed. However, the currently existing animal welfare labels are mainly focused on farmers' operations and food processing. At the moment these labels are not applicable for CowView yet. As animal welfare becomes more important these labels might be developed in the near future. When this is the case, getting CowView certified is an interesting option.

In order to enhance the reliability and accuracy values, endorsement is an interesting option. In this case impartial external organizations approve of the product and link their name to it. This would also testify of high quality and reliability. Interesting organizations are:

- Federation of Veterinarians of Europe (FVE)
- Wageningen UR
- DairyCo UK
- Farm Animal Welfare Committee (FAWC)
- Deutscher Tierschutzbund E.V.
- Swedish Center for Animal Welfare (SCAW)
- Danish Center for Animal Welfare (DCAW)

The FVE is an organization which is active in 38 European countries and represents 46 national veterinary organizations. Additionally the FVE researches animal health and new technologies (FVE, 2013). This is an interesting organization as 40% of the farmers use veterinarians as information providers (GEA FT Lameness Survey, 2013).

The Wageningen UR is a collaboration between the Wageningen University and Stichting DLO. Together they are a world leading organization in the area of dairy agricultural research. An endorsement of this organization would really strengthen the reliable and premium image.

DairyCo is an UK non-for-profit organization. This organization is researching topics which are currently not researched and tries to eliminate market failures. The organization is very well-known among UK farmers and therefore an interesting organization to get approval from.

The FAWC (UK), Deutscher Tierschutzbund, SCAW and DCAW are all organizations who are concerned with animal welfare. These organizations are researching opportunities to increase animal welfare.

Product demonstrations

Product demonstrations will help to create awareness about the product. As CowView is a complete new technology many farmers have no clue how it works and what to expect. In order to get farmers excited GEA FT should organize product demonstration days at their current test farms. Currently GEA FT has 4 test farmers in Denmark, 2 in Germany and 1 in the Netherlands. During these product demonstration days farmers have the ability to see the product and listen to the experiences of the test farmer. Organizing demonstration days means that the popular information source 'colleagues' will be used. This will be appealing to farmers as colleagues are considered to be reliable. Also these test farmers can inform other farmers about what influence it had on their freedom and the health in their herd. Next to farmers providing information it is also interesting to invite one of the organizations that are endorsing the product. This will enhance the high quality image and increase the change of conviction.

Customer testimonials

A customer testimonial is a communication tool which is regularly used in the industry. Here users of CowView will tell about their experiences with the product. This will be recorded on video and can be put online. This communication tool allows GEA FT to spread the message frequently and easily. Also it will make use of the information source 'colleague' and should therefore be seen as more reliable and appealing.

Next to customer testimonials it is also recommended to involve veterinarians. According to the GEA FT Lameness survey (2013), more than 40% of the farmers use veterinarians as a source of information. Veterinarians sending out the message are boosting the reliable and premium image of CowView.

Trade fairs / symposium

According to the GEA FT Lameness survey (2013), trade fairs are the third most common used sources of information. Therefore presenting CowView at a trade fair would be a good option. Agricultural trade fairs are often visited by farmers and dealers. These trade fairs form the ideal environment for farmers and dealers to experience CowView. Here they can see the product and test it themselves. The following fairs might be interesting to present CowView in the market introduction phase in 2013 and 2014:

- NorLa (Germany)
- GreenLive 2013 (Germany, the Netherlands)
- Elmia Agriculture, Livestock & Technology 2013 (Sweden)
- Landbouw Vakbeurs (the Netherlands)
- South West Dairy show (UK)
- EuroTier 2014 (Germany)
- NutriFair 2014 (Denmark)

The trade fairs mentioned above are mainly national trade fairs and are focused on CowView's target market.

Another option is to organize a symposium with the central theme 'Animal Welfare'. This could be organized together with other organizations involved in animal welfare. This symposium would form a platform to exchange information about animal welfare and presenting different technologies. It contributes to raising awareness for this important issue.

Print and digital media

In order to promote CowView, print and digital media should be used.

The GEA FT Lameness survey (2013) shows that almost 20% of the farmers are reading trade journals. Therefore trade journals are an interesting option to place advertisements. These advertisements will help to create more product awareness. Another important print media tool that should be used are brochures. These brochures can be handed out on many occasions like trade fairs and symposiums, demonstrations and customer meetings. The advantage of a brochure is that it can easily be used in different situations and it provides a lot of product information. The brochure should also be available to download from the GEA FT website.

According to the GEA FT Lameness survey (2013) more than 20% of the farmers are using the internet to search for information. Therefore digital media is an interesting tool to spread the message. The website of GEA FT should form an important information platform. At the website a product description should be given which will be supported with images and videos. Another interesting digital media source is the current GEA Farming Facebook page. The advantage of using Facebook is that the people that are reached are actually interested in GEA FT. The most common age of the GEA Farming page users lies between 25 and 34 years. Among them are many farmers or next generation farmers. Using Facebook already shows that they are willing to adapt new technologies and are therefore an interesting audience. Another interesting option for digital media is placing banners on

different websites. This could be websites who publish dairy farming news or who are endorsing CowView.

The goals of the communication strategy are to create awareness and demand for CowView. This should be done by sending out two types of messages. The first group of messages should be product related, e.g. animal welfare, convenience and saving time and money. The second group of messages should be lameness related, e.g. costs involved and the amount of lameness. Channels that should be used for this communication strategy are product endorsement, customer testimonials, trade fairs/symposiums and print and digital media.

5.3 MARKETING MIX

The following marketing mix is based on the outcomes of the desk research and the online survey. This marketing mix is a recommendation of how CowView should be offered initially.

5.3.1 PRODUCT

The product that is offered will operate in a similar way in every starting country. However, the place influence small details like language that needs to be adapted to each country separately. After the online survey it can be concluded that most farmers prefer to set up their own treatment strategy. Therefore farmers prefer to see all lame cows in their herd. This is an important outcome and the system should be adapted to this demand. As an extra option it is recommended to include a filter where the degree of lameness can be set. This allows farmers to see lame cows from a certain degree and higher. This option is preferred by 24% of the farmers (GEA FT Lameness Survey, 2013). An advantage of this function is that initially the level of lameness can be set a little higher. By doing this farmers will not get overwhelmed by the amount of lame cows and stay motivated for treatment. After a while the set level of lameness can slowly be lowered to a level where farmers see all lame cows. This filter should be set according to farmers' preferences.

Another interesting product option is a benchmarking option. Here farmers should be able to compare their lameness percentage with the average lameness percentage of all farmers. It allows farmers to see how they are scoring in comparison to other farmers. The idea behind this function is that literature written by Leach et al., (2010) shows almost 40% of the farmers desire to do better than other farmers and that pride in a healthy herd is valued to be important. This benchmarking option will trigger farmers to put in extra effort to do better than their colleagues.

5.3.2 PLACE

In all cases CowView will be sold through the existing GEA FT dealer network. This network has very high market knowledge and knows the customers. Additionally this method of distribution is already set up and has proven to be successful. However before the dealer network can be used to distribute CowView the dealers should be trained.

As mentioned in chapter 3.2.2 the initial starting countries for CowView will be Germany, UK, the Netherlands, Denmark and Sweden. Afterwards other countries could be entered, e.g. United States.

5.3.3 PRICE

The price of CowView will vary per farm. It is dependent on the amount of cows and what type of barn the farmer has. CowView consists of two types of costs, purchase costs and a service fee. Purchasing costs include the equipment like tags, receivers, wiring, etc. The service fee is a fee that the farmer is paying for making use of the GEA FT server and its services.

In order to enhance the premium image of CowView a slightly higher price will be charged. However as the topic lameness is still lacking awareness a market skimming strategy will not be used. It would scare away potential customers as they might say it is too costly for a problem that 'hardly exists' in their opinion.

5.3.4 PROMOTION

In order to get farmers to buy CowView promotional actions should be used. The first interesting option for CowView would be to charge no service fee for a limited time. Charging no service fee will influence the P 'Price', as it makes CowView financially more attractive. However, giving large discounts is not recommended as it would hurt the premium pricing strategy.

A second option would be to give away a free iPad Mini or other small tablet when the product is bought. Using a smaller tablet makes it easier for farmers to use the system in their barn. A smaller tablet would more convenient than regular sized tablets as it allows farmers to see things clearly without having to carry a huge device.

The product should display all lame cows in order to provide farmers with the ability to set up their own treatment strategy. However, in order not to overwhelm farmers who are new to the system it is recommended to include a filter which only shows the severest cases. This filter can be switched off later on or adapted to farmers' preferences.

CowView should only be sold through the existing dealer network and launched in Germany, UK, the Netherlands, Denmark and Sweden.

In order to support CowView's premium image a slightly higher price should be charged. However a market skimming strategy is not recommended as it would scare away potential customers.

During the product launch CowView should be promoted. This could be done by not charging service fees for a limited time or giving away a free tablet.

5.4 IMPLEMENTATION PLAN

The implementation plan displayed below shows all steps which need to be taken, who is involved and when these steps needs to be taken in order to execute the recommended strategy.

What	Who	When
Product endorsement		
Choose organization for application	Prod. Man. CV.*	During testing phase.
Apply for endorsement	Prod. Man. CV.	After test phase has successfully ended.
Product demonstration	Prod. Man. CV.	When organizations are interested in endorsing CowView.
Trade fair		
Select and book trade fairs	Prod. Man. CV. / Corp. Mark.** (trade fairs)	Ongoing process can already be started in the testing phase.
Build exhibits (only once)	Trade fair construction	Already done.
Prepare trade fair	Corp. Mark.	Depending on the size, large fairs 6 months, smaller fairs 2 to 3 months.
Ship and set up exhibits	Trade fair construction	Week(s) before the trade fair.
Trade fair	Prod. Man. CV. / regional sales team	Dependent of trade fair.
Product demonstration		
Select and contact test farmers	Prod. Man. CV.	Once first systems have been sold and farmers are familiar with it.
Invite endorsing organizations	Prod. Man. CV.	Checking for interest can be done as soon as they start endorsing. Inviting should be done as soon as date is known.
Prepare demonstration	Prod. Man. CV. / Corp. Mark	Dependent of the demonstration. Approx. 2 to 3 months before demonstration.
Host the demonstration	Product manager, Mark. Supp. Milking & Cooling*** / Regional sales team	Set date.
Customer testimonials		
Select CowView users	Prod. Man. CV. / Corp. Mark	Once first systems have been sold and farmers are familiar with it.
Check if selected farmer want to cooperate.	Prod. Man. CV.	Once a farmer has been selected
Make appointment with farmer to shoot the video	Prod. Man. CV.	Once the farmer has given approval.
Shoot and edit the video	External organization	Set date.
Put video online	Corp. Mark.	As soon as the video is done.
Advertisements		
Determine which journals to advertise in	Prod. Man. CV.	Ongoing process can already be started in the testing phase.
Design advertisement	Corp. Mark. Classic media	During testing phase.
Check advertisement	Corp. Mark. Classic media / Prod. Man. CV.	Once initial ad is ready.
Send out advertisement	Corp. Mark. Classic media	At the same time as the market launch.

What	Who	When
Brochure		
Determine what needs to be in the brochure	Prod. Man. CV. / Corp. Mark Classic media	During testing phase.
Design brochure	Corp. Mark.	Once the content is known. During testing phase.
Print brochure	External organization	End of testing phase/before market launch.

* Prod. Man. CV. = Product Management CowView

** Corp. Mark. = Corporate Marketing

*** Mark. Supp. = Market Support

5.5 COSTS

Below an overview of the indicated costs that are involved with the strategic recommendation is displayed. The overview gives in an indication of the initial costs and what it would cost after the first time. The reason why certain elements are cheaper after the first time is due to the development/design costs which are included in the first time. These costs will not be made after the first time as the items are already available.

	Initial	Following
Product endorsement (per endorsement)	€ 3,500.00	3,500.00
Product demonstrations	€ 2,500.00	700.00
Customer testimonial video in 5 languages (approx. 2,5min.)	€ 9,000.00	0.00
Trade fair exhibit	€ 8,000.00	0.00
Trade fair 100-500km from Bönen (3 m ²)	€ 450.00	450.00
Brochure á 2,500 (design and print)	€ 2,500.00	500.00
Advertisements trade journals (per month, ½ page)	€ 5,200.00	3,903.00
iPad mini (per piece)	€ 315.00	315.00
Charging no service fee (per day/200-cow herd)	€ 14.00	14.00
Internet banner header (per 1,000 views)	€ <u>220.00</u>	<u>120.00</u>
Total	€ 31,699.00	9,502.00

Sources: (Reed Business Media, 2013), (GEA Farm Technologies, 2013), (Unitec, 2013)

CHAPTER 6 – OVERVIEW RECOMMENDATIONS

This chapter will sum up all strategic choices mentioned in previous chapters.

Target market

- Initially the target market will be within the European Union. The target countries will be Germany, UK, the Netherlands, Denmark and Sweden.
- When the product launch in the initial target countries has been successful moving to the U.S. market should be considered.

Target group

- Farmers who have strong focus on animal welfare and herd optimization.
- Farmers who are interested in innovative technologies
- Large scale farmers with herd sizes of approximately 200 and more.

Positioning

- Position CowView as a premium brand with a strong focus on the following product values:
 - Innovation
 - Premium
 - High quality
 - Freedom
 - Maximize animal welfare
 - Efficient and effective herd management
 - Reliable
 - Accurate

Communication

- The general goals of this communication strategy are creating awareness about CowView and about the negative outcomes of lameness.
- The points of focus for the communication strategy are divided into two groups the positive and negative points of focus.

Positive points of focus

- Animal welfare
- Saving time
- Saving money
- Convenience

Negative points of focus

- General amount of lameness in the herd
- Costs involved

- The subject of the message that will be sent out will be related to both the positive and negative points mentioned above.
- The message will be communicated through the following channels:
 - Product endorsement
 - Product demonstrations
 - Print and digital media
 - Consumer testimonials
 - Trade fairs / Symposium
- The marketing mix will be as follows:
 - Product
CowView should show all lame cows. This allows farmers to set up their own treatment strategy. For the beginning it might be useful to only show the worst cases in order not to overwhelm the farmer. The system must also offer the ability to compare the lameness score with the average lameness score of all farmers using the system. This will trigger some sort of rivalry among farmers and a motivation to do better than others.

- Place
Initially the product will be sold in Germany, UK, the Netherlands, Denmark and Sweden. Moving to the U.S. can be considered in a later stage.
- Price
The prices will vary per farm. This is determined by the amount of cows and the type of barn. The product consists of two types of costs, purchasing and a service fee. In order to enhance the premium image a slightly higher price will be charged but no market skimming strategy.
- Promotion
The first option for promotion is to not to a charge service fee for a limited time. The second option is to give away a free tablet when CowView is bought.

Following this strategy will result in an increased awareness of the product and the money that is lost by not treating lameness consistently. This increase in awareness will make farmers aware of the importance of CowView and therefore stimulate sales.

BIBLIOGRAPHY

- Ai, A. (2012). *Report: Chinese middle class to reach 40% of the population by 2020*. Retrieved March 15, 2013, from Shanghaiist: http://shanghaiist.com/2012/02/10/report_chinese_middle_class_to_reac.php
- Barboza, D. (2008). *China's Dairy Farmers Say They Are Victims*. Retrieved March 14, 2013, from New York Times: <http://www.nytimes.com/2008/10/04/world/asia/04milk.html?pagewanted=all&r=0>
- Bauman, D.E. & Capper, J.L. (2011). *Sustainability and dairy production: Challenges and opportunities*. Retrieved February 28, 2013, from Cornell University: <http://www.ansci.cornell.edu/cnconf/2011proceedings/15.Bauman.pdf>
- BBC News. (2013). *Dutch government to probe export of milk formula to China*. Retrieved May 17, 2013, from BBC News: <http://www.bbc.co.uk/news/business-22460796>
- BCSPCA. (2010). *Lameness in dairy cows*. Retrieved March 25, 2013, from BCSPCA: cfhs.ca/files/bc_spca_and_abc_dairy.pdf
- Beldman, A., Daatselaar, C., Galama, P. & Prins, B. (2010). *Trends and challenges in world dairy farming*. Retrieved February 28, 2013, from AMA: http://www.ama.at/Portal.Node/public?genetics.rm=PCP&genetics.pm=gti_full&p.contentid=10008.77507&trends_and_challenges.pdf
- CAFRE. (2006). *The Economic Cost of Lameness*. Retrieved March 25, 2013, from College of Agricultural, Food & Rural Enterprise: http://www.milkproduction.com/Documents/challenge_note_2a_economic_cost_lameness_dpdb.pdf
- Cernansky, R. (2010). *Factory Farms Decreasing in Number, But Increasing in Size: 20 Percent Growth in 5 Years*. Retrieved February 28, 2013, from Alternet: http://www.alternet.org/story/149034/factory_farms_decreasing_in_number,_but_increasing_in_size%3A_20_percent_growth_in_5_years
- Dairy Farming Today. (n.d.). *State Statistics*. Retrieved March 20, 2013, from Dairy Farming Today: <http://www.dairyfarmingtoday.org/Learn-More/FactsandFigures/Pages/StateStatistics.aspx>
- Dairy Policy Analysis Alliance. (2011). *Dairy Policy Issues for the 2012 Farm Bill*. Retrieved March 21, 2013, from FAPRI: http://www.fapri.missouri.edu/outreach/publications/2010/Dairy_Policy_Issues_April2010.pdf
- DairyCo. (2013). *EU producer numbers*. Retrieved April 24, 2013, from DairyCo: <http://www.dairyco.org.uk/market-information/farming-data/producer-numbers/eu-producer-numbers/>
- DairyCo. (2013). *Healthy Feet Programme*. Retrieved June 11, 2013, from DairyCo: <http://www.dairyco.org.uk/technical-services/healthy-feet-programme/>
- DairyCo. (2013). *World milk production*. Retrieved May 17, 2013, from DairyCo: <http://www.dairyco.org.uk/market-information/supply-production/milk-production/world-milk-production/>
- DeLaval. (2013). *DeLaval*. Retrieved April 13, 2013, from DeLaval: <http://www.delaval.com>

- Delfra. (2008). *Dairy cattle lameness - practical solutions to a persistent problem*. Retrieved March 25, 2013, from Delfra:
<http://archive.defra.gov.uk/foodfarm/farmanimal/welfare/advice/documents/lameness.pdf>
- EU Commission. (2012). *AHDB European Market Survey - 13 April 2012*. Retrieved March 15, 2013, from The Cattle Site: <http://www.thecattlesite.com/reports/?country=EU&id=359>
- EuroTier. (2012). *EuroTier innovations 2012*. Retrieved April 23, 2013, from EuroTier:
<http://www.eurotier.com/innovations.html>
- FCEC. (2009). *Feasibility study on animal welfare labelling and establishing a Community Reference Centre for Animal Protection and Welfare*. Retrieved April 25, 2013, from europa.eu:
http://ec.europa.eu/food/animal/welfare/farm/aw_labelling_report_part1.pdf
- Food and Agriculture Organization. (2012). *Food Outlook Global market analysis*. Retrieved June 13, 2013, from FAO: <http://www.fao.org/docrep/016/a1993e/a1993e00.pdf>
- FrieslandCampina. (2013). *Weidegang stimuleren*. Retrieved May 2, 2013, from FrieslandCampina:
<http://www.frieslandcampina.com/nederlands/sustainability/outdoor-grazing.aspx>
- FVE. (2013). *Welcome*. Retrieved June 18, 2013, from FVE: http://www.fve.org/about_fve/index.php
- GEA. (2013). *Key figures of the group*. Retrieved July 15, 2013, from GEA:
<http://www.gea.com/en/investoren/konzernkennzahlen.html>
- GEA Farm Technologies. (2013). *Business Units*. Retrieved February 27, 2013, from GEA Farm Technologies:
<http://www.gea-farmtechnologies.com/uk/en/bu/default.aspx>
- GEA Farm Technologies. (2013, June 26). *Prices Marketingpackages*. Bönen, Nordrhein Westfalen, Germany.
- GEA Farm Technologies. (2013). *Search and Find function in CowView*. Bönen, Nordrhein-Westfalen, Germany.
- GEA FT Lameness Survey. (2013). *GEA FT Lameness Survey*.
- GEA Group. (2013). *Our strategy*. Retrieved April 2, 2013, from GEA Group:
<http://www.gea.com/en/unternehmen/strategie.html>
- GEA Group. (2013). *Welcome to GEA*. Retrieved June 13, 2013, from GEA Group:
<http://www.gea.com/en/index.html>
- Geiger, C. (2013). *Milk production and dairy farms continue to consolidate*. Retrieved July 08, 2013, from Hoards Dairyman: http://www.hoards.com/blog_milk-production-dairy-farms
- Harbor, A. M. (2006). *Assessing Agricultural Input Brand Loyalty Among U.S. Mid-Size and Commercial Producers*. Retrieved April 25, 2013, from AgEcon Search:
<http://ageconsearch.umn.edu/bitstream/21460/1/sp06ha06.pdfA>
- Helming, J.F.M. & Beerkum van, S. (2008). *Effects of abolition of the EU milk quota system for Dutch agriculture and environment*. Retrieved February 28, 2013, from AgEcon search:
<http://ageconsearch.umn.edu/bitstream/43966/2/111a.pdf>
- IFCN. (2012). *World Dairy Map 2012*. Retrieved March 15, 2013, from IFCN Dairy:
<http://www.ifcndairy.org/media/downloads/Dairy-Map-2012-low.pdf>

- IFCN. (2013). *New combined IFCN world milk price indicator*. Retrieved June 13, 2013, from IFCN: http://www.ifcndairy.org/en/output/prices/milk_indicator2013.php
- Isla, L. (2012). *Mega Trends Underlying Latin America's Future Growth – Macro to Micro Implications*. Retrieved March 15, 2013, from Frost & Sullivan: <http://www.frost.com/sublib/display-market-insight-top.do?id=260399597>
- Katsarova, I. (2013). *Animal welfare protection in the EU*. Retrieved April 25, 2013, from Europa.eu: [http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130438/LDM_BRI\(2013\)130438_REV1_EN.pdf](http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130438/LDM_BRI(2013)130438_REV1_EN.pdf)
- Land- en Tuinbouw Organisatie Nederland. (2011). *Melkveehouderij midden in de maatschappij*. Retrieved February 28, 2013, from LTO: <http://www.lto.nl/media/default.aspx/emma/org/10709400/110518+LTO+NL-melkveehouderij-def-webversie.pdf>
- Leach, K.A. & Whay, H.R. (2008). *Development of a Lameness Control Programme for Dairy Cattle*. Retrieved May 3, 2013, from Welfare Quality: <http://www.welfarequality.net/downloadattachment/41418/19325/wq%20report%20lameness%20controll%20programme%20for%20dairy%20cattle.pdf>
- Leach, K.A. Whay, H.R. Maggs, C.M. Barker, Z.E. Paul, E.S. Bell, A.K. & Main, D.C.J. (2010). *Working towards a reduction in cattle lameness: 1. Understanding barriers to lameness control on dairy farms*. Retrieved March 25, 2013, from Elsevier: http://ac.els-cdn.com/S0034528810000676/1-s2.0-S0034528810000676-main.pdf?_tid=b6f512ba-9549-11e2-abf7-00000aab0f6c&acdnat=1364215640_956e544f661ae8f0bb1049fb27682695
- Leach, K.A. Whay, H.R. Maggs, C.M. Barker, Z.E. Paul, E.S. Bell, A.K. & Main, D.C.J. (2010). *Working towards a reduction in cattle lameness: 2. Understanding dairy farmers' motivations*. Retrieved March 25, 2013, from Elsevier: http://ac.els-cdn.com/S0034528810000706/1-s2.0-S0034528810000706-main.pdf?_tid=e59c7204-952e-11e2-beeb-00000aacb35f&acdnat=1364204122_3e4d9ae476de5760b03c6b0c4b055e95
- Lely. (2013). *Lely*. Retrieved April 15, 2013, from Lely: <http://www.lely.com/en/home>
- Lutey, T. (2013). *Dairy farmers cope with high feed costs*. Retrieved April 24, 2013, from Billings Gazette: http://billingsgazette.com/news/state-and-regional/montana/dairy-farmers-cope-with-high-feed-costs/article_abff318c-43d3-583c-b369-a0c4a7ab9457.html
- Lynch, S. (2012). *Milk quota abolition could create up to 15,000 jobs*. Retrieved February 28, 2013, from Irishtimes.com: <http://www.irishtimes.com/newspaper/finance/2012/0523/1224316551310.html>
- Mooney, P. (2012). *Irish banks turn to farming in difficult lending market*. Retrieved March 1, 2013, from Farmers Journal: <http://www.farmersjournal.ie/site/farming-Irish-banks-turn-to-farming-in-difficult-lending-market-14404.html>
- National Farmers' Union. (2010). *Dairy Cow Welfare Strategy*. Retrieved February 28, 2013, from NFU: <http://www.google.nl/url?sa=t&rct=j&q=cow%20welfare%20trends&source=web&cd=1&ved=0CDAQFjAA&url=http%3A%2F%2Fwww.nfuonline.com%2FYour-sector%2FDairy%2FDairy-Cow-Welfare-Strategy%2F&ei=LiouvaaLMb04QTS64CYBA&usg=AFQjCNFynN3CfhoNdRLL0PaOTomoUs0gVA&bvm=bv.431>

- OECD. (2011). *Dairy - OECD-FAO Agricultural Outlook 2012-2021*. Retrieved May 2, 2013, from OECD:
<http://www.oecd.org/site/oecd-faoagriculturaloutlook/dairy-oecd-faoagriculturaloutlook2012-2021.htm>
- Patton, M., Binfield J., Moss, J., Kostov, P., Zhang, L., Davis, J. & Westhof, P. (2008). *Impact of the abolition of EU Milk quotas on Agriculture in the UK*. Retrieved February 28, 2013, from AgEcon Search:
<http://ageconsearch.umn.edu/bitstream/6650/2/cp08pa01.pdf>
- Plain, R. (2013). *Semi-Annual Cattle Inventory Summary*. Retrieved March 20, 2013, from University of Missouri:
<http://agebb.missouri.edu/mkt/bull12c.htm>
- Plume, K. (2009). *U.S. dairy farms in crisis as milk prices turn sour*. Retrieved June 13, 2013, from Reuters:
<http://www.reuters.com/article/2009/02/10/us-financial-dairy-farms-idUSTRE5190JN20090210>
- Progressive Publish. (2012). *2011 U.S. Dairy Statistics*. Retrieved March 21, 2013, from progressivepublish.com:
http://www.progressivepublish.com/downloads/2012/general/2012_pd_stats_income_lowres.pdf
- Reed Business Media. (2013). *Tariefkaart Boerderij 2013*. Retrieved July 17, 2013, from Reed Business:
<http://www.adverterenbijreedbusiness.nl/media/241074/boerderij%20rundveehouderij.pdf>
- ScienceProgress. (n.d.). *7S-Model (MCKINSEY)*. Retrieved April 10, 2013, from Scienceprogress.nl:
<http://www.scienceprogress.nl/diagnose/7s-model-mckinsey>
- Shearer, J. (2007). *Effect of Flooring and/or Flooring Surfaces on Lameness Disorders in Dairy Cattle*. Retrieved June 10, 2013, from Western Dairy Management Conference:
<http://www.wdmc.org/2007/shearer.pdf>
- Steinmann. (2013). Pilot farmer survey 2013. (J. Oosterlaken, Interviewer)
- Tacken, G.M.L. Banse, M. Gardebroek, C. Neshu Turi, K. Wijnands, J.H.M. Poppe, K.J. (2009). *Competitiveness of the EU dairy industry*. Retrieved April 2, 2013, from WageningenUR:
<http://www.lei.dlo.nl/publicaties/pdf/2009/2009-011.pdf>
- Thorrold, B. & McCall, D. (n.d.). *Towards 2020 - The next decade in dairying - Competitiveness*. Retrieved April 23, 2013, from DairyNZ: <http://www.dairynz.co.nz/file/fileid/33971>
- Unitec. (2013). *Certificate in Animal Management*. Retrieved July 17, 2013, from Unitec:
http://www.unitec.ac.nz/social-health-sciences/natural-sciences/programmes_natu/animal-health-and-welfare/certificate-in-animal-management-captive-wild-animals.cfm
- West, D. (2000). *Development and Acquisition of New Technologies in the Food-Processing Industry*. Retrieved April 16, 2013, from Agriculture and Agri-food Canada:
http://publications.gc.ca/collections/collection_2013/aac-aafc/agrhist/A22-215-2000-eng.pdf
- Yang, Y. (2012). *Wary of tainted milk, Chinese go for foreign options*. Retrieved March 14, 2013, from Latitude News: <http://www.latitudenews.com/story/chinese-milk-scandal-panic-domestic-dairy/>
- Zinpro. (2013). *Locomotion Scoring of Dairy Cattle*. Retrieved March 25, 2013, from Zinpro:
<http://www.zinpro.com/lameness/dairy/locomotion-scoring>

APPENDIX I – GEA FT LAMENESS SURVEY

Cow/Animal Welfare is more and more getting into the focus of the public – nevertheless a healthy cow is not less important from the production point of view. With this questionnaire we would like to learn more about your best practice related to cow health – especially related to lameness – and how technical solutions to support you should look like.

Lameness and hoof care – Status Quo (Routines and treatments)

- Q1 Who is responsible for the regular hoof trimming on your farm?**
- I do the hoof care by myself/have a designated employee.
 - The hoof care is done by a hoof trimmer.
 - I haven't got any regular hoof care been done at all.
- Q2 How often are your cows trimmed?**
- Once a year
 - Two times a year.
 - Once in three months.
 - Once a month
 - Please specify: _____
- Q3 How do you currently detect lameness in your herd?**
- Visually (by observing) (Q5)
 - Via an automated system (Q4)
- Q4 Which automated lameness detection system do you currently use?**
- _____ (Q7)
- Q5 What does your usual lameness detection routine looks like (multiple answers possible)?**
- Observing cows when entering/leaving the milking parlour (Q7)
 - Observing cows while feeding (Q7)
 - Observing cows while cleaning the barn (Q7)
 - Observing cows while other routine work in the stall (Q7)
 - Designated time to observe cows for lameness issues (Q6)
- Q6 How much time do you usually spend on detecting lameness? Please give the time in minutes per day.**
- ___ minutes per day
- Q7 Do you record the findings/diagnoses on the regular hoof trimming?**
- No, I do not record hoof trimming results
 - Yes, the hoof trimmer keeps the records
 - Yes, I keep the records
- Q8 (Pictures locomotion scoring)**
The pictures below show a healthy cow first (left hand side standing, right hand side walking). Underneath the different degrees of lameness are shown. When do you consider the cow to be lame? Please make your choice by clicking on the corresponding picture.
- Q9 Given the different levels of lameness: What are the main reasons for your perception of lameness (as stated before)? (Multiple answers possible)**
- I do not want to spend more time to also identify lame cows earlier.
 - I want to make sure that the cow is lame for sure.
 - I want to make sure that I detect all lame cows.
 - Low scorings are not relevant from an economical point of view.
 - I also focus on the well-being of the cows.
 - Even if detecting cows earlier, I wouldn't take any action at that stage.
 - Other please specify _____

- Q10 How many lameness cases do you have on a daily basis (% of your herd)?**
- _____%
- Q11 Given the number of lame cows you mentioned before, how important do you personally consider the topic of lameness on your farm? Please make your choice on a scale from important to not important.**
- important to not important (scale of 1-5)
- Q12 What are the main reasons for lameness in your herd? (Multiple answers possible)**
- Cow genetics
 - Hoof care is not optimized yet (e.g. hoof bath)
 - Cows are in the barn all year
 - Hoof trimming interval too long for more fragile cows
 - Infections
 - Feeding issues
 - Surface/barn layout/cubicles
 - Others – please specify _____
- Q13 How satisfied are you overall with the way you detect lameness
Please make your choice on a scale from very satisfied to totally dissatisfied.
– in terms of detecting cows early
– in terms of detecting all lame cows?**
- Very satisfied – totally dissatisfied (scale of 1-5)
- Q14 How do you usually treat lame cows (multiple answers possible)?**
- I do the lameness treatment by myself/have a designated employee.
 - The lameness treatment is done by a hoof trimmer/
 - The lameness treatment is done by a veterinarian.
 - I do not treat lame cows at all
- Q15 How fast do you usually treat lame cows?**
- Treatments are done as part of the usual hoof trimming routine (no extra treatments of acute lame cows).
 - The treatment is done when necessary – not depending on the number of cows that need to be treated (lame cows are treated immediately)
 - Cows are treated when a minimum requirement is met (in terms of number of cows to be treated).
 - Treatments are done in a certain interval (if needed). (We could ask for more details) (e.g. every Wednesday I do hoof treatments)

Lameness – Costs awareness and prevention measures

- Q16 After having detected a cow to be lame: What do you think a lame cow costs on your farm (per incident per cow) on average?**
- ___ € per cow/clinical lameness
- Q17 What costs do you consider in the costs as stated above (multiple answers possible)?**
- Treatment
 - Veterinarian
 - Extra work
 - Discarded milk
 - Reduced milk yield
 - Increased culling
 - Extended calving interval
 - Extra insemination
 - Please specify: _____

Q18 What measures do you currently take to prevent lameness (multiple answers possible)?

- Hoof bath
- Regular hoof trimming
- Rubber mats in the barn
- Manure scrapers
- Analyse hoof trimming records
- Optimize feeding
- Please specify: _____

Scientific research shows that on dairy farms, a lot of lame cows are not detected as lame. The main reason for this is that – on the one hand - farmers are often too used to their cows to perceive them to be lame (they “always walk/ behave like this”) while on the other hand it is difficult for “different staff” working with the cows to monitor them efficiently (if not a designated person is responsible for hoof care). In a nutshell the research summarizes that lameness is an underestimated problem on dairy farms.

The corresponding economic costs are calculated to range from 200-350 € for each clinical lameness incidence (On average, one can consider lameness costs of 30€/cow and month).

Q19 Please give your opinion about the following statements:

Please make your choice on a scale from strongly agree to strongly disagree.

- The economic consequences of lameness are not that high (30€/cow and month or 200-350€ per incidence)
- An automatic detection system might show lame cows that I am not aware of
- Lameness can be best monitored by observation.
- Detecting lameness by observation is possible but takes too much time.
- Lameness is not a problem in my herd.

Lameness tool – concept evaluation

Please consider an automatic lameness detection tool that monitors the cows´ activity in the barn. Based on each animal´s activity behavior it will be possible to show derivations from the cow´s usual behaviour (also compared to the herd/its group) and thus detect lame cows.

Q20 In order to support you best in your daily work – how would you prefer to use the information provided by the tool to treat lame cows?

- I want to see all cows with lameness of a certain degree and higher
- I want to see a summary of those cows that need to be treated first/short term only
- I optimize the daily work routines (in terms of time spend for treatments) - the system should provide information which cows to treat (first) given a **certain time allocated for treatments.**
- I optimize the daily work routines (in terms of costs of treatments) - the system should provide information which cows to treat (first) given a **certain monetary budget allocated for treatments.**
- I want to quickly treat all lame cows and want to get the complete overview of all cows to develop my own strategy how to treat the cows
- Other – please specify: _____

Q21 What degree of lameness should the system use as a benchmark to show lame cows?

Show pictures of the locomotion scoring again here

- Score 2 (and higher)
- Score 3 (and higher)
- Score 4 (and higher)
- Score 5

- Q22** Furthermore the system will allow you to find each single cow in the barn by giving you real-time information about where she is. How useful do you perceive this feature for your daily work in terms of treating lameness and the related work (e.g. control)? Please make your choice on a scale from important/useful to not important/useful.
- Important/useful – not important/useful (likert)
- Q23** How convinced are you that such an automatic lameness detection tool will help you to reduce the lameness in your herd? Please make your choice on a scale from highly convinced to sceptical.
- Highly convinced – Sceptical (likert)
- Q24** What do you perceive as main benefit of an automatic lameness detection tool?
- _____

Sources of recommendation and information – information seeking behavior

- Q25** When looking for information about animal health (like lameness) – what are your main sources of information you refer to? Please rank your TOP3 sources of information.
- Veterinarian
 - Colleagues
 - Internet
 - Trade fairs
 - Other media, e.g. journals, trade fairs.
 - Personal experience
 - Consultants
 - Industry
 - Other _____

Statistical /Farm profile information

- Q26** Is your stall a free stall barn?
- Yes
 - No
- Q27** What is the average herd size?
- _____ COWS
- Q28** How many cows do you usually milk?
- _____ COWS
- Q29** How many hours per day do your cows spend outside during the summer?
- ___ hours per day
- Q30** Which of the following devices do you already use on a daily base? (Multiple answers possible)
- Computer
 - Smartphone
 - Tablet/iPad

All questions with separate **no answer** and **don't know** option

INTERNSHIP REPORT

This internship report consists of three elements. It starts off with an overview of the completed work during the internship. Afterwards an overview is given of what I learned during this internship. Finally, I described how I met my personal goals during this internship.

OVERVIEW OF WORK COMPLETED

The activities that were carried out during my internship at GEA Farm Technologies can be divided into two groups, daily activities and thesis related.

When I started my internship at GEA Farm Technologies I first had to gain agricultural knowledge. This was gathered by reading articles and reports.

First the daily activities will be explained. Over the time there were several managers who required market information. This market information served different purposes for example launching new products, entering new markets, starting new strategic alliances, etc. The type of information that was needed determined the way I gathered the information. It often occurred that only a company analysis was needed. In that case I started a company analysis via the Dun & Bradstreet database. Once the analysis was done it was forwarded to the person who asked for it. Executing such a company analysis took me about two hours.

Next to company analysis I also did a market request. This market request was set up in order to investigate the market potential for a new product that was going to be launched. For this market request I send an Excel sheet to the responsible sales persons in the different countries. Here the sales persons had to state how many units they estimated to sell and what the cannibalization percentage would be. The information from the different countries was gathered and processed by me. Afterwards an overview of the results was send to the product manager. This whole process took a couple of weeks. However, the response time for the sales persons was three weeks. It took about two to three days of active input from my side in order to set up and process the market request.

Another example of the market research that I carried out was more general market research. Here I investigated current trends, prices, tendencies, etc. The size of the research determined how much time was needed. Generally it was between a day and a week.

An important project that I worked on was the implementation of the Digimind system. This is a system that automatically searches for market information. Information is sought according to different key words and is listed by different topics. Digimind will be used by approximately 200 employees throughout GEA Farm Technologies. For this project we were operating in a team of four people in total. In the beginning of the project we needed to define what type of results the system should generate and what kind of search queries were needed. This was then sent off to Digimind who was setting up the system. In the beginning of May I had two days of training. Here a Digimind expert explained us how to use the system and what steps needed to be taken in order to implement it. Currently we are in the fine-tuning stage. This means that we have to fine tune the results that are generated by the system. We are having a meeting with the Digimind experts on a monthly basis. Here we discuss what needs to be done in order to optimize the results. The next step will be to determine the different users and their needs. This information will be needed in order to create the different dashboards later on. This is an ongoing process for the upcoming six months. In general it takes me about half a day per week.

During my internship we had a weekly meeting of a half hour with the complete department. The aim of this meeting was to have a short update on new information and to see who was working on what.

In order to complete my thesis I also had to carry out several activities. First of all I needed to conduct a market research to get a better understanding of the dairy market and its competitors. As I did some prior research for several managers I already had a large part. However additional information was needed and was gathered though additional desk research and an online survey. The second part of my research was an online survey. Setting up an online survey was a large task. First I had to

determine what I needed to know and questions had to be formulated. After setting up a concept survey I discussed it with my supervisor and the product manager. When the concept was ok, I started to create the online survey. Once this was done the invitations could be sent. This process until then took me about two to three weeks. The survey was online for approximately six weeks. Afterwards the results were analyzed with SPSS which took me about two weeks. In order to get in-depth information I did two personal interviews, in Germany and the Netherlands. The final step of my thesis was to write the strategic part. Now the desk research, online survey and interviews were carefully analyzed and translated into a strategy.

ASSESSMENT OF GRADUATION PROJECT

During my internship at GEA Farm Technologies I learned a lot of new things and was able to further develop existing skills. When I look back at my internship and graduation thesis I can conclude that it went well. However there are certain things that I would do differently if I had to do it again. First of all I would structure my thesis differently from the beginning. During my internship I changed the structure of my thesis a couple of times as it figured out along the way that the current structure was not always logical. Also developing and conducting the online survey took a lot of time. As I never developed such a professional survey it took me quite some time. Also I was not very familiar with the statistics program SPSS as I only used it one block in the first year. After going through these processes I learned a lot and can conclude that my method of approach was not always very efficient. If I would have to do it again it would start determining what I really want to measure. This would save me a lot of time during the development stage and during the analysis stage. Especially the analysis phase took me a lot of time. As I was not familiar with the software anymore, I first had to figure out how to work with it. Afterwards it took some time to determine what results I wanted to analyze and publish. Going through this process was very informative. If these activities have to be carried out again in the future I will be able to do it more efficiently.

One thing that turned out better than expected was the integration within the company. Before I started my internship I thought that this would require a lot of effort as my German language skills were not very strong and I was not familiar with the agricultural industry. In the beginning I read a lot about the industry. As I find it a very interesting industry it was easy to pick things up. Fortunately my language skills improved quickly as I was 'forced' to speak German. Overall there were no disappointments.

One of my strengths is the ability to integrate within the company. It did not take very long before I had a good understanding of the company and the industry it is operating in. Additionally the colleagues that I was working with made me feel at home. This contributed a lot to my integration within GEA FT. The main weakness I was facing during this internship was my language skills. In the beginning I found it difficult to understand the smaller details of discussions. Also it was difficult to be proactive in meetings as I felt not very confident with speaking German. Fortunately this got better very soon. After a while I was very well able to participate in meetings. As my knowledge about the company and the industry was increasing, I was better able to execute different tasks like market investigations and doing the analysis. Before I started my internship I set two main goals, learning German and improving my business skills. As a look to these goals right now I can say that both are achieved, my German got significantly better and I learned a lot during my internship. This internship gave me a better understanding of how certain tasks and processes are executed by businesses. Before this internship I only worked for smaller organizations. Therefore it was very interesting and informative to work for such a large multinational. Here tasks and processes are done differently and people are working according to specialisms. This internship gave me the opportunity to get a better insight in how market research is executed in a professional way. I already did many market studies during projects at the university. However, when conducting one within an organization it turns out that certain aspects are very different. The main thing that I learned was having a more critical look when gathering and analyzing information.

COMPETENCIES

Before I started my internship I already had an advanced theoretical framework. This helped me a lot with executing my daily tasks. However, in the beginning I noticed that my colleagues were using a different approach which was more practical. On the other hand I was sometimes focusing a bit too much on theoretical framework and models. Fortunately I was quickly able to change this approach into a more practical one. Although I focused a bit too much on the theoretical part in the beginning, it did provide me with a good guidance of how to reach the end goal. In general I brought the theory into practice by working on the projects. After the first project I already learned a lot about how to optimize my method of approach and working more efficiently and effectively.

As mentioned before, the process of getting used to my new working environment went pretty smoothly. The two elements that strongly contributed to this were my colleagues and my interest for the industry. First of all my colleagues were very kind and helpful. This made the process a lot easier, especially in the beginning as many things needed to be arranged. As I did not have any agricultural background I had to learn a lot about the industry and the different concepts. However, this turned out not to be a major problem. My colleagues already prepared some documentation to read. I found this really interesting and that made the adaptation process a lot easier.

During my internship I had several opportunities to measure my capabilities in practice. First of all I was able to do so via my graduation thesis. During my internship I handed in several concept parts of my thesis. Afterwards my manager gave me feedback on the work delivered. The second opportunity was the request for market information. This was the ideal possibility to show my competences to my colleagues. I knew I did a good job once the person who requested the information did not have any further questions. In general my reports were assessed as clear, structured and containing relevant information.

One of my personal goals of this internship was to learn the German language. When I started my internship my German skills were minimal. Most often I was able to understand my colleagues but saying something was more difficult. At that time my German skills were very passive. It was tempting to switch to English when I did not know what to say. However, I always tried to speak as much German as possible during meetings or informal conversations. Over the weeks I noticed that it got better and better as I kept trying. Now at the end of my internship I can say that my German skills have significantly improved. As I will stay in Germany for another year I still have the ability to practice a lot.

This internship can be seen as my final preparation to go off working. Over the period from February until June I learned a lot of valuable things which can only be learned in practice. I gained a better understanding of what the day of a strategic marketer looks like and what competencies are most important. This knowledge is acquired by working on daily activities and discussions with direct colleagues. At the end of this internship I am glad to say that my career has started as I accepted a job offer for a year.

GEA

