Potential and prospects of a brand differentiation in the agricultural engineering, using the example of the multi-brand company CNH Industrial

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Heinzenhausen, December 2022 Benjamin Münd

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ABBREVIATIONS

AFS ..... Advanced Farming System
AGCO ..... Allis Gleaner Company
ASM ..... Area Sales Manager
BMW ..... Bayerische Motoren Werke
BOL ..... Beginning of Life
CAI ..... Computer Assisted Interview
CEO ..... Chief Executive Officer
CNH Industrial AG ..... Agriculture segment of CNH Industrial
CRM ..... Customer relationship management
CVT ..... Continuously Variable Transmission
e.g. ..... exempli gratia (for example)
Ebit ..... Earnings before interest and taxes
EOL ..... End of Life
EU ..... European Union
EU 27 ..... 27 member states of European Union
FPT ..... Fiat Powertrain
GDPR ..... General Data Protection Regulation
hhp ..... High horsepower
hp ..... Horsepower
IHC ..... International Harvester Company
Inc ..... Incorporated
KHD ..... Klöckner-Humboldt-Deutz
km ..... kilometer
km/h ..... kilometers per hour
KPI ..... Key Performance Indicator
MF ..... Massey Ferguson
MQB ..... Modularer Querbaukasten
N/A ..... Not available
NPD ..... New product development
PDI ..... Pre-Delivery Inspection
PLC ..... Product life cycle
PLM ..... Product life cycle management
PTO ..... Power take-off
R&D ..... Research and Development
RAL ..... Reichs-Ausschuss für Lieferbedingungen (Color type)
RDA ..... Reichsverband der Deutschen Automobilindustrie
SDF ..... Same Deutz-Fahr
SSP ..... Scalable Systems Platform
SUV ..... Sport Utility Vehicle
TCO ..... Total Cost of Ownership
TIV ..... Tractor Index Volume
UK ..... United Kingdom
US ..... United States (of America)
USA ..... United States of America
VW ..... Volkswagen

1 INTRODUCTION

The world is changing - population is growing faster and faster and needs to be provided with food, beverage, clothes, fuel, and other agricultural products. Climate changes, induced and boosted by a modern world, in which every person and every country is striving for more, modify the challenges for farmers and manufacturers for farming equipment. 2013 in Europe 174 million hectares agricultural land were used to produce food, which means 40% of the whole European landscape. The agricultural land is cultivated by about 10 million farms. One third of the farms are located in Romania, 13% in Poland, followed by Italy and Spain. The average farm size differs widely and is illustrated in figure 1. In Romania the average size is little bit more than 3 hectares, in Czech Republic conversely 133 hectares. (Cf. Heinrich Böll Foundation, 2019)

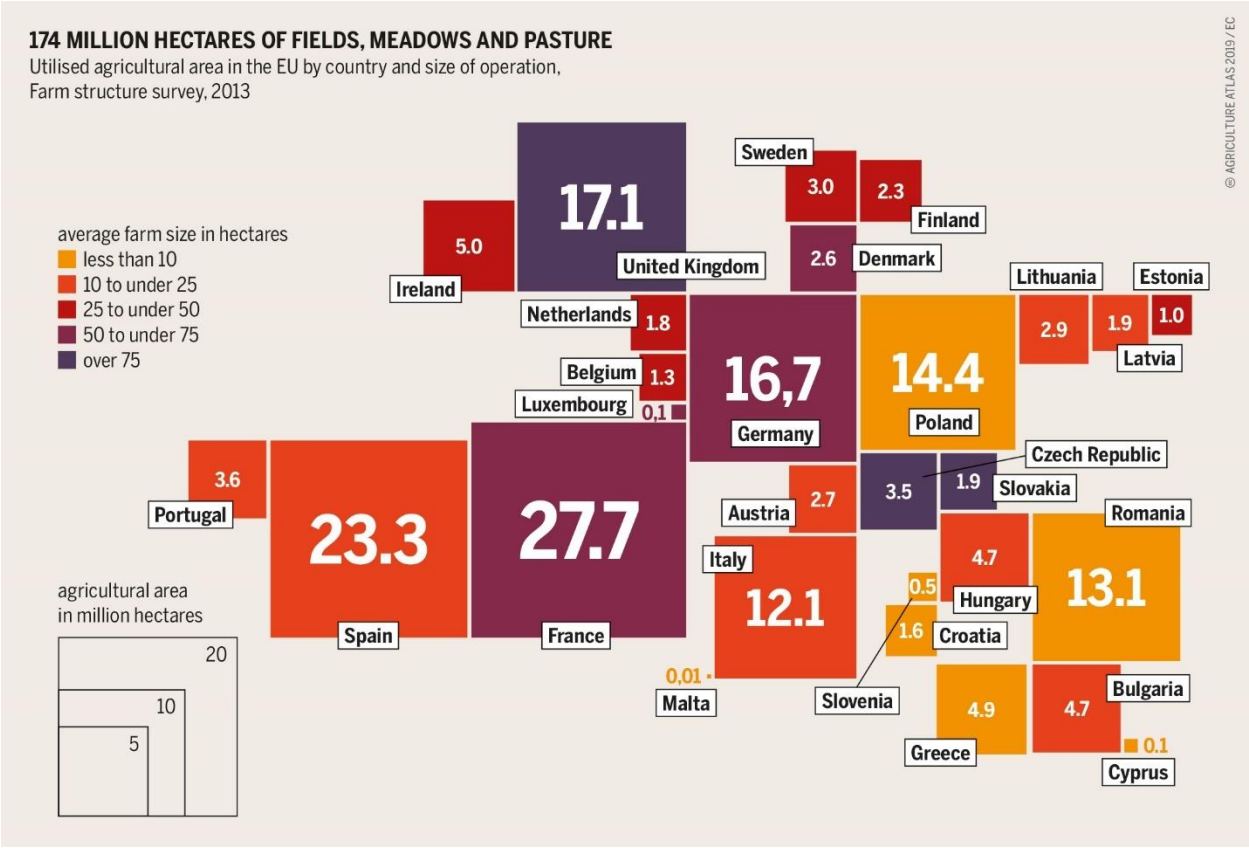

Figure 1: Size and distribution of agricultural landscape in Europe in 2013 (Heinrich Böll Foundation, 2019)

The European Union is after China the second biggest trading power in the world. With a trade surplus in 2020 of 62 billion $, the EU 27 counts to the net exporters of agricultural and nutrition goods. (Cf. Pascher, et al., 2021) Due to that, the EU is a globally important area for food production and is as such faced with the challenges of a rising population

to be fed in the future. This is encouraged by the good climatic and structural conditions for agricultural production.

Germany is one of Europe's most important countries in regard to the agricultural output. With an agriculturally used area of approximately 16,7 million hectares, it is the fourth biggest in Europe and globally regarded the third biggest exporter in agricultural trading. With a trading volume of 81 billion $ in 2020, after the Netherlands with 89 billion $ and USA with 144 billion $, Germany is at the same time the third biggest importer of agricultural goods with an import of 100 billion $. (Cf. Pascher, et al., 2021)

The important role of the agricultural production in Germany and in the rest of EU 27 comes along with a lot of challenges, for example the increasing climate change, a rising human population, resistances in the plant protection and a reduction of farms and employees in the agricultural business. Figure 2 shows the development of farm numbers in Germany as an example for the whole European Union.

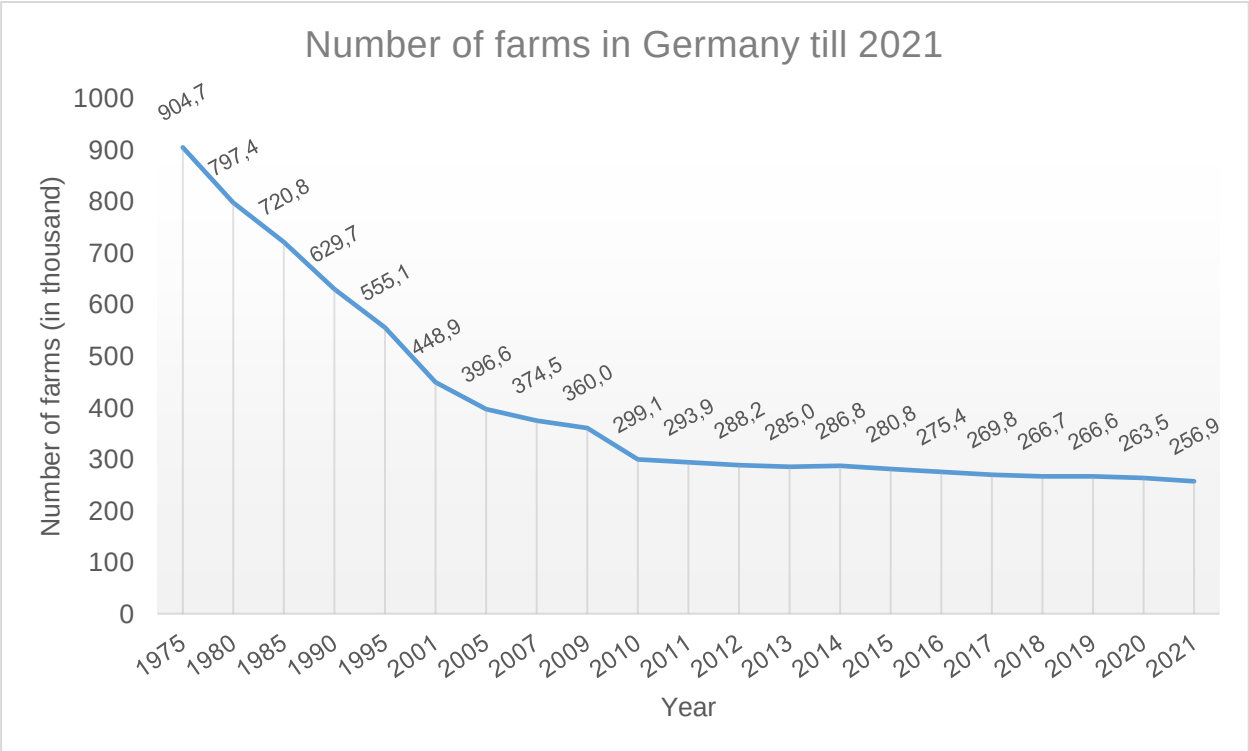

Figure 2: Number of farms in Germany between 1975 and 2021 (Statistisches Bundesamt (Destatis), 2021)

The food production in Germany, which was done by 904.700 farms in 1975, had to be managed by 256.900 farms in 2021, which means a reduction of nearly 71% within 45 years but with a higher demand towards high quality nutrition. These developments are

challenging farmers and the industry for farming machineries similarly. The manufacturers of farming equipment supply the farmers and contractors with efficient and powerful machines and intelligent solutions. At the same time the driver benefits from more comfort and ease of operation whilst the owner saves money. Innovations and new developments in the agricultural machinery sector have the mission to offset the reduced number of agricultural employees and farms.

Due to these developments in the agricultural sector, the agricultural machinery industry also changed. Some former brands are no longer existing or were merged into a multi-brand company. With a few minor exceptions, such as John Deere and Claas, most of the current European and North American tractor manufacturers are organized as multi-brand companies, for example CNH Industrial, AGCO and SAME Deutz-Fahr. These big companies unite advantages and disadvantages. Large multi-brand AG companies with a broad portfolio are one of several consequences of the structural changes in agriculture. The broad portfolio and large scale are supposed to guarantee a certain profitability whilst the number of farms and as such customers is being reduced. A lower number of farms and higher average farm size result in higher professionalism which requires large, high-tech equipment whereas the total number of machine purchases declines due to rationalization.

2 PROBLEM AND TARGET SETTING

The transition and development in the European and especially in the German agriculture, which was illustrated in the introduction, lead to a restructuring and rethinking for the agricultural machine manufacturing industry. The reduction of farms in Germany and in the rest of the world leads to a lower demand for tractors and attachments, but the requirement for high professional tractors and high horsepower (hhp) machines rises. A lot of new competitors are entering and did already enter the European tractor market, especially in the lower horsepower segment. The big challenge for the manufacturer is, to make their brands and their products unique and outstanding, to avoid or reduce the comparability to other brands and their products. For gaining market share and business volume it is also necessary that different brands within one company are not equal and competing amongst each other to avoid an internal price fight. In this term, the only winner is the customer but not the manufacturer nor the distribution partners which are selling the products and delivering the service and support.

In the agricultural machinery industry, there are some big players which have a huge importance in the European Union and particularly in Germany. On the one hand there are single brand companies, for example John Deere and Claas and on the other hand there are multi brand companies like AGCO, Argo Tractors, SDF (Same Deutz-Fahr) and CNH Industrial. The multi brand companies resulted in a takeover or a merger of different brands which are producing machines for the agricultural sector. Some brands in these enterprises still exist and sell their products under the former name, for example Deutz Fahr, Fendt, Case IH. But there are also brands, like Steiger, Hesston, Ford tractors, Fiatagri, which are now included in other brands and sold under a “new” name. Technical developments and innovations from these former brands are mostly pursued in the new machines. The multi brand companies have in contrast to the single brand companies the challenge to sell more brands and to reach a high market share and profitability for all brands and not only for one focused brand. The aim of the multi brand companies is to use synergies in the developing and manufacturing process to reduce costs for a higher efficiency but to differentiate the brands and their products in the best way from each other to be not or less comparable and substitutable in the market. If their brands and its products are too comparable, the brands are risking being seen as one brand by the customers. It is a fine line for these companies between saving money through complexity

reduction and cost savings through the use of same components and factory plants and having different products for no or less internal competition. In the worst case it would mean for CNH Industrial, the customer is not deciding in the buying process between tractors from Steyr, Case IH or New Holland, the decision would be to buy a CNH Industrial tractor or a tractor from a competing company.

The investment in agricultural machines is constantly high in Germany (compare to the bar chart in figure 3) and as well in Europe. The investment in Germany in 2020 was 303,12 million $, which means the second highest amount in the last eleven years and a share of 5,5% of the whole sales volume of machines which are produced in Germany (Cf. Statistisches Bundesamt (Destatis), 2022). Especially in difficult times, for example in the COVID 19 pandemic in 2020/2021 it shows, that the business volume and the demand in the agricultural machinery segment is constantly high and less influenced like in other business areas. That means, that farmers and contractors are investing despite crisis a lot of money in their agricultural machinery equipment, which results in a high potential for agricultural machinery manufacturers to earn money and invest for the future.

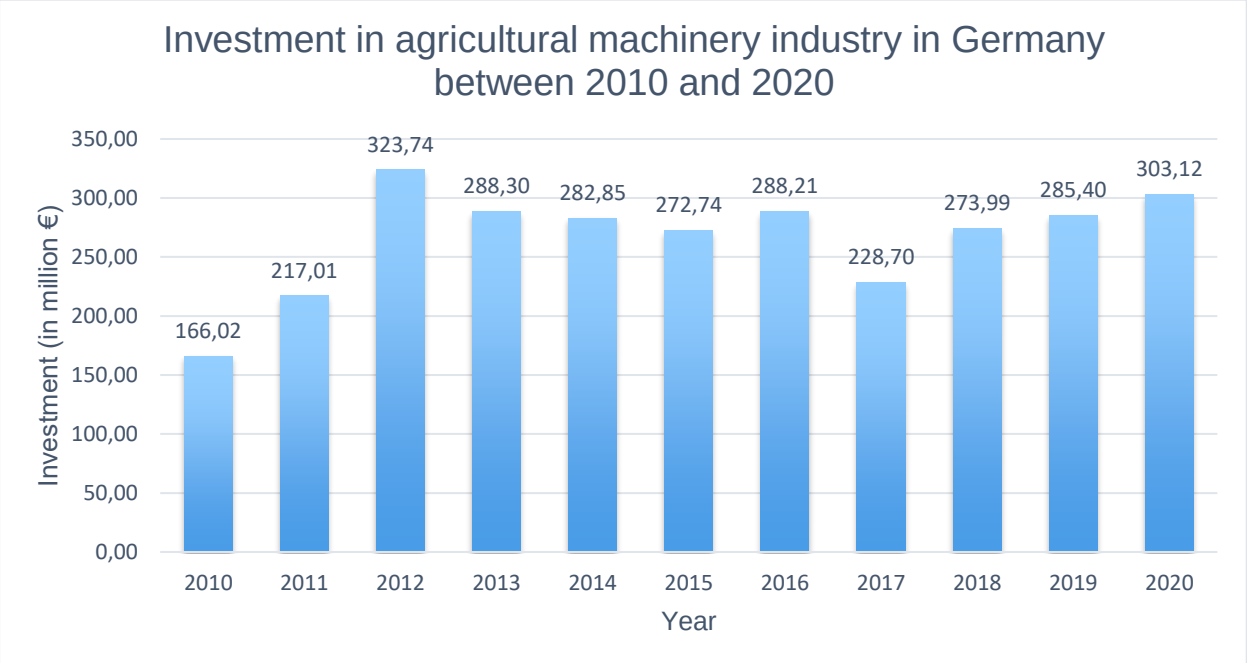

Figure 3: Investment in agricultural machinery industry in Germany between 2010 and 2020 (Statistisches Bundesamt (Destatis), 2022)

These investments are done by several customer groups. Tractors for example are used for a large range of applications and have several different customer groups: Potential customers are contractors, small to big farmers, part time farmers, hobby users,

municipalities, industry and forestry. Roughly, these customer segments can be split in AG and Non-AG customers. Non-AG customers are for example private persons with no agricultural income, industrial companies and municipalities which use their tractors for road cleaning and mowing. Every customer and customer group have their own requirements towards the machine and a special focus. Goal of a multi brand company (for example CNH Industrial AG) should be to offer tractors for all or nearly all customer segments, to receive a high market share and visibility. There are two possible approaches:

1. Brand and product differentiation for all three brands
2. Establishment of a “new” CNH brand

The three AG brands of CNH Industrial, Case IH, Steyr and New Holland have a long history and loyal customers who bought the products of the brands over generations and decades. By the merge to CNH Industrial, the evolution of the three brands and their products became more and more similar due to cost reduction and usage of the same factories for manufacturing and engineering. Most of the tractor models are available as Steyr, Case IH and New Holland, with different model names. The stylings are different but almost all components which are used are the same, which makes the three “different” models from the three “different” brands very comparable. Because of the high comparability an internal competition grew, which is not positive for CNH Industrial, the three AG brands and the dealers which are selling the tractors.

Aim of this thesis is to identify the customer needs and evaluate a differentiation process for the three AG brands from CNH Industrial. For a better overview and a restrictive definition, this doctoral thesis deals only with the tractor business and not with the whole agricultural machinery segment. The first step is to investigate the status quo of the CNH Industrial AG brands and their products to find out how they are perceived by the customers. Important is also the role of the distribution partners and the significance of the dealer-customer-relation. This is also a part of this scientific study. Furthermore, the meaning of image for tractors is relevant and its effects of the buying process. In the plan of the differentiation process of the CNH Industrial AG brands, Steyr was supposed to develop to a premium brand in the future. This will be also investigated in this doctoral thesis.

The Attendees of the online survey are farmers and contractors from Germany, UK and France. Other customer divisions, mentioned above, are not regarded in this research due to high complexity and less importance for the professional tractor market. High value tractors with high list prices and high profit for the manufactures are almost sold to farmers and contractors. Due to that, the focus of further investigations is limited on the buying behavior of this client group.

3 HISTORY OF CNH INDUSTRIAL AG BRANDS

CNH Industrial currently contains three brands which are producing agricultural machines including tractors. These are Case IH, Steyr and New Holland. In this topic you will get an overview about the history and development of these brands. Every brand has a large and eventful history, which impacts the current brand positioning within CNH Industrial as well as customer buying behavior and brand perception. The history of the brands should impart knowledge about the significance of all brands and why a merge to one CNH Industrial tractor brand is not feasible or only with a high risk of losing many loyal customers. Especially the two big brands, Case IH and New Holland, were formed by many amalgamations of former brands which are now part of the company. The tradition and customer loyalty of the former brands is also important for these current brands. Therefore, the history of all three brands is displayed in detail in the following chapters.

3.1 Case IH

In 1842, Jerome Increase Case founded the Racine Threshing Machine Works in Racine, Wisconsin, which was renamed later to J. I. Case and Company. The focus was on improving the current thresher and separation from straw and grain. Five years later, in 1847, Cyrus McCormick founded in Chicago the McCormick Harvesting Company, which became later International Harvester. (Cf. Case IH, 2022)

J. I. Case and Company developed and produced in 1869 the first steam engine tractor, which could be interpreted as the signal for the tractor era. It was a mobile power unit, drawn by horses. The first self-propelled tractor followed in the year 1876, but horses were still needed for steering. The innovation, to use gasoline and kerosene instead of steam produced by burning wood or coal, for powering the tractor, was starting in 1892 at J. I. Case and Company and led to the introduction of the Titan series in 1915.

Meanwhile in 1871, the Great Chicago Fire destroyed the McCormick factory. J. I. Case and Company offered to build machines for McCormick. This was the first cornerstone of a long collaboration between these two companies.

The International Harvester Company (IHC) came into existence in 1902 by a merger of McCormick, Deering and five other small brands. It was the first long-liner company of the world for agricultural machines. (Cf. Bauer, 2003) They developed and presented in

1919 the first power take-off (PTO) on the 8-16 tractor including a series of implements to use it. The first legendary Farmall, which was a highlight from IHC, was built in 1923 and had a revolutionary light design. The USA´s first wheeled diesel tractor, the McCormick-Deering WD-40, followed in the year 1935. IHC became famous and produced in 1974 the 5 millionth Farmall 1066 tractor. Beside the tractor manufacturing, they were also successful in building Axial Flow Combines (launched in 1977).

The Steiger family presented in 1958 their first tractor. Their tractor was much bigger and more powerful than the other tractors, which were available on the market at that time. The commercial production started in 1963.

In the Year 1985 the division of agricultural machines from IHC was sold to Tenneco, after that, the legacies of J. I. Case and Cyrus McCormick were united in one brand, Case IH was born. The new organization became the second largest farm equipment manufacturer. The combination provides a broadened product portfolio and a big dealer organization. Steiger joined in the growing Case IH offering in the following year. In the beginning the Steiger tractors were available as red Case IH and also as green Steiger, after 1989 only as Case IH. The new Magnum tractor was launched in 1988 as the first machine which was combined engineered from Case and IHC. One year later the Maxxum tractor series followed. For maximizing the farms' productivity by satellite technology, Case IH introduced 1995 Advanced Farming Systems (AFS), which was an innovative solution for this time. For reduction of ground compaction and increase of traction, the Steiger Quadtrac was 1996 presented. (Cf. Case IH, 2022)

Parallel to the progress in the USA, International Harvester Company m. b. H. in Neuss, Germany, was founded in 1908 to support the export business to Germany and Europe. In the beginning, the subcompany in Germany was only selling tractors, which were imported from the US to avoid the high import tariff. But already three years later, IHC Neuss was producing their own agricultural machines (mowers, rakes and tedders). With the big success of the Farmall series in the US, the tractor manufacturing was also done in Neuss. The new D-series was completely developed in Neuss and first available in 1956. A lot of innovations, such as the Agriomatic, which allowed the driver to change the driving direction without using the clutch, were invented by IHC engineers in Neuss. The IHC tractors, which were built and developed in Germany, were well appreciated from German farmers, represented by the first place in market share with 21,7% in the year

1972. Till 1983, 500.000 tractors were produced in Neuss. IHC in Germany had a big in-house production depth, which means that a lot of the used components were manufactured from IHC itself. With the takeover of the Waggonfabrik Fuchs in Heidelberg, the combine and wheel loader production moved to Heidelberg, which is since 1967 used as spare part warehouse and still is for CNH Industrial. In 1993 Case IH announced a restructuring program, which included the relocation of the factory to Doncaster in England and decided to close the plant in Neuss. The last Neuss tractor left the plant in 1997, a Maxxum 5150. (Cf. Buschmann, 2021)

The Fiat Group acquired Case Corporation in 1999 and merged it with New Holland N.V. to create CNH Global, a world leader in farm machinery and construction equipment, which was reorganized in 2013 to CNH Industrial. The further development of Case IH within the CNH Global company will be explained in the following chapters.

3.2 Steyr

The Steyr Factory corporation based on the Österreichische Waffenfabriks-Gesellschaft, which was producing weapons and lumber mills. The reorganization into Steyr Werke AG took place in the year 1926. (Cf. Bauer, 2003)

The first Steyr tractors, Type 180, were manufactured in 1947 with the reticle logo on the hood, which was a symbol for the tradition in producing weapons. It was the starting shot of the new Steyr tractor era. In the next years, they were developing and manufacturing the tractor Type 80, a single-cylinder tractor with up to 15 hp, made for small farms in Austria. More than 45.000 units were sold until 1949. In 1952 Steyr decided also to sell lager tractors up to 60 hp, powered by an in-house four-cylinder engine, Type 280 was born. (Cf. Steyr Traktoren, 2022)

When Austria became a free nation in 1955, the Republic of Austria took over the St. Valentin plant, where the Steyr tractors were manufactured. The effect was a rapid development and an enormous growth in the tractor production in the following years. The number of tractors in Austria increased to almost 79.000 units by 1957. The St. Valentin plant became part of the Steyr-Daimler-Puch AG. Steyr developed to an innovative tractor manufacturer with high-speed diesel engines, reversing transmission, PTO with two speeds and both directions planetary rear axles and hydraulic controls. The number of tractors in Austria increased to 147.000 units in 1962, with an annual growth

of 13.701 tractors within this year. Beside the tractor business, Steyr decided to build loader wagons for hay production, the Steyr Hamster was launched, and more than 64.000 items were sold.

The Steyr 4WD tractor production started in the year 1964, to support the grassland farmers in the alpine areas of Austria, southern Germany and Switzerland. Steyr is till these days a synonym for alpine tractors with a low balance point to enter steep terrain. The painting switched from green, to red and finally to red/white, as it is today. At the DLG exhibition in Hannover in 1972, Steyr presented a prototype of their first tractor with powershift transmission. One year later, the development of large tractors for big farms, with 120 and 160 hp, started. The plant moved from Steyr to St. Valentin, where is still the European headquarter of Case IH and Steyr.

In 1990 a restructuring at Steyr-Daimler-Puch AG led to the tractor and agricultural machinery divisions regrouping as Steyr Landmaschinentechnik GmbH. Six years later, Steyr Landmaschinentechnik was taken over by Case Corporation and later from CNH Global and CNH Industrial, which will be explained in chapter 3.4.

Beside the agricultural business, Steyr and Steyr-Daimler-Puch AG were producing cars and trucks (e.g., Joint venture with Mercedes G-Class), military vehicles for World Warr II, Bikes, Motorbikes and weapons. Steyr-Daimler-Puch corporation was in 1980 with 17.000 employees the third leading company in Austria.

3.3 New Holland

New Holland was founded in the year 1895 by Abe Zimmermann in New Holland, Pennsylvania, USA. In the beginning it was only a Machine shop for repairing agricultural machines. Four years later, the company was manufacturing their own portable mills, which was the start for a producing enterprise. In the forties, New Holland got famous with a self-developed automatic and portable baler for hay and straw. The company New Holland was taken over by Sperry Rand Cooperation and renamed to Sperry New Holland. In the Seventies were about 11.000 employees working for the company. (Cf. New Holland Agriculture, 2022)

In Zedelgem, Belgium, the mechanic Leon Claeys founded his company to develop threshing machines and built his factory in 1906. One of the actual plants from New Holland for producing some agricultural machines is still in Zedelgem. In 1958 began the collaboration between New Holland and Claeys, which was the most important manufacturer for combines in the European Market at that time. Six years later, Claeys was bought from New Holland.

1986 the Sperry Corporation was taken over by the Burroughs Corporation and subsidiary company New Holland was sold to Ford Motor Company. One year later, Ford Motor Company bought the Canadian manufacturer of agricultural machines Versatile to extend their product portfolio. Versatile was annexed to New Holland.

At the same time, the Ford Motor Company was founded in 1903 by Henry Ford in Detroit, Michigan, USA. In the early stages the enterprise was only manufacturing cars. Henry Ford is well known for his pioneering spirit and perfected the assembly line production, which enabled him to build cars in a more efficient way with lower costs. With the production of tractors, starting in 1917, Ford created a second main pillar. The tractor brand got the name Fordson, which stood for Henry Ford and Son. The tractors were frameless and equipped with a four-cylinder gasoline engine with 4.3 l and 20 hp. The cheap price of 750 $ was unrivaled and just possible due to a rational series production. The Henry Ford & Son Limited was founded 1917 in the United Kingdom. In the first two years, due to World War One, they imported the tractors from USA, after 1919, the tractors were also produced in UK. After July 1919 the Ford family bought all shares of Ford Motor Company and merged Fordson and Ford to one company. By the year 1928, Fordson had produced more than 700.000 tractors in the US, after that time, the production in the UK was about 300 units per day. The whole agricultural division of Ford (including New Holland and Versatile) was sold to Fiat in 1991. The new naming for Fiat and Ford agricultural machines was from now on New Holland. (Cf. Bauer, 2003)

Along this time, nine persons founded in 1899 in Italy the Fiat company which was like Ford solely an automotive manufacturer in the beginning. The presentation of the first Fiat tractor came off the assembly line in 1919 with 30 horsepower and the first crawler appeared in 1932. With the first 4 WD tractor in 1953, Fiat evolved to the worldwide most important manufacturer for 4 WD tractors. Nine years later, Fiat decided for a joint venture with the Turkish KOC Holding in Ankara – Türk-Traktör was born. The joint venture is still

active and some Case IH, Steyr and New Holland tractors are manufactured in Ankara. A spin-off in 1974 took place and the Fiat tractors are renamed in Fiat Trattori. On year later, Fiat Trattori took over all shares of the failing Italian combine manufacturer Laverda. Another one year later, Fiat Trattori bought the share of 50,2% of the north American company Hesston, to gain ground in the north American market. In the same year, they acquired the Italian tractor company Agrifull, which was producing small and midsize tractors. In the year 1981, Fiat Trattori is with a volume of 76.928 tractors and an export rate of more than 70% the third biggest tractor manufacturer worldwide. And again, renaming from Fiat Trattori to Fiatagri was made in 1984, all agricultural divisions are summarized within this “new” enterprise. In the same year Fiatagri bought 75% of the French firm Braud, which is very popular for grape harvesters. Seven years in a row (1978 – 1985), Fiatagri was the market leader in Europe with a market share of 16%, followed by IHC with 9%. First myths about an acquisition of Case IH from the Tenneco concern came up in 1988 but where denied. In 1991 Fiatagri und Ford tractors merged as one company and sold to Fiat. The contract allowed Fiat to sell the tractors till 2000 under the name Ford. Hesston had to be sold within this activity, this was the requirement from the US antitrust authority to agree to the fusion. (Cf. Bauer, 2003)

The brand “New Holland” was born in 1993 through a renaming of N. H. Geotech. The “new” logo is the blue leaf from Fiatagri.

3.4 AG segment of CNH Industrial

In November 1999, Case Corporation, with the brands Case IH and Steyr, was assumed by New Holland, which belonged to the Fiat concern, for an amount of 4.3 billion $. “With an accumulated business volume of 11.8 billion $, a new Giant for agricultural machines beside John Deere is born”. (Cf. Bauer, 2003) The Fiat concern is the biggest shareholder of this new company CNH Global with 84,5%.

Already in the year 2001 the company saved with the fusion 300 million $. All three brands were distributed via separate dealer networks but managed in Western Europa under one roof. (Cf. Bauer, 2003) Table 1 shows the changes in the company structure from CNH Global from 1999 to 2001 on financial and personal site. In the following years the consolidation went on to save money and made the company more efficient and as such

more profitable. The reduction of headcounts was one of the results. The 2002 worldwide CNH Global business volume was split into New Holland 56% and Case IH (including Steyr) 44%.

Business Volume and number of employees of CNH Global

	1999*	2000	2001
Business volume	9.952	10.770	10.777
Operative Income	95	45	209
Net profit (loss)	-170	-754	-291
Employees	34.963	31.033	28.127

Amounts in 1.000€ *pro forma

Table 1: Business Volume and number of employees of CNH Global (Cf. Bauer, 2003, p.75)

In 2012/2013, CNH Global and Fiat Industrial were merged into CNH Industrial. The company is listed on the New York Stock Exchange and on Borsa Italiana. It is incorporated in the Netherlands and their seat is in Amsterdam. The brand portfolio of this new group is shown in the next chapter and has no big effects for the AG brands Case IH, Steyr and New Holland.

In January 2017, CNH Industrial took over the agricultural machine division from Kongskilde Industries and integrated it in the New Holland brand to extend its portfolio and to become a full liner of agricultural machines. Kongskilde was a Danish company producing several agricultural machines, which was in the early stages producing grain blowers. With the production of spring tine harrows, it entered the soil cultivation sector. Between 1997 and 2011, Kongskilde absorbed the company Becker, which was producing tilling machines, the plough manufacturer Överum, the soil cultivation producer Howard and Nordsten and at the end the grassland division of the company JF. Kongskilde communicated in 2015 to sell their “new” products only under their own name from now onwards. The vending of the agricultural division with two plants in Poland and Sweden was announced in 2016 and implemented in 2017. (Cf. CNH Industrial, 2017)

For a better overview of the continuously growing process of the CNH Industrial AG business, the following family tree in figure 4 will illustrate the history of this big company and the former companies which were merged to this multi brand company. Please be aware, that some stadiums (for example CNH Global) and companies (for example former brands of Kongskilde) are missing in that chart, due to complexity reduction and less importance. New Holland and its former brands are colored in blue. Case IH with its predecessors and Steyr are painted in red. Kongskilde in violet is assigned to New Holland AG but was bought by CNH Industrial a long time after the formation of New Holland. Due to that, it has a separate color (violet) but is in the same line as New Holland.

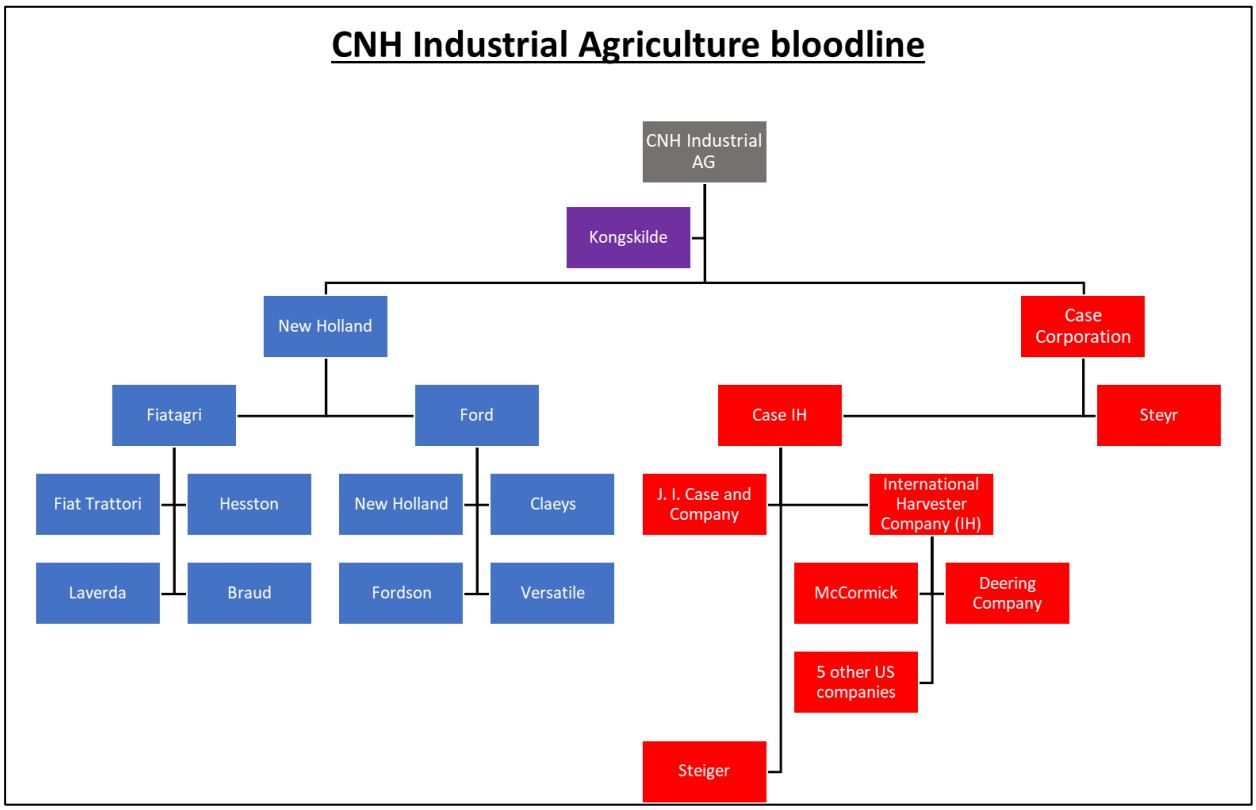

Figure 4: CNH Industrial Agriculture bloodline (own source)

3.5 Consequences by antitrust authority

The Fusion to CNH Global was approved by the EU commission and the American department of justice on the 28th of October and 4th of November 2000 but went along with a lot of drastic constraints (Cf. Bauer, 2003). These are shown in this chapter, to get a better understanding what the companies Case IH, Steyr and New Holland had to give

up, and how some other competitors benefited from this fusion. The authorities feared that the new organization CNH Global would be getting too powerful, would dominate the agricultural machine market and develop towards a monopoly position.

“Antitrust Authority means any Governmental Authority charged with enforcing, applying, administering or investigating any Antitrust Laws, including the U.S. Federal Trade Commission, the U.S. Department of Justice, any attorney general of any state of the United States, the European Commission or any other competition authority of any jurisdiction.” (LawInsider, n.d.)

Some other tractor manufacturers benefitted from the merge of CNH Global. One example is Lindner (Austrian tractor manufacturer) which got the concession for Steyr models M 948 and M 958 and the Case IH pendants CS 48 and 58. The tractors were furthermore produced in St. Valentin. Landini (now brand of Argo tractors) took over the plants in Doncaster, England and St. Dizier, France and the big baler production in Neustadt, Germany. Apart from this, Landini assumed the New Holland plant Breganza, where the Laverda combines were manufactured, except the machines with levelling system. The shares of about 50% of the Hay & Forage Industries Hesston were novated by Agco, who is now sole owner of Hesston with baler and swath mower. “CNH Global made the arrangement about the disposal of New Holland tractor series G/70 and the articulated tractors from Versatile together with the plant in Winnipeg, Canada, where these are produced, to Buhler Versatile Inc., a subsidiary of Buhler Industries, Inc.” (Cf. Eilbote, 2000) CNH Global kept the patent right for the SuperSteer-System but allows Buhler to use the license right for the Versatile tractors and the series G/70. New Holland uses the SuperSteer Axles also for new tractor developments. “It was our highest priority in the whole sales discussions, to ensure the continuity of product- and spare parts availability for our dealers and customers. We reached this target with the agreement with Buhler. The New Holland dealer and customer will furthermore have access to these products, which will be produced in the factory in Winnipeg.” (Rosso, 2000)

The consequences from the antitrust authority were, that CNH Global was authorized to exist but with a few restrictions. The price they had to pay to be able to create this new company was high. As result of these enforced actions, in Europe a new Full liner awakened, Landini with its new brands Laverda and McCormick.

4 STATUS QUO

This chapter presents CNH Industrial in detail, to get an imagination about the size of this company and the products they are manufacturing. The focus is on the current situation excluding earlier entries and exits of different brands which are out of scope. The description illustrates the status in 2020 and how it evolved until 2022 with significant changes being made to the company structure and strategy.

4.1 CNH Industrial

CNH Industrial, the subsidiary of Fiat, was founded in 2013 and recently directed by CEO Scott W. Wine. It is controlled by Exor, an Italian company which is the major shareholder of CNH Industrial.

“In 2020, CNH Industrial reported revenues of $26.0 billion and adjusted net income of $437 million as a result of a solid performance in the second-half of the year, partially offsetting severe adverse COVID-19 impacts in the first-half.” (CNH Industrial, 2021) These figures show the dimension of this big company with several brands

In the year 2020 were 64.016 people employed in 180 national markets. The company has globally 66 plants where vehicles, machines and components are manufactured.

4.1.1 Brands of CNH Industrial

CNH Industrial unites 12 brands in 5 divisions. It is important to get a clue about the coverage of this multi brand concern and the different divisions. The five divisions will be closer regarded in the following.

4.1.1.1 Agriculture

The first division is Agriculture and contains the brands Case IH, Steyr and New Holland. Together, they are the second largest manufacturer of agricultural machines in the world behind John Deere. All of them are manufacturing tractors, some models are quite equal for all brands, which will be discussed in another chapter, some other models are only available as New Holland (for example the smaller series) or Case IH (for example the Quadtrac tractor models). The Steyr product portfolio only involves standard tractors, Case IH offers additionally bigger tractors, telehandlers, balers and combines. New Holland has the biggest product lineup with additional smaller tractor series, SPFH, hay

& forage and tillage equipment. The acquisition of Kongskilde and joint venture with Maschio Gaspardo lead New Holland to become a Full liner for agricultural machine equipment. In the product portfolio of the three agricultural brands a brand differentiation partly still exists. This mostly based on the history of each brand with the merge of former companies and their product line up at that time, which still exists in the “new” brands Case IH, Steyr and New Holland.

4.1.1.2 Construction

Construction is with Case Construction and New Holland Construction the second division. Both brands are global player in construction equipment. New Holland Construction is producing and selling skid steer and compact track Loader, Mini Excavator, Backhoe Loader, compact wheel Loader and wheel Loader. These machines are now distributed in Europe over New Holland agriculture dealer. In North America in contrast, New Holland Construction has their own dealer network for selling and servicing the Construction equipment. Case Construction has more models to offer. In addition to New Holland, it offers Midi and Large Excavators, bigger wheel Loaders, Crawler Dozers and Graders. These machines are only available at a certified Case Construction Dealer, a Case IH dealer for agricultural equipment is not certified to sell and repair it.

4.1.1.3 Commercial & Specialty Vehicles

This division contains 6 brands.

Iveco is a manufacturer for light, medium and heavy commercial vehicles for on- and off-road use. One of the key players in the product line-up is the Daily with a gross weight between 3.3 and 7.2 tons. It is available as Van, small truck or special vehicle. Another important series is the Eurocargo, a truck with a gross weight between 6 and 19 tons for several applications. Above 16 tons, Iveco offers three models. The S-Way series is made for on-road transport, the X-Way models, however, for light off-road use and the Tracker trucks are designed for tough off-road missions.

Iveco Astra offers trucks for heavy off-road applications in oil & gas, mining, quarry, heavy construction and heavy haulage. All products come with a high-yield strength steel chassis structure and a steel cabin.

Iveco Bus is a European leader for buses and coaches, present in more than 40 countries. The product portfolio includes urban and inter-city buses, tourism coaches, minibuses and chassis for bodybuilders.

Heuliez Bus is part of the CNH Industrial group since the merger between Fiat Industrial and CNH Global in 2013. Their urban and inter-city buses are popular in France, Spain, Switzerland, Belgium, Luxembourg and the Netherlands.

Magirus is located in Ulm, Germany, and is manufacturer for firefighting vehicles. It is famous for its turntable ladder, fire engines, rescue vehicles and airport fire engines, as well as components and special vehicles. Magirus is a partner to fire brigades in 150 countries and service partner around the world.

Iveco Defence Vehicles are based in Bolzano, Northern Italy, developing and producing specialized vehicles for defense and peacekeeping missions. The entire range offers advanced levels of anti-ballistic and anti-mine protection. Three categories are available: logistic and tactical trucks, multirole and protected vehicles and the light multirole vehicle.

4.1.1.4 Powertrain

FPT (Fiat Powertrain) is producing vehicle components like engines, axles and transmissions. These components are used in mostly all CNH Industrial vehicles but also sold to another brands, which are not in the Fiat respectively CNH Industrial concern. More than 8.000 people working for FPT in ten manufacturing plants and seven Research and Development centers. The product lineup involves six engine series from 42 up to 1.006 hp, transmissions with maximum torque between 200 and 500 Nm and front and rear axles with a Gross Axle Weight up to 32 tons. It is also offering a natural gas engine with a power from 136 up to 460 hp, which is newly used in one New Holland tractor series. Especially the engines from FPT are well appreciated in the agricultural sector and used to powering tractors and self-propelled harvesting machines by multiple manufacturers in the industry.

4.1.1.5 Financial Services

CNH Industrial Capital is a global Financial Services player in the Agricultural, Construction Equipment and Commercial & Specialty Vehicles segments. It is used as an inhouse solution and supports the CNH Industrial brands' customers, dealers and

distributors. The main sectors are financing, leasing and renting. It operates around the globe with a managed Asset of nearly $27 billion in the year 2020.

4.1.2 Business volumes

The business volume of the 5 divisions differs in terms of Net Sales and EBIT, respectively EBIT margin. The chart in figure 5 shows the business volume of the years 2019 and 2020, to give an impression about the size and profitability of the four manufacturing divisions of CNH Industrial. The fifth division, CNH Industrial Capital, is not shown in this chart, because an EBIT or EBIT margin for this division is not possible to identify. The net income of the Financial Services was in 2019 361 million $ and in 2020 249 million $.

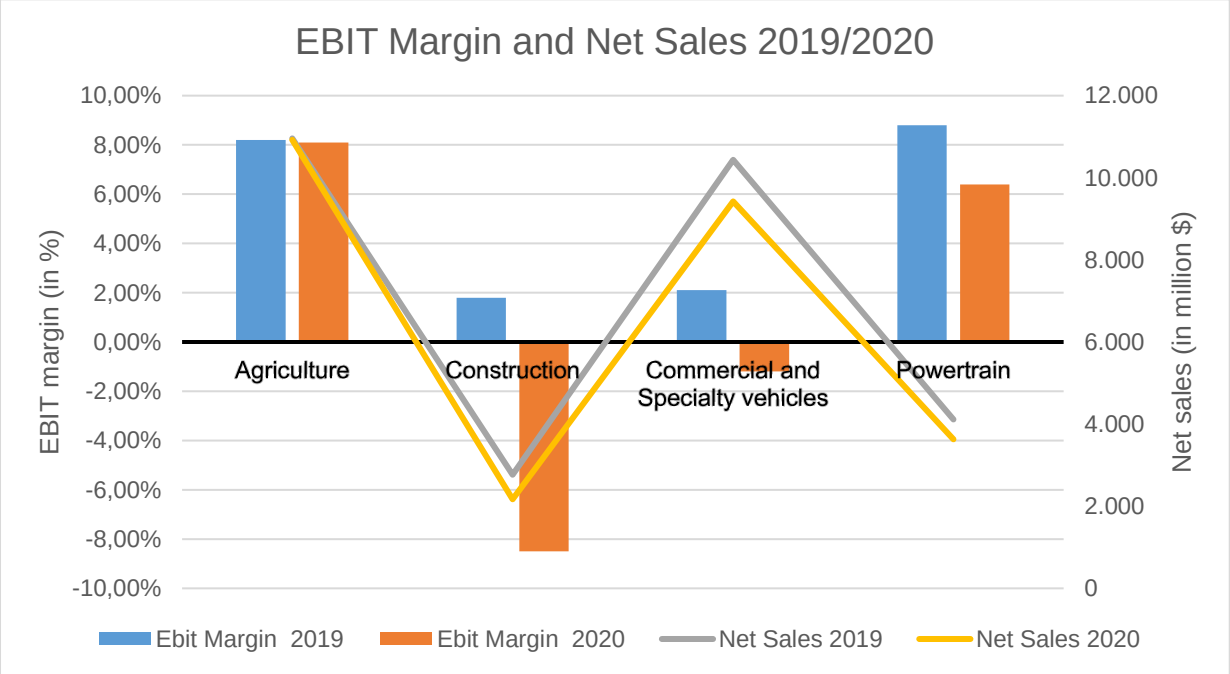

Figure 5: EBIT and Net Sales 2019 / 2020 of CNH Industrial divisions (CNH Industrial, 2021)

The Net sales (yellow and gray lines) of Commercial and Specialty vehicles are almost as high as the one from the division Agriculture. With a Net Sales volume between nine and eleven billion $ per year (2019 and 2020), these two divisions are the biggest ones within the CNH Industrial group. But their EBIT margin (blue and orange bars) is completely different. The agriculture had in 2019 and 2020 nearly the same margin with a difference of 0.1% (2019: 8.2% vs. 2020: 8.1%). Both figures show the high and steady profitability of this section. Commercial and Specialty vehicles on the other hand had in 2019 a low positive margin with 2.1% and in the year 2020 a negative margin (- 1.2%).

Both years were affected by the COVID-19 pandemic, which started in the early spring of 2019 and worsened during winter 2019/2020. The divisions Construction and Commercial and Specialty vehicles were hit much stronger by the effects of Covid 19 than Agriculture and Powertrain. The deficiency led to a negative EBIT margin of - 8.5% for Construction in 2020. Powertrain suffered also a little bit (8.8% vs. 6.4%) due to lower demand in the Construction and Commercial vehicle sector.

The chart shows, that the departments Agriculture and Powertrain are the draft horses of CNH Industrial and most important for the profitability of the concern. The divisions Commercial and Specialty Vehicles and Construction have a low respectively negative EBIT margin what means that the company CNH Industrial makes less money with these two business segments and in the worst case loses money.

4.2 Spin off

Due to the situation mentioned above, CNH Industrial decided in 2019 to split the big group into two “new” companies. “The industrial equipment and automotive group said in 2019 it planned to split into two, separately list its lower-margin Iveco truck and bus business along with its FPT engine division to boost asset values and streamline its business.” (Piovaccari, 2021) It was originally planned to be completed in the beginning of 2021. Due to the COVID-19 pandemic, it took much longer than expected. Negotiations with the Chinese company Jiefang about a possible takeover of Iveco collapsed in the spring 2021 due to disagreement about valuation and concerns that the Italian Government might not allow the fusion. Jiefang is the largest heavy truck manufacturer in China and belongs to the FAW Group Corporation.

The original plan of CNH Industrial was, to spin-off its truck, bus and engine business. Defense and special vehicles should be part of Agriculture and Construction, but this was changed. These two divisions will stay in the truck department, which makes the process much easier and faster. “The group does not provide separate sales figures for its defense and special vehicle business, but some analysts estimate their combined sales amount to around 8% of CNH`s total revenues, which stood at $26 billion last year” (Piovaccari, 2021)

This new separation strategy is called “Twice as strong”. Episode one and two of the communication material about the Spin-off is shown in figure 6 and shows the key figures

of the new companies. CNH Industrial is spin-off to On- and Off-Highway segments, which are differently impacted by global trends. The “new” Off-Highway company is furthermore named CNH Industrial and contains the agricultural brands Case IH, Steyr and New Holland as well as the Construction brands Case Construction and New Holland Construction and CNH Industrial Capital. Scott Wine keeps the function as CEO. The new On-Highway company is called Iveco Group and persists of the divisions Commercial and Special Vehicles, Powertrain and Iveco Capital, which was earlier a part of CNH Industrial Capital. Gerrit Marx holds the CEO position within this new organization. The two new companies have similar sizes in terms of revenues, number of employees and Research & Development Centers. CNH Industrial has with 38 plants 10 more than Iveco Group, but both have a global presence and a leading role in their respective industries. The two pictures in figure 6 are an extract of the internal communication which consist of 8 sheets and was spread to the staff to be inform about the company development.

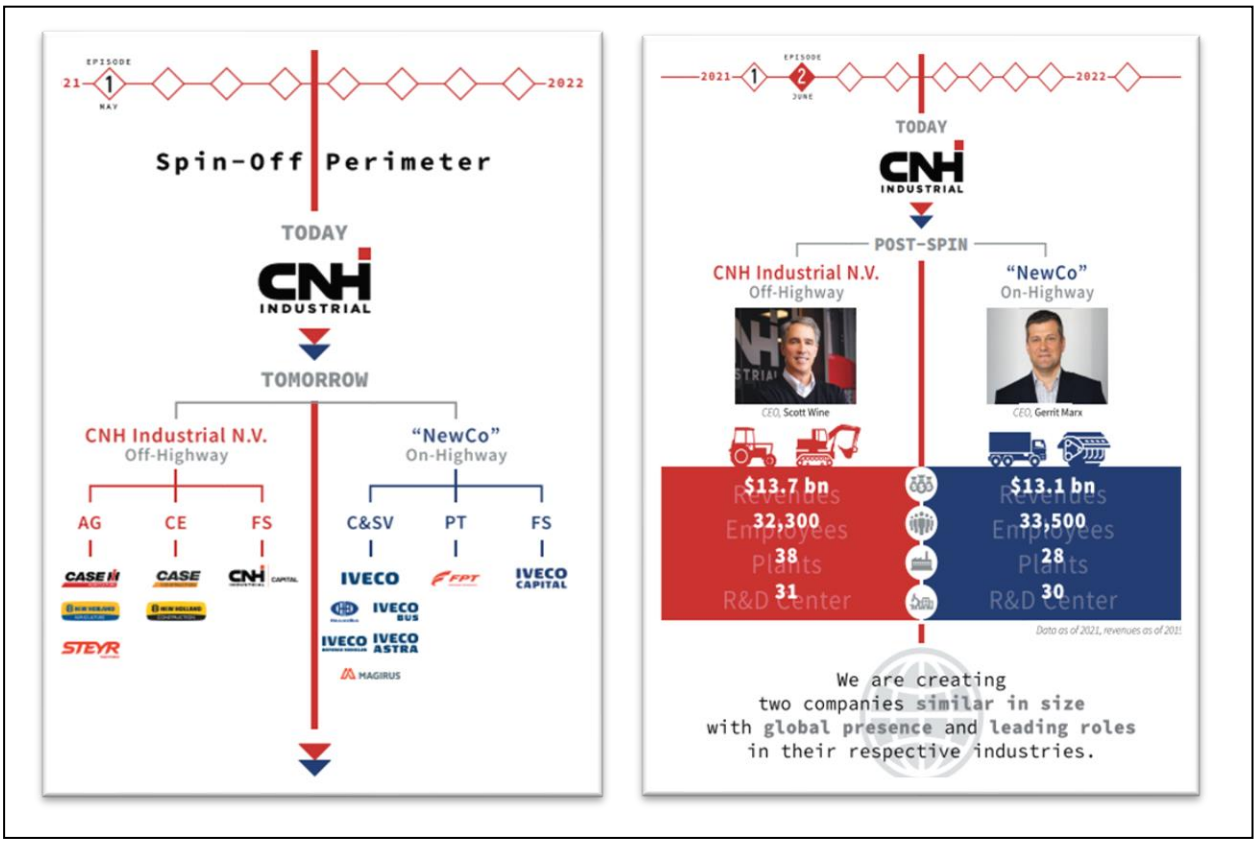

Figure 6: Spin-Off to Off- and On-Highway (CNH Industrial, 2021)

One additional reason for the spin-off are the investors. From investor and capital market perspective the On- and Off-Highway businesses are completely different and have different natural investors. Therefore, it needs to have distinct investor strategies with a

clear focus. In the past, CNH Industrial were trying to use synergies between the several brands. The safety feature “Advanced Trailer brake” for example was invented by Iveco trucks and later used also on tractors for slowing down the trailer while reducing speed of the tractor without using the brake pedal. With the new structure of the two new companies with similar purposes, there are more prospects to use synergies.

4.3 Sales organization in Germany for AG brands

The distribution channel for the CNH Industrial AG brands Case IH, Steyr and New Holland in Germany is separated from each other. There is a dealer network for New Holland and a completely separated dealer network for Case IH including Steyr. The dual branded dealer network (Case IH and Steyr) resulted from the fact, that Steyr was merged by Case Corporation and a restructuring in the dealer network took place at that time. There are a few exceptions in Germany, where single Case IH and Steyr dealers have another outlet for New Holland, but there are several restrictions to comply. The outlets have to be at different locations and have to be managed by different CEOs. This constellation is not preferred from CNH Industrial and mostly a loophole used by the dealers in the past. Due to that there are currently no plans to promote this dealer network strategy for dual branded dealers to sell Case IH and New Holland or Steyr and New Holland together.

In Germany, there are currently 38 Case IH and Steyr main dealers with 203 sub dealers with Single Service Fee, which means, that they are listed in the CNH Industrial systems, have access to certified tools and are entitled to do warranty works. On New Holland side, there are 46 main dealers in Germany with 157 sub dealers in total. The sales partners in Germany are usually family-owned businesses. Some of the dealers run up to three outlets. Most of them, however, only operate from one outlet and cooperate with sub dealers in order to gain greater area coverage. In the Case IH and Steyr dealer network in Germany there is one distribution partner which is not a family business: Titan machinery Inc.. It is globally the biggest distribution partner of Case IH with 74 outlets in the US and 23 outlets in Bulgaria, Romania, Serbia and Ukraine. The Company was founded in 1980 and has its headquarter in West Fargo, USA, and a European headquarter in Vienna, Austria. Titan Machinery Inc. is a stock company listed at Nasdaq with a revenue in fiscal year 2021 of $1,4 billion. (Cf. Titan Machinery, 2021) Since 2018 with the acquisition of Agram Landtechnikvertrieb GmbH, Titan Machinery is additionally

acting as a German dealer for Case IH and Steyr. With its five outlets in Germany, Titan has the biggest sales territory (related to the land surface) in Germany and is responsible for a big part of Eastern Germany. The structure of this big stock company is similar to other big global companies like Case IH. There are vertical and horizontal employee structures, on global, European and country level with specialists for all divisions, for example AFS. These specialists are often responsible for several outlets which is more efficient for the dealer in terms of better utilization of the employees and better for the specialists' skills because they are only concentrating on this special job. Aim of Titan Machinery in Germany is to build new additional outlets and service points to reach a good territory coverage. In contrast to most German Case IH and Steyr dealers, the target of Titan Machinery is to grow with new sales and service locations. Maybe this company structure could be a compensation for the progressive dealer dieback in Germany and contribute to a stronger professionalization of the dealer network.

5 FOUNDATION OF DIFFERENTIATION

There are many varieties of differentiation in diverse aspects. The following chapter will set the foundation for a deeper understanding of the term “product differentiation” and its meaning in the context of this thesis. In addition, the impact of a product differentiation for a company, including the benefits and risks will be elaborated.

“Differentiation is when a firm/brand outperforms rival brands in the provision of a feature(s) such that it faces reduced sensitivity for other features (or one feature). Through not having to provide these other features the firm has an avenue to save costs. The firm benefits from the reduced sensitivity in terms of reduced directness of competition allowing it to capture a greater proportion of the value created by exchange.” (Sharp & Dawes, 2001) A differentiation is for multi brand companies, such as CNH Industrial AG, important for an efficient delimitation against competitive companies but also within the company to reduce internal competition. A product differentiation is mostly accompanied by a brand differentiation, which can’t be analyzed separately.

5.1 Definition of product differentiation

“In economics and marketing, product differentiation (or simply differentiation) is the process of distinguishing a product or service from others, to make it more attractive to a particular target market. This involves differentiating it from competitors' products as well as a firm's own products.” (Chamberlin, 1933)

The particular target market in this case are farmers and contractors who have an interest in buying agricultural machines and in this specific case tractors. The very small customer segment outside the farming business, for example industry, municipality and private user are, due to the comparatively small market units and small business volume, not regarded in this differentiation. Within the concerned target market „farming and contracting“ a large number of manufacturers are active.

Therefore, it is important to have an advantage against the competition, deliver a higher value for the customer and as a result be more successful in the marketplace. “In this article, a firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors. A firm is said to have a sustained competitive advantage when it is

implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy" (Barney, 1991) This higher value could be hardware related, for example a new transmission type like Continuously Variable Transmission (CVT), more horsepower or more lift capacity or it could be a software solution which supports the farmer for example in organizing his fleet (telematics). Best practice is having Unique Selling Points (USP) which the competitors are not able to offer and sell due to existing patent rights.

The most important question for companies is: "how, and why, can differentiation allow a firm to earn superior profits?" (Sharp & Dawes, 2001)

- Differentiation makes the product desirable, therefore you will make more sales and more profit.
- Differentiation makes the product unique, therefore price comparisons are difficult, and you can get away with charging a higher price.
- Differentiation means the offer is unique and highly valued, therefore demand will exceed supply and you can charge a higher price.
- Differentiation causes brand loyalty therefore marketing costs will be lower because it is cheaper to sell to existing customers.
  (Cf. Sharp & Dawes, 2001)

Summing up, the driver of a product differentiation within a company is to earn more money with current or new products. The ultimate goal is to raise the business volume and especially the margin. At the same time, however, differentiation induces additional cost for product development and more expenses for engineering. To be sustainably profitable, it is indispensable that the additional input (expenses) is smaller than the output (higher value and price).

5.2 Types of differentiation

In order to achieve a sustainably profitable product differentiation, different approaches are available and will be illustrated in this chapter. Usually, products in one product segment, e.g. tractors, are heterogeneous products but still they are substitutable for the customers to a certain extent. Goal of all three differentiation types is to raise the

willingness to pay on customer side and to reduce the intensity of competition between the brands. (Cf. Münter, 2021)

There are two dimensions of product differentiation, which have an important impact on market share and competition:

1) Horizontal product differentiation

   Customer and consumer have individual, subjective preferences concerning their buying behavior, even though products might have similar characteristics, qualities and the same function. An example is Nike and Adidas or different beer brands. All beer companies in Germany brew their beer after the German purity requirements from 1516 which prescribes the allowable ingredients (water, malt and hops). The customers' taste and preferences, however, vary from each other, which leads to different product prices due to a different willingness to pay. The price of Erdinger Weissbier for example is much higher than for Oettinger Weissbier – even though it seems to be the same product at the first glance. Enterprises use Marketing as a tool to establish and reinforce horizontal product differentiation in terms of branding and brand awareness. Technological differences are underpart. (Cf. Münter, 2021)

   In this dimension, the subjective preference is significant and cannot (always) be explained by facts and figures. It is driven by emotions, tastes and individual predilections, the decision is more irrational. To raise market share, a good Marketing is important.

2) Vertical product differentiation

   In contrary to the horizontal product differentiation, vertical product differentiation describes differentiation through the quality of a product or certain product characteristics which are objectively measurable. A good example for this is the different types of internet speed (50 Mbit vs. 100 Mbit) or the power of a car (75 hp vs. 200 hp) which has the same effect for all people. But different customer segments have different usage behavior and requirements towards the product and due to that a different willingness to pay. The consequence is, that some people would like to pay for a car with 200 hp, others would not. Organizations use the quality and technology differences to strengthen the vertical product

differentiation. Marketing is in the second step important, but not as important as it is for the horizontal product differentiation. (Cf. Münter, 2021)

“[If two comparable] products A and B are offered at the same price, then each will have a positive market share. This is not the case in models in which products are taken to differ in quality ("vertical" product differentiation). This latter kind of model has the defining property, that if two distinct products are offered at the same price, then all consumers prefer the same one (the higher-quality product).” (Sutton, 1986)

Focus for the vertical product differentiation are objective advantages and disadvantages, which are comparable to each other. These are mostly measurable parameters with less disunity. The decisions are made on rational motivations.

3) Mixed

In reality, usually a mix of both differentiation types is used. An example therefore are food companies which invest heavily in the product differentiation of mineral water.

But a reduction of intensity of competition and a higher product price can only be realized when the product differentiation is perceived as such by a huge customer segment. Fans of a brand and highly technically oriented customers distort competition. Blind tests show that Marketing (branding, used packaging, color, etc.) is oftentimes the significant factor of a product differentiation and not the content.

An important factor for a successful differentiation is a strong perception of the customer. The more different or unique a product is perceived by a customer, the higher is the willingness to pay for the product and the lower is the intensity of competition through substitutes. With significant investments in Marketing and Technology (innovations, development, quality, durability, etc.), product differentiation is a valuable tool to reduce competition. Premise, the preferences of the customers are exogenically different and addressable or at least influenceable by Marketing. (Cf. Münter, 2021)

Figure 7 below shows how a mix of horizontal and vertical product differentiation can be observed in the tractor industry. The x-coordinate shows the horizontal

product differentiation with an extract of some tractor brands. They differ, in addition to the brand, in colour, styling and design, architecture of the cabin, operator interface, dimensions of the vehicle, etc. On the y-coordinate you find the vertical product differentiation which illustrates the different tractor segments. Since universal segments like in the car industry are not existing within the tractor industry, 8 segments were created to display the differences. The tractor segments vary in power (engine and hydraulic), dimensions and weights, comfort (e.g. suspended front axle), advanced farming systems (telemetry and automatic steering systems), transmission types, safety features, extended warranty, etc.

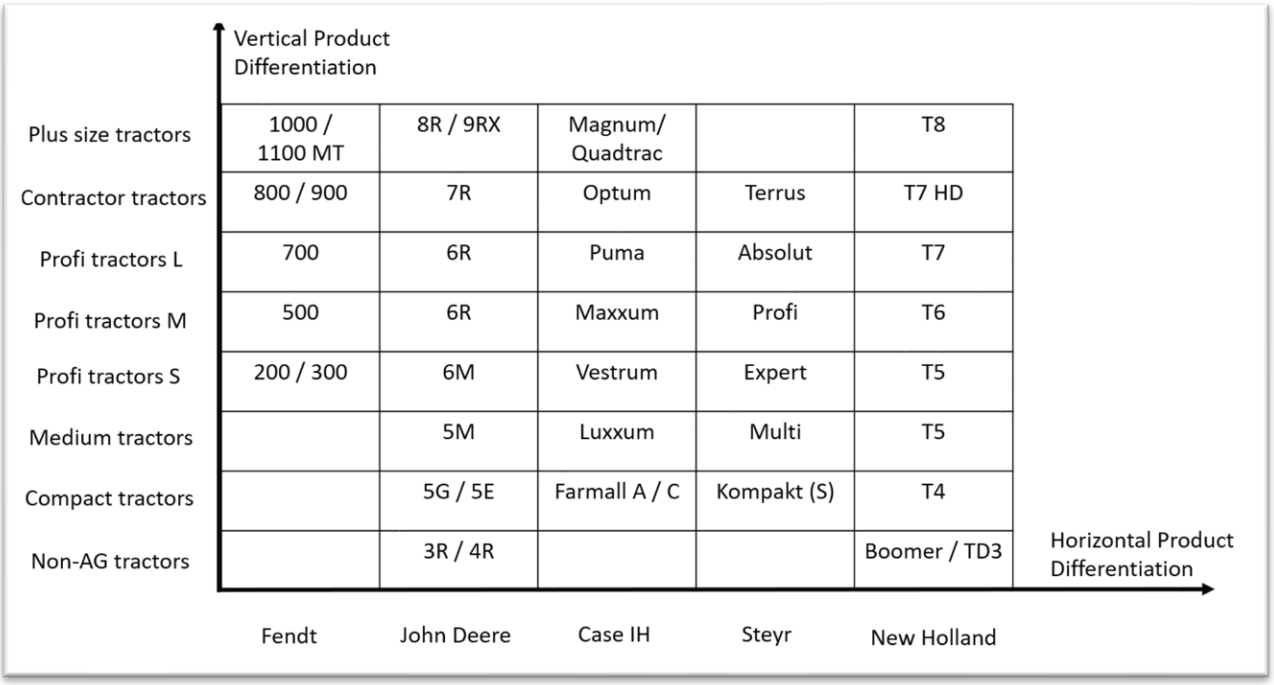

Figure 7: Horizontal and Vertical Product Differentiation (own source)

The tractor segments in figure 7 also demonstrate an extract of competitors for every tractor series from Case IH, Steyr and New Holland. These Fendt and John Deere tractors are examples for competitors with similar product properties.

5.3 Reasons for the need of a differentiation in the CNH Industrial AG segment

All three agricultural brands of CNH Industrial, Case IH, Steyr and New Holland have their own history and tradition in manufacturing and selling agricultural machines. Their history was highlighted in chapter 3, to understand the importance of the brands and their tradition relating to the buying behavior and customer loyalty.

Technological evolution and software-based developments on agricultural machines and especially on tractors lead to a high diversification level. The challenge of the manufacturing companies is to fulfill the customers' needs and be additionally unique and innovative. "Enterprises see themselves confronted in their market environment with an in total highly increasing intensity of competition as well as changing framework conditions. This development is forced by the growing technological interchangeability of products." (Jones, et al., 2005)

Steyr on the one hand is a local brand, which is well known in its origin country Austria and in the neighboring countries. Case IH and New Holland on the other hand are global players with a bigger product portfolio. A merge of the three brands to one CNH Industrial brand with its own tractor models and new branding and styling would be theoretically possible but the risk is high to lose loyal and traditional customer on all three sides. In particular, customers who have used tractors from one of the brands over a long time and sometimes over a few generations on their farm, would be at risk. These customers are important for the company because they are convinced of the brand and its products. Losing these customers would imply a damage of image, market share and ultimately profit of the company. Some of them would maybe buy a CNH Industrial tractor but the fear, that they would drift to the competition is extremely high.

The last three columns in figure 7 demonstrate the current differentiation situation of the three CNH Industrial AG brands. The horizontal product differentiation due to three different brands is given, but the delimitation is not as strong as against other competitors, which are not in the CNH Industrial company. The tractors of the three brands differ in color, design, interieur of the cabin (at least partially) but the plentiful usage of same components reduces the horizontal product differentiation. On the basis of cost and complexity reduction, a lot of components and the general tractor architecture are identical for all three brands which reduces the uniqueness compared to the tractors, when the brands were "original" and not part of CNH Industrial.

When we have a look on the vertical product differentiation, it shows the tractor product portfolio of Case IH, Steyr and New Holland. Most of the models are available in all three colors, except for the small non-AG tractors, which are only available for New Holland and hhp tractors above 300 hp which are not available as Steyr. For example, Case IH Maxxum, Steyr Profi and New Holland T6 are very similar and comparable. The tractors

consist mostly of the same components, have the same engine, exhaust aftertreatment system, transmission, hydraulic pump, axles, etc. One of the distinctive features is the location of manufacturing (Profi and Maxxum are produced in Sankt Valentin, Austria, whereas T6 is built in Basildon, UK). Some other models (e.g., Farmall C, Kompakt and T4) originate from the same assembly line, which reduces the differentiation even more. With the merge of the three tractor brands to CNH Industrial, the companies grew more and more together and the same is true for the products. The low product differentiation led to a high internal competition within the CNH Industrial company which should be reduced in the future.

This comparability brings along challenges in the sales business. In Germany, CNH Industrial AG has two sales organizations, one for New Holland and another one for Steyr and Case IH. If products are very similar and comparable, the price of the product is one of the most significant factors for the customer when it comes to comparing tractors of the three brands and taking a buying decision. (Cf. Sharp & Dawes, 2001) The preferences towards one specific brand and the brand loyalty decrease, because the additional value and USP is no longer given. Therefore, a competition among the CNH Industrial AG brands and their dealers exists and some customers try to get the cheapest price by playing for example the New Holland dealer off against the Case IH and Steyr dealer. As a consequence, the margin of the dealer and of all three CNH Industrial AG brands decreases. The only winner is the customer, who gets the tractor for a cheaper price. Due to the structure of the sales organization of CNH Industrial, the sales branches of New Holland and Case IH/Steyr who run on individual profit centers have no interest in gentlemen agreements and deals with each other, because every department has its own sales targets and try to reach these. On dealer side it is the same, every dealer is autonomous and wants to optimize their own profitability, sales figures and market share. Due to that, there is a price war between the dealers to sell the tractor and to win the customer.

Product differentiation can be one of several solutions to increase the profitability for CNH Industrial AG and its brands and is key for the reduction of comparability. Goal of this doctoral thesis is to identify which kind of product differentiation is needed and what the customer demand. The focus is to attract competitive customers and not those of sister brands.

5.4 Product Lifecycle

Every product in each segment underlies the same product lifecycle which is varying in timeline and costs. The development of a new product or further development of an existing product takes time. Especially for complex products, like tractors, it is not feasible to use product differentiation as a short-term differentiation step. This needs a couple of years but is efficient in terms of sustainable product differentiation. The time for a technical product differentiation depending on the complexity of the product and money to invest.

“Product life cycle management (PLM) is the integration of all aspects of a product, taking it from conception through the product life cycle (PLC) to the disposal of the product and components. […] PLM lowers the cost and speeds the time to market for new product development (NPD). Whether the new products consist of incremental or derivative changes to old products, groundbreaking new items, or the next generation of platform, there need to be a process for each organization to manage them.” (Eby, 2017)

Figure 8 demonstrates the whole PLM of a product. It starts with the concept and runs through the following development steps. Eby summarizes the individual steps in 3 stages which are explained below.

Beginning of Life (BOL):

The life of a product starts with the initial concept and all phases of development, including design and manufacturing. It is important that the requirements are identified, and necessary testing is completed successfully. Afterwards prototypes are built, which are tested under real conditions. The BOL process is significant for the success of the product. The BOL ends with the serial manufacturing stage and changes to the next phase.

Middle of Life (MOL):

MOL starts with the distribution of the product which is also called post-manufacturing. With selling the product, the phases Usage and Service begins automatically. The start of MOL stands for a hand over of the product to the customer. Now it is important to collect data, get information about the user experience and any failures of the product which have to be fixed to save the customer satisfaction. In addition, data collection is important for the future development of this or a new product.

End of Life (EOL):

Every product has an End of life after a defined time. This may mean retiring, recycling or disposing. EOL starts when users no longer have a need for the product or the product is, due to restrictions, no longer allowed or possible to sell (for example exhaust emission restrictions on tractors or wood burning stoves). The companies collect information about the value of parts and materials. After this stage are 2 possible choices, first is to develop a new product related on the old product or to invent a complete new one. However, a new PLC begins. (Cf. Eby, 2017)

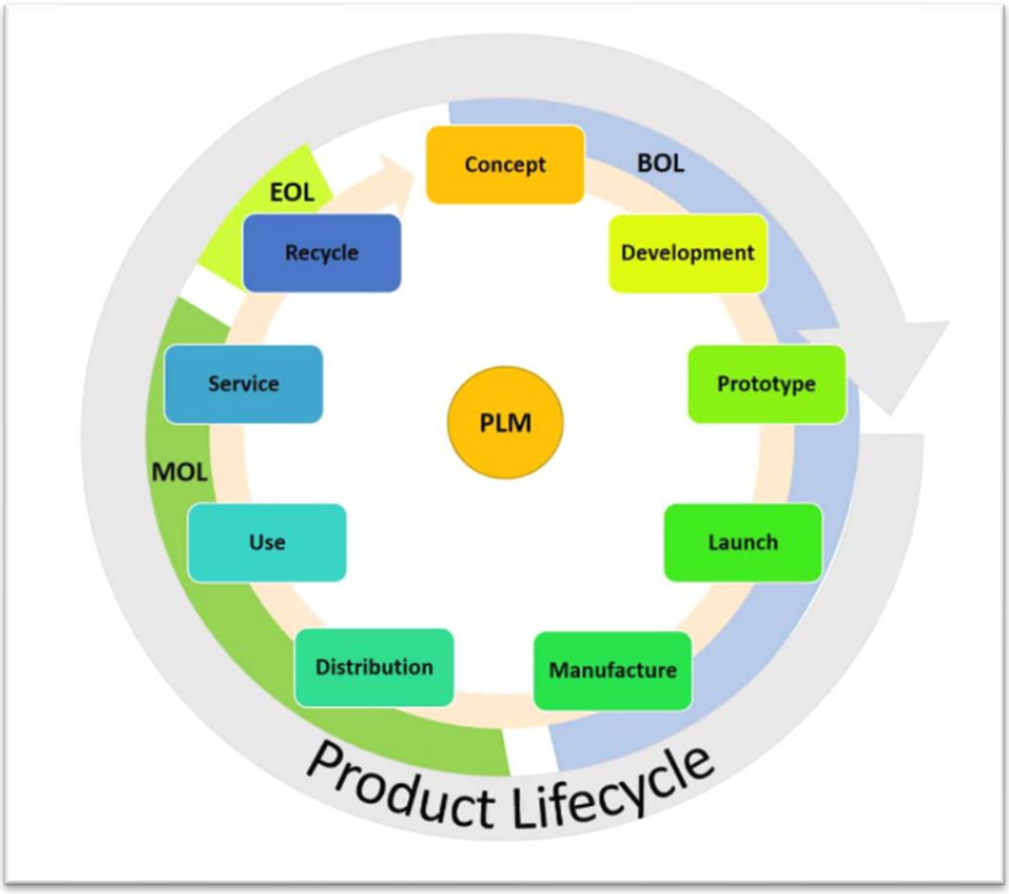

Figure 8: Product Lifecycle
(Eby, 2017)

Teksun describes the Product Life Cycle as a part of the BOL in figure 8. His theoretical approach is illustrated in figure 9. Every product starts with an idea. The idea could be an update for an existing product or a completely new one.

The process starts with the collection of different ideas. Next step is to screen the market in terms of customer demands, competition, feasibility of technology and legislation. After

the screening, these ideas are matched with the demands and requirements from the customers about the new product or product update. The customer needs are often investigated by surveys. Based on this, the ideas are evaluated, eliminated and prioritized. When this is finished, the next part will be the concept development with analyzing the costs, revenues and profitability of the product. In addition to that, a Strengths, Weaknesses, Opportunities and Threats Analysis (SWOT) is done. The target group of the product gets identified and product segmentation takes place. Next phase is the product development which key element is the manufacturing of one or more prototypes to evaluate the new product by getting tested. The last step is the commercialization and rollout which begins with the large-scale production and marketing campaigns for the new product. The product launch finalizes the BOL. (Cf. Teksun, 2021)

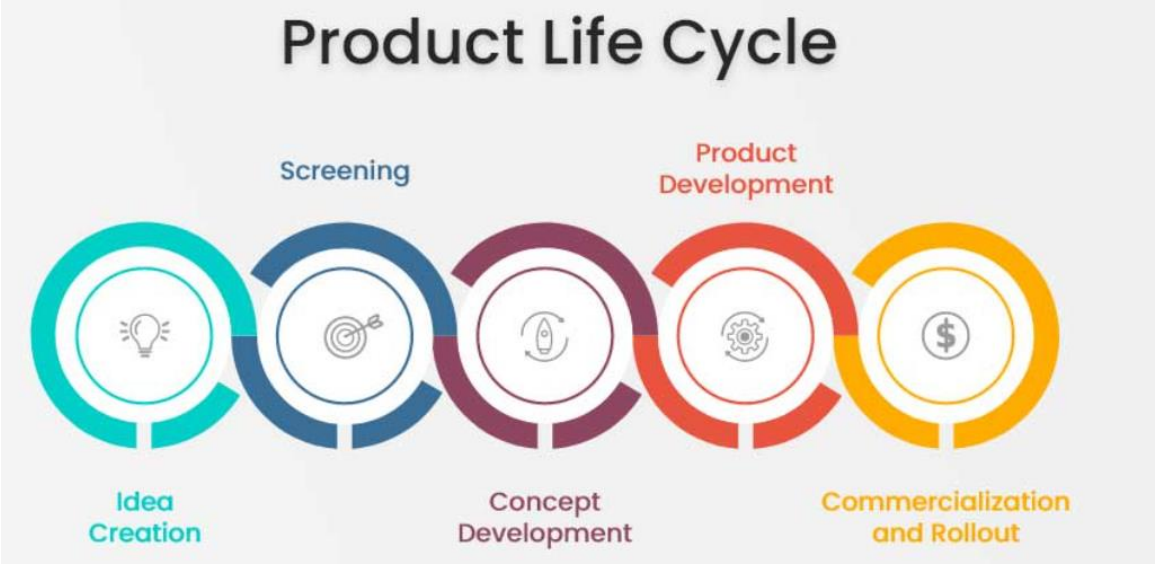

Figure 9: Product Life Cycle – BOL (Teksun, 2021)

5.5 Brand strategy in Europe 2019 – 2024

In 2019, the first presentation about a new brand strategy in connection with a product differentiation of the three CNH Industrial AG brands was shown to the German dealer network within a dealer meeting on 10th of April in Austria. It was the first time, that the project was communicated to the dealer network. The new strategy was named

“Transform 2 win” and explained the futural orientation of the three brands, as shown in figure 10.

Steyr is currently and was supposed to be a short liner in the premium sector in the future. Focus is on manufacturing tractors for the AG and also for the municipality, forestry and industry segment. Characteristic for this brand is its premium design, high quality and a good performance. The product portfolio for Case IH in Europe is broader and contains beside a bigger tractor line up, combines, telehandler and balers. Due to the large tractors with up to nearly 700 hp and large combines, the characteristics for this brand will be power, reliability, high productivity and industry-leading technology. The third party on this chart is New Holland, which has the biggest product portfolio of the CNH Industrial AG brands and is grown bigger than it was when the presentation was created and shown. New Holland is a complete full liner. Focus of this brand are on innovations, intuitive operating and sustainable solutions, for example the methane gas tractor, which was highlighted on Agritechnica fair in 2019.

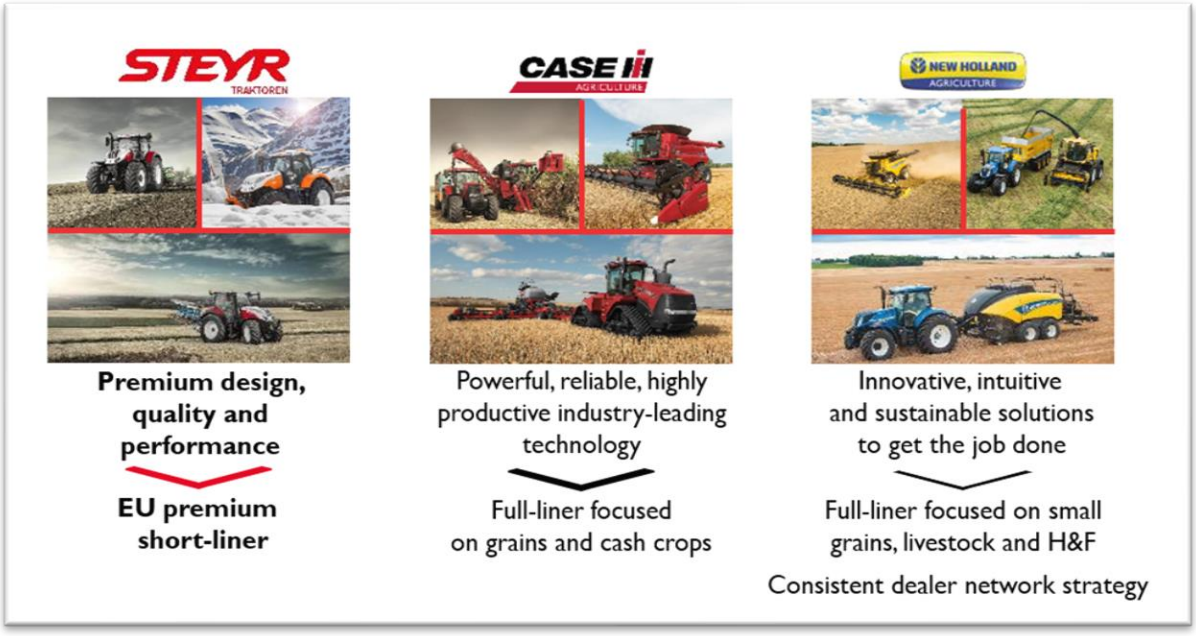

Figure 10: CNH Industrial AG brand strategy (CNH Industrial, 2019)

Timeline of this project, which was started in 2019, to have a stronger product differentiation in 2024, which refers to the development of a new product in the product life cycle from four to six years. The strategy bases on four main pillars 1) Product Differentiation and Quality Improvement 2) Aftermarket solutions 3) Dealer

Professionalism and 4) Marketing & Communications. This brand differentiation initiative was mainly driven by Hubertus Mühlhäuser, CEO of CNH Industrial at that time. He joined the company in September 2018, restructured the Management Team in the beginning of 2019 and in September of the same year was the five-year plan about the Spin off (On-Highway vs. Off-Highway) communicated and the implementation was started. He left the company CNH Industrial in March 2020. His successor went ahead with the Spin off activities but the brand differentiation in the AG sector was less forced as Hubertus Mühlhäuser wanted to do it in his period of office. In the current situation (July 2022), the plan and extent of a brand and product differentiation of Case IH, Steyr and New Holland is not communicated clearly.

6 COMPARISON WITH OTHER MULTI BRAND COMPANIES

There are other companies which include more brands with similar product portfolios. This chapter presents companies in the Agricultural Industry, but also looks beyond into the Automotive sector. One example is the AGCO group, which is only offering AG machines and services. The other example is the VW Group which contains several car brands, commercial vehicles, trucks and powertrains. The aim is to show, how they are managing their brands without or with less internal competition and which product differentiation they use for a different customer approach.

6.1 AGCO

The US company AGCO (Allis Gleaner Company) was founded in 1990 by a Management-buy-out from Deutz Allis (north American activities from Klöckner-Humboldt-Deutz with the agricultural engineering brand Deutz-Fahr). It is actually the third biggest manufacturer of agricultural machines after John Deere and CNH Industrial. The enterprise unites the following brands, some of them are not sold anymore under their original name. The list is reduced to the actual important brands and products, which are sold in Europe.

- Tractor brands: Fendt, Valtra, Massey Ferguson, (Challenger)
- Engines: Sisu Diesel (AGCO Power)
- Harvesting equipment: Hesston, Laverda, Fella, Lely

In the following chapters, the three important brands of AGCO for the European market are highlighted.

6.1.1 Fendt

Fendt is a traditional German tractor manufacturer. Its history started in 1930 with the production of the first “Dieselross” tractor with 6 horsepower in Marktoberdorf, which is in the South of Bavaria, Germany. The company is well known for their innovative products, like the Fendt Geräteträger with four mounting areas, which can be used for transport (without trailer) and equally as a standard tractor. Another innovation was the Turbomatic clutch (fluid flywheel). Fendt was one of the pioneers in inventing a stepless “Vario” transmission for tractors. The first Fendt Vario transmission was presented in 1995 in a Fendt Favorit 926 Vario on the Agritechnica fair. It is a mechanical-hydrostatic power split

transmission, which combines unique functionality and efficiency. (Cf. Bauer, 2003) That innovation made the brand even more popular and famous, especially in Central Europe. The name “Vario” became and still is a synonym particularly in Germany for stepless transmissions on tractors, independent of the tractor brand.

Fendt was bought in 1997 by the US agricultural equipment corporation AGCO for a price of $ 326 million in which AGCO also carried over their outstanding debt of DM 38 million. Two years later, Fendt announced with the slogan “Vario 2000” a complete and exclusive Vario line up with eleven models between 86 and 270 hp, which was extended in 2006 to 21 models from 95 to 360 hp. Fendt manufactured the first standard tractors with a top speed of 60 km/h, which is highly appreciated for transport works. Agricultural transport in Central Europe is often done with tractors and trailers due to mostly short distances.

Fendt is nowadays market leader in Germany for tractor registrations above 51 hp. With a market share of 23,3% for the entire year 2021, Fendt was on the first place, followed by John Deere (19,4%) and Deutz-Fahr (10,9%). (Cf. WIGeoWeb, 2022) Already in the year 1982, it passed by IHC and was equal to the market leader at that time, KHD (Klöckner-Humboldt-Deutz) with a market share of 18.9%. Three years later, Fendt was the new market leader in Germany. The market share is representative for the buying behavior of the customers in every country and is an indicator for the brand and product image and appreciation.

In the last few years, Fendt developed more and more to a Full liner. With the Joint-Venture and finally the acquisition of Laverda and Fella in 2010 through AGCO, the product portfolio of Fendt increased. Its actual product lineup includes: 10 tractor series between 79 and 673 hp, combines from 175 to 790 hp, one SPFH with 650 hp, different round and square balers, mowers, tedder, hay rakes, forage wagons, trailed and self-propelled crop sprayers and telehandler. Some product series (for example the complete combine range) are sold under the name Fendt and also Massey Ferguson.

The customer focus from Fendt is very high and the approach is to manufacture professional equipment for professional farmers and contractors. That is one of the reasons, why in particular those customers, who spend a lot of their time on their tractor (for example contractors), decide for this product. These customers are willing to pay more for comfort, image, prestige, innovation and high tec.

The image of Fendt in Western Europe and especially in Germany is outstanding. Fendt is a symbol for innovations, high-tech, comfort and strongly customer oriented agricultural machines. It is comparable with Apple in the smartphone segment. Fendt customers are proud of their products and these farmers/contractors are seen as wealthy people what makes it to an object of prestige.

All Fendt tractors were in the past and are still manufactured in Germany. This plant is exclusively used by Fendt. Valtra and Massey Ferguson tractors are produced in other factories. This is a clear separation to the sister brands. Moreover, Fendt offers several options, which are not available on Valtra and MF.

6.1.2 Valtra

The history from Valtra tractors started in 1951 with the production of Valmet tractors in Finland. The transfer of the tractor production of Volvo took place in 1979 and in 1994 the Valmet tractor production was integrated in the Sisu concern, which flew after a few additional steps into the AGCO concern in the year 2004. (Cf. Bauer, 2003)

The Valtra and former Valmet tractors were well known for their robustness and special forestry machines. The forestry section of Valmet was bought by Komatsu. Unique for Valtra is, that nearly every tractor comes with another painting, which is on the one hand difficult for a brand recognition but on the other hand eye-catching and individual.

Within the AGCO group, Valtra is the single brand which is only offering tractors and no other equipment like its two sister companies. The portfolio of tractors contains six series, starting from 75 hp up to 405 hp and is made for agriculture and municipality applications. The following chart in figure 11 demonstrates the market share development of Valtra in Germany in the cluster above 51 hp for the last 10 years. The number of registrations was constantly growing in this time, represented by the blue line. The increase between the years 2012 and 2020/2021 was 64%. (Cf. WIGeoWeb, 2022) This increase can be surely attributed to the fact of the merge by AGCO, the new distribution strategy and new product portfolio.

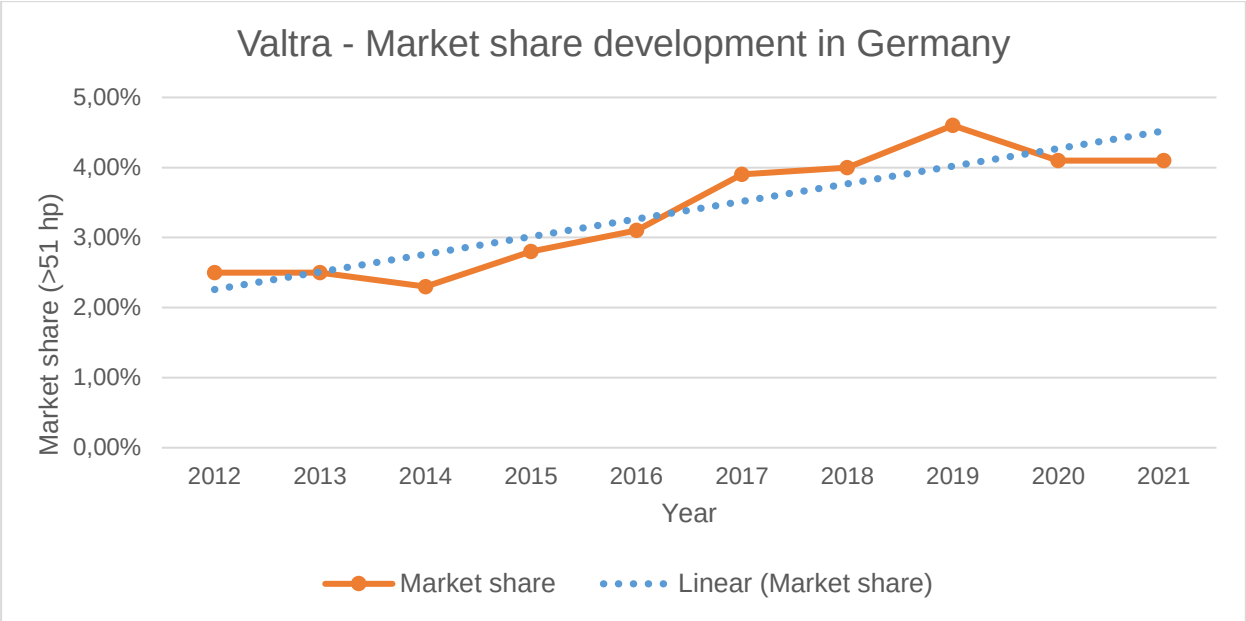

Figure 11: Valtra - Market share development in Germany between 2012 and 2021 (Cf. WIGeoWeb, 2022)

In the AGCO group, Valtra is the underdog - but developing very well, which is illustrated in figure 11 as an example for the German market. A lot of new features and a new modern machine interface including new multifunctional armrest, multicontroller and a new touch display support the appreciation in the German market. Additional comfort features like stepless transmission, unique air suspended front axle and reverse drive unit ex-factory push this progress. Valtra tractors are positioning more and more as an alternative for German farmers, especially for whom the Fendt tractor is too expensive but does not want to change their dealer. Some components from Fendt are also used on Valtra tractors, which makes the brand more interesting for former Fendt customers.

6.1.3 Massey Ferguson (MF)

The beginning of the brand Massey Ferguson roots back to 1953, when the Canadian company Massey-Harris merged with the British Harry Ferguson Limited. The plant from Racine moved to Detroit, the headquarter was in Toronto, Canada. Five years later, Massey Ferguson bought the engine manufacturer Perkins. After additional two years the company took over Landini, which was producing in the 70ies some tractor series for Massey Ferguson – same tractor with other painting. A new factory in Beauvais, France, was opened in 1960. MF had many contracts with other tractor companies in the whole world, which allowed them to build tractors under license from MF. 1970 is Massey Ferguson the worldwide biggest manufacturer of tractors, combines and diesel engines.

With 41 plants in 12 countries and 47.000 employees, MF delivers its products in 166 countries. The MF tractor market share in Europe was in 1983 with 33.750 units 12,5% and globally in 1987 with 18.5% one of the biggest players in this business. (Cf. Bauer, 2003)

In 1993 and 1994, MF was bought by AGCO. It became the most important brand within the corporation. The product portfolio got revised and renewed with additional series. A new spare part center was built in Ennery, close to Metz at the German French border. It is the biggest tractor parts depot in the world. The German headquarter was relocated in 1997 from Eschwege to Marktoberdorf and afterwards to Beauvais.

Today MF has 8 plants in 5 countries. The tractor production takes place in France, China and Brazil, combines are manufactures in Italy and Brazil, other equipment comes from another factories in Brazil and USA (former Hesston company). The product line up for the European market includes 11 tractor series with a power line up from 20 to 405 hp, 4 combine series between 218 and 647 hp, 4 round baler, one large square baler and one HD baler series, mower, tedder, hay rake and telehandler.

The global awareness of MF is a strict separation towards Fendt and Valtra which are (currently) more regionally represented.

6.1.4 Differentiation in the AGCO Corporation

To get an idea about the size of AGCO Corporation, you will see in the chart below (figure 12) the sales and figures from the years 2018, 2019 and 2020. The Net Sales volume of AGCO Corporation was in these years between $ 9.041 and $ 9.352 million. (AGCO, 2021) This is roughly $ 1.600 - $ 2.000 million less than the result of the agricultural division of CNH Industrial, which means that AGCO is about 20% smaller than CNH Industrial AG.

Figure 12: AGCO Sales figures from the years 2018, 2019 and 2020 (AGCO, 2021)

Fendt is the new full liner in the AGCO company with all available AGCO products, MF is a long liner and Valtra the short liner which is only offering tractors. The different product portfolio is one step of the differentiation process. Fendt tractors are only available as CVT models, MF and Valtra are available as CVT and with mechanical transmission. In addition, some equipment variants are reserved for Fendt, for example the new machine interface Fendt one and 60 km/h top speed. Also, the location of the plant is different. All Fendt tractors are manufactured and engineered in Germany, which is well known for a good quality (Made in Germany). Valtra and MF conversely are not built in Germany. Fendt is still the highly innovative and high-tech brand, while MF is producing mainstream tractors and Valtra is the brand for special operations.

One example of the innovativeness of Fendt is the development in the electromobility sector. The first small electric tractor from Fendt with the naming e100 Vario were introduced in 2017 on Agritechnica fair in Hannover. Fendt CEO Christoph Gröblinghoff announced, that the serial production of the version S and V will start in 2024. The manufacturing should take place in Marktoberdorf, Germany. The demand is not only from municipalities, but also high from wine- and vegetable farmers, from Germany, Scandinavia and California. There are actually researches running from Fendt for an electrification of bigger models. (Cf. Michel-Berger & Göggerle, 2022) This electrification development is currently reserved for Fendt within the AGCO company. It could be, that the other two brands will follow when the electrification is rolled out, the demand is high(er) and the technology works well and efficient. This product and brand

differentiation step underlines that Fendt tractors with their image and customer perception is different to MF and Valtra.

Fendt wants to extend the global business into the USA. “It is a huge but difficult market, because American farmers are loyal to their brand and most of them – up to three quarters – decided in the last generations for the national top dogs John Deere and Case. […] In the USA we are a Newcomer, but in the medium term we dare for a double-digit market share. All in all, it is the aim for Fendt for a higher internationalizing in the AGCO company. It should be helpful that Fendt is no longer only producing tractors and has a wide product portfolio, including combines, SPFHs, balers and some others.” (Cf. Marx, 2022)

There is a lot of movement within the AGCO group and also within each brand. It will continue to be interesting to observe the development of the three brands in the future and if a reorganization will take place. The development of the three brands may imply a higher brand and product differentiation or a reduction of both by using more synergies. One example for a possible reduction of differentiation could be a manufacturing of Fendt tractors outside Germany (for example for the US market) or the usage of the plant in Marktoberdorf for the production of tractors from the other two brands. It remains to be seen how AGCO develops and is willing to pay for the brand and product differentiation in the future.

6.1.5 Route 66

The Route 66 from AGCO is a distribution and growing strategy for Europe. Potentially, it will be escalated for other sales regions at a later point of time. The reasons for this new strategy are cost reduction, increasing profitability and realizing the “new” full liner strategy for Fendt and MF. The aim is, that these two brands get an exclusive sales organization and separate dealer network to sell all products from the portfolio of the respective brand and to increase market share for all AGCO brands.

The idea of this strategy was born in 2014 and communicated to the public and the AGCO dealers in 2016. The process is still running, because some dealers still selling Fendt and MF at one location (for example the RWZ outlet in Saulheim, Rhineland-Palatinate, Germany). The challenge is to double the number of dealers in some areas, to have an area-wide sales network for MF and Fendt. Valtra, being the short liner within the concern, will continue to be sold at the Fendt dealerships as additional brand with less or no

competition due to a different customer target group. The AGCO dealers are not allowed to sell tractors or combines from other brands and should sell the complete product line up. Contracts with other implements suppliers about hay & forage machines, balers, telehandlers, sprayers and SPFH are monitored and continuously terminated. Other implement brands are allowed if AGCO is not offering this product segment. Cash and Carry products, such as mowers and tedders are not so difficult to sell like a tractor and getting a better image with branding of Fendt or MF instead of Fella or Lely.

The product governance is important for the product identification and separation and to develop a unique product identity for different customer types. Fendt and MF have a similar product portfolio which means an internal competition for the dealer. In Germany, Fendt is the market leader for tractors above 51 hp, Valtra and MF however have a much lower market share, as illustrated in figure 13. That shows the high affinity of the German customers towards Fendt and much lower appreciation of both other brands. The MF tractors were mostly offered at dual branded Fendt and MF dealer as “second quality” and Fendt as premium. Due to that, it was not possible for MF to get a better market share and reputation in Germany. In other countries it is the other way around. The chart shows also the rise of market share of Fendt in Germany for the last ten years and also the market share growth of Valtra in contrary to MF. Valtra could almost double its market share whilst the market share of MF remained nearly stable.

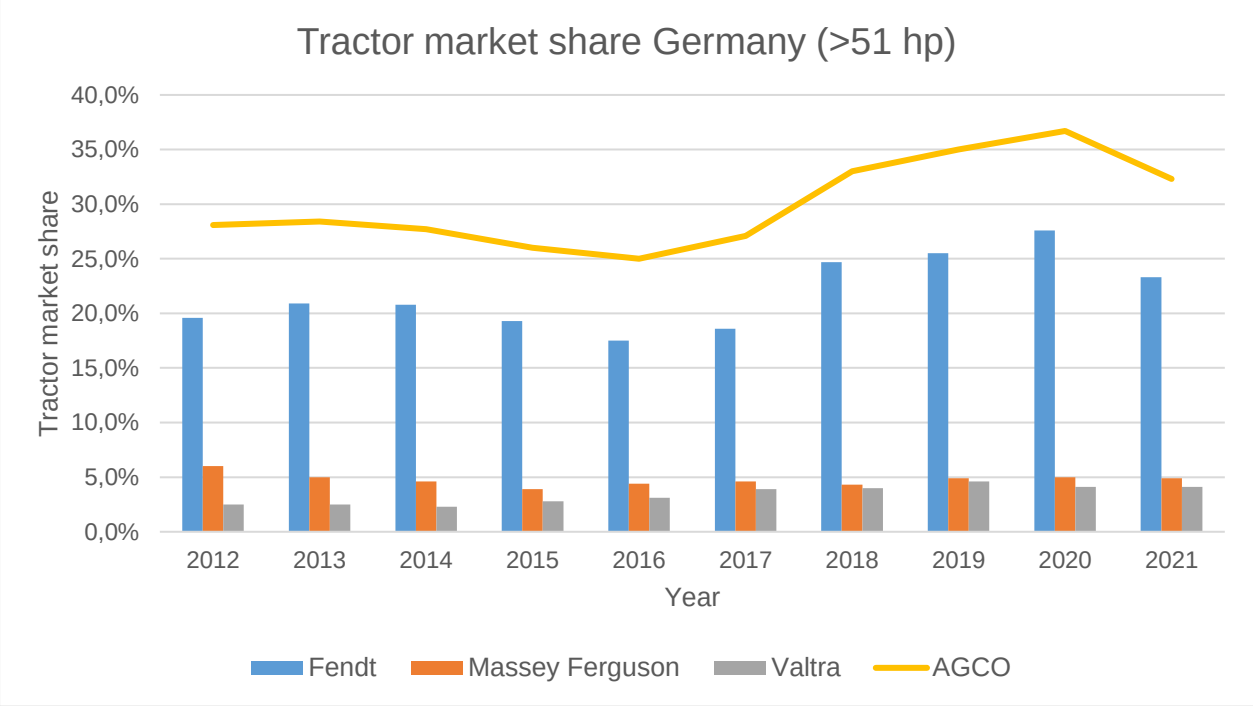

Figure 13: Tractor market share in Germany above 51 hp from 2012 till 2021 (Cf .WIGeoWeb, 2022)

The history of the 3 brands is quite different. MF was in the past one of the biggest manufacturers of agricultural machines worldwide focusing on mainstream products and technology. Fendt and Valtra were in contrast small tractor producers which sold their products more locally and were more specialized. Valtra, respectively Valmet sold their tractors mostly in the Nordics and Fendt in Western Europe but especially in Germany, Austria, Switzerland and North Italy. These two brands had less touch points in the past and do not see each other as opponent. MF on the other hand was a competitor to both brands in the past because it was selling the tractors also in their sales territories. Now the competitor is a sister company and still a rival. Because of these facts, a coexistence at one dealer outlet is not sustainable.

The whole change took much longer than expected. One of the reasons is, that a lot of AGCO dealers in Europe are organized as cooperatives (for example ZG, RWZ, Raiffeisen) and have complicated decision-making processes. That makes changes much slower than in a family driven dealer organization. But AGCO also has family managed dealerships. The reaction and behavior about the new strategy were equal on both dealer types (family business and cooperatives). Actually 80 – 85% of the implantation is done. The product and brand positioning has to be clearly defined for all three brands, as it is planned to use a larger number of components and factories for Fendt, Valtra and MF at the same time. What nowadays is done for the implements, will be copied in the future for the tractor production and therefore a valid product governance will be ever more essential. (Cf. Jungclaus, 2021)

This strategy shows the huge importance of the dealer network regarding sales activities and effort. If one dealer sells multiple tractor brands which are in competition to each other within the same customer segment, the brands will always cannibalize each other at least to a certain extent. To raise market share for both brands and in total for the whole enterprise, it is necessary to divide the dealer network or find additional dealers to outsource one of the brands.

6.2 VW Group

Another good example for an efficient brand and product differentiation is the VW Group. The company contains 12 brands in the automotive and truck sector. Additionally, they are offering from big engines over special transmissions and turbochargers up to finalized power stations. In the automotive sector, the VW group offers 10 different brands, which are displayed in the following chapters. The brands differ in terms of pricing, useability, status, image, etc. The VW group has a big portfolio for the most different customer segments, starting with a small car from about 8.000€ up to luxurious cars with a price of a few hundred thousand Euro. The product and brand differentiation within the VW group is most visible in its automotive sector due to the high quantity of brands and products. Due to that reason only the automotive sector of the VW group will be introduced in this chapter as an example of a great and efficient differentiation strategy.

6.2.1 Differentiation in customer segments

The ten brands are divided into 3 divisions, which are introduced in the next chapters. Every division has its own customer segment and target group with different requirements to the vehicle. There are customers who attach importance to cheap and reliable cars for a small budget, just in order to drive from A to B. Luxury and prestige don't have a big value for them. These customers belong to the group "Volume". On the other hand, there are customers who want to buy a status car, to show their wealth with the good image of the car, which is more expensive than the average price. These cars are also used for every day travelling and belong to the subdivision "Premium". The third segment are sportscars which are not driven every day and mostly used as a second or third car. Driving this kind of car is more hobby than serving a "real" purpose. A lot of power, maximum speed, sport and luxury are most important for this customer segment which is named by the VW group as "Sport". (Cf. Volkswagen AG, 2022)

Running multiple brands with different customer target groups within one company, can make a company more robust to a crisis. This became obvious for VW during the latest Covid-19 pandemic. The biggest impact of the Covid-19 pandemic took place for the Volume group, particularly for VW cars. The operating profit from € 3.785 million in 2019 reduced to € 454 million in the fiscal year 2020. For Porsche on the contrary, it was an insignificant loss from € 4.210 million in 2019 to € 4.021 million in 2020. (Cf. Volkswagen AG, 2021) That underlines the different customer groups and their behavior and financial

prospects. It seems, that luxurious cars are not affected in the same way in a crisis as the Covid-19 pandemic as “normal” cars from the Volume group.

6.2.1.1 Volume

The brands in this group have together the biggest volume in terms of market share, sales figures and sales revenue. It includes Volkswagen, Volkswagen Commercial Vehicles, Skoda, Seat and Cupra. A short description of the individual brands and their history follows. Volkswagen Commercial Vehicles is due to the different scope of application not comparable with the other car brands and because of that there will be no need of a further elaboration.

1. Volkswagen

“The Reichsverband der Deutschen Automobilindustrie“ (RDA) (Reich Association of the German Automobile Industry) commissioned Ferdinand Porsche to design a Volkswagen on June 22, 1934. However, the companies that made up the RDA had reservations about Adolf Hitler‘s requested price limit of 990 Reichsmarks. […] The ”Deutsche Arbeitsfront” (German Labor Front) filled the gap in the chain of responsibility in 1937. […] On May 28, 1937, the ”Gesellschaft zur Vorbereitung des Deutschen Volkswagens mbH“ (Company for the Preparation of the German Volkswagen Ltd.) was established in Berlin. The name was changed to ”Volkswagen GmbH“ on September 16th, 1938 and was entered into the Commercial Register on October 13.” (Grieger, et al., 2008) Volkswagen was in the beginning one single brand company and merged step by step other brands to become the multi brand company that it is today – the Volkswagen group. The company was born to give “normal people” in Germany the possibility to buy their own car – mobility for everybody. In comparison to other European countries, the German motorway infrastructure was more in focus than the railway network, which made the automobility more interesting and necessary for the citizens.

The delivery of 9.3 million vehicles (cars and commercial vehicles) worldwide in fiscal year 2020 makes Volkswagen still the biggest player within the Volkswagen group. Due to the Covid-19 pandemic the decrease was 15,2% in year-on-year comparison. With a sales revenue of € 222.9 billion and an operating profit of € 10.6 billion it is the biggest brand in the company. The delivery share of the VW car segment was 5,33 million cars

with a sales revenue of € 71.1 billion and an operating profit of € 454 million in 2020. (Cf. Volkswagen AG, 2021)

2. Skoda

Skoda is one of the oldest car manufacturing companies in the world and is located in the Czech Republic. The first Skoda car was built in 1905, which means over 30 years earlier than the first VW. The brand was strongly characterized by World War I and II to produce military vehicles at those times and afterwards by the Red Army with great destruction and the change from Czechoslovakia to Czech Republic. The brand Skoda was bought in the year 1991 by the VW concern. Renault and BMW were also interested in buying Skoda, but the government of Czechoslovakia decided for VW, due to their future vision and concepts. With this merge, Skoda achieved with its new Models again a notably market share in western Europe. With nearly 1 million sold cars in 2020, Skoda is much smaller than VW. (Cf. Skoda, 2022)

3. Seat and Cupra

The brands with the lowest market share and sales volume in this group are Seat and Cupra, which is the sportive and more powerful brand of Seat. Seat was found 1950 in Spain and is nowadays the brand of the Volkswagen group with the youngest customer profile in Europe with conspicuous designed cars. The cooperation between Volkswagen and Seat started in 1982 and ended 4 years later in taking over of Seat by the VW group. Since 1984, the Seat plants in Spain are additionally manufacturing the VW Polo and Passat, to use synergies. The first Cupra (Cup Racing) model, a Seat Ibiza Cupra, was presented in 1996. Seat has a long history in motor sports. With the intent to create Race Cars for the road use, the own brand Cupra was formed. In the beginning it was a special model from Seat with more power, in 2018 the new brand Cupra with own logo was presented on the auto show in Geneva. Cupra is a subsidiary company of Seat and represented about 7% of the Seat deliveries in 2020. (Cf. Seat, 2022)

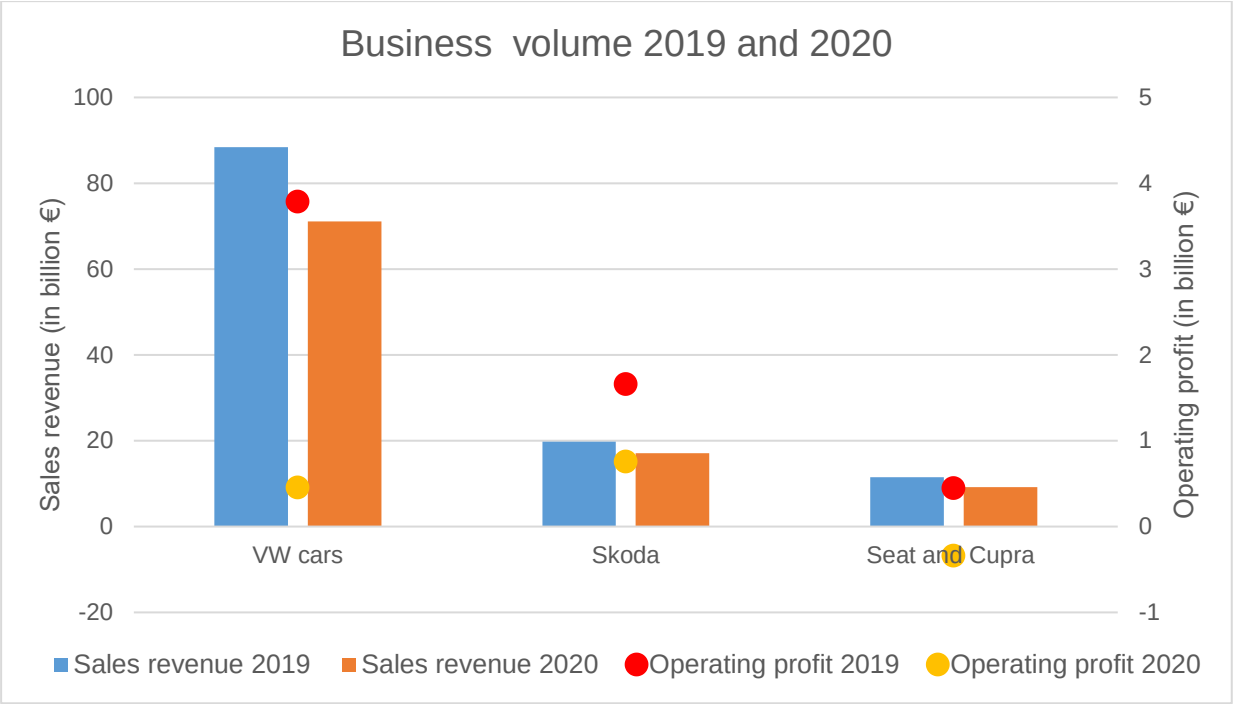

Figure 14: Business volume for VW cars, Skoda and Seat with Cupra in 2019 and 2020 (Volkswagen AG, 2021)

The chart in figure 14 is an extract from the 2020 and 2019 annual reports of the brands VW cars (excluding commercial vehicles), Skoda and Seat with Cupra. Seat and its subsidiary company Cupra are accumulated as one figure for a better comparison.

The Sales revenue from VW in 2020 with 71.1 € billion is more than four times higher than from Skoda with 17.1 € billion and more than seven times more than Seat together with Cupra (9.2 € billion). This is an effect of the big differences in the number of deliveries. VW cars had 2.84 million deliveries, Skoda in contrast 0.85 million and Seat together with Cupra 0.48 million cars, which were delivered in the same year. Under normal conditions, Volkswagen is the most profitable brand within this Volume group (operating profit in 2019: 3.785 € billion). In the same year, Skoda yielded an operating profit of 1.66 € billion and Seat incl. Cupra 0.45 € billion. The comparison of the business volumes of the three brands in this group displays the significant importance of Volkswagen cars and the huge differentiation in terms of market share and profitability. In the year 2020, due to Covid 19, Volkswagen cars and Seat with Cupra were more affected in profitability than Skoda. (Cf. Volkswagen AG, 2021)

6.2.1.2 Premium

This group contains the four luxury brands Audi, Lamborghini, Bentley and the Motorcycle company Ducati. For the comparison of the several car brands within the VW group, Ducati is not important and will not be regarded in this line-up.

1. Audi

"Audi aspires to spearhead the Group both technically and technologically." (Audi, 2021) This description shows the standing of the brand within the VW group. Audi is an innovative car company with the slogan "Advance by technology" and was founded 1909 in Zwickau, Germany. From 1964 till 1966, the Volkswagen group took over the Auto Union (later Audi). Since 1980, Audi cars are available as Quattro, which is a four-wheel drive transmission with a perfect power distribution and power transfer. This feature made Audi more popular, and Quattro became a synonym for four-wheel drive transmission. Audi belongs to the premium car manufactures since the 21st century and is competitive to other German premium car brands Mercedes Benz and BMW. With the sportive S-Line configuration or the S/RS-Models, Audi offers sportive Racing cars with up to 620 hp. The product portfolio includes from small mainstream cars over big luxury vehicles to on road racing cars. The actual focus is on electromobility, the development of a new Audi engines generation has stopped, actual engines will be redesigned for the upcoming emission guidelines. Audi is the luxury car brand from the Volkswagen group for the wide middle and upper class. "Vorsprung" ("Advance") is Audis' global brand promise that is currently redefined by the brand with the four rings. (Cf. Audi, 2021)

2. Lamborghini

Lamborghini is an Italian manufacturer of exclusive sports cars, founded in 1963, and belongs to Audi since 1998. At the Geneva Motor Show in 2013, Lamborghini presented the new model Veneon, the most expensive (sales price about € 3 million) race car for road usage. The actual product portfolio covers 2 sports car models and one SUV. The worldwide first Super SUV Ursus was presented in 2017 defining a new product niche in the luxury segment. (Cf. Volkswagen AG, 2022)

3. Bentley

Bentley in contrast is a British car brand which produces luxury cars only, with 4 models being available (Coupé, Roadster, Limousine and SUV). The brand is globally known and

appreciated as a luxury and powerful car brand. It was bought by Rolls-Royce in 1931 due to insolvency. In 1997 the brand was taken over by the VW group and split afterwards again into Bentley (VW) and Rolls-Royce (BMW). Bentley strives for becoming the leading manufacturer of luxury electric cars. Target is to produce only electric cars from 2030 onwards. (Cf. Volkswagen AG, 2022) Bentley is a status car which symbolizes power and wealth and is also used as state limousines.

6.2.1.3 Sport

Porsche is the sole representative in the group “Sport”. The brand is known around the globe for exclusive powerful sportscars with German engineering. In 1931, Ferdinand Porsche founded an engineering department “Dr. Ing. h.c. F. Porsche GmbH, Konstruktionen und Beratung für Motoren und Fahrzeuge” in Stuttgart which produced own sportscars after 1945. The collaboration between Porsche und Volkswagen exists since 1934 in terms of product development and test phases, which Porsche did for Volkswagen. The famous model “Käfer” from Volkswagen was designed and engineered from Ferdinand Porsche. Fourteen years later, the first Porsche Model 356 “VW-Sportswagen” was introduced to the market, which consisted of a lot of VW parts. (Cf. Dr. Ing. h.c. F. Porsche AG, 2022)

After 1994, Porsche became the world most profitable car manufacturer and extended its product line up. From 1993 to 2002, Porsche was managed by Ferdinand Piëch, grandson of Ferdinand Porsche and principal shareholder of Porsche AG was CEO of Volkswagen and executive chairman of the Volkswagen group until 2015. Porsche extended its participation in Volkswagen in the following years and tried to take over Volkswagen but cancelled the transaction due to financing problems. The Volkswagen group completely assumed the Porsche AG in 2012. Today, Porsche has a product portfolio of ten different models, from Boxster with a lower entry price, over luxurious SUV and limousine models, up to the famous sports car Porsche 911 Carrera and Turbo. Porsche was and is still today a synonym for wealth and speed.

6.2.2 Differentiation in geographical offering

Different geographical offerings are a possibility for a brand and product differentiation of a multi brand company. The VW group is not selling all their brands on every continent or rather in every country. They differentiate their selling regions in four areas, Asia-Pacific,

South America, North America and Europe including the remaining countries. Figure 15 shows the distribution of the car brands VW cars, Skoda, Seat with Cupra, Audi, Bentley and Porsche within the different regions. Lamborghini and VW commercial vehicles are missing in this contemplation but are not important for the demonstration of the regional differences. The brand Ducati is also not regarded in this consideration because the brand is only producing motorbikes and due to that there is no possible competition and no differentiation needed.

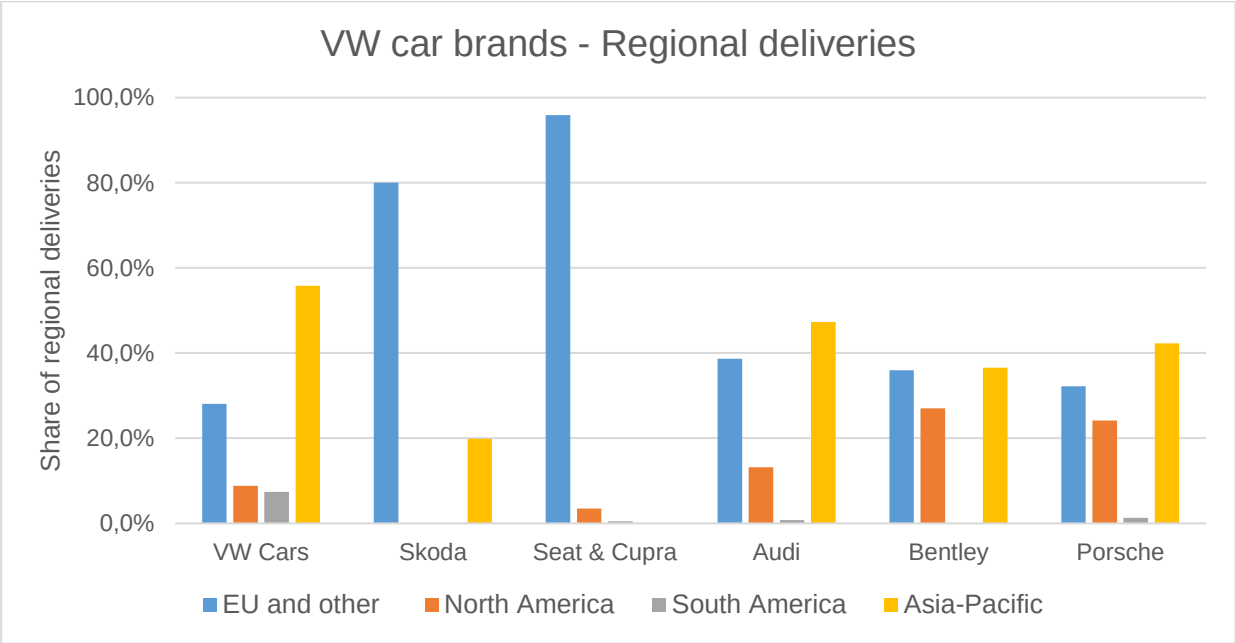

Figure 15: Volkswagen group - geographical brand differentiation (Volkswagen AG, 2021)

The bar chart in figure 15 displays the regional deliveries of the six respectively seven car brands. The delivery of a car presupposes the possibility to buy it in the corresponding country. A perfect way to strengthen a brand in a specific country is to delete its competitors. VW, Skoda and Seat have some similar models with the same chassis, for example Seat Ateca, Skoda Karoq and VW T-Roc or as another example Skoda Kodiaq, VW Tiguan and Seat Tarraco. This characteristic leads to a competition between the sister brands and in the end to lower operating profit of each brand and of the VW group. Seat is very popular in the region “EU and other”, but nearly not represented in the other regions. Skoda is in addition successful in Asia-Pacific and the cars from VW are presented in all 4 regions, which also explains the much higher business volume, which was highlighted in chapter 6.2.1.1. The brands Audi, Bentley and Porsche are not

comparable with any of the other brands within the VW group, and the models are more expensive. These 3 brands are equally sold in three regions, only in a small volume in South America.

This differentiation in the geographical offering of the brands of a multi brand company is a possibility with limited investments to avoid cannibalization of the own brands and increase profitability for the holding company. Knowing the consumer behavior and their preferences within different regions is key for this strategy. Otherwise, there may be a risk of losing customers to the competition if the preferred brand of the company is not offered in the country and the consumer don't like to buy and drive the offered brand. The consumer preferences can be influenced with marketing and advertising.

Another advantage of the geographical differentiation is, that not so many dealers are needed as if all brands would be fully available on all continents respectively in all countries worldwide. That means for the company less employees in the markets are needed and more focus on the available brands in the particular market. For some markets "special" models are created and offered by the Volkswagen group. In the US for example the big SUV VW Atlas is offered, which is not available in the EU market. This model is conceptualized only for the North American market to fulfill the customers' demands. Designing a regional product is much easier for one brand than for all brands and not so expensive for the parent company.

6.2.3 Different product line up

Every brand in the VW group has its individual history, which is still highly respected and at least partially continued after the takeover by the VW group. Each car company has its own identity and appeals other customer segments. Due to that, competition between the VW brands is relatively low. The cars are still sold under their original name, which preserves customers' brand loyalty.

For using synergies, saving costs, and reducing complexity, some components and factories are used for different brands and models. In Wolfsburg for example the following models are manufactured:

- Volkswagen Golf / Variant
- Volkswagen Touran
- Volkswagen Tiguan

- Seat Tarraco

An example for a different product portfolio by using synergies are the models Seat Ateca, Volkswagen Tiguan and Skoda Kodiaq, which are using the same chassis (“MQB = Modularer Querbaukasten”). But the Seat model is smaller than the VW Tiguan and the Skoda Kodiaq with 4,7m the longest vehicle in the comparison. (Cf. Voswinkel, 2016) The other dimensions of the three sister models are almost equal in size up to a few centimeters. In contrary to the VW Tiguan, the production of the Skoda Kodiaq and Seat Ateca takes place in Kvasiny, Czech Republic. All three models are powered by the same engines, but with the choice between 9 different engines, the Tiguan offers four variants more than the Skoda Kodiaq and the Seat Ateca. Another distinguishing feature is the styling with different faces of the hood and the interieur of the cars. Layout of dashboard and entertainment system are completely different and follow the typical design language of each brand. By using different materials for the interieur, different customer requirements can be served. The demand for family SUVs with up to seven seats is so high that the VW group decided to create such a model for all three brands in order to maximize the market penetration. The entry-level price for the three models is very different. Seat is the cheapest in the comparison, VW the most expensive one and Skoda in between the two others. This is at least partially caused by the configuration of the base model and difficult to compare. Especially in Europe where all three brands are highly represented, the Volkswagen group offers the right model for every customer segment. The customers in Europe can decide if they are willing to pay more or less money for the same type of car depending on the desired equipment standard.

This is just one example in the VW group to use synergies and have one chassis for several models. The cars are similar in their size but have their own identity and brand image, which reduces the comparability and replaceability.

6.2.4 VW strategy: NEW AUTO

The new strategy is based on the Paris convention to reduce the CO2 footprint of 30% till 2030. In the same timeframe, the VW group assumes, that 50% of the sold cars will be electric ones. Sustainability will be key in the future.

“SSP” will be the new super modular technique which will be used for all brands and will be the foundation for autonomous driving. The differentiation between the several brands

will be a various combination of different modules with different sizes of platforms. The unique combination for every model will avoid a unit vehicle over all brands and models. It is important for the VW group, that the character of every brand will be preserved.

Another focus will be on new software solutions to develop from a car manufacturing company to a mobility concern. For a stronger customer loyalty, VW plans to be a provider of own batteries with repowering option and a fast-charging station network. New mobility solutions are autonomous shuttle buses for transporting people and goods, car rental, subscription, car sharing and Ride-cab. (Cf. Volkswagen, 2021)

Volkswagen tries to reinvent the car and the mobility of people. The intention is to be an outstanding company with individual solutions to differ inside the company with different brands and outside against the competition.

With these new strategies and future plans of Volkswagen there will be many more dimensions for a differentiation process than we have today. The differentiation will be more software based and linked to different tasks the new mobility will bring along. There will be new solutions to travel from A to B.

7 POTENTIAL FOR A DIFFERENTIATION

Differentiation between several brands within a multi-brand company can be manifold. It depends on the complexity and purpose of usage of the product. The size and variety of the customer groups is significant for the product and brand differentiation. Different customer groups make the differentiation easier because of several development opportunities for each brand and product. Due to high complexity of tractors, there are a lot of possibilities for a differentiation. In the following chapters you will find a choice of differentiation options, which are worth to have a closer look to.

Due to the usage of complexity reduction and cost saving, brands within one multi-brand company don't differ as much as independent brands among each other. On financial side the synergies are an advantage, for the uniqueness it is a disadvantage.

7.1 Product portfolio and product quality

Every company and brand has its individual product portfolio, which is adjusted to the country, where it is sold. In addition, it is related to the demand of the customers and mostly congruent with the offering from comparable competitors. The John Deere product line up for example is almost equal to the Case IH line-up. Both brands have their origin and their headquarter in the US and sell their products worldwide. The product portfolio differs from country to country or from continent to continent. In some non-EU countries, both companies are also selling other AG equipment, for example for Hay and Forage, Planting, Seeding and Spraying. These machines are not offered in Germany and most other European countries, because there are a lot of European manufacturers, which are highly appreciated and well known for their good quality. Due to this highly competitive environment both John Deere and Case IH decided to concentrate on the core portfolio for a higher efficiency and profit.

Table 2 below shows the tractor product line up from Case IH with the comparable tractor segment from John Deere for the German market. On the red side all series from Case IH available for German customers are listed. Every series exists of three to seven different models which vary in power and furthermore in the availability of different options (for example in the transmission type). In yellow you will find the John Deere series, which are comparable in terms of power, size and options. The 6 M series of John Deere starts at 90 horsepower and goes up to 195 hp with different frame sizes. Due to that it is a

competitor for the Case IH models Vestrum, Maxxum, Puma SWB and LWB. Because of the different transmission options, the 6R fits better for the Maxxum and Puma range in this comparison.

AG product line up Germany: Case IH vs. John Deere

Case IH - Models	Power (hp)	John Deere - Models	Power (hp)
Quantum	75 - 107	5 G series	73 - 105
Farmall A	55 - 75	5 E series	49 - 75
Farmall C	58 - 114	5 M series	75 - 115
Luxxum	100 - 120	5 M series (4 cylinder)	90 - 115
Vestrum	100 - 130	6 M series (small frame)	90 - 120
Maxxum	115 - 150	6 R series (small frame)	110 - 150
Puma SWB	140 - 175	6 R series (medium frame)	145 - 185
Puma LWB	185 - 240	6 R series (large frame)	175 - 250
Optum	270 - 300	7 R series	250 - 350
Magnum	310 - 400	8 R series	280 - 410
Steiger / Quadtrac	370 - 620	9 R series	440 - 640

Table 2: Product portfolio of Case IH and John Deere in Germany (own source)

This comparison demonstrates that different brands have a similar product portfolio in the same country. Almost every John Deere model has a suitable counterpart on Case IH side and the other way around. This is caused by the demand of the market and requirements from the customers. The worldwide tractor portfolio of John Deere and Case IH is much bigger, the German offering is just a part of it, which is selected by the regional marketing and sales department. There are multiple reasons, why a model is offered or not:

- Customer segments: Who are my customers and what are their requirements?
- Price: Is the customer willing and able to pay for it?
- Regulations: Is the tractor compliant to the market responding regulations? For example, engine stage or tractor mother regulation.
- Competition: How big and strong is the competition in this sector?

On the contrary, Fendt has another product offering which is more concentrated on the European and especially German market. Fendt offers, in contrast to John Deere and Case IH, only tractors with CVT transmission and the product portfolio of Fendt standard tractors starts with 113 hp. The product line up is much smaller and targets fewer customer groups but is more focused on the professional German farmer and contractor.

The product range of AG companies varies. Steyr and Valtra for example are offering only tractors. As such they are often referred to as short liner in the AG sector. Other brands like Case IH offer other harvesting equipment (for example combines, telehandlers and balers) in addition and are long liners, which have a wider machine portfolio of Ag equipment. Other examples are New Holland and Fendt as full liners. Both brands are offering tractors, combines, SPFHs and equipment for tillage, seeding, baling, hay and forage. The development in the agricultural engineering sector shows, that there is a trend to become a full liner. “At Agritechnica 2019, New Holland introduced its new strategy within the CNH concern. The brands in the concern should differ much more from each other. Since 2015, New Holland like to develop to a full line supplier” (Cf. Tastowe, 2021)

The product quality for agricultural machines and especially for tractors is of great importance. Since it is important for the customer to invest in a reliable and durable machine, quality is majorly important for the manufacturing companies who strive to serve the customers’ needs best. High product quality can also bring an advantage against competitors in this segment. The manufacturers of tractors differ in the amount of Research and Development (R&D) expenses, they spend on test engineering and product quality. “Test engineering in agricultural machinery ensures high quality in all machinery components. Latest instrumentation contributes to improve test procedures or creates new opportunities that were not known or possible. Today the tractor still is in focus, but its fuel consumption well documented due to realistic test procedures. High investments in those procedures today make sure that in the future this information will be even more reliable.” (Griepentrog & Volz, 2014) The product quality of tractors holds an immense opportunity for a differentiation for the manufacturers.

Quality is not only dependent of the test engineering, but the choice of the components which are used is also significant. As a general rule, high-priced components tend to have a better quality than cheap ones. Therefore, a premium tractor brand has both higher

R&D expenses as well as production costs than a non-premium brand. On the upside, however, customers are willing to pay more for a high-quality tractor which they can rely on. Bottom line it will be key to find the right balance between additional cost and additional willingness to pay to make sure that the high-quality leads to a positive Return on Investment and brings a financial benefit for the manufacturer as well.

Furthermore, the country in which the product engineering and the tractor assembly in the factory take place can make a difference. Different countries have different levels of education and manufacturing standards, but also the manufacturing costs differ. “In the literature on international marketing it is generally agreed upon that the location of production has considerable effects on consumers’ beliefs about product quality.” (Haucap & Wey, 1997) Low-income nations have mostly a lower education than countries with a high per capita income. It is clearly visible, that high-end tractors are produced in high-income and cheaper models in low-income countries. The premium brands Fendt and John Deere are producing most of their tractors which are sold in Western Europe in Germany, which represents with “made in Germany” a high-quality standard. “The terms “made in Switzerland” and “made in Germany” were used among other things to transfer image attributes like “high quality” and “reliability” on the own enterprises and their performances. […] It shows that German products compared to the average image of the remaining industrial countries only have relative strengths. This especially applies for the dimensions “international top quality” and “technological particularly high-quality”.” (Cf. Kühn, 1993) The production location has a significant impact on the image and quality of a tractor brand and its models. Due to that it is a differentiation possibility for tractor brands. The past showed that some products which were formerly developed and produced in Germany and afterwards the assembly line moved to other countries with a lower quality standard, the assembling quality and consequently the product quality suffered. An example is the VW Käfer production in Nigeria. “The complaints about sloppy mounted assembled cars accumulate. […] The VW Käfer, which has a worldwide good reputation for its robust technology with VW as an appreciated manufacturer for durable cars which are successful running in Brazil, Mexico and South Africa, has in Nigeria a bad reputation as non-reliable car.” (Cf. Der Spiegel, 1979).

7.2 Digitalization, smart farming and innovations

The new generation tractors don't come only with an engine, transmission and hydraulic motor, they are offering much more to the customer. Digitalization in agricultural engineering has become an important part and begins with ISOBUS and ends with agriculture 4.0.

"After 20 years of research in "precision agriculture" there are nowadays many types of sensors for recording agronomically relevant parameters, as well as many farm management systems. Electronically controlled machines are state of the art. In fact, technology is now capable of automating cyber-physical systems by networking between different machines. This is what we call "agriculture 4.0" […] Automatic data recording only helps farm results where the analysis of the collected material takes less time and allows more profit to be made compared with good management decision based on gut feeling and experience. The largest portion of added value deriving from the new technology, however, today lies with the machinery and not the agricultural products." (Cf. Weltzien, 2016)

"Agriculture 4.0, as the fourth evolution in the farming technology, puts forward four essential requirements: increasing productivity, allocating resources reasonably, adapting to climate change, and avoiding food waste. As advanced information systems and Internet technologies are adopted in Agriculture 4.0, enormous farming data, such as meteorological information, soil conditions, marketing demands, and land uses, can be collected, analyzed, and processed for assisting farmers in making appropriate decisions and obtaining higher profits." (Zhai, 2020)

Aim of developing these mostly software-based solutions, is supporting the driver of the vehicle at work and the farmer in taking agricultural decisions, reducing time in the field and saving money. In general, these features should lead to an increase of efficiency and profitability for the farmer and contractor. Due to the structural changes in the agriculture, the farmer relies on this support. Lower number of employees and especially professional employees, bigger machines, change of climate and increasing managed surface per farm became very challenging for farmers and contractors and will become even more challenging in the future. Features like advanced farming systems and telematics help the farmers optimize the use of resources like reducing work time, fertilizer, plant

protectants and fuel. The tractors can be monitored in real time and work orders can be send via push message from the office to the display in the driver cabin.

Digitalization and smart farming are currently only available for the high-end tractor models of a few brands, which are producing professional farming equipment (for example John Deere, CNH, AGCO, etc.). It is used on big farms and by contractors, where the additional cost for the systems brings an economical benefit and where the support is needed. Other customer segments normally, with a few exceptions, don't use these options by now. These customer segments are for example small farmers, part-time farmers, hobby users and users outside the farming business. Regarding the market share in Germany and Europe, a lot of the tractors are not or with only a few smart farming options equipped but this group is not representing the professional customer and the customer of tomorrow. The professional customers mostly purchase these features, and they bring a high value for them. For some farmers and contractors, the available smart farming options are the decision maker for the tractor brand they buy. Innovations and an efficient smart farming product portfolio are key for purchasing tractors for professional customers of today and tomorrow. These professional customers are very important for tractor manufacturing companies because of the high business volume. These features still distinguish tractor brands for professional and non-professional customers and will help them differentiate even further in the future. John Deere had a lot of innovations in this sector in the last few years and is well appreciated from big farms and especially professional contractors. Smart farming and digitalization in the agriculture and on agricultural machines is significant and delivers a big differentiation potential for tractor brands. That depends on the customer focus group of the tractor manufacturing company.

Innovations like My John Deere and My Case IH are internet platforms which are connected with the tractor fleet of the customer. Tractors which are equipped with telematic soft- and hardware can share data on their machine status remotely. The owner or fleet manager of the farm or the contracting business has the possibility for a real time monitoring of his whole tractor, combine and SPFH fleet. Users are able to check different parameters, for example the location, fuel level and consumption, oil temperature, working hours, error reports, etc. Also, the dealer and the manufacturer, if allowed by the customer, is able to see this information and can react more efficiently if an error code occurs and the machine has technical issues. The support is more purposive, and the dealer can arrange directly spare parts for a repair if needed. If the dealer is not able to

help or needs support from the manufacturer, specialists from the manufacturing company have the possibility to support the dealer to ensure the operating reliability. This innovation is especially appreciated by big professional farms and contractors, where a breakdown of a machine means a big financial loss. One example is the breakdown of an SPFH in the harvest time. The whole transport logistic would be affected by the breakdown of the harvesting machine which extends the financial loss even more. It is one important differentiation option to convince new customers and to increase customer retention. This platform in connection with the telematic solution on the machines is a continuous development process and will bring further support for the owner and driver in the future.

Due to the current situation about the energy crisis, innovations for alternative fuels and energy are more than ever significant and pioneering. There are different concepts from several manufacturers of agricultural machines. Fendt for example introduced the first completely electric tractor with the naming e100 Vario on Agritechnica fair in Hannover in the year 2017. “AGCO/Fendt has made a name for itself in the electrification of agriculture. For many years, Fendt has been developing practical solutions for the efficient use of electrical propulsion systems. The Fendt e100 Vario now becomes the first practical, battery-powered tractor which can be used in normal operation for a full working day without the need to recharge.” (Fendt, 2017) The tractor should be able to work five hours under actual operating conditions and the recharge of the battery up to 80% should be realizable within 40 minutes. At the moment this tractor model is the only electric model from Fendt which was introduced to the public. Electrification has several advantages against tractors with diesel engine due to noise level, exhaust gases and the possibility of oil leakage. Due to these reasons, the work spectrum is wider and new customer segments may be disclosed with this new technology. This new model will be unique in the tractor market. Because of the unique drive concept, the competition in some special customer segments is much smaller respectively not existent, when demanding specifications can only fulfilled with electric drive without exhaust gas emissions and noise pollution. In most of the agricultural applications this new model will compete with already existing tractor models from other brands with diesel engine.

Other manufacturers follow other approaches, New Holland on the contrary invented the first serial production of a 100% Methane tractor. “The New Holland T6 Methane Power is the world’s first 100% methane powered production tractor and is key to CO2 reduction

without compromising performance. […] Alternatively, refilling can be performed directly from the gas grid network or at specific biomethane stations New Holland can provide an eco-friendly solution to all your business needs. With the same levels of power as its diesel equivalent, you also benefit from up to 30% lower running costs. Producing 99% less particulate matter, reducing CO2 emissions by 10% and overall emissions by 80%, when using biomethane near-zero CO2 emissions are achievable." (New Holland, 2022) New Holland is not only offering the tractor, but also providing a filling station with an internal technical preparation of the Methane gas. The usage of Methane gas instead of diesel is primarily interesting for farms with own biogas plant to produce their own fuel which is cheaper than buying it from an external provider. It can be also interesting for farms close to a biogas plant, if they can buy gas from the biogas plant operator for a cheaper amount than diesel respectively gas. This could lead to a win-win situation for both, the fuel is cheaper for the farmer and also for the biogas plant operator, because the invest in the technical infrastructure of the gas preparation is paid by several users. A big advantage of the biogas usage is the closed recycling economy which is illustrated in figure 16. This biogas fuel can be, in contrast to diesel, gasoline and propane gas, autonomously produced by the farmer and reduces the dependence towards the energy providers and optimizes the financial planning security for the company.

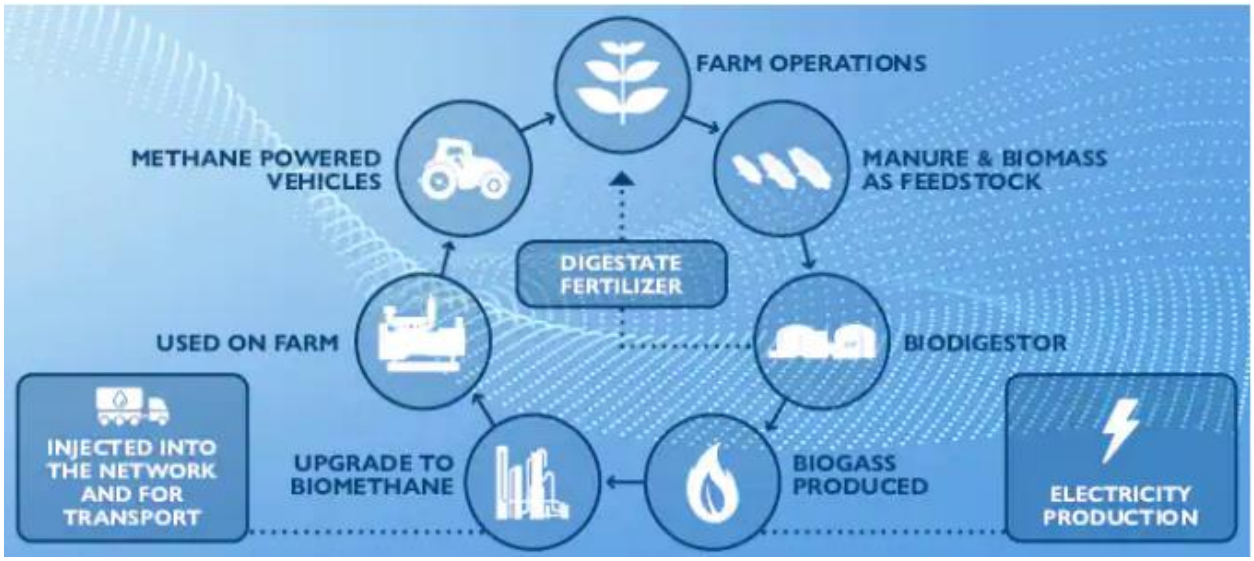

Figure 16: Closed recycling economy of biogas usage on agricultural machines (New Holland, 2022)

There are a lot of different technical features, smart farming options, vehicle concepts and other developments and innovations which can lead to a product and brand differentiation today and in the future. Upcoming requirements for new machines, such as new exhaust regulations, reduction of sprays and fertilizer, documentation obligation, reduction of employees on farms, narrow timeframes, etc. guide to an acceleration of continuously improvements and developments of tractors and other agricultural machines. This number of developments and innovations provides space for a large technical and software-based differentiation.

7.3 Customer segment, price sensitivity and brand positioning

Tractor customers are not always professional farmers and contractors, but also other customer groups purchase tractors. Part-time farmers for example do the farming business beside their “normal” work and don’t earn their main income from producing agricultural goods. Often their former generations were full-time farmers but due to increased economic pressure, they decided to earn their living in another employment and run the farm as a side business only. Main reason for farmers not being able to make their living from the farm is the structural change in the agriculture, which is mentioned in the introduction. “The full-time farms earn more than 50% of their income with their farming business, the part-time farmers less than 50%. By this definition are after results of the agricultural census in 2020 [in Germany – author’s note] meanwhile 57% of the individual enterprises managed as part-time and 43% as full-time farms. 2010 were the shares of 50% each.” (Cf. Deter, 2022) Figure 17 demonstrates the surface distribution of the agricultural landscape and share of farms in Germany for part-time farms for the years 2010 and 2020. This graphic shows that the farming area and also the number of farms for part-time farms increased significantly and a trend is visible.

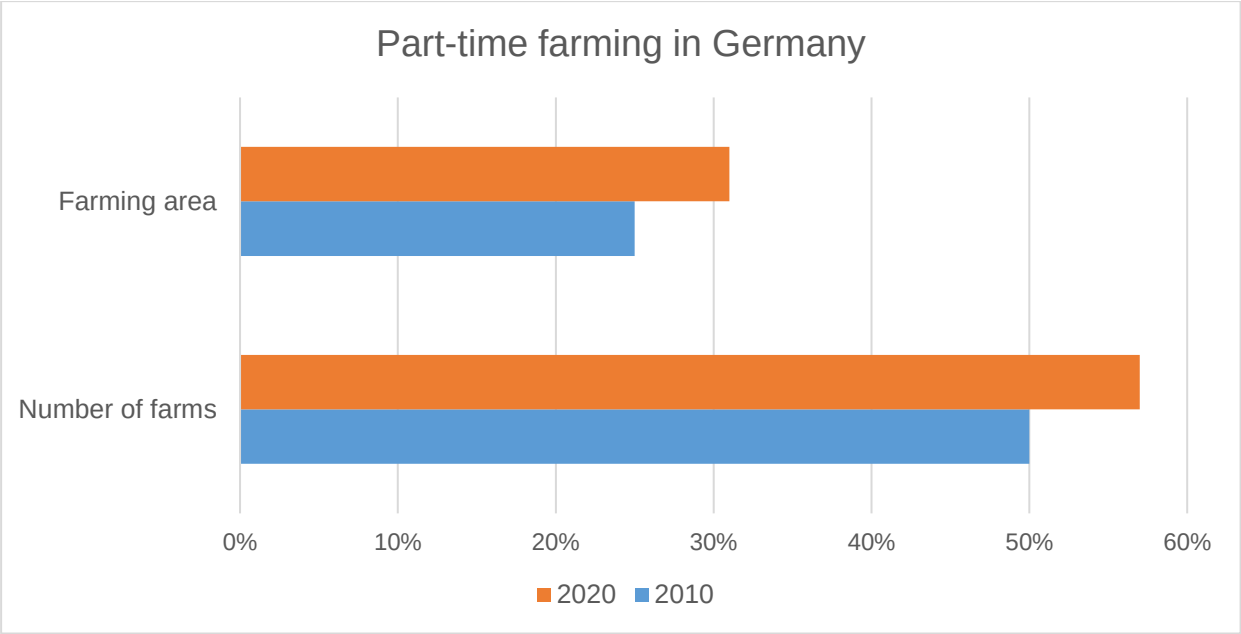

Figure 17: Part-time farming in Germany
(Cf. Deter, 2022)

This structural change has an impact on the agricultural machinery industry. One advantage of part-time farmers is, that they earn money beside farming and invest it in agricultural machines. They have the possibility to invest anticyclical in comparison to full-time farmers and makes the sales business less volatile. Mostly they spend more money for agricultural machines in relation to the agricultural landscape they are cultivating than bigger farms. A disadvantage is, that due to time issues they often outsource some tasks to a contractor which reduces the occupancy rate of their own tractor and extend the changing interval.

Among farmers there are different customer groups depending on farm type. Dairy farmers for example are mostly price sensitive customers in terms of buying a tractor. Often the tractor is not high-end equipped, and the customer cares more about their animals and their well-being than about the tractor. The brand of the tractor is for them not so significant as it is for other customer groups. On the other hand, arable farmers are usually more technical oriented customers and purchase better equipped tractors, also with advanced farming systems on board. These customers are not (so) price sensitive. The brand of the tractor and the product portfolio which the brand is offering, are elementary for the purchase decision.

Contractors can in this consideration be seen as special type of farmers with a high tractor occupancy rate up to 2.000 working hours per tractor and year and mostly a high-end

configuration of the tractors. The tractor brand and the equipment of the tractor is significant for this group. In addition, the dealer, the service availability and professionalism are also very important factors. The buying decision of this customer group is normally less influenced by the price and is due to that less price sensitive. Because of the machines' high utilization level, the TCO for the customer is only slightly affected. In Germany, the most fleets of the contractors consist of Fendt and John Deere which are representing the premium tractor market. Contractors are the most demanding customer group but is also the most profitable one. The tractor fleet of contractors consists in many cases only of young HHP tractors. The change interval is, due to the workload of the tractors, frequent, often after a few years of usage.

Another customer segment, especially for small tractors up to 70 - 100 hp with simple technology, is "Hobby". The owner purchases the tractor for private usage, for example having own horses, own firewood production, own big garden, etc. These customers are price sensitive and have a very low occupancy rate of their tractor. Tractor brands from Far East discovered the European market with cheap small tractors for private owners. Examples are Kubota, Solis, Iseki, Kioti, etc. which are increasingly expanding. In terms of price, Western tractor brands cannot compete with these. The market share of this customer group is constantly growing however, this product range tends to be less profitable for manufacturers than products targeting professional customer segments.

A growing segment is the usage as municipality vehicle. Because of the top speed of 50 or 60 km/h, the tractor is an efficient alternative to trucks and other vehicles (like Mercedes Unimog). Tractors can be used for several operations and are universally applicable for a better efficiency and cost reduction. Mostly, standard tractors with a few special options for municipality applications are used for this kind of operation. The purchase happens in the majority of cases via public invitation to tender with a scoring system. The price has typically the highest score and due to that this customer segment is price sensitive, because only one binding price offer is allowed. This customer segment is growing and should not be neglected by tractor companies.

There are other small customer groups, which are not regarded in this chapter due to lower importance in market share and business volume for the tractor manufacturing companies. As shown above, every customer group has its special requirements concerning brand and product and every customer group has several sub segments with

furthermore individual demands. Covering all customer segments with its sub segments is not feasible and not efficient for the companies. It is important for the tractor brands to focus only on a few customer groups and develop the right tractors for them. The customer and their requests take center stage and form the basis for all product development, marketing, distribution and service strategies. Fendt for example concentrates only on professional users and is very successful with this strategy in Germany. Aim of the companies should be to decide for the customer group(s) they want to work with whilst taking into consideration the own capabilities in terms of products as well as distribution and service network. The selection of the target group could be one step in the differentiation process.

Besides the customer segmentation and defining the right customer target group, the brand positioning is important for a multi-brand company and its single brands. “The objective of brand positioning is to place a brand that is clearly distinguishable from competitors' brands on the market. The principal aim is to ensure that the brand occupies a unique position on the market and that it is endowed with a precisely defined profile with clear-cut contours. The basic idea underlying this analysis is that consumers' perceptions of the various brands can be conceived as a multidimensional space in which individual brands are positioned. A product's positioning is determined from its position on the relevant dimensions of the perceptual space, its position on the various product attribute vectors and its position with respect to other brands.” (Hermann & Huber, 2000) The brand positioning is important for every brand and is connected to the customer target group. One differentiation possibility within the brand positioning is the combination of a certain price and quality level.

7.4 Distribution strategy

An efficient distribution strategy is in every segment and for every product elementary. Without a return on investment, which is delivered by selling products with a positive margin, companies are not survivable. There are two main different distribution strategies, direct and indirect distribution. The distribution of agricultural machines is exclusively B2B (Business-to-Business) as it is a typical investment item. “For an indirect distribution, the manufacturer uses external sales partner.” (Cf. Kleinaltenkamp, 2011) “ Consequently, one or more sales organs are interposed, which act legally and economically independent in the market.” (Cf. Meffert, et al., 2012) Beside a variety of different characteristic forms

of indirect distribution, it can be handled in the segment of industrial goods via technical consultants or commercial agents (economical independent sales assistants). The commercial agents can be an exclusive company representation and play an important role in the B2B section and especially in the machine tool industry. Commercial agents as self-employed independent trader benefit from their own network and personal contact to the customer. They get customer and branch-relevant information from their network for selling their goods and acquiring new customers. (Cf. Backhaus, et al., 2012)

For the continuous development of any manufacturer's sales distribution network the adequate mentoring and support of dealers by sales representatives who are responsible for one or a few distribution partners are important. The ideal management of the distribution network is one of the core tasks of sales companies or importers. The aim is to have a dealer network that delivers a homogeneously strong performance in terms of market exploitation. Key Performance Indicator (KPI) systems, balanced scorecards, etc. can now be used to show the strengths and weaknesses of individual retailers relatively accurately. However, it is not enough just to make the evaluations available to the sales partners, but a systematic control by the sales representatives of the sales company must take place. (Cf. Schlamp, 2014) That shows that a distribution network of independent dealers needs employees of the manufacturing brand who are monitoring and optimizing the dealer in terms of sales activities and service topics. In addition to the Area Sales Manager and Area Service Manager, most of the large manufacturing companies, such as John Deere, AGCO, CNH Industrial have dealer network development managers in place who take care of the professionalization of the distribution network. The professionalization of the distribution partners is important for selling high tech machines and delivering a high service standard.

For the distribution of agricultural machines in Europe mostly, as it is for the machine tool industry, the indirect variant is used with some exceptions. These exceptions are for example the full liner Claas with a few own sales outlets in Germany and some small companies which are producing special implements for special crops like viticulture, vegetable and orchard farming. These markets are very limited and specific so that a direct distribution is more efficient, and an indirect distribution would add too much structural cost. Mostly the sales territory for these special attachments is small and nearby the production location. For example, special machines for viticulture are preferably invented and produced in wine areas. There are also attachment manufacturing

companies in Eastern Europe producing for example front loader equipment and other auxiliary products and selling them via internet directly to the end-user for the reason of low margins and low need of product consultation. But the majority of agricultural machines, especially the high-end segment, is distributed with sales partners through indirect sales. There are several advantages to use this type of sales and for companies with a certain size not possible to handle as direct distribution. The sales partner / dealer acts additional to the sales business also as service and spare parts partner. Every sales partner runs sales and service outlets in a specific geographical area. He is responsible for reaching a certain market share within this area. The size of the dealers' sales area is dependent of the dealers' size, the number of outlets, sub dealers and availability of potential dealers in this area. Target is to have a comprehensive dealer network with a bearable distance between customer and dealer, to reach almost all potential customers.

Actual development shows, that this strategy is still preferred by the major players in this business. An example therefore is the tractor brand Steyr, which had in the past an own sales location (Steyr Center Nord) in Austria, close to Vienna. This outlet was sold in 2022 to RWZ Rhein-Main. "The Raiffeisen Waren-Zentrale Rhein-Main eG (RWZ) expands their international agriculture machinery business and takes over the machine activities of the Steyr Center Nord (SCN)." (Bohnsack, 2022) Reasons for the disposal of the sole outlet of Steyr were low respectively less profit. The main focus of Steyr is inventing and producing tractors but not the distribution to the customer. External distribution partners (family driven dealers or sales organizations) have more background and efficiency in selling products as it is their primary focus.

The rising professionalism in the farming business equally increases the expectations towards the dealer of agricultural machines. New and growing segments, for example digitalization, advanced farming systems, new operating concepts, fleet management systems, etc. must be handled by professional employees of the sales partner, not only in the sales team, also in the repair shop and in the spare part business. This development and structural change became and still becomes very challenging for all sales partner, especially for the smaller firms, and additionally for the dealer development department of the manufacturing companies. The challenges are easier to manage for big sales partner and collective companies as RWZ or Agrarvis in Germany due to the high number of employees with a high degree of specialization than for small dealers with only a few staff members. These specialists need a high education standard and constant product

training to be up to date in their special segment. During the education and training time the employees are missing in the repair shop and in the sales business, which is challenging for small dealers because of a permanent high workload. Due to that, the smaller agricultural equipment dealers cannot compete with the big ones. One possibility to professionalize the network of sales partner shows John Deere with the rollout of their strategy “Dealer of tomorrow”. An online interview with the sales director of Germany, Dr. Olaf Turß, described the strategy and its impacts. After changes in the John Deere dealer network in USA there will be a restructuring and reorganization in Germany as well as in the rest of Europe. John Deere supports their dealer network with the implementation of the new strategy. There should be no negative impact for farmers and contractors in terms of area coverage. Start of the strategy was in 2011, to tighten the dealer network. An online article in the past which described a reduction of dealer and outlets was wrong and led to displeasure and uncertainty on dealer and customer side. Goal is to meet the prospective customer needs and to deliver a professional partner for the customers. This shall be realized with big and powerful company structures with several locations and outlets. These requirements result from the structural change in agriculture. Important is the concentration of locations, further employment of the staff and growing employment in the future. John Deere wants to make their dealer network fit for the future to serve the market requirements. Digitalization speeds up the structural change and the customers need salesmen with best IT knowledge for the best purchase advice. Customers want an all-round carefree package which is only possible with digitalization. Growth and structural changes will not stop in the future, a constant professionalism is required, and John Deere will support their sales partner. Their focus is on sustainable optimization in all divisions (customer, sales partner and John Deere). (Cf. Sohst, 2020)

The goal of John Deere is preparing the sales partners for the future, to deliver further on a professional consultation and afterwards an efficient service partner with know-how and specialists. This is necessary for the tractor manufacturing company to sell high-priced professional machines to professional customers because the customers do not only buy the product, but they also pay for the service after the purchase. That means, that a tractor producer is only as good as its distribution and service network. For selling professional machines to professional customers, a network of professional dealers is crucial, otherwise these customers cannot be handled adequately. The status quo and also the future development of the dealer network of a tractor manufacturer are significant for the

positioning in the market. The quality and professionalism of the distribution and service network of a tractor brand is another differentiation step which is significant.

7.5 Potential of Steyr as premium brand

Due to the currently small business volume and sales area of the brand Steyr and its straight history in producing tractors, CNH Industrial decided in 2019 to develop Steyr to a premium tractor brand within the CNH Industrial Ag sector. The focus is clearly, in contrast to the sister brands Case IH and New Holland, only on manufacturing and selling tractors. In the context of a Master thesis from Lucas Zender with the title:" Premium brands in the German tractor market – influence of sales relevant factors for installation and establishment using the example of the brand Steyr", which was written in 2022 in collaboration with the University of Hohenheim and Steyr, the potential for Steyr becoming a premium tractor brand was investigated. Main and key component of this study was to ask in a depth interview John Deere and Fendt customers with a contractor business in Germany and at least ten tractors from one brand. Care was taken to interview contractors with tractor fleets from only one brand. Fendt and John Deere were identified in this thesis to be the premium tractor brands in Germany. Aim of this Master thesis was to figure out if it is possible to install a "new" premium tractor brand in Germany. Because of some special characteristic by the sale of agricultural equipment, theoretical economical approaches for other segments can't be used for this case.

"When defining the term premium in the context of the German tractor market, it is not enough to use only classic economic theories of an idealized market, because it is precisely the sample of large contractors in Germany considered very special ideas and challenges. However, those who know these aspects can create a reputation as a premium brand through targeted measures that can be done much easier and faster [...]. A cost- and time-consuming image building seems superfluous in the tractor market if the purchasing factors of the customers be addressed in a targeted manner. […] A brand has the best chances exactly when it tries to combine all purchasing factors in their product. In the premium tractor segment these actually are reliability, a good availability of spare parts or rather a good service, high-quality workmanship, especially in the tractor cabin as well as a vendor-independent order- and data management. If there is a financial advantage to the famous premium brands […] a lot of contractors will think about a new brand, for example Steyr." (Cf. Zender, 2022, not published)

The Master thesis shows that there is a potential for Steyr to become a premium tractor brand in Germany, but there must be a distinct separation from the brands Case IH and New Holland. This should be noticeable in terms of different products, other styling, better product quality, innovations and software solutions. Especially fully developed order- and data management systems and smart farming solutions are a door opener to the premium segment and could have afterwards a positive effect of the customer loyalty.

8 MATERIAL AND METHODS - CUSTOMER SURVEY

Focus on this doctoral thesis is a customer survey to investigate the buying behavior for tractors to understand how a product differentiation within one multi branded AG group, in this case for the CNH Industrial AG segment, can take place. The base of the survey is an online questionnaire with seven chapters and in total 36 questions. The participants were farmers and contractors from Germany, UK and France.

8.1 Identification of participants

The participant identification is an important element of the survey to get applicable information about the customers and their buying behaviors. Focus on this doctoral thesis was the differentiation of CNH AG brands in Europe, which consists of 47 countries. Due to this high number of countries, a survey within all countries is not possible and not productive. Great importance lies on the EU-states with the highest tractor index volume (TIV) and where high-spec tractors with a high average list prices are sold. These two indicators guarantee the manufacturer a high business volume and Ebit. Markets with a high number of registrations of small tractors with low list price are important for the quantity of tractors, high market share and a good capacity utilization of the production plants. But the low horsepower, value spec segment is not as profitable for the manufacturers as selling highly equipped and powerful tractors.

The following chart in figure 18 shows an extract of the article “Achterbahnfahrt auf den Märkten” from the German agricultural magazine Eilbote. The essential part of this article is about the tractor registration in the most important European countries and the development between 2019 and 2020, also under the influence of Covid-19. Germany and France have the biggest TIV in Europe by far. Italy is on the third place and followed by the United Kingdom (Cf. Neumann, 2021). Smaller countries with lower registration figures are not displayed in this chart, because these are not relevant for this consideration. The chart shows the number of all tractor registrations in the respective country, starting from 0 hp. That means, that this consideration contains all tractor and customer segments.

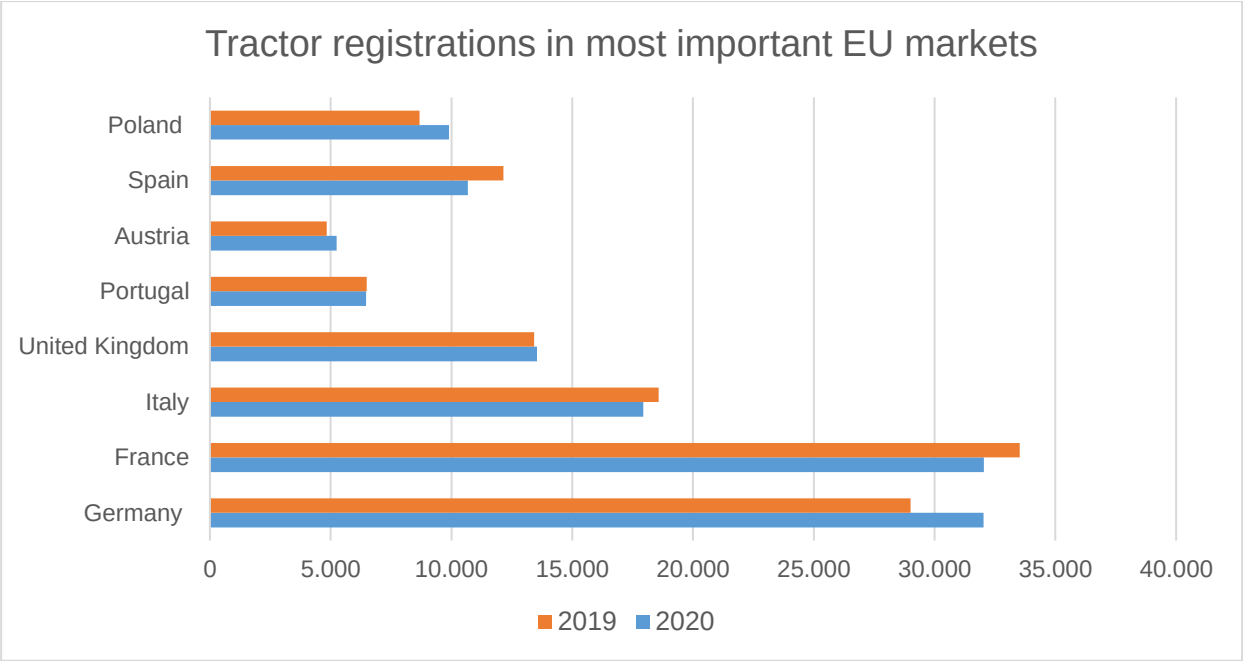

Figure 18: Tractor registrations 2019 / 2020 in the most important European markets (Cf. Neumann, 2021)

Target was to ask customers from 3 different countries. Due to the high TIV and the high concentration of high-spec tractors, the decision took place for Germany and France. Defining the third country was a bit more difficult, because Italy has the third biggest TIV in Europe, but the specifications of the tractors are, especially in middle and South of Italy, relatively low. In addition to the low specification in this area, most of the tractors are in the low horsepower segment which bring in average lower gross margins for the tractor manufacturing companies. Because of that, the decision was made for the UK as third country to be asked. The TIV of UK is a little lower than in Italy but the average horsepower and the configuration of the machines is much higher and as such the products are more profitable for the tractor brands.

The original plan was to ask the following number of farmers and contractors per country. This was discussed with my doctoral supervisor Prof. Dr. Dr. h.c. mult. Karlheinz Köller.

- Germany: 50 participants
- United Kingdom: 30 participants
- France: 30 participants

For a good mix, the asked farmers and contractors should have farms in different sizes in relation to the number of hectares they are cultivating. In addition to that, different farm

types (e.g. arable, livestock, vegetables, orchard, etc.) were interviewed. The brand of tractors they are currently using was another key factor to regard. Aim was to have more participants which are non-CNH Industrial customers, to get an idea what is important for these customers, to identify their needs and requirements and what would be needed to convince them with a CNH Industrial product through a brand and product differentiation.

Getting in touch with the right customers who were willing to take the time for answering the questionnaire was a challenge. The first idea was to use the CNH Industrial AG CRM (Customer relationship management) tool. The CRM tool provides a lot of information of customers, which are registered when buying a tractor or want to have a sales offer. Absolute prerequisite for the use of the customer data from the CRM for the survey was, that the customer signed for the usage within the CNH Industrial company and gave us the consent for contacting him/her directly. This is regulated by law and for the customers' privacy protection. Customer details such as location of the farm, type of business, size of farm, used tractor brand, purchase intention, etc. are stored in this database which gets updated every time there is new information available. The challenge with the personal data is the General Data Protection Regulation (GDPR) which is effective since 2016. With the new GDPR the customer is more protected about their personal data and information and the manufacturing company is not allowed to contact them when there is no signature approval from the customer is deposited. Therefore, I decided for another strategy, which is explained below.

1) Germany

   Case IH and Steyr Germany has 11 Area Sales Manager (ASM) for tractors. The colleagues provided me E-Mail contacts from customers after they have asked them if they would support the survey and retrieved their consent to forward their personal E-Mail address. With their approval and willingness to take part, I sent them via E-Mail the link to the online questionnaire. Participants are spread over whole Germany. Due to that, farmers and contractors from all over Germany, with regional and agricultural variations, are covered and regional differences are considered.

   I contacted 83 German farmers and contractors via E-Mail, 72 of them clicked on the link, however, cancelled the survey before having it finalized. 62 participants processed the survey till the last chapter and are counted thereby as valid. That results in a success rate of 76%, which is efficient and mostly the success of the

personal contact upfront of myself and my colleagues. It can be seen that the personal contact to the farmers and contractors had a big influence of the number of responses and the perseverance to answer almost all questions. In my opinion this is a result of the inner commitment when a personal contact is given.

2) United Kingdom

The Business Manager and the ASM of UK supported the survey in the way the German market did. I was invited to a Sales Meeting via Microsoft Teams where I introduced my doctoral thesis, the survey and need for their support. Every ASM provided me E-Mail contacts of own or competitive customers. The requirements for the participants were the same as in Germany. Location of the farms are in England, Scotland, Wales and Northern Ireland. In total I got 41 names, which I contacted via E-Mail. The result was 28 valid answers, what leads to the success rate of 68%. This is slightly poorer than in Germany but nevertheless a satisfying result, especially if regarding that the participants did the survey as a favor and didn't receive anything for their support.

3) France

Getting information from French farmers and contractors was a bit tougher than in Germany and UK. It was planned to do it in the same way I did with the two other countries, but this was not possible. After some E-Mails with the French Case IH business manager it became clear, that France is not interested to support this survey. There could be several reasons for this decision. One of the reasons could be the fact, that Steyr is currently not sold in France and the French colleagues might be concerned, that Case IH could lose customers if Steyr were offered in the future. Also, it is possible that the French team does not perceive the brand positioning as an opportunity since Steyr is not offered in France today. As such the cannibalization of own brands is less of a risk to them than in other markets and consequently there is also a lower opportunity to improve the status quo.

Because the strategy with the French CRM data base and the French business unit didn't work, I needed another plan to get French customers involved in the survey. The only chance was to ask German Case IH and Steyr dealers, which are close to the French border and have customers in France. This applies to two dealers in Southern Germany, which supported my project with 71 E-Mail

addresses. I sent E-Mails in French to all customers where I explained the focus of my dissertation and that their input would be highly appreciated. The result of usable answers was 8 which means a low success rate of 11%.

Another issue is the small catchment area of the survey in France, because the customers, which were contacted, mostly live close to the German border and their farm is located in Alsace and Lorraine, which is not representative for whole France. Based on these two points, the usability of the input from the French survey is limited and is only valid for a small part of France. Due to the small share of 8% in relation to the sum of valid responses I decided to take it into account of the survey and the following interpretation and discussion. It is to be expected, that the buying behavior in these regions in France are similar to the Southwestern regions in Germany, because the agricultural and climatic conditions are similar although they are separated by a national border. Some French customers and contractors are buying their agricultural machines and it is imaginable that it also happens the other way around. The analysis of the buying behavior of French farmers and contractors is consequently limited to customers living in Alsace and Lorraine and doesn’t display holistically France .

8.2 Data collection

Data collection can be done by quantitative or qualitative research, or a mix of both. It is the basis for empiric research and has to be clarified before beginning the survey. Both variants have their right to exist, and it depends on the information which is supposed to be collected and are valuable for a thesis. Figure 19 shows the differences between qualitative and quantitative research under important aspects.

COMPARING QUALITATIVE & QUANTITATIVE RESEARCH

Qualitative Research	RESEARCH ASPECT	Quantitative Research
Discover Ideas, with General Research Objects	COMMON PURPOSE	Test Hypotheses or Specific Research Questions
Observe and Interpret	APPROACH	Measure and Test
Unstructured. Free Form	DATA COLLECTION APPROACH	Structured Response Categories Provided
Research is intimately involved. Results are subjective	RESEARCHER INDEPENDENCE	Researcher uninvolved Observer. Results are Objective
Small samples –Often in Natural setting	SAMPLES	Large samples to Produce Generalizable Results [Results that Apply to Other Situations]

SHAYA'A OTHMAN

Figure 19: Comparison Qualitative and Quantitative Research (Othman, 2011)

"Quantitative and qualitative research approaches clearly differ in terms of how data are collected and analyzed. Quantitative research requires the reduction of phenomena to numerical values in order to carry out statistical analysis. By contrast, qualitative research involves collection of data in a non-numerical form, i.e. texts, pictures, videos, etc. However, quantitative and qualitative approaches also differ - particularly - in regard to the aims of scientific investigation as well as the underlying paradigms and meta-theoretical assumptions. According to quantitative approaches, psychological and social phenomena have an objective reality. The relationships between these phenomena are investigated in terms of generalizable causal effects, which in turn allow prediction. By contrast, qualitative approaches consider reality as socially and psychologically constructed. The aim of scientific investigation is to understand the behavior and the culture of humans and their groups from the point of view of those being studied'." (Alan, 1988) "An attempt is usually made to understand a small number of participants' own frames of

reference or worldviews, rather than trying to test hypotheses on a large sample.” (Gelo, et al., 2008) I decided for a mix of quantitative and qualitative research. For a better comparability, the quantitative research with numbers and figures as a result of the answers has advantages in contrary to the qualitative research. Especially for filtering the data for different approaches (country and brand) can be done with the quantitative research without emotions to get an objective picture. The following quantifying of the data is important to get a recommendation for action for an efficient brand differentiation potential.

There are several possibilities to get a mix of both research approaches, divided in two groups, one-phase and two-phase approach. The one-phase approach was selected by myself to be the best for my project. The quantitative survey takes place with the online questionnaire which is answered by the customers. Result of the customers feedback exist in numbers and shares, which will be interpreted and discussed for getting a qualitative value for this doctoral thesis. In the end, the numbers and figures from the survey turn to qualitative feedback which is helpful for further actions in term of brand and product differentiation.

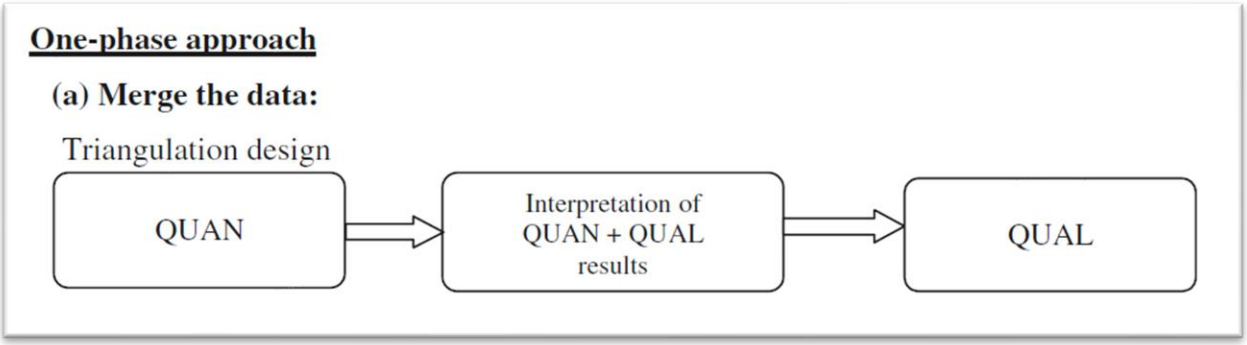

Figure 20: Mix of quantitative and qualitative data collection (Cf. Gelo, et al., 2008)

8.3 Questionnaire

The empirical part of this doctoral thesis is the inquiry of farmers and contractors which are the most important potential customers for tractors. This is done with a questionnaire to investigate their buying behavior and requirements respectively demands towards tractors. Aim is to identify what is important and unimportant for the buying decision and what could lead the customers to buy another brand. With this knowledge, potential differentiation steps for the three AG brands in the CNH Industrial company (Case IH,

Steyr and New Holland) should be identified. The different types of questionnaires and the content structure of the questionnaire will be illustrated in the following.

8.3.1 Type of questionnaire

The survey was done with an online questionnaire on the internet platform www.soscisurvey.de. The original language of the questionnaire was German and was translated into English and French for the respective country. The questionnaire in English is attached as Annex of this doctoral thesis.

There are 3 different forms of questionnaires which can be used for getting feedback from a focus group. These are face to face, via phone and in written form. Online questionnaire, which is the youngest method, is a type of written questioning, but is getting more popular and handled as an additional method. It is a Computer Assisted Interviewing (CAI) technique. Every questionnaire type has its advantages and disadvantages, and it is necessary to use the right one for getting the best possible feedback from the survey group. (Cf. Scholl, 2018)

Table 3 shows a comparison of the 3 respectively 4 questioning methods which is also a summary of the advantages and disadvantages of the different types. In my case, the “liability of the situation” was high for Germany and UK, because the participants were called by phone or asked face-to-face by my ASM colleagues or myself before I contacted them via E-Mail with the link to the survey and therefore, the success rate or rather liability was high. The personal commitment increased the liability of taking part on the survey. In addition, the “control of questioning situation” was higher compared to a sole online interrogation, because the ASM colleagues asked their provided participants if they took part at the survey. Due to that, the survey in Germany and UK is a mix of questioning via phone, face-to-face and mostly online. The mix of the survey process for UK and Germany unites partly the advantages of the different methods and lead to valuable feedback. For France in contrary, the “liability of the situation” was quite low, which reflects the real online questioning process, without any support by the other methods. This is caused by the challenge I was faced with French participants, which is mentioned in chapter 8.1. A mix of questioning types, as used for the two other countries, was not possible. The low take rate in France of 8% underlines the disadvantage of online surveys in terms of willingness of participation, especially when the attendees don’t get something

in return for their time and favor. Maybe a present or voucher could animate these people to take part in a higher number, but this was not possible for this survey.

I decided for an online survey, to reach as many as possible participants to take part on the survey. Especially in the farming business, there are only some timeslots in a year when farmers have time to answer a questionnaire or for an interview. These can differ in the different farm types and some regional and climatic variances. Before and after harvesting time of arable farmers is a good timeslot, because the time critical work is done or not started and the farmers are more relaxed, which is elementary to take time for an external questionnaire. As a result of these considerations, I contacted the potential customers in May and end of August. Another big advantage for me was to prepare the questionnaire in front of the true survey, whenever it was possible and with the advantage of an online survey from everywhere and with every laptop or computer. It was the same advantage for the customers to answer the questionnaire when they had the time to do it and were not disturbed in their daily work routine. Another benefit were the costs, which were much lower than visiting all the participants in Germany, UK and France. Especially in the COVID-19 pandemic the online consultation was a safe way to get feedback without the risk of getting infected with the virus or infect the participants. Additionally, some farmers and contractors didn't welcome foreign people on their farm when it was not necessary at that time, what made a face-to-face questioning also impossible. Last but not least, anonymity is for the participants important, because they tell you with answering these questions a lot about the size of their farm and indirectly about their financial potential. This is a big advantage of an online survey, where no personal data is needed and recorded. Every participant got the same link to the survey and didn't insert some personal information like name, place of residence, etc. Due to quite simple questions in the questionnaire, it was no limitation for this survey, that complex questions can't transported to the participant and to have doubts that questions could be misunderstood and answered in a wrong way. The online questionnaire was easy to use and intuitive designed.

Comparison of different questionnaire types

	Survey processes			
Evaluation criteria	Face-to-face	Via phone	written	online
Liability of the situation	+	o	-	-
Control of questioning situation	+	o	-	o
Anonymity	-	o	+	+
Exhaustion rate	+	o	-	N/A
Costs	+	o	-	-
Sample requirements	-	o	+	+
Requirements to questionnaire form	-	o	+	+
Allowed length of questionnaire	o	-	+	+
Allowed complexity of questionnaire	o	-	o	+
Allowed complexity of the questions	+	o	-	-
Allowed sensitivity of the questions	-	o	+	+
- (low) o (medium) + (high)				

Table 3: Comparison of different questionnaire types
(Cf. Scholl, 2018)

8.3.2 Structure

The online questionnaire contains seven chapters with 35 questions in total. Every page includes one chapter. To get to the next chapter, the forward button on the bottom of the page has to be used. By this reason, the chapters are clearly defined and isolated from each other.

The target of chapter one is getting knowledge about the farm/contracting business and the customer segment, the farm and owner belongs to. The focus is on the location of the farm, the farm type and the size in terms of hectares.

The next chapter asks about the tractors which are used on the farm, to get an overview how many tractors in which horsepower segments are available, the degree of capacity utilization, who is mainly the driver and how the tractors are equipped.

Chapter three handles the topic “brand” and investigates the tractor brands which are used on the farm and the satisfaction with it. Furthermore, the possibility for a brand change, respectively a change in the past and the importance of the brand when buying a new tractor. A key question is, at which price advantage a brand change would be taken into consideration.

Aim of chapter four is to get more information about the role of the dealer in the buying process. An important parameter to know is the maximum distance between dealer and farm the customer is willing to accept and in addition the customers’ satisfaction with the dealer. There are different customer types, some contact their dealer only for buying a new tractor and when the tractor needs to be repaired (if they can’t do it on their own), others are frequently in contact with their dealer to do all services and maintenance and buying all spare parts there. If the customer is satisfied with his dealer, would he change the tractor brand when the dealer is selling another tractor brand? These answers will tell about the customer dealer relationship and the customer loyalty, which is more distinctive than in other sectors, where the dealer is more exchangeable, for example in the food retail trade.

In the next chapter the company CNH Industrial is in the focus. These questions are supposed to obtain insights about the level of familiarity with CNH Industrial and the perception of the three CNH Industrial AG brands Case IH, Steyr and New Holland. Are there differences in the customer perception or are they seen as equal brands/products with same pricing, technology and quality? Another topic is the production country and its impact on the buying decision and quality perception. The chapter ends with the query if they noticed that CNH Industrial plans a brand differentiation in their AG segment.

Steyr dominates the sixth chapter in this survey. The brand is globally not so well-known as the much bigger sister brands Case IH and New Holland and some of their

predecessor brands. It is interesting to know, how the customer perceives the brand Steyr and with which attributes they connect Steyr with. The Potential of Steyr to become a premium brand in the future is one of the key issues which the survey should identify and if the customer is interested to get more information about the brand.

In the last chapter, the survey helps to identify the significance of brand image in the tractor business. At first, the participant is supposed to do a ranking of ten tractor brands in terms of brand image and is then asked about the importance of image of the ten most important tractor brands in Europe. Due to the spacious meaning of image, the customer gets asked what image represents for him and linked to which attributes. How valuable is a good image to a customer and how can it be optimized?

9 RESULTS AND INTERPRETATION

The responses of the online survey are summarized and interpreted in this chapter. Analogously to the structure of the questionnaire, the replies and its impact on this thesis are clustered in seven chapters. Some statements are separately prepared and considered for one of the three countries, others are regarded in sum for Germany, UK and France. In a few cases it is interesting to contextualize the answers of all participants with the answers of Fendt and John Deere customers, which are representing the tractor premium class in this survey.

9.1 Participants

In total, 98 valid participants, who fulfilled the target editing the questionnaire till the last page, took part at the online survey, 62 from Germany, 28 from UK and 8 from France. I clustered the three countries in different sections with similar conditions related to climate, agricultural landscape, relevance of agriculture, average farm size, etc. Germany is subdivided in 4, UK in 5 and France in 7 units. Figure 21 shows the example for UK and the dedicated units, which I created. The participants were pleased to click into the map where their farm or contractor business is located. The map in the survey was without subdivisions to avoid uncertainty of the participants. In the background the online tool recognized the number of the field, the participant clicked in and counted it. In the case of UK, 1 = North, 2 = Northern Ireland, 3 = Center, 4 = Southeast and 5 = Southwest. The guideline for the validity of the feedback respectively participants to reach the last page in the questionnaire means no guarantee, that all questions in the survey are answered. For example, the first question about the location of their farm was not answered by all valid participants. There is no feedback from 3 German and 3 UK attendees. There could be several reasons for such a behavior. One could be, that the farmers or contractors are afraid, that there can be conclusions done with information about their farm and business, which they don’t want to share. Another reason could be, that they don’t understand the question, or they are not sure what to answer or rather the right answer is not given in the questionnaire.

Country	Region	No. of participants
Germany	North	6
	South	20
	West	28
	East	5
	n/a	3
UK	North	1
	Northern Ireland	0
	Center	5
	Southwest	7
	Southeast	12
	n/a	3
France	North	0
	Northwest	1
	East	7
	Southeast	0
	West	0
	Rest	0
	Close to Paris	0
	n/a	0

Figure 21:Survey - Farm locations of participants (own source)

The result of question one is displayed in the table in figure 21. In Germany the participants are located mostly in Southern and Western Germany, less in the North and East. This depends on the one hand on the willingness of the farmers to take part on the survey and on the other hand on the sales area allocation of the German ASMs. That means that 34% of the German participants live in Bavaria and Baden-Württemberg and 47% in Rhineland-Palatinate, Hesse, North Rhine-Westphalia and Saarland. In this part of Germany are eight of in total 11 tractor ASM responsible, which explains the partition of participants. Most of those farmers are doing arable farming (82%) and livestock farming (58%). Grassland farming as business type is represented with 42% and working as an agricultural contractor (26%). 16% of the participants cultivate special crops (Orchard, vegetable and vineyard farming) or doing other farming business. A lot of the farmers having more than one business unit and due to that the question for the farm type was a multiple-choice question with several answering possibilities. Depending on the development in agriculture, most of them have multi business farms with arable, grassland and livestock farming, sometimes additionally working as a contractor for other farms. The sum of the percentage distribution is more than 100%, because plenty

participants decided for more answer choices than one in this multiple-choice question. It is the same situation for UK and France.

In UK I got no response from farmers from Northern Ireland and only one from the North. 76% of the participants have their farm in the South of UK (Southwest and Southeast summarized). Together with the Center (20%) it represents the most important part of UK for agriculture. Like Germany, the majority (89%) of the farmers are doing arable farming, while only 21% have livestock farms and 18% grassland farms, which is nearly congruent, because the main food production for livestock farms based on grass respectively hay. Every fourth participant is a contractor, either as main business or beside agriculture. Two of the attendees are doing any other business and no one is growing special crops, which is not popular in the UK region, due to climate and other reasons. Compared to Germany, the farming business of the UK entrants is less focused on livestock and grassland. The participants are mostly specialized on one business segment. A reason therefore could be the selection of relatively big farms, which took part on the survey, which is displayed in figure 22. In many cases, the professionalism and specialization of a farm is dependent on their size. Bigger farms are often concentrating on one business unit to be as efficient as possible, smaller farms instead have often several business units to minimize the financial risk because of several pillars. Sometimes it is needed to have more pillars on small farms, because the cultivated agricultural landscape is not enough to survive with only one business type.

The low number of French participants and the region of their farms is explained in chapter 8.1. Due to the closeness to Germany, most of the French farmers are from district East who took part at the survey and one farmer from the Northwest region, which covers only two of seven districts, and the representation of whole France is limited, which is considered in the analysis of the whole survey. All the attendees cultivate arable farms, 38% have a livestock farm and in each case one participant is doing grassland, special crops and contractor business.

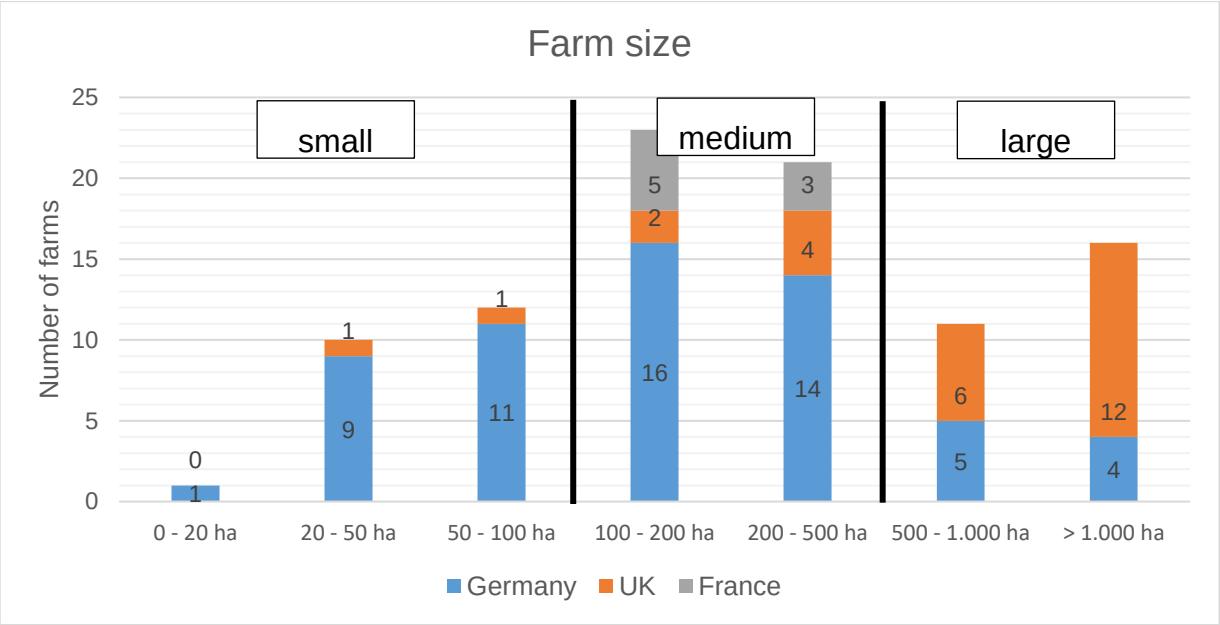

Figure 22: Survey – Farm size (own source)

The bar chart in figure 22 shows the allocation of the farm sizes of the participants, divided into each country. Blue represents Germany, orange stands for UK and France is colored with gray. I clustered the seven answer options in three different farm sizes to get a better overview. Up to 100 ha are small farms, which are sometimes managed by part-time farmers, and which are often not the main source of income. Between 100 and 500 ha, the farms belong to the medium range and above 500 ha are defined as large farms. Surely, the size depends not only on the cultivated area in ha, also on the business segment(s) of the farm. A special crop farm with a cultivated area of 100 ha is comparatively big, a contractor in contrary whose machining area is 300 ha is relatively (very) small. But due to the fact, that most of the attendees are arable and livestock farmers the clusters make the consideration much easier and better to compare.

The German range is from very small up to large (more than 1.000 ha), but the majority is with 68% between 50 and 500 ha (small and medium range). That means that the survey in Germany is portraying all farm sizes but with more focus on medium sized farms (100 – 500 ha) with 50%. The situation for UK is quite different. The concentration is with 69% on large farms. Small farms are illustrated with 8% and medium farms with 23%. 2 German and 2 UK participants didn't answer on this question. The evaluation in France revealed, that the eight participants having mid-range farms.

The results concerning the farm size of each country will be regarded in the following research and is important for the next chapters. Large farms have sometimes other requirements and demands as smaller farms. Furthermore, bigger farms usually invest more money in professional agricultural equipment and also in smart farming options, such as telematics, automation, etc. This will be discussed in the respective chapter.

9.2 Machinery

The aim of this chapter of the survey is to get a deeper understanding of the machinery parc, the participating farmers and contractors are using. Based on this consideration, information about the tractor usage behavior of farmers and contractors can be derived.

The first question in this chapter was multiple choice in shape of a matrix, where the attendees were asked how many tractors in which horsepower segments they currently hold and use. I clustered the horsepower segments in seven columns as listed in table 4. The possible answers for the number of tractors for each power segment are from 0 up to more than 5 in each line. I decided to use the possible answer of 0 to make it easier to understand the question for the participant, but didn't notice in the result and table, because this information is not useful for this consideration.

	Horsepower segment (in hp)						
No. of tractors	**<50**	**51 - 100**	**101 - 150**	**151 - 200**	**201 - 250**	**251 - 350**	**>351**
1	12	24	35	31	22	9	12
2	8	13	17	15	13	8	4
3	0	2	4	6	5	4	4
4	0	2	3	1	2	1	1
5	0	1	1	0	1	0	2
>5	1	2	1	3	1	1	0

Table 4: Survey - Horsepower segment (own source)

Table 4 shows the result of the potential customers' answers. In this case, I summed the results from all three countries into one table, because there were no significant differences in the responses. I colored the results from green (high numbers) to red (low numbers). It is obvious, that most farmers have between one or two tractors in one power segment but more tractors with different horsepower. This is explainable of the different work which is done with the tractor. An arable farmer for example needs a heavy and powerful tractor for soil cultivation and minimum one or two other smaller tractors for crop care applications, front loader activities and maybe road transport. This phenomenon is

applicable for all other farm business types. In addition to the number of tractors, the result of the most used horsepower segments is interesting. The most used tractors are between 51 and 250 horsepower and with a closer look between 101 and 200 hp. This tractor category is very popular for small and big farms. On smaller farms, these tractors are often used as big tractors for the heavy work and on bigger farms as crop care or front loader tractors. Due to the wide field of application for the different farm sizes, this tractor range is a significant product series for tractor manufacturer and has a big potential. The HHP segment starts with 120/130 hp and is for the most European tractor brands the business with the highest margin and profit. HHP tractors are mainly well equipped and therefore more expensive. The number of tractors in this result provides no information about the capacity of utilization or if the number of tractors, which are used on the farm is necessary or not.

The grade of configuration was asked in the next question. Various aspects were covered: Comfort, automatic guidance systems, telemetry systems, technology and extra equipment. The participants were able to select only one answer for each aspect in terms of simple, medium or high tech. The results are illustrated in a network diagram in figure 23. Every configuration aspect is represented by another color. The center point of the diagram stands for 0% take rate and the corners of the triangle for 70% take rate, which was chosen through the highest take rate in this survey of 67%. The three corners act for the voted importance by the potential customers (simple – medium - high tech). Comfort (light blue line) is important for the customer and evaluated with 95% by medium and high tech, only 5% of the tractors is equipped with less comfort options, which is negligible. One aspect of comfort is the automatic guidance system (orange line), which is rated with 57% as high tech and only 15% with simple, which is congruent with the result of professional HHP tractors in the previous question. In contrast, telemetry (gray line) is not so much represented on these machines. 44% of the participants answered “simple”, which means the tractor is not equipped with it. This depends on the fact, that telemetry is only available on bigger tractors and not every brand is offering it. In addition, it is a relatively new feature and some tractors from the participants are probably older and it was not available when ordering the tractor. But every fifth customer answered with “high tech” on this question, what implies, that this aspect has potential for the future, especially on big farms or for contractors with several drivers to have a better control of their tractor fleet. 94% of the participants’ current tractors are medium or high tech regarding the

technology (yellow line) of the tractor. The result for technology is nearly congruent with the result for “Comfort”, due to that the yellow line is almost hiding the light blue line in this diagram. It raises the question if tractor customers connect the configuration feature technology with comfort and the other way around. Technology and comfort are significant indicators for the tractor brands, that the customer is willing to pay for high tech tractors. Two third of the tractors are fitted with extra equipment (dark blue line).

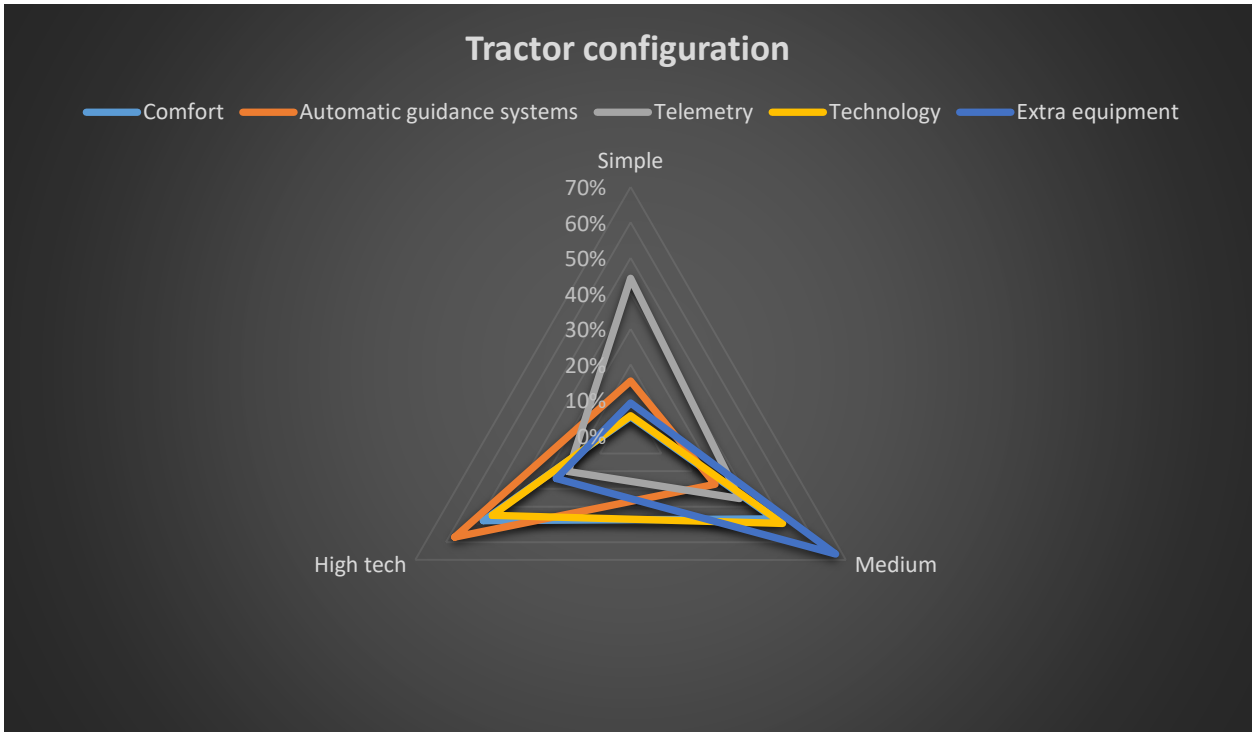

Figure 23: Survey - Tractor configuration (own source)

In this context it is interesting to know, who is driving the tractor and does it have an impact of the configuration of the tractor. Every participant was asked to answer the multiple-choice question “Who is mostly driving the tractor(s)?” with the following response options: Temporary employees, seasonal employees, family members, employees, and business owner. The evaluation of the responses revealed that it is different for the three involved countries. In Germany, most of the drivers are business owners (65%) and family members (50%), closely followed by employees. Only 15% for seasonal and 19% for temporary employees. It is an effect of the distribution of the farm sizes in Germany. On small and medium farms are often the business owner and family members the only driver, because there is not enough work and sometimes the financial resources for an external employee. Seasonal and temporary employees are often engaged on special crops farms and contractors, with a high workload in a small

timeframe, in addition to their permanent employees in order to compensate workload peaks. The farms of the UK participants are much bigger than the German ones. This leads to another allocation of drivers. With a share of 75%, the UK attendees answered for permanent employees and 43% for business owner, which underlines that business owners of big farms are rarely driving the tractor on their own compared to small and medium farms, because they have usually other management jobs to do. It is the same for family members, which is with 21% also low in this contemplation. Seasonal (29%) and temporary (11%) employees support the farm in the high season. The analysis of France is comparable to the result of Germany and needs no closer look at. The investigation of who is the tractor driver on a farm is important for the buying decision of a new machine. Is it only the owner of the tractor or maybe family members or the driver who have influences on the choice of the tractor brand and model?

Looking at the tractor configuration in the context of who is the driver, it is obvious, that farms with a high number of employed drivers tend to have a much higher take rate of telemetry than for those farms where the business owners or family members are driving the tractor(s). This is explainable through the fact, that the business owner benefits from a better overview of the tractor fleet and the operating costs with telemetry systems. A tractor fleet management can support a farm in reducing cost and saving money through an optimization of tractor usage. Due to investment costs, these systems are more efficient for big farms and contractors, compared to small and medium farms. It is the same phenomenon for automatic guidance systems. Another topic is the grade of comfort in the tractor. The UK tractors are better equipped than the tractors of the German and French participants, which can be argued with the high amount of operation hours per year the tractor is used. Maybe the picture would be different if only German and French participants with medium and primarily large farms and contractor businesses were asked in this survey. The utilization of a tractor is mainly influenced by the size of a farm or contractor business.

The employees of a farm or contractor respectively driver of the tractors are often asked about their preference for the configuration of the tractor, which they are driving in order to motivate them and gain or retain talented and skilled tractor drivers. Mostly every driver has their dedicated tractor on the farm which they are responsible for and most of them want to have a comfortable work environment. It is obvious, that the size of the farm, the usage per year and the driver of the tractors are three parameters which are in most

cases congruent and complementary. Besides the configuration and driver of the tractors, it is interesting to investigate on the usage. The workload of tractors is measured in operating hours per year and a good indicator about the change interval and degree of capacity utilization. The accounting depreciation for a tractor in Germany is between 8 and 10 years, but in reality, tractors with a high workload have a shorter change interval than tractors with a low workload (e.g., 1.500 vs. 250 operating hours per year). Some contractors or big farms with a high workload (more than 1.200 and 1.500 operating hours per year) change their tractors already after three to five years. Tractors with a high workload are oftentimes purchased with an extended warranty for the time, the contractor or farmer want to use the machine. Thereby the machine costs are better predictable and connected to less risk. This is called Total cost of ownership (TCO) and includes the purchase price plus the costs of operation. It can be downsized to operating cost per hour for the tractor, which is an important key performance indicator (KPI) for the machine owner and their financial results. The older the tractor and the more hours it has, the higher the risk of expensive repairing costs which must be paid by the owner and have a negative impact on the TCO, if there is no extended warranty from the producer of the machine or a repairing insurance from an external supplier.

Figure 24 displays the workload of the participants' tractors in steps of 200 operating hours per year from 0 up to 1.000, afterwards from 1.000 – 1.500 and above 1.500 operating hours on the y-axis. On the x-axis the number of tractors is listed which are affected by the corresponding usage. The result is split into the three countries due to the different farm sizes. For Germany (blue bars) the spread is similar to the result of the farm sizes, the range starts with 0 – 200 up to 1.000 – 1.500 operating hours per year. No German farmer or contractor decided for more than 1.500 hours, which would mean an extraordinary use to capacity. The biggest share (28%) is for a workload between 400 and 600 hours per year and closely followed by 22% for 600 - 800 and 20% for 800 - 1.000 working hours per year. That means, 70% of the German participating farmers and contractors use their tractor between 400 and 1.000 operating hours per year, which is a realistic degree of capacity utilization. There is no consensus about the optimum capacity utilization of a tractor, because there are a lot of aspects to be considered, for example the size of the tractor and the usage. In my experience, the optimum load factor of a tractor is between 300 and 1.200 operating hours per year, depends on the work which is done with it and the relation between tractor and attachment. Smaller tractors (up to

120 hp) have a higher efficiency at lower number of operating hours per year compared to HHP tractors, due to cheaper prices per hp and lower loss in value. Because of higher complexity and more professional equipment on HHP tractors the purchasing and operation costs is increasing with hp.

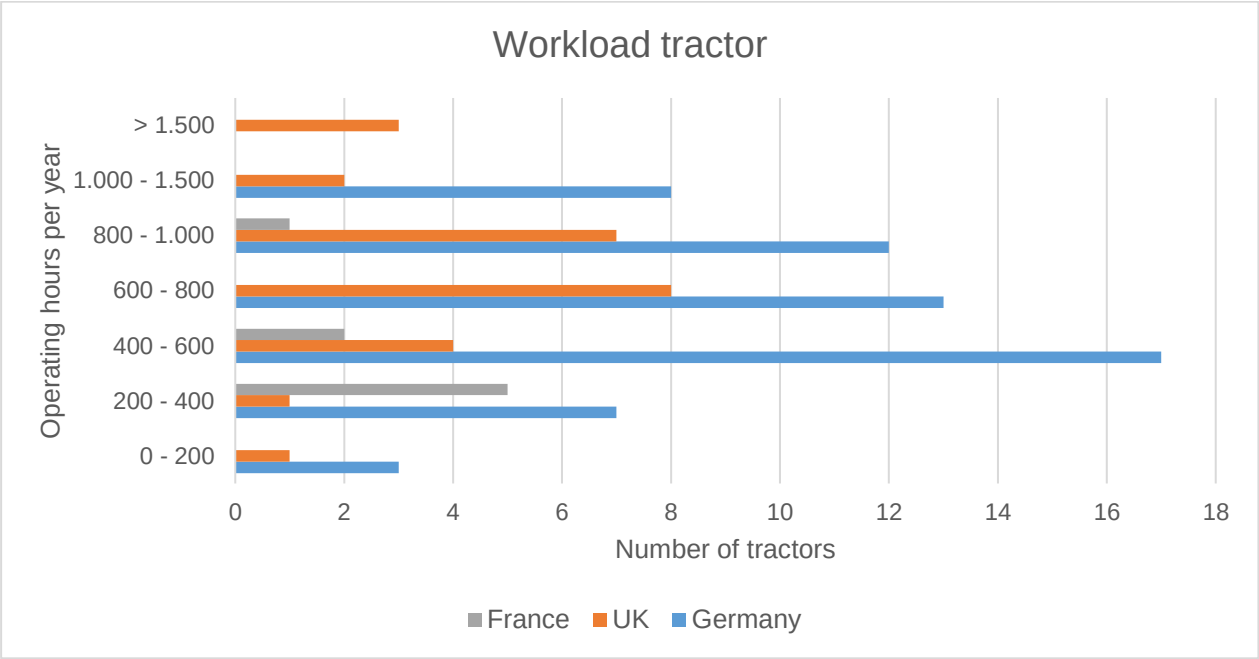

Figure 24: Survey - Workload tractor (own source)

The analysis for UK (orange bars) is little bit different. We have also a wide range from 0 - 200 to above 1.500 hours, but the peak with the most usage of the tractors is with 600 - 800 hours one cluster higher than for Germany. Further three participants answered on this question with more than 1.500 operating hours of use per year. Matching these results with the farm sizes of the attendees in UK, mentioned in chapter 9.2, the distribution can be explained. The interviewed farms are much bigger than in Germany and France. Due to this fact, they get the most out of their tractors, which is usually an indicator for a shorter change interval of the machines. The range of the tractor usage for France is instead much smaller. With 88%, most of the feedback was between 200 and 600 operating hours per year and only one participant chooses 800 - 1.000 hours. This result is, analogously to UK and Germany, explainable by the French farm sizes between 100 and 500 ha. Due to the big variation range of 200 - 500 ha, it could be, that the French participants, who decided to choose this answer, are cultivating just a little more than 200 ha. This would explain even more the degree of utilization of their tractor.

9.3 Brand

Another important topic is the brand of the tractor, the participants are using. This chapter investigates the significance and impact of the tractor brand regarding the buying behavior of farmers and contractors. The question is raised if there is an effect or not, and if yes, could the impact be quantifiable? Brand awareness, image and loyalty should not be underestimated in the decision and buying process of a tractor. I scrutineer the possibility of a brand change for a farmer and contractor and thereby the potential for a brand differentiation in the CNH Industrial AG segment. Aim is to get more knowledge how important the tractor brand is for the customers and what they associate with the brand.

The first question should provide an overview about the tractor brands the participants are currently using to get a status quo for further analysis. The question is single choice. If several tractors from different brands are in use on their farm, the participant is supposed to select the brand which represents more than 50% of their ownership. The choice is between the 13 tractor brands with the most registrations in Europe. If using another brand, it could be answered with the 14th choice option “other”. For all three countries the brand split is almost equal and due to that summarized in the results. Case IH is with 35% the most used tractor brand, which is surely an effect of the identification of the participants for this survey, supported by Case IH salesmen and dealers. This share is represented by 32 farmers and contractors. The brand with the second highest share is Fendt with 23 participants which stands for 25%. Directly followed by John Deere with a share of 19%. Far behind with 5% (Deutz-Fahr) and 4% (Claas) are Massey Ferguson, New Holland and Steyr with 3% each and Valtra with share of 1%. This is an uneven distribution of the different brands. Some brands are not chosen, for example Kubota, Landini, Mc Cormick, Same and “other”. The non-chosen brands do not have a big impact related to registrations above 51 hp in Europe and especially in Germany. The market share (>51hp) in Germany of these 4 brands together was in the full year 2021 3,6%. Due to that, it is no issue, that we don’t have a closer look on these four brands. The fact that no one decided for the answer “other” implies, that the farmers and contractors are currently not using tractors from brands besides those which are given as answer options, or these brands just have little importance, because they represent less than 50% of the tractor fleet on the farm. With a majority of 79%, the participants are using Case IH, Fendt and John Deere tractors, which is helpful for the doctoral thesis to get more intelligence

about the professional segment in these countries and about the requirements, demands and purchasing behavior of the agronomists.

Another advantage of this split is, that Case IH, Fendt and John Deere have in Europe and especially the latter two in Germany high market shares, what means that these brands are well appreciated by farmers and contractors in this area. In Germany, Fendt is market leader (>51hp), closely followed by John Deere. To ascertain the potential of a product differentiation in Europe with Germany as one of the biggest and most important markets, it is significant to investigate the buying behavior of their customers. Therefore, this imbalance of brands in this survey is appreciated.

Important for first time and second time buying of a product is the customer satisfaction of the product and the brand. In the next question the potential customers are asked how satisfied they are with their tractor brand. It is difficult or nearly impossible to differentiate between brand and the several products a brand is offering, which have different satisfaction levels. Because of that, the brand satisfaction also reflects an average satisfaction of their products. The members had five possible answer choices, from very satisfied, satisfied, neutral, disappointed and very disappointed in forms of smileys, to make it more intuitive in the consultation process. No one of all countries answered on this question with “very disappointed” and “disappointed”, which was surprising for me, because in the sales business I often hear from the customers, that they are (very) disappointed with the tractor and the brand. But this seems to be snapshots from owners with actual technical issues or negotiation strategy and the reality seems to be different, that the bulk of the tractor operators are satisfied with the brands and products they are using. 7% of the respondents of the questionnaire answered with neutral, what means, that they connect neither negative nor positive emotions with the brand. 55% voted for “satisfied” and 37% with “very satisfied”. Overall, this result indicates, that most farmers and contractors are (very) happy with their tractors and the brands behind it. That is a positive result and an indicator for a high brand loyalty.

A deeper investigation of these results leads to a benefit for a potential brand differentiation. Due to that, a breaking down of the results on the three brands Fendt, John Deere and Case IH with Steyr makes sense. Figure 25 shows the responses of these participants in particular. The different brands are represented with colored bars in the graphic. Fendt (green/red) is best in class, performing only in the two top segments

“satisfied” with 52% and “very satisfied” with 48%. John Deere (green/yellow) and Case IH with Steyr (red/white) have similar responses. Case IH and Steyr is with 26% “very satisfied” a little bit better than John Deere (19%) but worse regarding the statement “neutral” with 15% against 6%. John Deere is with 75% highly concentrated on the level “satisfied”, which is a solid base. These statements underline my experience as ASM in Germany where I speak to a lot of farmers and dealers. The reputation of Fendt in Germany and surrounding countries is outstanding and only very few customers are not satisfied with the brand or if yes, they would not or only rarely communicate it. This finding underpins the assumption that it is very difficult to convince a Fendt customer from another brand and product. On John Deere side the situation is similar but with a slightly higher chance of success.

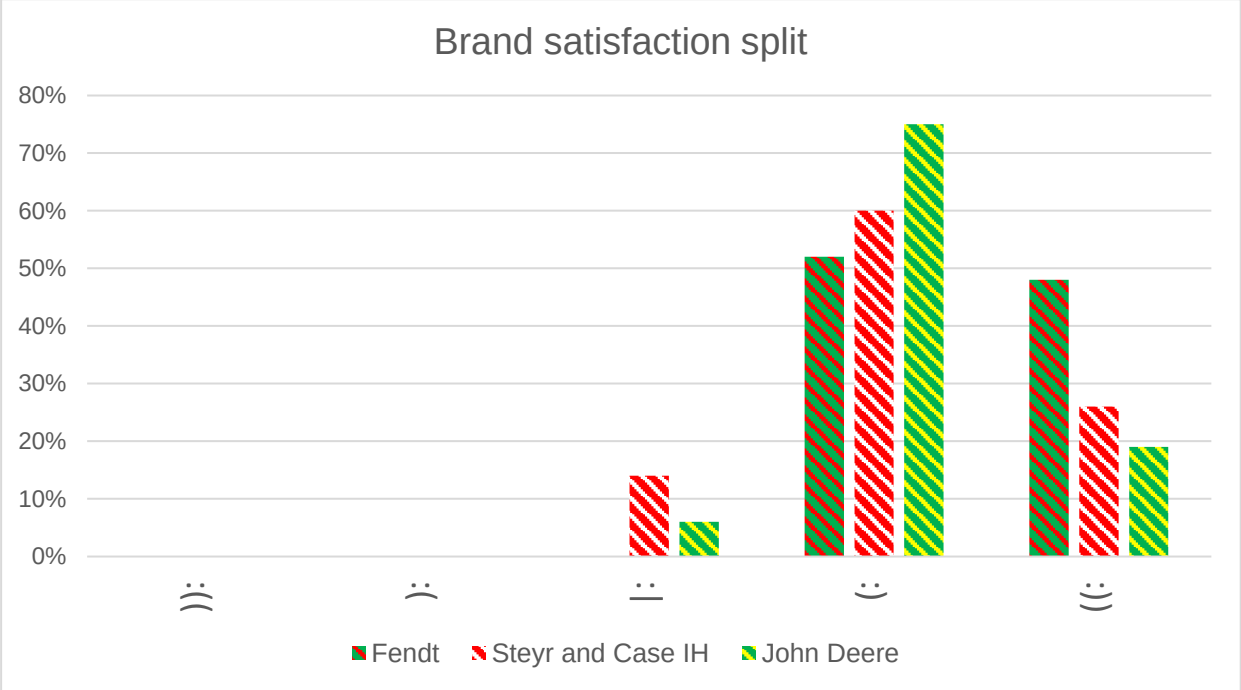

Figure 25: Survey - Brand satisfaction split (own source)

In this context the brand loyalty is another significant topic. Due to the fact, that it is tricky to do prophecies for the futural buying behavior of potential customers, the question is facing the past of the participants. Aim of this question is to identify the average frequency of a brand change particularly with regard to extend the market share of all three brands of CNH Industrial AG in the differentiation process. Most of the survey members (40%) are very loyal customers and didn’t change their tractor brand in the last 15 years. That means, that more than one third of the potential customers buy every time the same

tractor brand and it seems that they don't have a reason to change it. While another 35% declared that they changed the brand once in this time frame. There could be several reasons for this decision and sometimes the customer is forced to do this. Examples could be that their dealer closed its business or there is no suitable tractor in the product portfolio for the customers' (new) requirements. This decision is not necessarily caused by the brand. The picture is different when a farmer or contractor changed the brand two times (15%), three times (7%) or more than three times (3%) in the last 15 years. This implies, that the customer changed the brand, because they were not satisfied with the products or the behavior of the brand in terms of quality, service, image, good will, etc. The question comes up whether it's possible to satisfy these users or they are permanent dissatisfied with any product and brand. It can be said that farmers and contractors are in general loyal customers, which is displayed by these results. On the one hand, this is a comfortable situation for existing brands with a satisfying market share but on the other hand difficult for expanding and new brands. However, brands like Kubota showed, that there is a chance to enter the European tractor market in the 70 - 170hp segment, which is an important range in terms of registration numbers. These new Kubota customers had changed in the past from another brand to Kubota, which shows, that there is a potential to convince customers from another brand and product and there is a realistic chance for a market share increase.

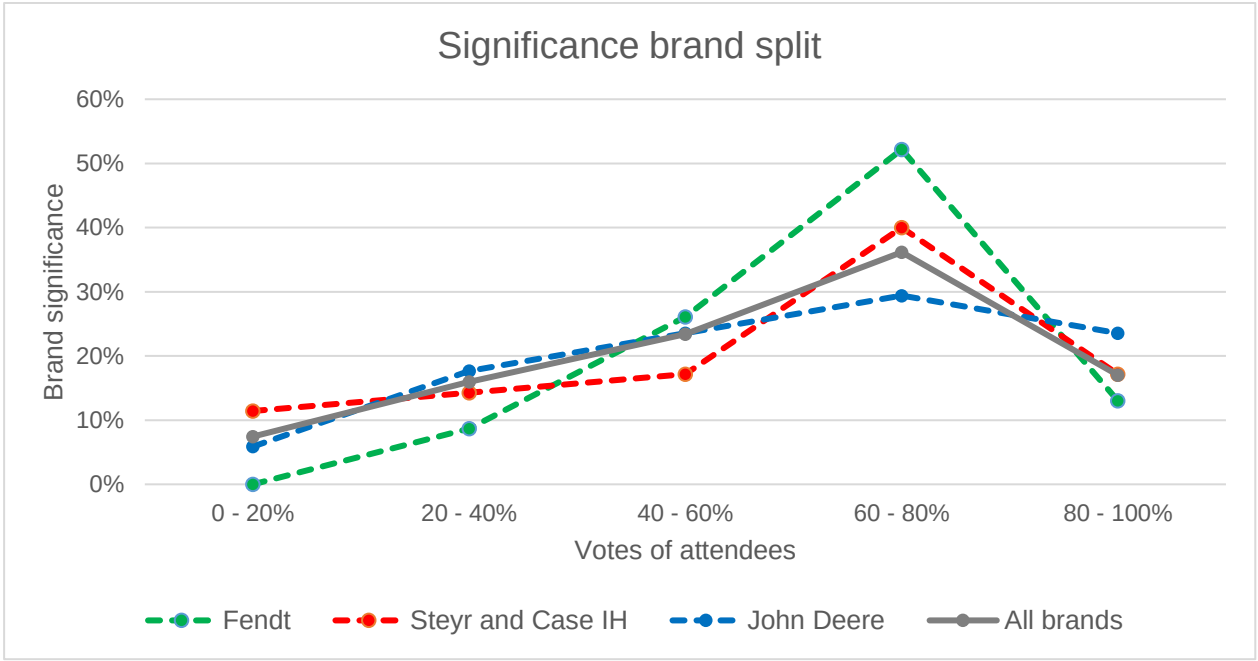

Figure 26: Survey - Significance brand split (own source)

To get a deeper customer understanding the significance of the brand in the buying process is important to know. The potential customers were asked “How important is the tractor brand when you buy a new tractor? Please select the significance in percent.” The results from Germany, UK and France are cumulated illustrated in figure 26. The significance of the brand in the buying process is represented by the y-axis and the vote of the attendees is displayed with the x-axis in percent for each country. Gray line represents the significance of all brands to have a reference and it is defining the average of all attendees who answered on this question. Fendt is shown with the green dashed line and has the highest peak of all manufacturers at 60 - 80%. That means that for 65% percent of the Fendt customers in this survey the brand significance is higher than 60% in the buying behavior. On the contrary the significance from 0 - 40% is rated with only 9% which is very low. That means, that Fendt customers attach great importance on the brand when they decide to purchase a new tractor. The brand is for those participants a big decision criterion in the purchasing process. Case IH and Steyr (red dashed line) have a similar peak at 60 - 80% but not so pronounced as Fendt does, whereas answered 25% with 0 - 40% which means that one quarter of these farmers have no or less focus on the tractor brand in the purchase decision. The course of the John Deere curve (blue dashed line) is pretty similar than the Case IH and Steyr one, but flatter without a big peak. The evaluation of the results shows very clearly that the tractor brand has a much more significance for Fendt than for John Deere and Case IH and Steyr customers. The reasons for this are multiple and individual.

Although the statement is clear, that a brand change is difficult to manage, especially for customers who are buying high professional tractors, for example Fendt. But the reality shows, that there are indeed farmers and contractors who change their tractor brand. The next question targets at investigating the customers’ motivation more deeply. It was asked in multiple choice, which reasons could make them consider changing the brand. There are six different segments the potential customer is asked to answer in form of a ranking. Five stars for very important/high impact, one star for less important/low impact. The

segments are price, dealer, configuration and options, innovative technology, service with warranty and goodwill and image.

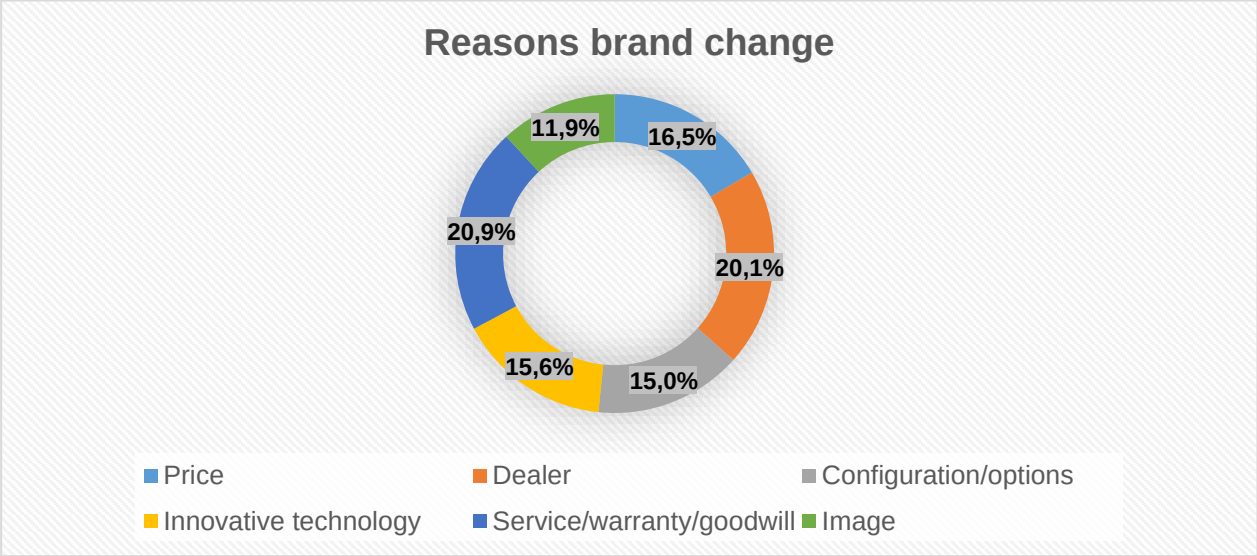

Figure 27: Survey - Reasons brand change (own source)

Figure 27 shows the result of the question about the reasons in a circle diagram. I multiplied the feedback of the attendees with the number of stars they selected to get points, to get a better overview than to handle with figures in a matrix connected to a star rating. For example, the answer possibility “price” was voted by one participant with one star (1 x 1 = 1 point), seven attendees voted for two stars (7 x 2 = 14 points), for three stars 34 votes (34 x 3 = 102 points), for four stars 24 persons (24 x 4 = 96 points) and for five stars 20 survey members (20 x 5 = 100 points). The points were summed up for every answer possibility and the results for every segment are displayed in percent, related to the sum of all feedbacks. Sum of all points was 1.908, which is the calculation base of 100% for the graphic in figure 27. “Image” is with 11,9% (represented by 227 points) the segment with the lowest impact for a brand change. Only 7 participants voted with 5 stars and 13 with 4 stars, which are representing a high and very high impact. A possible reason could be that “image” is a broad term and difficult to classify by the customer. It seems that image has a low impact of a possible change of the tractor brand. It is followed with a share of 15,0% by the equipment of the tractor, in terms of possible configurations and order options. This was chosen by 12 attendees with 5 stars and 21 votes for four stars. The equipment of the tractor seems not to be important for a possible brand change. On the third place (15,6%) the participating potential customers voted for the

answer possibility “innovative technology” with 16 votes for five stars and 26 for 4 stars, which seems more important for the customer. Followed by the price of the tractor with a share of 16,5% and a vote of 20 times five stars and 24 times four stars. The price has a medium impact on this decision. The second highest place goes to the dealer with 20,1 %, with a vote of 40 x five stars and 36 x four stars. The dealer is a key factor in selling tractors and other agricultural equipment. The relationship between farmer respectively contractor and their dealer is much deeper than the relationship for example for a user and owner of a car with their dealer, but this will be deeper investigated later on. But the most significant motive for a possible brand change reason was the response option “service, warranty and goodwill”, which was chosen by 20,9 % of the partakers and a share of 53 participants who voted with five stars and 23 with four stars. A good service must be provided by the manufacturer and by the dealer, same applies to goodwill and price. It can’t be considered separately; it is always the interaction and collaboration between manufacturer and dealer (network). This clarifies the important role of a dealer or rather the distribution network of a tractor manufacturer and it is not a one-dimensional perspective. The satisfaction of the customer related to service and technical support is mainly influenced by the dealer in the first step to get the tractor repaired, but the support from the manufacturing company in the background is very important to train the technical skills of the repair shop team to be up to date and being accommodating in terms of financial decisions in case of a breakdown of the machine in the first years. The analysis of the average data, contextualized with all collected data of this question, is congruent with the ranking of the high and very high impact of a possible brand change, represented by four and five stars.

As price is one of the decision makers, manufacturers should determine their price positioning carefully based on the desired positioning against competition both internally as well as externally. A price reduction might have 2 dimensions:

1. It could be realized through a reduction of manufacturing costs whilst sustaining a stable gross margin for the manufacturer. This is always connected to a close collaboration of engineering and the controlling department. Also, there is a certain risk to compromise quality and customer satisfaction whilst taking cost out of the product.

2. Another option is using the price elasticity of demand systematically. Meaning: how much more volume can I generate by reducing the price and could this volume increase compensate or even overcompensate the margin reduction?

As there is little or even no scientific information available on price elasticity in the ag machinery industry, the next question was supposed to get some insights into the customers' expectations and price sensitivity. Therefore, they were asked: "Starting with which price advantage would you think about a brand change? The Price advantage is given in percent and related to the retail price." It is a hypothetical question, and the feedback provides only evidence what could happen if there was a specific price advantage. It's not sure, that these customers will really change their brand at the end. The retail price is what the customer is paying to the dealer for the tractor. This depends on the list price of the machine, the discounts the dealer get from the manufacturing company and the individual surcharge of the dealer, which can differ significantly from one dealer to another. If a sub dealer is involved in the sales business, there is an additional party which needs a surcharge for selling the tractor. In contrary to items other than agricultural machinery, there are no recommended retail prices for tractors who made a price comparison more difficult. There can be in addition some regional differences in the price setting. But this is the relevant price for the customer, which is compared with the offers from competitors in the buying process and lead to buying decision.

The chart in figure 28 displays the feedback from the survey about the price advantage for a possible brand change of the participants' tractor. The collected data are for all three countries summarized represented by the gray bars and show the average of all participants. In addition, the results are split into the three brands Fendt (green/red bars), Case IH and Steyr (red/white bars) and John Deere (green/yellow bars). On the x-axis is the price advantage in percent clustered in 5% steps, starting with less than 5% and ends with more than 20%. Another possible answer is that for the farmers/contractors a brand change is inconceivable, which means that a price advantage would not change their buying decision. The gray bars represent all survey members who insert feedback and is consequently the average for all brands. A possible brand change at a price advantage between 0 and 10% is rated very low with 0% by Fendt customers up to 17% by Case IH and Steyr customers. Worthwhile emphasizing is, that no Fendt tractor owner selected these two possible answer choices and John Deere customers only above 5%. This

induces that Fendt customers have a higher psychological barrier to purchase a tractor from another brand than other customers and it is only possible to convince these farmers by another tractor brand with a price advantage more than 10%. In the next segment, between 10% and 15%, the result is similar for all three brands and the average of all attendees ranges roughly between 20% and 30%. The next cluster with a price advantage of 15 – 20% shows a peak for John Deere customers with feedback of 38% of the participants. A price advantage in this dimension for an equal tractor with similar configuration is very difficult respectively impossible to realize: if a John Deere tractor would cost 200.000 €, the competitive tractor must not cost more than between 160.000 € and 170.000 €. Maybe this would be feasible for a very important business for example a key customer but not systematically at current cost and pricing structures. More dramatic is the situation in the next cluster above 20%. More than half of the Fendt customers stated that only a price advantage of more than 20% would impel them to think about a brand change. Standard price positioning is targeted to be in the range of about 5 – 10% below Fendt. Since 2022 price positioning however is changing permanently due to hyperinflation throughout all industries additionally effected by the Ukraine war and COVID-19 pandemic and makes a price comparison even more difficult, but a price advantage of more than 20% is not realistic and not feasible with a positive margin for the manufacturing company and distribution partner. The feedback of John Deere and Case IH and Steyr customer is conversely moderate between 13% and 14%. There are some customers from all brands, for whom a brand change is impossible, and also a huge price advantage could not change their mind. These are very loyal customers, who are not possible to convince from another brand by a cheaper price for a new tractor. Maybe there could be several other reasons for a brand and product change. Some of these opportunities will be investigated in the following chapters. The share of these very loyal customers is represented in this survey between 9% and 14%. That means, that minimum every tenth customer is not willing to change the tractor brand, even if there is a high price advantage.

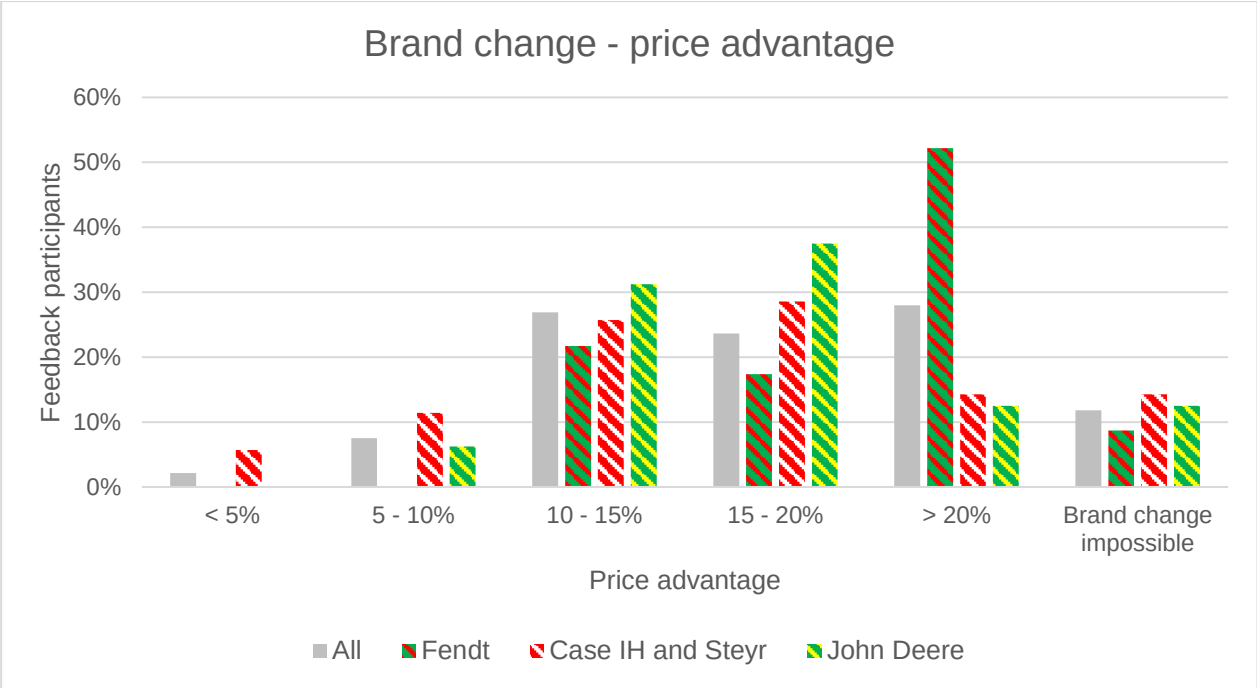

Figure 28: Survey - Brand change - price advantage (own source)

These results underline the statement of the previous question, that the price of the tractor has not the highest priority in the buying process and decision. A price advantage has a moderate to low impact for the agricultural customers to change their tractor brand. If at all possible, it would need a big price difference which is barely feasible for the tractor manufacturing companies at current developing, production and distribution cost.

Armed with this knowledge, the impact of the pricing policy is very small in a differentiation process. Other causes, as illustrated in figure 27 have a much more tangible influence on the buying process and have to be considered in greater detail for a brand differentiation and a market share increase.

9.4 Dealer

As a result of the previous chapter, the dealer network and every single dealer is important for the success of a tractor brand. There are no big tractor brands in Europe which sell their tractors on their own, all of them work with a distribution network of independent dealers which are responsible for sales and service. There are smaller exceptions, for example a Steyr outlet in Austria, which used to be owned by CNH Industrial but was sold to RWZ in 2022, and a few Claas outlets in Germany, however, these are negligible. Most of the dealers are private companies, some of them family

driven, others with an external management structure. The dealer network of Fendt in Germany is special as it mostly consists of cooperatives. These cooperatives have a higher bearing on their supplier (in this case Fendt as tractor manufacturing company) than small dealers. The aim of this chapter is to get a deeper understanding of the significance of the dealer network in the purchasing process and the potential of the dealer to extend the business and raise market share for the tractor producer.

One important aspect of the dealer network is the geographical distribution as well as the number of dealers in a country or region. Due to the low top speed of a tractor (maximum 30 km/h for older models and 40 respectively 50 km/h (a few models with 60 km/h) for new tractors) the distance between farm and dealer is more important than in the automotive sector. This is aggravated by the fact, that the usage of some roads or highways is not allowed for tractors, which makes the distance even longer and sometimes more uncomfortable to drive. In order to get an understanding of their current situation the participants were asked, how far their tractor dealer is away from their farm. The results from Germany, UK and France have a similar allocation of responses, due to that the sum of all results for all countries are shown as one figure. 13% of the farmers and contractors answered the question with a distance between 0 and 5 kilometers, 15% stated that their dealer is between 6 and 10 km away from their location. The majority of 32% decided for the answer with a distance between 11 - 20 km and one quarter chose 21 - 35 km. Only 10% of the participants drive between 36 and 50 km to the workshop and 5% are more than 50 km away. That means, that 85% of the participants have a farm-dealer-distance between 0 and 35 km, what means a travel duration with a tractor of a few minutes in the best case and more than one hour in the worst scenario (dependent on infrastructure and top speed of tractor). Only 15% of the customers are willing to drive a distance longer than 35km. That is a challenge especially for regions and countries with a small number of farms and low density of dealers. Customers in such an area are extremely limited in their brand choice if they insist on having a workshop within an acceptable distance. Therefore, brands with a high-density dealer network have the best chance to reach and satisfy all customers. Open points (i.e., areas or regions with no dealer network) are lost regions where customers mostly buy another product. Needless to say, a high-density dealer network is a prerequisite for an efficient market development and high potential for a tractor brand. Furthermore, multiple outlets of one

dealership organization can support minimizing the distance between farm and repair shop which lead to a positive effect.

The results show the current status of the customer-dealer-distance of the participants with their already purchased tractors, but it can be assumed that this reflects the customers' buying behavior in general when it comes to purchasing a new tractor.

Besides the physical distance to the dealer, the relationship between dealer and customer is another important factor for a successful market penetration of the brand. The survey participants were asked: "How important is the dealer for you when buying a new tractor?" The 4 possible answers reach from very important over important to unimportant and very unimportant. Nearly 60% of the survey members, which is represented by 55 of 94 qualified responses stated for very important and 35, which represents 37,2%, chose important. Only 4 farmers/contractors voted "unimportant", and no one selected "very unimportant". This result shows that the dealer has a big impact on the buying process. Almost 96% of the groups have the opinion that the dealer is important or very important when purchasing a new tractor. This is underlined by the results of the following question: "How satisfied are you with your dealer?". The five response options range from a very sad smiley (not at all satisfied) to a very happy smiley (very satisfied). It represents in this case the overall satisfaction and not only the relevance for purchasing a new tractor. It is not possible to regard this separately, because the dealer-customer relationship is not only characterized by purchasing a tractor, but there are also mostly a lot of other transactions happening and influencing the cooperation between these two business partners. The answers are also influenced by satisfaction in regard to service, maintenance, goodwill and purchase of other equipment and machines. From country to country and from brand to brand, there are no significant differences in the results, therefore, results are analyzed holistically for all three countries as displayed in figure 29.

The chart in figure 29 shows the result of the customer satisfaction with their dealer. Only two of 93 participants answered with "not at all satisfied" (light blue piece of cake) or "not satisfied" (orange). That represents roughly 2% and might be caused by several reasons (in the past and presence) which could be also interpersonal. Eleven percent (10 participants) voted for "neutral" (gray) which means they are neither satisfied nor unsatisfied. The reason could be that there were negative and positive experiences in the past, which led to a balanced opinion or there is no deeper relationship than just buying

a tractor in the past and having no other touch points. But the majority with 56%, represented by 52 votes, voted for “satisfied” (yellow) and 31% with 29 votes for “very satisfied” (dark blue). This means that 87% of the tractor owners have a positive relationship to their tractor dealer and appreciate their work. That is important for a sustainable collaboration between dealer and customer. Often the business relationship between dealer and farmer or contractor exists through generations and decades.

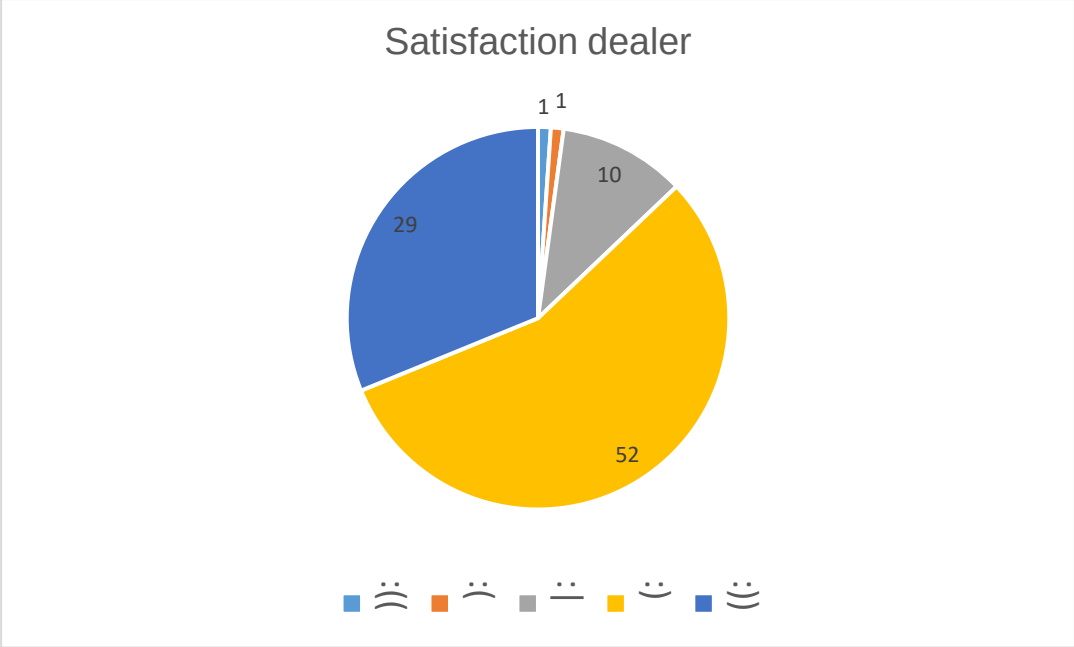

Figure 29: Survey - Satisfaction dealer (own source)

A satisfied customer usually is a loyal customer who has no reasons to change the dealer and the tractor brand the dealer is selling. It is difficult to differentiate dealer and tractor brand in this consideration because the customer’s feeling is always a combination of both. If the customer is not satisfied with the product the dealer is selling and has a lot of problems after the purchase, the relationship between dealer and customer will automatically suffer beneath. A high satisfaction rate is wildly important for both dealer and manufacturer.

Figure 30 demonstrates the connection between these two considerations, divided in the result of the three asked countries. The split is similar for the dealer satisfaction and the brand satisfaction, which underlines the thesis, that both are inseparably linked to each other. It is important that the dealer and his team (Sales team as well as the employees in the workshop) are loyal to the brand they are selling and repairing and identify themselves with the brand and its products. The customer should have the feeling that

dealer and tractor brand are one unit and collaborating together in a good way, so that the customer gets the best support from both parties for an overall satisfaction.

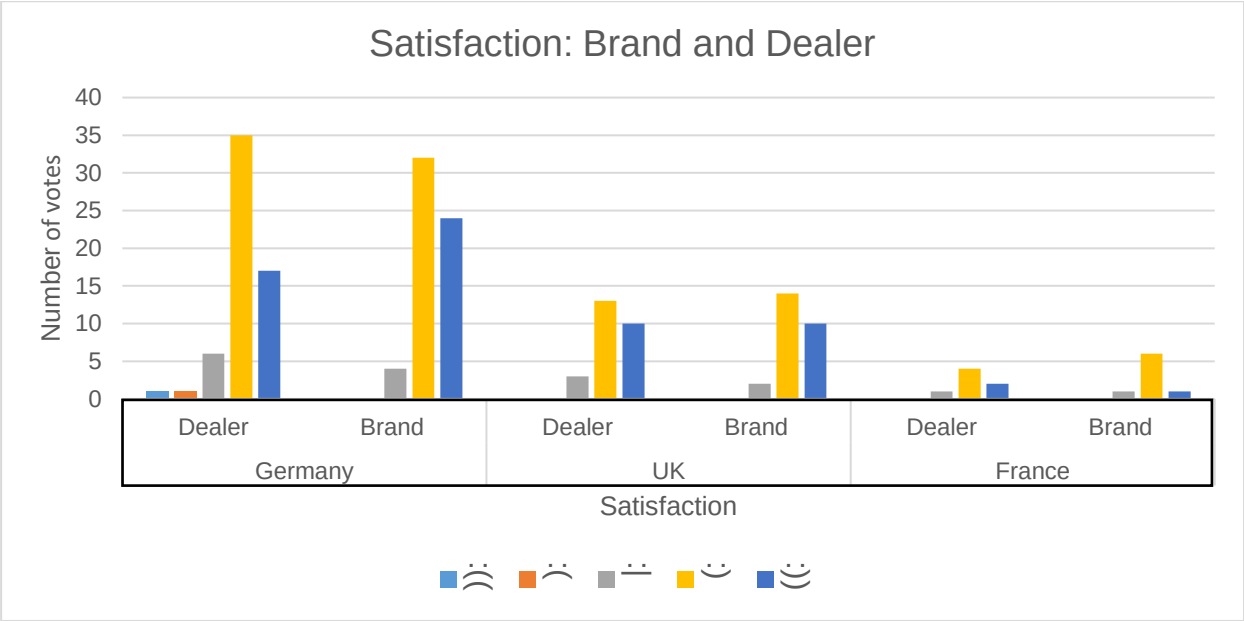

Figure 30: Survey - Satisfaction brand and dealer (own source)

There are different customer behaviors being observed in the exploitation of a dealer. Some farmers and contractors only need their dealer for the initial tractor purchase, others, however, have all routine works, such as maintenance services, spare parts supplier, and all kind of repairs (from small to big), done by the dealer. The latter are important for the dealers' utilization of workshop capacity and strengthen the relationship because the dealer is earning more money with the customer and the customer is more dependent on the dealer.

The participants of the survey were asked, how often they frequent their dealer due to tractor cases. The five answer options are in 20% steps subdivided. The range is from "I`m just buying my tractor at the dealer" (0% - 20%) up to "My dealer is doing everything on the tractor (service, inspection, repairs, parts, etc.)", represented with 80% - 100%. One quarter of the survey members decided for the response option 80% - 100%, further 29% for the range between 60% - 80% and nearly one third voted for 40% - 60%. The rest (16%) decided for a usage of 0% - 40%, whereby only 5% of the participants choose the answer, that they are only buying their tractor there. This result shows that the dealer is for the majority of the tractor users not only a sales partner, but also essential for the aftersales service. For the farmers and contractors, the dealer is an important partner

whom they rely on, especially in tough situations and high seasons. The purchase of a new tractor is consequently dependent on the experience and satisfaction of the customer related to their dealer in terms of technical support and financial goodwill.

Aim of the next question is to get a deeper understanding of the dealer-customer-relationship. The potential customers were asked about the attributes of the dealer they like or dislike. They were asked to do a ranking, starting from 0 stars (low quality) up to 5 stars (high quality) for different attributes. The first one is the distance between dealer and farm, which is difficult to influence by the dealer but an important factor for customers, as previous results have shown. Additional service outlets with a (small) workshop or a service van for mobile technical support can have a positive impact. The next attribute is the pricing of machines the dealer is offering. How do customers feel about their local dealer's prices compared to other suppliers or dealers? Are the prices for service and repairing appropriate or excessive? Third topic is about the customer relationship and the social interaction between tractor owner and dealer including his team. This question aimed at the emotional relation between customer and dealer and the behavior of all parties. Next one is about the professionalism, especially regarding the handling of new high-tech tractors, advanced farming systems, software solutions, etc. And the last question is about the dealer's service quality and goodwill .

The results are illustrated in a network diagram in figure 31 below. Each corner represents the satisfaction in terms of one to five stars. The five different dealer qualities, which are investigated in this question, are displayed with the points and lines in the different colors. The results are given in absolute numbers of votes. Between 91 and 94 participants answered on these questions. The question about the "Customer relationship" got the lowest feedback with 91 responses and the question about the "pricing" received with 94 votes the highest participation. It is conspicuous that there are no peaks for one and two stars, which means, that less customers are not satisfied with the overall quality of their dealer.

The "distance" (light blue points and lines) is voted with a wide range and almost even distribution of stars. This depends on the location of farm and dealer and is in this case a subjective feeling. It could be that for one customer a distance of 20 km is far away, for the next participant it is a close distance. As mentioned before, this type of quality is

complicated to compare and improve, because it is difficult to change and is linked to great effort and costs.

For the topic “pricing” (orange color) almost half of the participants voted for 3 stars what implies that the customers’ satisfaction with the dealers’ pricing policy is not very high and maybe they have the opinion that the dealer is earning too much money respectively the dealer’s margin is too high. This impression can arise as soon as customers start to get machine quotes from different dealers. Due to the fact, that the selling price is determined by the dealer and not by the tractor manufacturing brand, there are different price points in the market for the exact same machines. Another factor for different prices for identical machines can be the time of the tractor order entry. This is sometimes not retraceable for the customer. The price increase of the tractor manufacturer in the last years have an additional negative influence on this specific issue. Therefore, prices between dealers will always differ which might cause frustration on the customer side as shown in the results. Additionally, it is imaginable that the question about the price of a tractor on customer side would be never voted as positive even if all dealers would offer the tractor for the same price.

The “customer relationship” (gray color) is rated with a good result and less people answered with one and two stars. 33% of the participants ranked it with 5 stars, what suggests being a great partnership between dealer and farmer/contractor. The “professionalism” (yellow color) of the dealers is highly appreciated by their customers. More than two third ticked four and five stars - only 9% selected one and two stars.

But the highlight is the result of the topic “service and goodwill” (dark blue color). 80% of the attendees voted for four and five stars, which is very good result and illustrates the high satisfaction with the technical service and the accommodating behavior in terms of costs. Good dealer qualities are a strong basis for a good partnership with the tractor customer and very important for the tractor manufacturing companies in terms of satisfied and loyal customers.

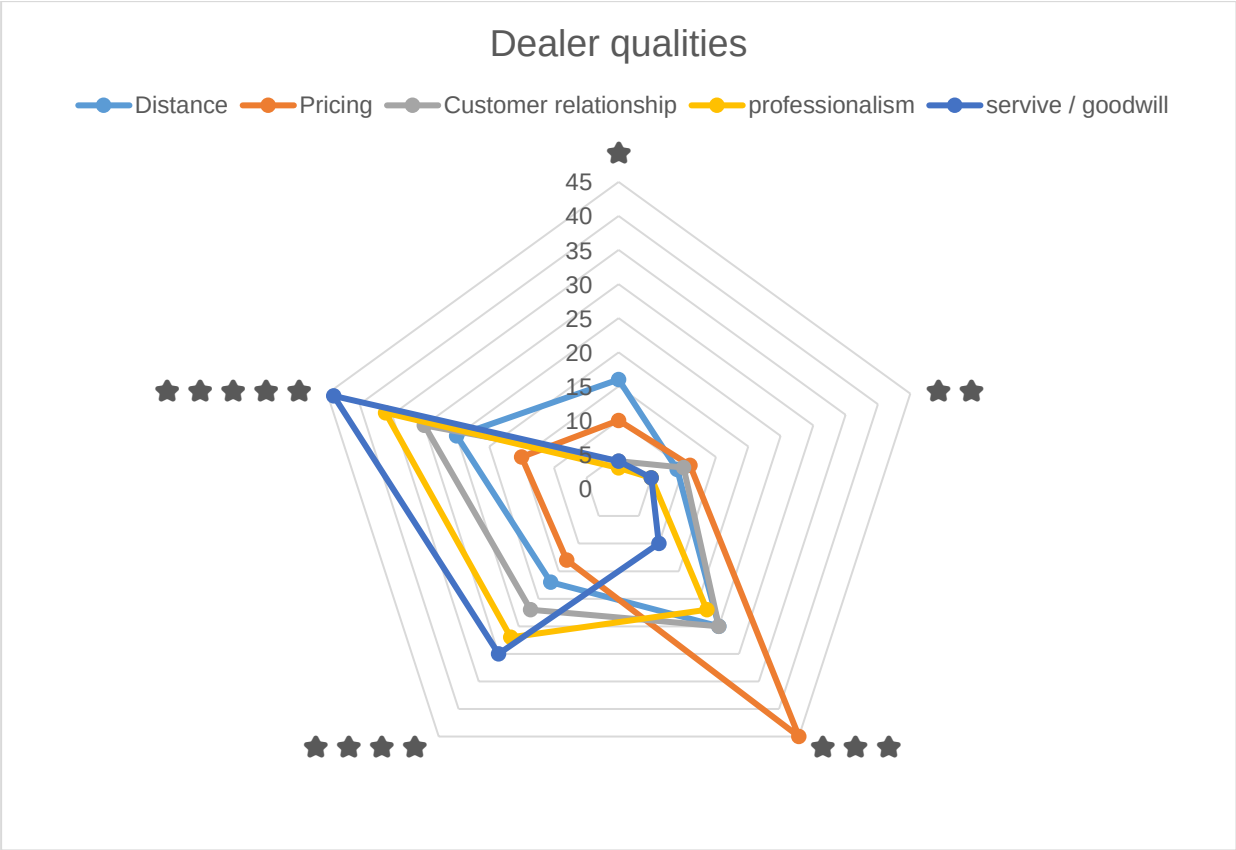

Figure 31: Survey - Dealer qualities (own source)

Figure 31 analyzes the overall satisfaction of customers with the different dealer attributes accumulating all countries. In addition, it is interesting to analyze the response pattern depending on the main brand of the customers. Especially for Germany where the sample size allows to separate the results into Fendt, Case IH including Steyr and John Deere, the analysis discloses additional insights. This separate consideration is displayed in figure 32. As mentioned in chapter 7.4, the different tractor brands in Germany have different distribution strategies and networks. Case IH and Steyr have a network of mostly small and a few medium respectively big dealers for tractors, sometimes with dealer outlets or sub dealers to extend their business area. Almost all of them are family businesses with Titan Machinery as one exception in Eastern Germany. Fendt on the other side runs a network of cooperative sales partner (Agrarvis, BayWa, ZG Raiffeisen) and some private dealers but the cooperative companies accounted for the largest share. John Deere has in comparison to Case IH and Steyr in Germany less but larger main dealers, most of them with several outlets and sub dealers. With the strategy “Dealer of

Tomorrow" there will be even fewer main dealers in Europe and Germany in the future to strengthen their professionalism to deliver the required support.

Figure 32: Survey - Dealer qualities in Germany -brand split (own source)

The bar chart in figure 32 represents the votes of John Deere customers in green/yellow, Case IH including Steyr customers in red/white and Fendt owners in green/red. The only topic where Case IH and Steyr dealers in Germany get the best ranking, in comparison to the other two competitors, is pricing. This can be explained by lower prices of Case IH and Steyr tractors in general compared to equivalent Fendt and John Deere tractor models but also by smaller family dealers with small structures and less personnel costs. Due to less internal costs, a small dealer sometimes can run on lower margins and as such offer a better price to the customer whilst still achieving the same profitability as a larger dealer with higher overhead costs. Best in class regarding the topic distance is Fendt which is explicable by the numerous outlets of the cooperative sales partner in Germany with a good collaboration of different locations within one cooperative company. Fendt is closely followed by John Deere with an efficient dealer network in Germany with main dealers, outlets, and professional sub dealers. Case IH and Steyr, which can be seen as one because of the shared dual branded dealer network, perform much worse in this comparison. This is an effect of a low territory coverage and a couple of open points

in Germany where no dealers are available. In terms of customer relationship, John Deere by far scored best, what implies a friendly and professional customer contact. Case IH, Steyr and Fendt are far behind and got similar results. The topic “professionalism” shows that John Deere and Fendt are the winners in this topic and Case IH and Steyr is behind these two. The variance within the results about the dealer professionalism is for Case IH and Steyr higher than for the dealers of the two other brands. This can be explained by the heterogenous dealer composition of Case IH and Steyr in Germany, compared to John Deere and Fendt. Especially smaller dealers face problems in terms of professionalism due to technical trainings, advanced farming specialists, deeper product knowledge (especially on new technologies and software solutions), mostly caused by less employees and missing structures. Larger dealers and cooperative companies have a big advantage. An AFS specialist, for example, can be afforded more easily in larger dealership structures as they are responsible for a big tractor fleet and can focus on his specialized area exclusively. Smaller dealer cannot afford this, and a specialist would not be fully busy with this function. The same is true for service and goodwill. Especially the service skills of the workshop employees have to be trained regularly to make sure that the staff is up to date on new machines to deliver a good support and service for the customer. For small dealers with a low number of workshop employees it is more difficult to send mechanics to a technical training on a regular basis than for larger companies. Missing structures in the workshop intensify these problems.

Armed with this knowledge, it is interesting to investigate the question, what happens with the customer if the dealer changes the tractor brand, which he is selling. The results from the previous questions in this chapter have shown that the dealer holds a key position for tractor manufacturers to be successful in selling tractors and satisfying their customers after the sale. Consequently, the survey participants were asked: “Would you change with your actual dealer to another tractor brand, assumed comparable technic and price?”. It is important in this case, that the dealer changes to a brand which is comparable in terms of technology. The four possible answer choices in this single choice question are: “no”, “probably no”, “probably yes” and “yes”.

12% of the participants answered with “no”, that they wouldn’t change the brand when their dealer changes the main supplier for tractors. Conversely voted 3% with “yes”, that they would go with the dealer to another brand. But the majority chose the response options “probably no” (43%) and “probably yes” (42%) with almost the same share. That

means, that the farmers are not sure how to react if such a situation occurs. It also depends on the alternative possibilities for the customers, which are individually different. If the farmer or contractor has other (appreciated) dealers in his surrounding area, the reaction would be maybe different as it would be, when it is the only dealer in an acceptable distance to the farm. Having a closer look on the German participants who are driving Fendt tractors, they voted with 22% for “no”, that they would not change to another product, even if their dealer did. It seems, that the loyalty to the tractor brand instead to the dealer is stronger for Fendt customers than for the other participants who are driving tractors from other brands. That shows again the strong solidarity of the Fendt customers to their brand.

To conclude, the dealer plays a key role for the tractor manufacturers in every country and area. To increase market share and customer satisfaction, it is unavoidable to have professional dealers and a nationwide dealer network with a good area coverage. The dealers must be up to date and attend trainings for their own development. For a brand differentiation an efficient, motivated, and success-oriented dealer network is needed.

9.5 CNH Industrial

Aim of this thesis is to investigate the potential of a brand differentiation within the CNH Industrial AG segment. Therefore, it is significant that potential customers know the CNH Industrial company and its brands in the agricultural segment. Many customers of each CNH Industrial brand have a long relationship with the brand, partially they have been customers since the time where the brands were completely independent, partially they have also been a customer of brands which are now merged into the current CNH Industrial brands. This knowledge is fundamental for all further investigations and actions aiming at strengthening each brand and push a brand differentiation in order to increase market share and profitability for the whole company CNH Industrial.

Because of the considerations above, the participants were asked to answer the following question: “Do you know CNH Industrial and are you aware which brands belong to it?”. This feedback should lead to an overview about the knowledge of farmers and contractors about CNH Industrial. The possible answers are: “Yes, I know the company; I know the company as far as possible; I have heard about it and no, I don’t know CNH Industrial and don’t know which tractor brands it contains”.

The results for all three countries are similar and the analysis is not split by country. 64 customers voted for “yes, they know CNH Industrial”, which represents 70% of the survey members and shows a high degree of brand awareness. Further 24% selected the response option “as far as possible”. That implies that nearly one quarter of the farmers and contractors have at least a basic knowledge of CNH Industrial and its brands. On the other hand, just 5% of the respondents have only heard about it and one person voted for the option, that they do not know CNH Industrial and the brands behind it. The responses of the customers show that CNH Industrial is known by a major part of the people who working in the agricultural sector and most of them have a deeper knowledge about its structure, brands and products. This is a good starting point for a deeper investigation in this area. The small number of participants who shared that they don’t or rarely know CNH Industrial and the brands which are included can be neglected due to the small share of approximately 6%.

It is interesting to get a better understanding if the participants currently have or did have a tractor from CNH Industrial or of its predecessors IHC, Fiat, Fiatagri, Ford, etc. in the past. IHC has a meaningful history in Germany and was market leader in some years of the 70s and 80s. Due to that, it is not unlikely that the attendees, especially the German ones, got in touch with the brand previously. In order to find out about the customers’ previous or current touchpoints with CNH brands, a multiple-choice question was used. The participants got asked: “Did/Do you have a tractor from the CNH Industrial company? If yes, which brand?” Multiple selections were allowed because it could be that for example a farmer is currently driving a Case IH tractor and in the past, he used an IHC or Fiat, which he might still have in the tractor fleet. The possible response options were “No” which means that the survey member have currently and had also in the past no touchpoints with a current or former brand from CNH Industrial AG. The important current and former brands of CNH Industrial AG are represented in the other answer options (“Case IH”; “Fiat”; “IHC”; “New Holland”; “Steyr”) In figure 34, the results are displayed by country.

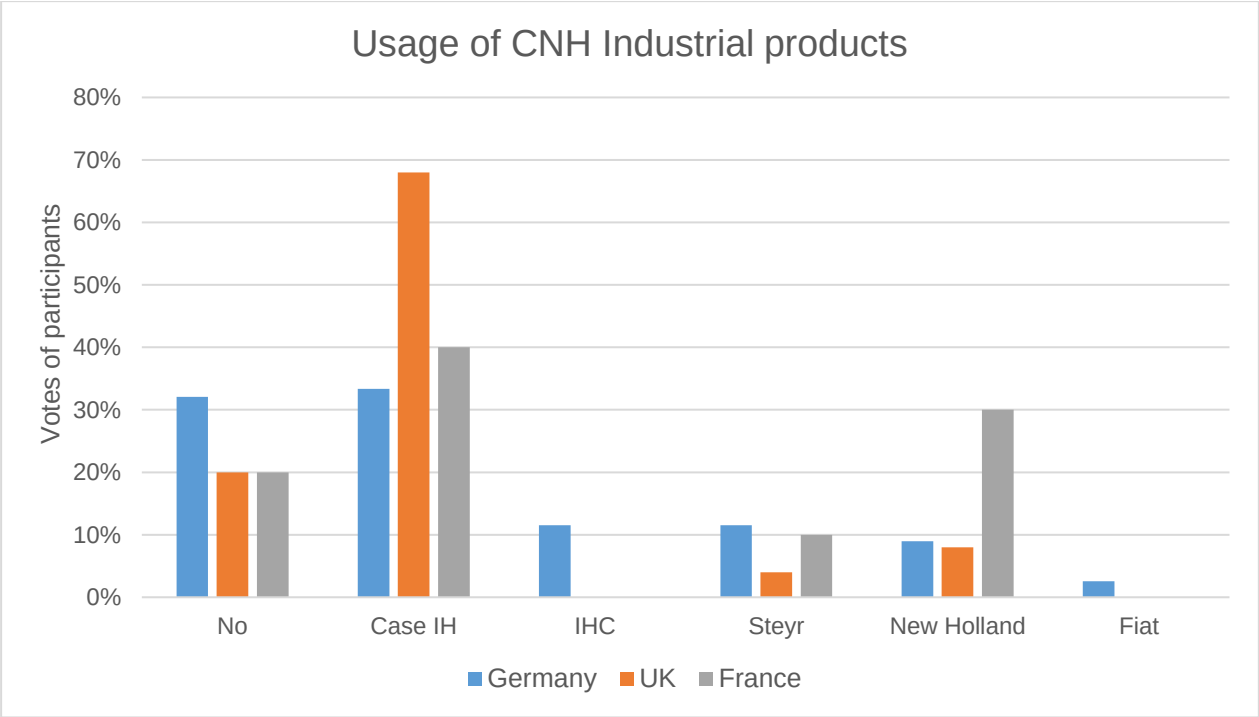

Figure 33: Survey – Usage of CNH Industrial products (own source)

The bar chart of figure 34 demonstrates the distribution of the brands for each country and refers to the question 21 of the questionnaire (attached as Annex). The votes of German participants are represented by blue bars, UK votes by orange. The gray bars show the result of French farmers and contractors. For a better comparison, the votes of the participants are illustrated in percent. It shows that 32% of the German participants have or had no CNH tractor, neither in the past nor in the present. The question arises, “what is the reason for this?” Is there an aversion towards these brands, is there no (appropriate) dealer or is there not the one specific root cause for this? Potentially, the survey members are in a customer segment which cannot be satisfied presently with CNH product portfolio. This could be a potential for a brand differentiation and new products for different customer categories. Due to the fact, that the farmers have neither positive nor negative experience with one of these brands, they should be openminded and have no or less prejudices. In France and UK, the distribution is different, the participants voted for the response “no touchpoints” with 20% which means, that 80% of the UK and French participants actual have a CNH tractor or had one in the past. 68% of the UK farmers stated that they have or used to have a Case IH tractor, 4% voted for Steyr and 8% for New Holland. In France, 40% voted for Case IH, 10% for Steyr and 30% for New Holland. Despite the fact, that in France currently no Steyr distribution network is existing, the

number of Steyr tractors is surprisingly high. Most likely this is based on the circumstances that only farmers and contractors close to the German boarder were asked in this survey and probably the tractors were retailed by German and not French dealers. French CNH Industrial dealers currently are not selling Steyr tractors. There are two different ways for a French customer to get a Steyr tractor nevertheless: either the customers are buying it in another country where Steyr is officially sold, or the French dealer imports the Steyr tractor from abroad and sells it to the customer. In Germany there is another allocation of the different brands. 33% of the participants answered that they have or used to have a Case IH tractor which is a comparable percentage to those who answered that they have/had no CNH product. Another 12% voted for IHC and Steyr each. 9% selected New Holland and 3% its' predecessor Fiat.

For a potential brand differentiation in the future, it is significant to have a good understanding of how potential customers perceive the different brands. This is the base for action plans to differ the three brands from each other. It's the scope of the following question to receive more insights into this. The participants were asked in a multiple-choice question how they perceive the 3 tractor brands from CNH Industrial. Because of the question type with multiple choices, the sum of all answers is together more than 100%. The basis of the calculation is the number of participants from all three countries who answered on this question, in this case N=98. The result for every response option is divided by N to get the feedback in percent. The sum of the results is 144%, this indicates that the participants choose in average 1,44 answers, mostly between 1 and 2. The participants had the choice of five possible answer options. One answering option is, that the different brands are perceived to have a different pricing positioning in the market, meaning one brand being perceived as being cheaper/more expensive than others. Another option was, that the three tractor brands are using different technologies or differ in terms of technical configurations. The next response option reflects the perception that the quality of the three brands differs from each other. "A different product portfolio" is another possible answer which is selectable and the last one is a statement, that the customer has the opinion, that all three tractor brands from CNH Industrial are equal and there are no differences between the brands Case IH, Steyr and New Holland.

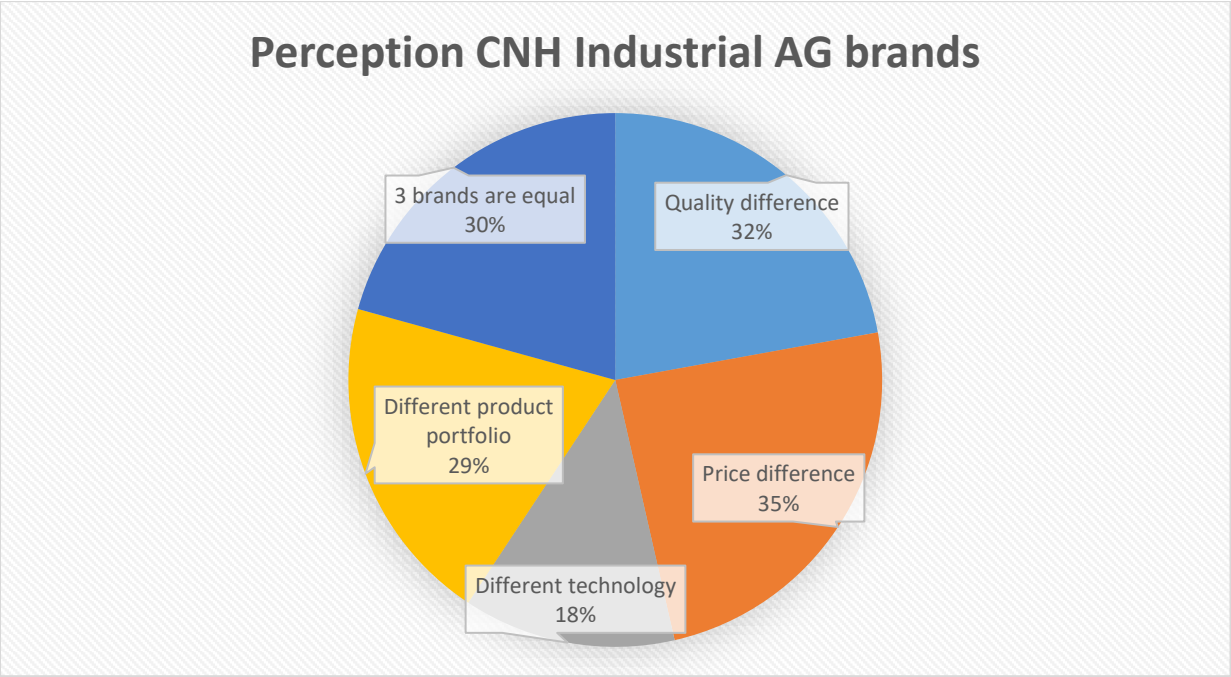

Figure 34: Survey – Perception CNH Industrial AG brands
(own source)

The split of the result is shown in the pie chart in figure 35. The feeling of 30% of the participators is, that the 3 brands (New Holland, Steyr and Case IH) are equal, what means they are seen to have the same products, price and technology – which is not reflecting reality as there are significant differences in terms of portfolio. It is likely that the answers were given by non-CNH Industrial AG customers who have little information about the brands and their product portfolio. Conversely, the almost similar amount of people (29%) has the opinion that the three brands have a different product portfolio – which is the case in reality. That implies, that these people have a closer look to these brands, maybe due to purchasing intentions. 18% of the survey participants selected the possible answer, that the three brands use different technologies on their tractors. Case IH, Steyr and New Holland in general use the same technology on equivalent models, however there are few exceptions and differences in terms of operating interface or technical features. It seems that these participants had a closer look on the technical data of the products or even experienced the different products with their feature differences on their own. An example for such a technology difference is the different operation for the CVT tractors. On New Holland the Multicontroller lever has a zero position, to which the lever returns after accelerating and decelerating. On contrary, the Case IH and Steyr CVT Multicontroller has no zero position and does not return automatically, this operating concept is comparable to the operating concept of a combine. Such nuances can only be

known when the customer has experience with or interest in these products. 35% of the participating farmers and contractors gave the feedback that in their opinion a price differences between the products of the different brands exist. From a manufacturer perspective the pricing policy does not differ between the 3 brands. Target is to have a comparable price positioning in the market. Still, the customers seem to perceive the price positioning as different. This can have several reasons: In some cases, New Holland has other key models than Case IH and Steyr, which means that specific models have a better discount for New Holland than for Case IH and Steyr, but it is also the other way around. Furthermore, dealer stock tractors have in many cases a better price than a new order, because the stock machines got a cheaper purchase price for the dealer due to missing price increases. The purchase price for the dealer is normally fixed with the dealer order date or the invoice date of the tractor and not with the sales date to the customer. Especially in times of frequent high price increases a stock machine can have a significant price advantage over a new order. Another reason for a price difference could be, that one of the tractors is declared as demo unit with a special discount for the dealer and customer. These are all reasons why customers might feel a price difference between Case IH, Steyr and New Holland tractors. In reality, however, the goal of the CNH group is to avoid or reduce “internal” price fights. Therefore, CNH Industrial installed a brand governance department which controls the list prices and discounts, because every price fight between these three brands is a profit loss for the partaking dealers and the manufacturing company.

32% of the survey participants from Germany, UK and France said that they assume quality differences between the 3 different brands. The results don’t give an indication which brand or products are seen to have a better or worse quality; it is just the fact that in their opinion quality differences currently exist. In reality, there could be slightly different quality standards for equal products from different production locations. Smaller ranges are often produced on the same plant, bigger models have different production plants in different countries. Case IH and corresponding Steyr models are manufactured always in the same plant in Europe, New Holland, at least partially, in other factories and countries. For models which are produced in the same factory, a quality difference is very unlikely to occur. It could therefore be assumed that customers subjectively attribute different quality standards to the different brands.

Due to the understanding that most of the farmers and contractors have the opinion, that the three brands, New Holland, Case IH and Steyr differ from each other, the attendees got confronted with a combined selection sequence question (question 25 in the questionnaire). The first part of the question targeted at understanding, for which of these three brands the customer decides, when he would by a new tractor now and the second part asks: “What are the reasons for this”. Ten survey members would not buy a tractor from these three brands and as such did not answer the question. Case IH got most votes with 60%, followed by Steyr with 21% and New Holland on the last place with only 8%. The positive result for Case IH is influenced by the survey participants which are mostly no New Holland owners. Still, the results show that Case IH is the favorite and best-known brand for the participants in this survey. Case IH is the favorite brand in all three countries. On Steyr side we have different results between the three countries. 20 people in Germany voted for Steyr, in UK no one and in France just one participant. This is explainable by the reason, that Steyr is currently not offered in France and UK, due to that the customers have no experience with the brand, neither positive than negative. The reasons for the low rating of New Holland could be manifold but will be not investigated deeper in this thesis.

The result of the second question leads to a deeper knowledge, why the customer has decided for one of the brands. Possible answer options for this single choice question were “dealer, price, technology, image and service”. The same number of participants as in the first part of the questions didn’t answer on this. With 44%, the response option “dealer” earned the most votes. Also in this decision, the dealer has a very big impact which brand of CNH Industrial AG will be bought. This explains the high rating of Steyr and Case IH in the previous question, because in Germany most Case IH dealers are also Steyr dealers (dual branded), with only a few exceptions. Technology and image share the second place with 17% each as decision-maker. Followed by the reason price with 7% and service 6%. The price does not seem to be important for this decision. This can have two possible root causes: either the real price difference between the products of the three brands is only marginal or the price has less importance for those customers in this decision. To conclude, the highest impact of the decision between these three CNH Industrial brands is with the dealer, which is the sales and aftersales partner for the tractor owner. It shows again, how important the dealer is for the success of a tractor brand and this is also relevant for the success of a brand and product differentiation.

Another question of the survey addressed the relation between the manufacturing location of a product and the customers' acceptance. Farmers and contractors have certain preferences for the manufacturing location of their products. The user connects the quality and durability of a product often with the country of origin. "Made in Germany" for example has a good image in the whole world regarding high art of engineering and high quality. The selection of the production country for a manufacturing company has a positive or negative influence on the image and acceptance of its products. When investigating the potential of a brand differentiation it is important to identify the value for the customer and get a ranking for the countries with the best image producing agricultural machines in Europe.

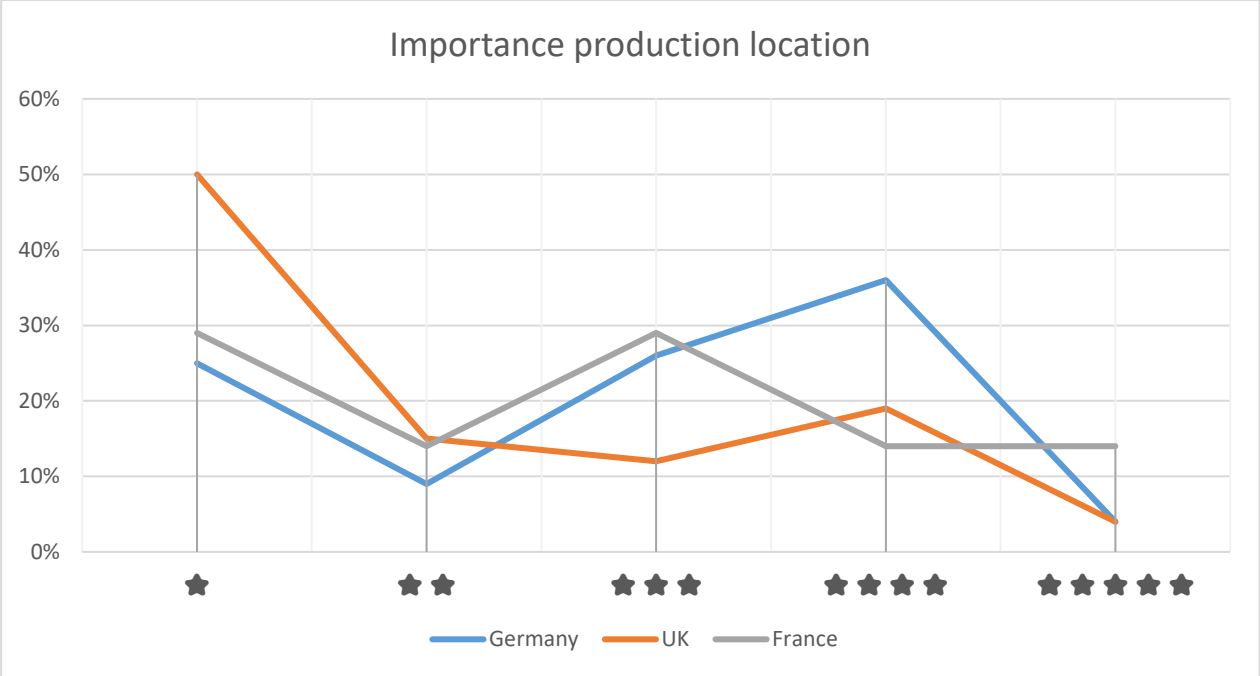

Figure 35: Survey - Importance production location (own source)

Figure 36 shows as a chart with the importance of the production location for the buying process. The importance of the production location is subdivided in 5 possible answer choices, starting from 1 star, which means that the production country has a low impact in the buying decision, up to 5 stars with a high significance. The results are illustrated separately for Germany (blue line), UK (orange line) and France (gray line). The results are given in percent.

It has a different importance for the people from the different countries. UK farmers answered with 50%, that it is insignificant for them, where their agricultural machines are

produced. That means that every second UK farmer and contractor doesn't care, where their tractor is assembled. The average for UK is 2,12 stars for the importance of the manufacturing location. This is very low compared to other countries. For French farmers the importance is higher, the majority of 29% voted for one and 3 stars, the average of all French participants is 2,71 stars. But the highest importance was responded by German participants. 36% of them voted for 4 stars and the average is 2,85 stars, which implies, that the manufacturing country for their new tractor has a high impact in the decision-making process. The demand for a high manufacturing quality in Germany is one of the highest or maybe the highest in Europe, which is underlined by this feedback.

RANKING	COUNTRY
1	Germany
2	Austria
3	France
4	UK
5	Scandinavia
6	Italy
7	Eastern Europe
8	Turkey

Table 5: Survey – Customer preferences regarding product location (own source)

In addition to the chart in figure 36, table 5 shows the result of the ranking for the manufacturing countries. The participants were asked: "Which country as production location would you prefer for your next tractor? Please do a ranking for the following countries: 1 = highest ranking; 8 = lowest ranking". It is an accumulated result of all three nations which took part at the survey. Production location in Germany was voted from Germany and France on the first place, UK decided for their own country as best manufacturing location. But due to more participants from France and Germany, Germany is in the accumulated consideration on the top with 57 votes from 75 valid responses, followed by Austria, home of Steyr, and France on the third place. Famous

tractors from France were Renault in the past, which was taken over by Claas in 2003. The results of the participants were multiplied with the ranking numbers in reverse order. First place was counted with 8 points, second place with 7 points, up to the last place with 1 point. The sum of the points leads to the ranking of the 8 possible production countries, which are presented in table 5. UK is on the fourth place and famous for the production of hhp New Holland tractors and for JCB (tractors and telehandlers for agriculture purposes), closely followed by Scandinavia, which is the home country of Valtra tractors. The participators voted Italy on the sixth place. Italy is known for the development and production of the former Fiat tractors and now New Holland and some other smaller tractor companies, such as Goldoni, Carraro, etc. Eastern Europe ranks on the seventh place and Turkey on the last one. It is safe to say, that Germany is the most important manufacturing country in Europe for agricultural machines and especially tractors. Fendt, Deutz, Claas and John Deere have their global or European headquarter in Germany and most of their European production, especially the hhp tractor production for professional customers, takes place in this country. In my opinion, this is in addition one of the reasons why German tractors or tractors, which are built in Germany, for example John Deere in Mannheim, are so successful in Europe and especially in Germany. The location of the tractor plant has a high impact on the image of the tractor and the buying process. This should be considered in a differentiation process.

The last question in this chapter aimed at the upcoming differentiation plan of CNH Industrial AG. The customers were asked:" Did you notice that there will be a differentiation between the 3 brands of CNH in the future?" Customers from Germany, UK and France answered in a different way. 63% of the potential customers in Germany didn't know that this would be happening in the future. In UK 42% and in France 38% gave the same response. Due to that response distribution, it seems that the participants from UK and France have more information about these plans of CNH Industrial. The next possible response option was, that they don't really know what is behind this plan but heard or read about it - for example in conversations with colleagues and dealers or in journals and technical magazines where this topic was highlighted. This was selected by 13% in Germany, 35% in UK and 12% in France. Germany and UK equally with 23% and France with 50% voted for the response option "Yes". It shows, that roughly every fourth of the participants is informed about the reorganization of CNH Industrial and its AG brands. In my opinion, this is a good base for a further differentiation process.

9.6 Potential Steyr

One part of the differentiation plan is, that Steyr becomes a Premium brand with only tractors in their product line up. This brand is, in contrary to the global brands Case IH and New Holland, in some European regions completely unknown. As such neither positive nor negative experiences were made by customers which is a chance for this brand development.

In the first question the participants were asked how they as potential customers perceive the brand Steyr and their products. Do they assess the products and the brand as Premium, medium-class, standard or don't they know Steyr tractors at all? Figure 37 demonstrates that the feedback for standard tractor (17%) and premium tractor (15%) is nearly identical and represents accumulated only a third of the valid responses. The majority of 42% decided for medium-class tractors, which implies, that Steyr tractors are appreciated - not more, not less. One could say that the attitude towards Steyr is neutral, neither positive nor negative. These results of course raise the question if this feedback is based on practical experience of the survey users or if it is just an impression based on reading articles about Steyr in magazines, chatting with other farmers or contractors or maybe just a feeling towards the brand. The motives for this decision are not deeper investigated and the votes are supposed to show the actual perception. The situation for the case "not available" is different und clear to interpret. Nearly one quarter of the respondents stated that they have no perception of the brand Steyr and its products. That means, that they don't know the brand at all or didn't have experience with it up to now. These customers have no opinion on the brand or the products which offers a potential respectively means no obstacle for Steyr to develop to a premium brand with a good image.

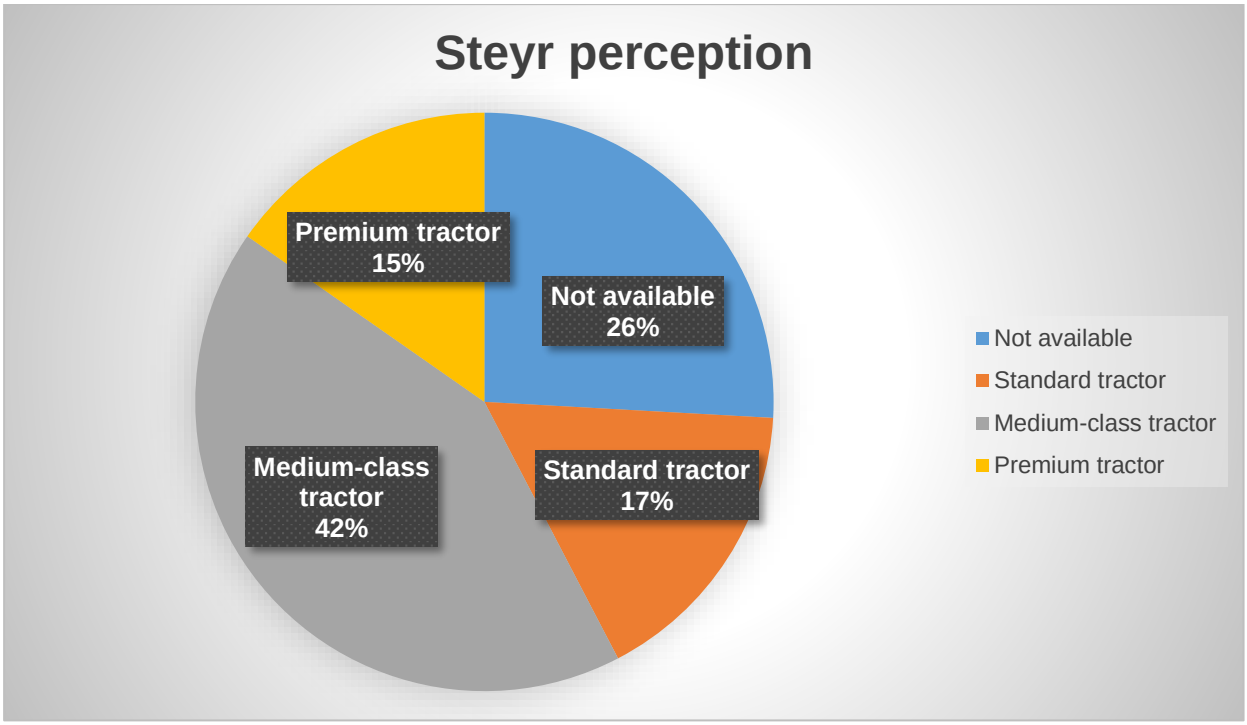

Figure 36: Survey - Steyr perception (own source)

In addition to the actual perception, the outlook is of big interest in terms of the potential of Steyr in the future and of the feeling of the potential customers. The survey members were asked:" What do you think about the potential for Steyr becoming a Premium brand?" The distribution of the responses for Germany, UK and France were very similar and are analyzed as one result. A minority of 8% answered with "very low" and another 7% have the opinion that the potential is very high. For a low potential voted 41% and the rest of 45% chose the response option "high". Most of the participants has a moderate attitude about the potential for Steyr becoming a premium brand. It is interesting to compare this result for all participants with the isolated data analysis of the John Deere and Fendt customers, which participated at this survey. John Deere and Fendt are handled as the premium tractor brands, especially in the German market. Due to that, it is interesting to get a feeling what these customers think about this question and what their attitude is. The results are accumulated for both brands and for the three participating countries. Only 3 people voted for "very low", these were John Deere owners, no Fendt customer decided for this answer option. It shows that John Deere customers are very convinced of their brand, and it seems that they are more convinced than Fendt customers. No one of this focus group decided for the possibility, that Steyr has a very high potential for this development. 56% voted for "low" and the rest of 36%

for “high”. The result for these two options is similar on both sides, no significant difference. Compared to the results of all participants, the opinion of the farmers who are currently driving a premium tractor is more negative towards the premium potential for the Steyr brand than the opinion of the other customers. This highlights the difficulty to convince customers with premium tractors from another product to do a brand change even despite a brand repositioning.

For a better understanding of the Steyr perception it is important to get more information about the effect of the brand on the customer. What is the customer thinking when he hears “Steyr tractors” and what does he connect with it? Multiple answer selections are allowed in the question about their attitude towards Steyr because some attendees have multiple attributes which come to their mind when they hear this brand name. Feedback was given by 98 persons with 242 clicks in total, which causes an average click-rate by 2,47 clicks per participant. The combined results for the countries Germany, UK and France are illustrated in the chart of figure 38. The y-axis represents the different attributes, and the x-axis shows the number of participants who voted for these response options.

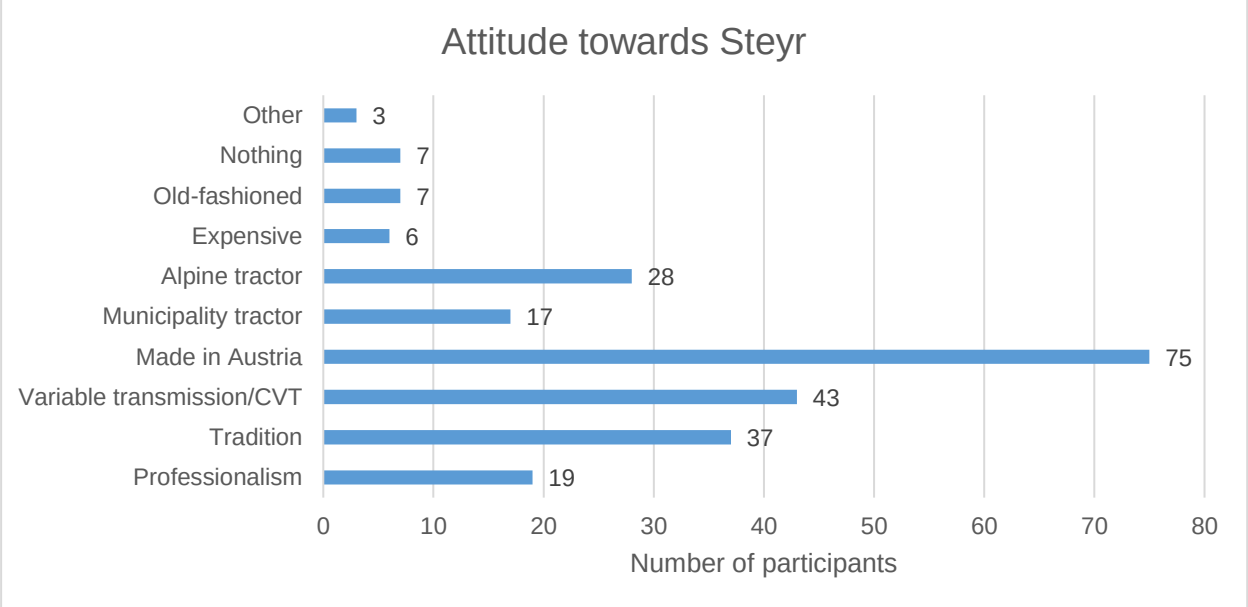

Figure 37: Survey – Attributes customers connect with Steyr (own source)

All survey members (N=98) answered to this question and are a part of the result. Only 3 farmers or contractors what represents 3% of the participants answered with “other” what means that they have other thoughts connected to the brand Steyr which are not listed in

the response options. This indicates that nearly all participants found their attitude towards Steyr represented in the answer options. Another 7 attendees have no opinion of Steyr and decided for “Nothing”. Maybe they didn’t have touchpoints with the brand or products so far. The two negative response options “old-fashioned” and “expensive” were rated low with 7% respectively 6%, which is a low number and suggests that most of the farmers have no negative attitude towards Steyr, probably also because of the low level of awareness. In contrast, the next five answer options have a neutral attitude and got a higher affirmation. “Alpine tractors” was chosen by 29% of the participants. Due to their history, Steyr tractors are a symbol for tractors with a low center of gravity, made in and for the alpine regions for a lot of farmers. 17% of the candidates voted for usage in the municipality sector. An additional niche for Steyr besides agricultural tractors within the CNH Industrial company is the non-AG segment in which municipality plays the biggest role with biggest business volume and which was growing in the last years. Steyr tractors can be ordered in municipality color (RAL 2011) and with special options for municipality applications, in collaboration with external and internal suppliers, ex-factory. These special options are reserved only for Steyr, Case IH and New Holland cannot be equipped with these features. The survey shows that this is being recognized by some agricultural customers. The biggest share of 77% decided for “Made in Austria”, which is a statement and trademark, not only of the country where the tractors are built, it is also linked to values which are connected to the manufacturing country which are shown in the previous chapter. Austria was voted on the second place of the preferred producing countries. The statement implies the high value of the tractor. As Steyr is (one of) the inventor of variable transmissions for tractors, it is interesting that only 44% attribute this to Steyr. It can be expected, that if the same question would be asked in a survey for Fendt, most of the attendees would vote for it. Most likely this is also due to the strong marketing of Fendt or on the fact, that Fendt is only producing variable transmissions since a long time in contrast to Steyr which is offering both - mechanical and CVT transmissions. “Vario” became for farmers and contractors a synonym for this transmission type. The last neutral answer option is “tradition”, it was selected by 38%. For the positive answer choice “professionalism” voted closely every fifth member of the survey. It means that four of five people don’t watch Steyr as a professional tractor brand, which may have different reasons. Some farmers and contractors don’t know the brand and had no contact points with it. A second scenario could be, that the user had a bad experience with a Steyr tractor and is unsatisfied with the brand and regards it as an unprofessional brand. Comparing

the results from Fendt and John Deere owners in Germany, shows a different picture. While Fendt customers voted for professionalism with 17%, which is in line with the average voting from all participants, no John Deere customer voted for this attribute. This shows again that Fendt customers have another attitude towards Steyr than John Deere customers have. It seems, that John Deere customers are very confident with their brand and its products and have the opinion, that no other tractor brand is as professional as John Deere. That is an indication of a high satisfaction of John Deere customers and makes it difficult to convince these farmers and contractors from another (premium) brand.

Fendt and John Deere tractors are seen as premium tractors in in the most regions of Europe and are the competitors for Steyr in the future to fight against. Due to that it is important to know if the tractor owners think that Steyr has the potential for a premium tractor manufacturer or not. For a further study, the participants were asked: “How realistic is it in your opinion, that Steyr will play a role in the premium-class (e.g., Fendt and John Deere) in the future?”

The result of all 90 attendees from Germany, UK and France who answered on this question is as follows:

- Not realistic: 12%
- More unrealistic: 42%
- More realistic: 38%
- Realistic: 8%

With a deeper look on the response distribution, it becomes clear, that UK farmers and contractors have a more negative forecast. 25% of UK participators have the opinion, that it is “not realistic”. In contrary, only 9% in Germany decided for this response option and in France, nobody choose it. The attitude of potential customers from the UK is not explainable rationally and maybe just a feeling or an emotion. Due to low or less experience with Steyr tractors these statements can’t be based on scientific justification. In addition to the country differentiation, a deeper look into the two premium brands and their responses are interesting. None of the Fendt customers decided for “not realistic” or “realistic”, and the distribution between “more unrealistic” and “more realistic” is closely balanced. The response of the John Deere customers is different. Almost one quarter (24%) of them have the opinion that it is not realistic that Steyr will play a role in the tractor

premium-segment. Another 53% of them voted for “more unrealistic”. That means that 77% of the John Deere customers are skeptical about Steyr having the potential to become a premium tractor manufacturer. This result is congruent with the outcome of the previous questions, that John Deere customers are loyal to their brand and feel the brand John Deere as superior to any other tractor brand in the market. Fendt customers in comparison are more open minded and it seems to be easier to convince them from another professional brand.

The results of the previous chapters and questions showed that Steyr and its products are not as famous as other tractor manufacturers. A lot of farmers and contractors had little or no experience with it. This can be a chance for a more or less unknown brand to develop to a premium brand because there are no or little negative experiences and emotions. Investigation the level of interest of potential (new) customers leads to the last question in this chapter. The participants were asked: “Would you like to get further information about Steyr?”. This question is important to get knowledge how big the interest in the brand and its products is, especially from the participants who didn’t get in touch with it until now. The three possible answers for this question were: “yes”, “no” and “maybe in the future”. The last response option is a neutral statement. 93 feedbacks were counted for this question.

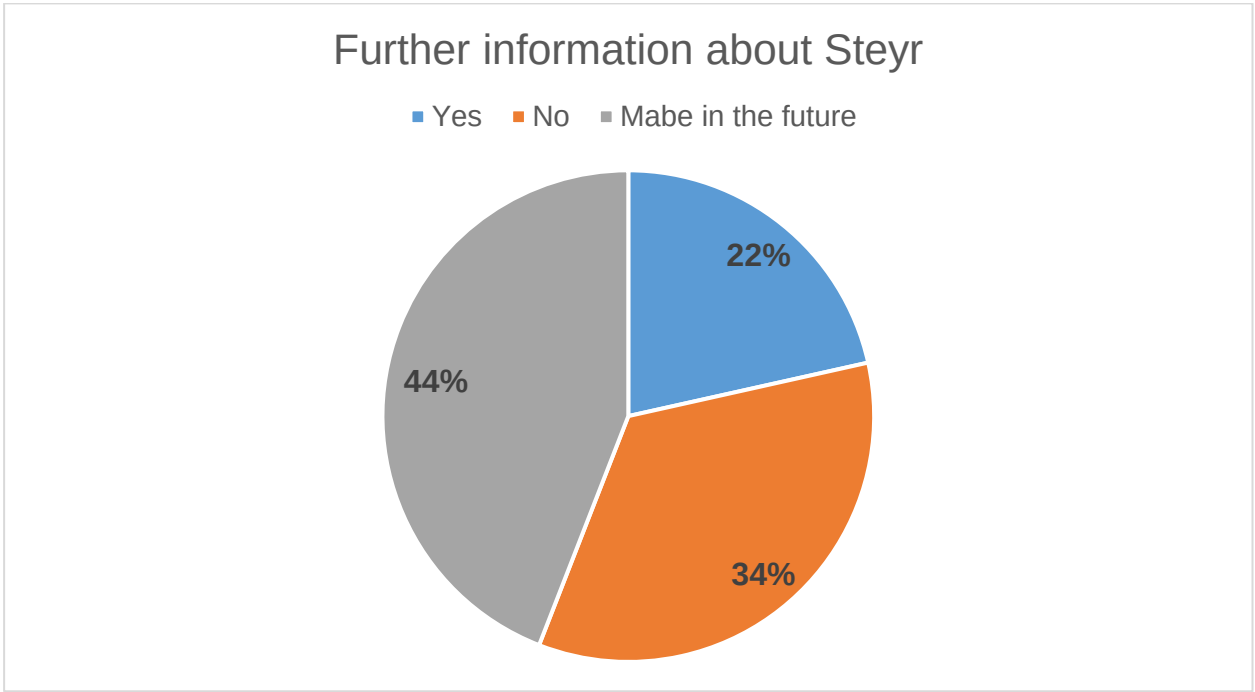

Figure 38: Survey - Further information about Steyr (own source)

The results of this question are visualized in the pie chart of figure 39. 22% of the participants answered with “yes”. This part wants to get more information about the brand and is interested in it. The current level of knowledge in this group can be different, from completely unfamiliar up to a Steyr specialist who is familiar with the brand and the products by own experience. On the other hand, there are 34% who voted with “no”. This group does not want to get further information about the brand and its products. This could have several reasons. One reason could be, that the attendees have currently one or more tractors from another brand and is very satisfied with it. Due to the high level of satisfaction, these participants are not interested in information about other tractor brands because they don’t want to change the brand. Another reason could be that the participant had bad experience with the brand Steyr or another CNH Industrial AG brand and thinks that the products of the three brands are equal. But the simplest reason could be, that the farmer is not interested in Steyr and does not want to be informed about the brand and its products. In this case, there is (currently) no potential to convince the customer from the brand Steyr and to acquire him as new customer. Aim for the brand Steyr should be to awake the interest of these persons in order to change their mind, so they would be more openminded in the future for the brand and its products. Another 41 survey members answered that they maybe want to receive more information about Steyr in the future, this represents 44%. A reason therefore could be, that they actually don’t want to buy a new tractor and presently don’t need this information. It is possible, that they want to get information when a new purchase is planned. This customer group has a potential to be convinced from the brand Steyr in the future.

In summary, it can be ascertained that it is difficult for a tractor brand which is currently not seen as a premium brand to develop towards it and fight against still existing premium brands which already have this image and reputation since a long time. It is a challenge to convince especially John Deere customers from another brand as they are very positive and loyal towards their brand. The question comes up if it is only the brand and its products the customers appreciate or if it is the whole experience including the dealer network?

9.7 Image

Emotions and attitudes are significant for every buying process, also for agricultural machines and more particularly relevant in this thesis for tractors. Defining and developing a brand image takes a long time and costs the companies a lot of money, but raises the appreciation of the users and owners, which ultimately helps to increase market share and profitability of the tractor manufacturer and the distribution partners. There are multiple factors that influence the farmers and contractors, which are not only relevant when it comes to the actual purchasing decision itself but are important permanently as they help shaping a brand's image either subconsciously or consciously. Such influences are advertising (for example print media, internet banner, personalized advertising, etc.), statements and testimonials from practitioners, discussions and conversations with professional colleagues, machine tests from accredited institutes (for example DLG). Other factors which can have a positive or negative impact of the image of a tractor brand are for example the level of durability, innovations and software solutions.

Due to the significance of image in the tractor buying process, this is one important field of investigation in the differentiation process and play a vital role when developing Steyr towards a premium brand within the CNH Industrial AG group. Aim is to get an overview about the current image of CNH Industrial AG and its brands Case IH, New Holland and Steyr in the agricultural engineering sector. Therefore, the survey participants were asked to do an image ranking for a selection of different tractor brands. The selection represents the ten most used tractor brands in Germany and Europe (based on tractor registrations above 0 hp in Germany via Vistamap). The best ranking is represented by the first place and the brand with the worst image is voted on the tenth place in this consideration. To compare the rankings, I defined ranking points which are multiplied with the votes of the participants. First place gets 10 ranking points, second place gets 9 ranking points, down to place 10 with one ranking point. The brand with the most ranking point is best in class and the brand with the lowest number of ranking points is on the tenth respectively last place. Based on this, it is possible to summarize a complex matrix into one number, to make the image of the brands more comparable to each other.

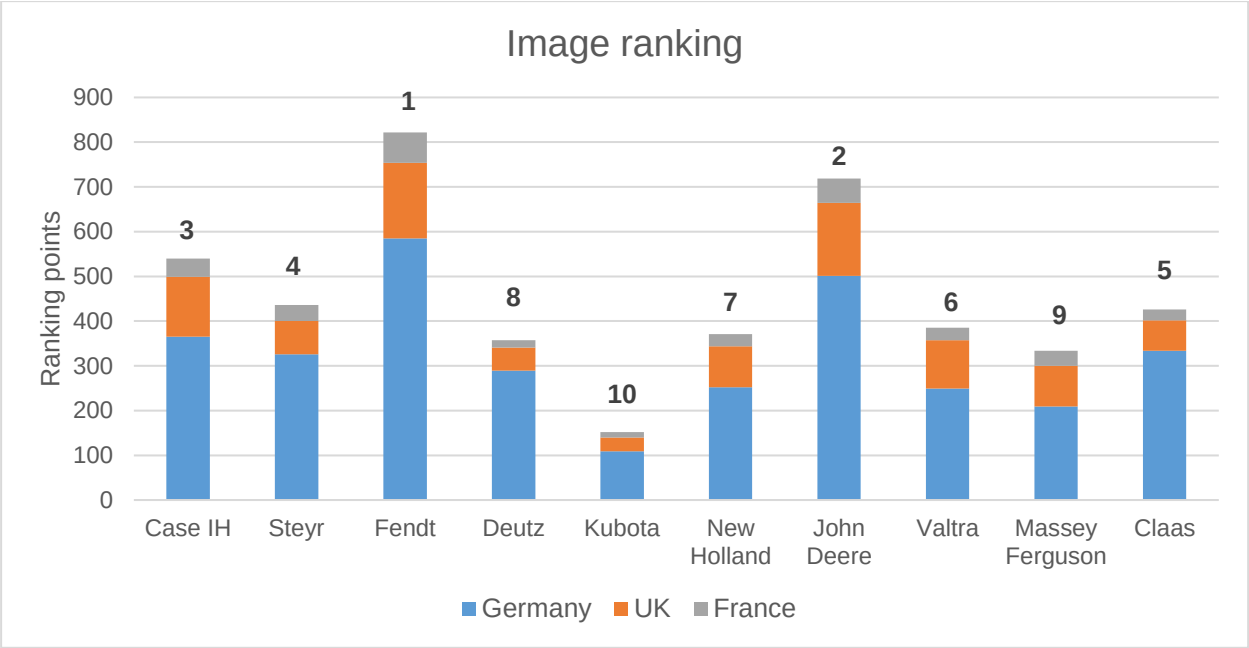

Figure 39: Survey - Image ranking (own source)

The chart in figure 40 displays the result for the image ranking of the different tractor brands. Every brand has its own column on the x-axis and consists out of the votes from the German (blue part), UK (orange part) and French (gray part) participants. On the y-axis the ranking points are displayed. The number above every column stands for the summarized ranking of all three countries. Fendt is voted on the first place with 822 ranking points. The brand was voted in Germany, UK and French independently on this place. This shows, that not only in Germany Fendt is highly appreciated by farmers and contractors. Fendt makes an effort to have a good image and invests a lot of time and money on this. The success of the image supporting actions is shown by these results. With 719 ranking points John Deere is voted on a safe second place. It is the same as for Fendt, that John Deere is voted in all countries independently on the second place with a big gap to the next place. John Deere is also investing heavily into advertising and sales promotions. With its professional dealer network and innovative software solutions it has a high reputation and good image. On the third place we have Case IH with 540 ranking points. No doubt, this is partly caused by the composition of the survey attendees and the high number of Case IH customers among the participants. A delta of 104 ranking points leads to the fourth place, which is filled by Steyr. Because of the relative unfamiliarity of some participants of the survey, which was the result of previous questions, this ranking is relative high. Especially considering the background, that only 3 Steyr customers took place on the online questionnaire, the result is relatively high compared to the Steyr

owners. This implies, that a lot of foreign brand customers voted for a good Steyr image. The German participants voted Claas with 8 ranking points more on the fourth place, but UK and France voted Claas on the eighth place which led to the fourth place for Steyr and fifth place for Claas with a gap of ten ranking points in total. The places 6 to 9 are close together regarding the number of ranking points they received. One may get the impression, that the image perception of farmers and contractors towards these tractor brands are similar and comparable. With a big gap of 182 ranking points to the penultimate place Kubota is on the last place. Compared to the rise of tractor market share in Europe and especially in Germany within the last few years, it is surprising that Kubota is attributed such a bad image. The image of Kubota tractors must be differentiated in small tractors beneath 60/70 hp and above 70 hp. The smaller ranges are often bought by private users or part time farmers which are using the tractor only for a small number of operating hours per year and for light operations. In addition, these tractors are often bought by municipalities. The tractor ranges with more than 70 hp are mostly and with more than 100 hp are exclusively used by farmers. They are offered with more features and because of that they are more expensive. Since Kubota started their big horsepower segment only a few years ago, the image is not as good as it is for long-established tractor brands from Europe or USA. Kubota only has little experience as a manufacturer in the HHP segments, which might have an impact on the comfort and technology of the tractors. Especially in terms of dealer network (for farmer tractors), innovations and software solutions, Kubota has a deficit compared to tractor brands like Fendt, John Deere and Case IH. It will be interesting to see how the image and acceptance of Kubota will develop in the future.

Besides the image ranking for the several tractor brands it is important to get a deeper understanding if image is a significant criterion in the buying decision. The question was how important the image of a tractor brand is for participants in the buying choice. There were four possible response options for this single choice question: “not important”, “less important”, “more important” and “very important”. For 17% of the participating farmers and contractors, the image of the tractor brand is not important. For further 40% it is less important. That means, that with 57% more than half of the attendees don’t attribute a significant importance to the tractor brand image in the buying decision process. On the other hand, 34 respondents (36%) voted for “more important” and the rest (6%) for “very important”. This result shows that the significance of image in regard to the tractor buying

process is almost balanced. The results filtered by the brands John Deere, Fendt and Case IH shows that the image of the tractor brand, in this case their own brand, is more important for Fendt customers than for Case IH and John Deere customers. This phenomenon can be noticed especially in Germany and France. Fendt is spending a lot of money for image promoting campaigns, particularly in Germany. The result shows, that these efforts lead to an increase in the importance of image. In addition to that, positive customer feedback and testimonials lead to a good reputation in the market. The customer needs to have the feeling, that he is something special when he is buying and driving the tractor. These actions and emotions lead to an extraordinary image.

In general, image is a term of an overall impression of people about something. These impressions are characterized by individual experiences, opinions, emotions and attitudes. It depends on the product and product segment if image is very pronounced or not. The image of a sports car for example is much more pronounced than it is for toothpaste. As investigated in the previous question, the tractor image is not as important as it is for a luxury good, but it is still important. The next question targeted at getting a better understanding of the tractor brand image and what the customers connect with it. The participants were asked in a multiple-choice question: “Which attributes and values do you connect with the definition “Image in the tractor business”?”. Due to the fact, that the possible response options are non-mutually exclusive, it was possible to select more than one answer.

In the pie chart of figure 41 the results of this question are illustrated. The number in every piece of cake reflects the total sum of votes from Germany, UK and France. Every response option has another color in the pie chart for a better overview. All 98 participants answered this question, some with voting only for one option, others for two or more. Starting with the lowest number of votes, 9 participants chose the answer “other”. The low number suggests that most of the potential customers find their feelings and attitudes about image in the following answer possibilities represented and only a few connect other attributes with “image”. A total of 15 people considered “good advertising” as important for image. It shows that advertising has no big impact on the image of a tractor brand. High market share as a factor for (but also consequence of) image was chosen by 27 participants, which represents more than a quarter of the participants. The relation between market share and image has two dimensions:

1. A good image can – besides other factors such as pricing or customer segments - contribute positively to the market share of a certain brand.

2. Once a brand has reached a high market share, this will also feedback positively on the brand image due to the herd behavior: “when many customers believe this is a good product, this has to be a good product”.

For 39 farmers and contractors, the value of the tractor brand image stands for pride. It is important for them to feel proud of owning and driving a specific tractor (brand). They feel confident in their tractor brand decision. Pride is an emotion which can be part of satisfaction and generates the feeling that the own product might be superior to those of other farmers and contractors. But the majority of 69 and 76 participants, which represents 70% and 78%, feel the deepest impact of image explained by satisfaction and good technology. Satisfaction is an emotion caused by hard and soft factors. Hard factors in regard to a tractor could be for example fuel consumption, durability, pricing, dealer network, service and goodwill. Soft factors are feelings and emotions, which are more individual and difficult to quantify. Examples are the design of the product, the interieur, the advertising and the type of customer approach. Hard factors can be compared easier, because they are measurable, soft factors are difficult to compare, because they are perceived by different customers in a different way. Soft factors are often representing the identity of a brand. John Deere for example is known for green tractors with yellow rims and a bright brown interieur, Case IH is famous for red tractors with silver rims. A change of the brand identity is mostly avoided by the tractor companies because this would mean losing their recognition value. The next response option “good technology” consists of hard factors only. It stands for product reliability, quality, innovations and additional features on the tractor which lead to a higher efficiency and comfort. In conclusion, the result showed that the term “image” and its value in regard to tractors and tractor brands is mainly driven by hard factors and less by emotions. But emotions must not be completely disregarded, subconsciously they are also relevant for a purchase decision.

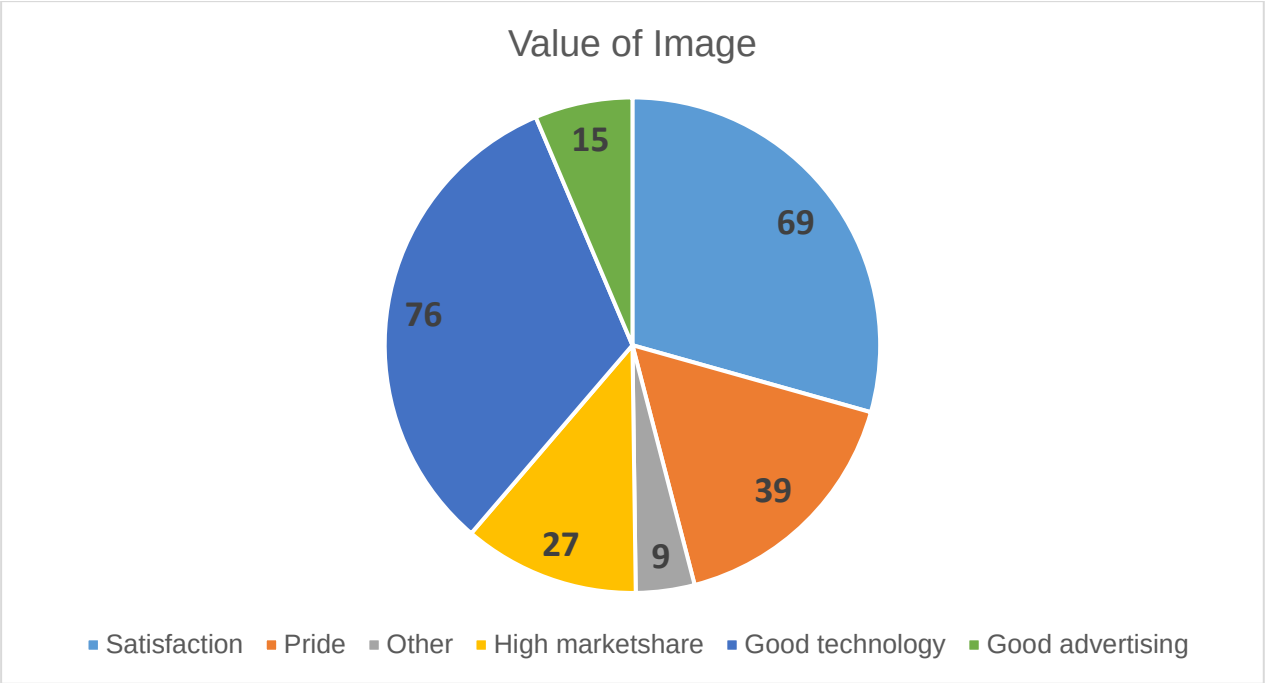

Figure 40: Survey - Value of Image (own source)

In order to define a value for the term “good image”, the participants were asked, which additional price they are willing to pay for a tractor with a good image and the same or equivalent technology. There were 6 answer possibilities for this single-choice question. Table 6 shows the results for all participants (second column) who took part in this question, the third column represents only the Fendt customers and the last one is the result of John Deere customers only. The results are a summary from Germany, UK and France. It is obvious that all participants, including Fendt and John Deere customers, are not willing to pay an additional price of more than 20%. More than one third of all customers don’t want to pay an additional price for tractors with a good image at all. That means, it has no impact for this customer group to spend more money for a tractor brand with better image. Almost half of the group (48%) is willing to pay an additional price between 0% and 10%. Only a few people decided for 11% - 15% (8 participants) and 15% - 20% (5 participants). The distribution of the results of Fendt customers is different. They are ready to pay in average a higher additional price for a tractor with a good image compared to farmers and contractors with another tractor brand. Almost a quarter of the Fendt customers would pay an additional price of 11% - 15% for a good image. For the majority of Fendt customers, a good image of their tractor is important, which is underlined by the fact that only 18% are not willing to pay an additional price in comparison to 38% of all participants who answered on this question. The result of the John Deere customers

is more similar to the rest of the group and not so noticeably different than the Fendt results although a little shift from “no additional price” to “0% - 10%” is observed. It shows that some customer groups are willing to pay a higher additional price than others for a good image and equivalent technology. For owner and driver of premium tractors, the image has a higher significance than for farmers and contractors who have a non-premium tractor, also in the purchasing process. It seems that the customer loyalty of John Deere owners is mainly justified by other reasons than a good image, which does not seem important enough for them to pay a price addon for it.

Additional Price	All customers	Fendt customers only	John Deere customers only
No additional price	38%	18%	24%
0% - 5%	27%	23%	35%
6% - 10%	21%	27%	29%
11% - 15%	9%	23%	6%
15% - 20%	5%	9%	6%
> 20%	0%	0%	0%

Table 6: Survey - Additional price due to image (own source)

Based on the insights gained from the previous results, the last question of this survey aimed at the potential for an image optimization. Due to the willingness of some farmers and contractors to pay an additional price for tractors with a good image, it is highly relevant for the tractor manufacturing companies to investigate on the opportunities to improve the image. The participants were asked what would be required in order to improve the image of a tractor brand. It is a multiple-choice question with 8 possible answers. In figure 42 the votes are illustrated separately for Germany, UK and France with different colors. For getting an overview if something in the answer catalogue is missing which is important for the customers, the response option “other” allows conclusions about it. Due to the low voting of “other”, it can be assumed that the customers’ ideas are well represented in the response options. At first sight it is recognizable that the German participants voted more actively and selected various answers. Because of that the share in every result is dominated by the German farmers.

The option “more advertising” received the lowest feedback, which was only selected by 16% of the German survey members and nobody from France and UK. It seems, that advertising has a low impact on image optimization of tractor brands. This is not surprising as advertising should not be an end in itself but would rather be used emphasize certain positive characteristics of features. The feedback with the second lowest share is “good

test results". It appears, that test results are more important for German farmers and contractors, followed by UK. For French customers it seems to be not relevant. The situation is a bit different for the response option "high goodwill". This was voted by all countries but with a different ranking in terms of importance. A bigger consensus exists on the innovative technology. This feature was selected by 60% of the Germans, 39% in UK and 38% of the French participants. A professional dealer is highly significant for the Germans with 82%, UK is in the medium range with 54% and France attaches less value to it with 38%. With two votes more in total "good service" is on the second place in the ranking. The distribution between the three countries is similar to the results concerning the professional dealer. The customers connect the good service more with their dealer than with the manufacturing brand of the tractor. That shows once more the big importance of a professional and comprehensive dealer network. But the most popular answer choice was "high product quality". In this case the farmers and contractors from all countries agreed with a take rate between 82% and 92%. High product quality is mostly influenceable by the manufacturer and only scarcely by the dealer in terms of Pre-Delivery Inspection (PDI) and a good service. The main goal of the PDI should be to keep production issues away from the customer to deliver a better quality. There is a PDI check list for every CNH Industrial tractor model which should be completed by the dealer before machine is delivered to the customer.

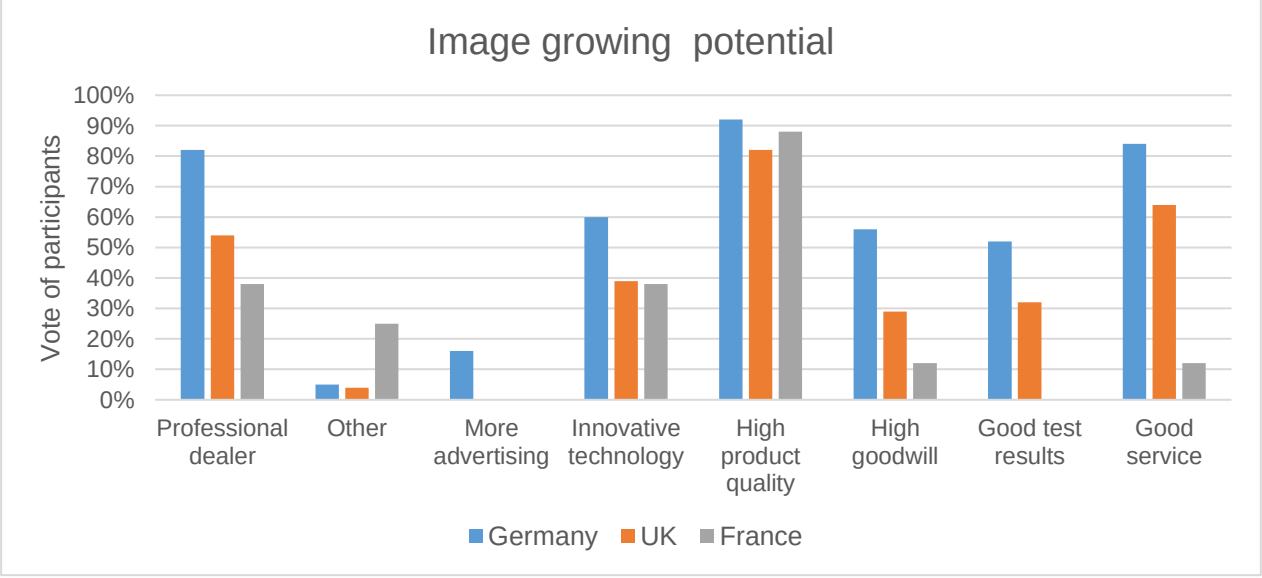

Figure 41: Survey - Image growing potential (own source)

The result of this question shows that the most significant influences for a positive image growth could be generated by a good dealer network, high product quality and a good service. On the contrary, more advertising is playing a marginal role in this case. Innovative technology, high goodwill and good test results have a moderate effect of the optimization of a tractor brand image.

10 DISCUSSION AND OUTLOOK

The purpose of the following discussion is to give answers to the four major research questions:

- Which factors are driving the purchase decision of customers and what are the elements of a distinct brand differentiation?
- Status Quo: How do customers perceive the different CNH brands?
- What is the potential of Steyr to develop towards a Premium brand?
- What could be the steps for a successful product differentiation within the CNH group?

Ultimately, the discussion is closed by giving a recommendation on how to differentiate the different brands of CNH Industrial and how to leverage an ideal brand positioning in the market.

10.1 Which factors are driving the purchase decision of customers and what are elements of a distinct brand differentiation?

The survey brought interesting facts to the surface about the tractor buying behavior of farmers and contractors. As shown in the results, there are multiple drivers for a customer's purchase decision which have a different significance within the decision process.

In the following chapter it will be elaborated and discussed how these drivers and aspects could be used in order to create a distinct brand differentiation within the CNH Industrial group.

10.1.1 Technology & product portfolio

When speaking about technology and product portfolio the major trend in the last decades was a development towards larger machines and higher hp machines. The increase of tractor horsepower has several backgrounds. On the one hand, the still existing farms are getting bigger in terms of landscape they cultivate with a simultaneous decrease of employees working in the agriculture. That means, that one employee on these farms must cultivate more land, which is only possible with bigger tractors and implements to

be more powerful and efficient. On the other hand, the time frames for harvesting and crop care are limited, which leads to an extra time pressure. More recently, however, it could be observed that pure power is not sufficient, but the machines also need to become intelligent which is a counterpart to the pure hardware evolution and will determine the future product development. Advanced farming systems, such as automatic guidance systems are efficient, relieve the driver, increase the output whilst reducing the usage of fertilizers and pesticides, which means a reduction of cost and environmental impact. The survey proved that “automatic guidance systems” are seen as most important, even more important than “comfort” and “technology”. This shows the significance of intelligent features and the relevance for tractor manufacturers. New smart tractors are much more than heavy iron pigs from the past. As mentioned in chapter 7.2, efficient tractors must be “agriculture 4.0” capable and this trend will continue in the future. Especially for large professional farms and contractors it provides an additional value. The whole tractor fleet can be monitored in real time by the manager remotely. The coordination of the tractors and the fleet management can be optimized whilst downtime for maintenance and service can be reduced. Goal for the manufacturing companies should be offering a closed system for farms, which support the farmer and driver with their daily work and decision processes. That reaches from automatic guidance systems to recommendations for actions, for example the best timing for crop protection applications or site-specific seeding density or fertilizer amounts. Interface standards between different tractor brands will be another major gamechanger as this provides the advantage, that potential customers, who are currently using a competitive tractor, can be convinced from another tractor brand without losing their data. Furthermore, it helps customers with multi brand fleets to manage their data efficiently. Also, the compatibility between tractor and harvester from different brands would be increased, which will be an advantage for short liner tractor manufacturers like Steyr. The Steyr tractor for example could communicate with a Claas harvester. For an efficient product differentiation not only the product portfolio of tractor models is decisive, but also the smart farming options which the brand is offering. This is dependent on the customer segments, which the brand wants to serve with its products. Big professional farmers and contractors have a much bigger interest in software solutions and are more willing to pay for it than small farms, parttime farmers or hobby users. Innovations in the smart farming segment are currently and even more in the future strongly important to achieve a differentiation between the brands outside and inside of CNH Industrial AG. For a brand which wants to manufacture tractors

for the professional customer, further development and innovations in the sector “agriculture 4.0” are essential and are significant for the customer loyalty. The more the customers are using this software- and hardware-based support from the tractor, the more they are dependent on it and consequently on the tractor brand. Agriculture 4.0 offers a wide range of differentiation possibilities which can be efficiently used by tractor manufacturers. It is one of the segments with the currently highest development rate.

Besides the development of intelligent features, also other factors such as comfort or image play a major role for customers. The survey shows that especially on large farms and contractor enterprises the tractor drivers have an important influence on the buying decision of a new tractor. Particularly, well appreciated drivers are asked by the owner about their preferences, which are mostly followed – hoping to retain the employees in times where a shortage of skilled professionals is one of the most limiting factors. The drivers, in contrast to the owners, are not or less price sensitive and care less about TCO. Their focus is on other characteristics, such as driving comfort, well equipped and user-friendly operator station, good image of the brand, etc. It is important for manufacturers of tractors and especially for the professional segment, to understand the needs of the drivers and to integrate them into the decision and buying process. This starts from small features in the cabin of a tractor, for example enough storage options and an efficient Bluetooth speakerphone over a comfortable seat and ends with a smooth transmission and well-functioning suspended front axle. In order to bring the brand Steyr and its products to the same professional level as John Deere and Fendt, it is necessary to have a deep customer understanding about the highly professional customers, their requirements and wishes. These requirements have to be investigated and evaluated to reach the same level. More focus on the driver of the tractor leads to a better understanding what they need and want to have. Surely, the purchasing price has to be realistic compared to the competition but a lightly higher price for these features will be paid by the professional tractor owner and can be used by the tractor manufacturing companies.

It is important to use this knowledge about the customer requirements and to implement it in the development of new products or product updates. The development of a new tractor series needs its corresponding time. The product development in terms of a product lifecycle was displayed in chapter 6.4. Especially the part “Beginning of Life” (BOL), which ends with the launch of a new tractor model or model update, is significant.

Usually, it needs between three and five years from the first idea to the production stage for tractors in the CNH Industrial AG segment. A different product portfolio is necessary for a technical product and brand differentiation. Therefore, the product development plays an important role in the differentiation process as it leads to less comparability of tractors within the CNH Industrial AG segment. Due to the timeline of a few years, the technical product differentiation is a more medium- to long-term approach. In addition to the long time which the differentiation process consumes, product development and product innovations are highly cost intensive. This high investment needs to be compensated with the new products in the next few years after the product launch, which means a high risk for the tractor manufacturing company.

Different product portfolios by acquisition or joint venture

The past of the two CNH Industrial AG brands Case IH and New Holland was characterized by acquisition and merger of other agricultural brands. In addition, joint venture business between these two brands and other manufacturers for agricultural machines took place as depicted in chapter 3. This led to a bigger machine product portfolio and developed the brands to status quo.

In the last few years some new acquisitions took place. One of these was the integration of the AG segment of Kongskilde, which contained machines for hay and forage, seeding and planting, soil cultivation and some other machine types. These “new” machines are offered via the New Holland dealer network in Europe and some of the machines are branded in New Holland identity. The remaining products are still sold under the Kongskilde branding. Another joint venture deal was sealed in 2020 between New Holland and Maschio Gaspardo about Disc Harrows and Subsoilers to extend the New Hollands’ full liner portfolio in terms of tillage products. These new products from Kongskilde and Maschio Gaspardo are exclusively available for New Holland; Steyr and Case IH dealers have no access to these machines. This development was one of the CNH Industrial AG differentiation steps in Europe to differ the brands’ portfolio and strategy. New Holland evolved to a full liner with the new product segments, whilst Case IH retains the status of a long liner with tractors, combines, telehandlers and balers and Steyr also retains its status to be an exclusively tractor manufacturer.

These different brand strategies and business alignments lead to another focus of the brands. The focus of New Holland in Europe is to offer a wide machine portfolio for arable and dairy farmers, Steyr concentrates on tractors only for all customer segments, also

outside the usual farming purposes such as municipality and forestry and the focus of Case IH is on the big arable farmers with the hhp tractor portfolio and combines and for all other segments with the small and mid-range tractors. It is comparable with the AGCO group and their brands: The product lineup of Fendt is comparable with those from New Holland, Valtra is similar to Steyr and Massey Ferguson, related to worldwide importance and products equivalent to Case IH. It shows that another strategy in the product portfolio and another focus is a good differentiation possibility of several AG brands in a multi branded company. Another differentiation approach is used by the VW group as mentioned in chapter 6.2: They have a clear brand split for different customer segments and target groups (Volume, Premium and Sport). A brand differentiation in terms of customer segments as in the automotive industry, however, is difficult to realize due to a lower quantity of customers and other customer requirements. Steyr for example is strong in the non-agricultural segment like industry, forestry and municipality but this special segment is too small to have the focus only on these customers. Steyr tractors are also used by hobby users, part-time farmers as well as professional farmers and contractors. New Holland in contrary has with its' well appreciated harvesting equipment (wide range of combines and SPFH) a potential access to larger farmers and especially contractors, but with the smaller tractor models also focus on small farmers and hobby users. This shows that a clear brand split for different tractor customer segments is not feasible and wanted by the manufacturing companies.

Another interesting acquisition took place in 2021, when CNH Industrial bought Raven Industries. It is a famous company for tractor automation, guiding systems and intelligent solutions for spraying applications. The collaboration with this new sister brand opens up new opportunities for Case IH, Steyr and New Holland in further development steps which can be used in the differentiation process. Different automation levels in the future could be one approach.

Alternative fuels and powertrains

Another field with several development opportunities is the segment around alternative fuels and powertrains. New Holland is already producing the first series production of the Methane tractor, which was already mentioned in chapter 7.2. This can be a big advantage for farmers and contractors who have their own biogas plant and can produce their own fuel and can work independently. Another innovation is the fully electrically powered e100 Vario from Fendt which has the further advantage of emitting no exhaust

gases and noise. The concept tractor from Steyr, which was introduced 2019 on Agritechnica fair in Hannover uses a hybrid technology. All these approaches deliver a high potential for a brand and product differentiation nowadays and even more in the future. The essential question for this decision is: “Which customer segments are in my focus and what fuel and drive concept will be the best for them?”

10.1.2 Country of production

The country of the production plant has an important influence on the consumers’ beliefs about product quality as said by Kühn (compare chapter 7.1). The results of the survey also showed that it is important for the agricultural customers, where their tractor is produced. Germany is identified to be best in class, followed by Austria and France. The European plants for CNH Industrial tractors are in:

- Austria, Sankt Valentin: Mainly for Case IH and Steyr, but also for New Holland T7 HD series
- UK, Basildon: Bigger New Holland tractors
- Italy, Jesi: Small and medium tractors for all three brands
- Turkey, Erenler: Small (low cost) tractors for all three brands

This result is congruent with the feedback from the market which I receive in my role as ASM. Austria is more appreciated than UK although they are producing nearly the same tractor with same components. The perception of the manufacturing quality is different. It is another feedback for Italy, where all three brands are produced in the same plant. The customers agree that these models are more comparable than the tractor models from UK respectively Austria. John Deere and Fendt have the advantage, that they are producing and designing their tractors in Germany, but it is shown, that not only the production country is decisive about the success of a tractor brand. A lot of Deutz tractor series for example are also designed and manufactured in Germany and the brand Deutz and its products is not as appreciated by the customers as Fendt and John Deere as also seen in the survey results. There are a lot of other factors to be considered and the country of production is only one out of several aspects. It is a fact, that every country has its individual attitude towards quality, which is put into practice in their factories. This can be influenced by the company with manufacturing standards but there will always be different quality levels visible. It is necessary for the bigger Steyr tractors to continue being produced in Austria. The most voted attribute in the survey when the participants were

asked what they connect with Steyr was “Made in Austria” which shows the strong link between Steyr and Austria. Highest customer appreciation would be granted if all Steyr models were produced in Sankt Valentin, which is, however, not feasible due to financial and economic reasons. It can be said that the country of production is important for the customers’ acceptance and due to that it has a potential for a brand and product differentiation which can be used by the manufacturing companies.

10.1.3 Brand positioning

Tractor brand and the related series and models is another important opportunity for a differentiation. The brand positioning plays a vital role for customer loyalty: A high customer satisfaction with the brand and its products is significant for the customer loyalty. The feedback from the survey was that most of the asked customers are satisfied or very satisfied with their tractor brand and the tractor models they use. That also implies a high loyalty and less chance for a brand change or only with a big effort. The Fendt and John Deere customers in this survey are the most satisfied customers, which means, that it would be the highest effort to convince these farmers and contractors to change the tractor brand. 40% of the participants expressed that they never changed their tractor brand in the last 15 year. This underlines the assumption, that, especially, satisfied customers don’t want to change the brand, when there are no relevant reasons for a brand change. Some people are identifying themselves with their tractor brand and have several reasons why they are buying and using this special brand. In addition, the decision for the tractor brand is not only depending on the brand, but there are also several other decision-makers, for example the relationship to the dealer, distance to the dealer, etc. Another 35% voted for the answer possibility “changed the tractor brand once in the last 15 years”, which could be a consequence of dissatisfaction with the brand/product or influenced by other circumstances which are not the direct matter of the brand, for example the closure of the customers’ former dealership outlet.

Another element that is directly connected to the brand positioning is the price. The better a brand is positioned in the market, the higher the price that can be asked from the customer. As Münter describes in his theory about product differentiation, a unique brand and product positioning can increase the customers’ willingness to pay. This can be confirmed by the results of the survey. Even though the price is with feedback of 16,3% not so relevant as the dealer and the service/warranty/goodwill, still this is a significant

result and indicates that customers do perceive a difference in brand positioning and as such a difference in perceived priceworthyness. The results of the question about the price advantage for a brand change demonstrates, that especially for the professional brands John Deere and Fendt the customers are very loyal and difficult to convince of another brand with a price advantage, even though when the products are comparable. The price advantage has to be between 10% and more than 20% in comparison to their current brand. In the professional hhp tractor segment, a tractor costs between 150.000 and more than 300.000€, which would mean a price advantage of 15.000€ till more than 60.000€, which is economically not feasible for a tractor brand from CNH Industrial. Price is in the professional tractor business a purchase argument with a low impact and therefore with a low prioritization for a brand and product differentiation. A low price can be a chance for tractor manufacturers in the non-professional segment to raise market share and sales figures but not for professional farmers and contractors.

In contrary to the multi brand company CNH Industrial AG, the three brands of AGCO (Fendt, Valtra and MF) maintained their own and traditional brand identity. The production country is one example for this. All Fendt tractors are still exclusively manufactured in Marktoberdorf and the engineering department is also located there. The tractors from the sister brands are produced in other factories in other countries. The German brand identity of Fendt is still alive, also persisted after the merge to AGCO. This leads to a still continuing distinct brand positioning of the three AGCO brands, less comparability and due to this less in-house competition. It is the same situation for the different car brands in the VW group. The brands Volkswagen, Seat and Skoda share a lot of components but also have their own brand identity for example due to different interieur, stylings, dimensions and user interfaces. The brand identity of Case IH, Steyr and New Holland suffered since the merge to CNH Industrial by using a lot of synergies and a high complexity reduction. The extensive use of same components for the tractor models of all brands led to a high comparability in the market and to the voting in the survey that 30% of the participants have the opinion that the 3 CNH Industrial AG brands are equal. It can be said that the high saving measures in the fusion to CNH Industrial downgraded the brand identity of Case IH, Steyr and New Holland. This was on the one hand needed to make the three brands profitable again but with this action the company lay the foundation for a less distinct brand positioning. Compensating this decision today would

mean a high financial investment in order to reestablish three brands with own and different brand identity.

10.1.4 Dealer network

The distribution of tractors in Europe and also in the rest of the world is a great challenge for all manufacturers. A nationwide dealer network with professional dealers, outlets and sub dealers is pivotal for a tractor producer for success or failure. The distribution strategy for most tractor brands is indirect and uses external sales partners. This is explained in chapter 7.4. There are a few exceptions, but the past has shown, that it is more efficient to work with distribution partners than to purchase the tractors directly to the customer. Through this, the manufacturer can concentrate of the development and production of the tractors and the task of the dealer is selling and repairing the tractors. There are employees from the manufacturer who support the dealer in sales and service topics to satisfy the customer.

The results of the survey show that the farmers and contractors value having a dealer or a service point in physical proximity. If a tractor brand has no dealer in this area, the potential customers are lost and usually switch to another brand. The RWZ for example has recently taken over multiple Case IH dealerships in Germany in order to increase their area coverage. Taking over existing dealerships has several advantages for the RWZ and AGCO compared to building additional dealerships from green field, such as the takeover of existing buildings and employees for sales and service which are still connected with their customers. Also, the customer data can be part of the deal. But the main advantage is to oust Case IH and Steyr dealers and to minimize the competition in this area. If the farmers and contractors are satisfied with the performance of the dealer, the chance is high that the customer will change the brand along with their dealership. A comprehensive distribution network is elementary for an efficient market development and a ready sale. The focus of the tractor manufacturing companies has to be on a professional nation-wide dealer network, and they have to spend enough money on it to keep it running efficiently. Target should be to optimize the number of dealers and outlets as well as the distance from customer to dealer. The professional dealer must be motivated to maximize their business. As said by Schlamp (compare chapter 7.4) an efficient dealer network management of the manufacturer is the most important function for a sustainable and successful business and a professional distribution partner network.

The dealers which are responsible for sales and services have to be supported by the manufacturers' field representatives in the best way for an optimum performance. It is the base for a possible brand differentiation. This was proven by the survey: The survey showed that the agricultural customers have a close relationship to their dealers and the dealer is a key factor for the selling process. Only 4% of the attendees stated, that the dealer is unimportant when they are buying a new tractor. Compared to the automotive industry it is completely different. Car dealers are more replaceable than tractor dealers and the complexity is considerably smaller. In addition to that, the tractor dealer is mostly the business partner for attachments and other agricultural equipment, which further strengthen the customer dealer relationship. Also, in relation to the satisfaction of their dealers the majority answered with satisfied and very satisfied. Many customer dealer relations are existing over decades and through generations. Most farmers and contractors don't change their dealer, except they are not satisfied at all or felt betrayed. It is interesting, that the feedback from the different countries and different brands are comparable and the satisfaction with the brand is also comparable to the satisfaction with the dealer, as seen in question 9 and 16 in the survey. That shows that the dealers and the product they are selling are one unit and the satisfaction of both is dependent on each other. Having professional dealers and developing them constantly is crucial in order to acquire and serve professional customers. Especially with new challenges like smart farming and Agriculture 4.0, the requirements towards the dealer are rising extremely and very fast. John Deeres' "dealer of tomorrow" strategy is targeted on these aspects, to professionalize their dealer network and prepare the dealers for the requirements in the future. It is a strict approach which not every John Deere dealer is happy with, but it is effective and in my opinion indispensable in order to have professional dealers which are ready for the present and future. The satisfaction of the customers and a sustainable professional business has to be paramount and not the satisfaction of each individual distribution partner. Future developments will be extremely challenging for small dealers because of the manpower which is required to have several specialists in the company, whose specific knowledge is outstanding and can support the customer in an efficient way without respectively less consultation of the tractor manufacturer. Another possibility is shown by the distribution of Fendt tractors in Germany largely via collective companies with a central administration process and a high number of employees and outlets. It can be said in summary, that the two professional tractors brands in Germany are represented in the market by a strong, (nearly) nationwide and professional dealer network which is

steadily trained and developed by the tractor manufacturer to deliver a good support and service for the customer. In my opinion this is one of the most decisive factors why John Deere and Fendt are so successful in Germany and other Western European countries. In the Case IH / Steyr as well as in the New Holland dealer network in Europe and particularly in Germany there are big open points, which no dealer is responsible for, and the market development does not have a primary focus. Customers in these areas are lost to the competition, this is visible by the registration numbers in these regions. For a better market penetration, a strengthening of the dealer network is inevitable. It is not only the number of dealers and locations, but it is also the professionalism of the CNH Industrial AG dealers in Germany which are mostly far behind the John Deere and Fendt dealers. Most of them are small dealers with low number of employees, family driven and not prepared for the challenges in the future, some of them are currently overstrained with the daily work and are not able to extend their business or sales volume. A restructuring of the dealer network is in my opinion crucial for the future to serve the customer with new technologies. In my view, only a few CNH Industrial AG dealers can cope with the upcoming challenges. CNH Industrial has to make sure that the dealer network develops in terms of financial, systems and marketing capabilities as well as in terms of employee qualification. As Schlamp elaborated, it is key to develop a dealer network which is able to achieve a homogeneous top performance in the marketplace.

10.1.5 Image

A good image is a guarantor for a high reputation and sustainable relationship between customer and dealer respectively customer and manufacturing company, also in the agricultural machinery business. Farmers and contractors connect various emotions and attitudes with the term Image. Satisfaction and good technology are the main characteristics which were chosen in the survey. Also, pride was selected by nearly 40%, which shows that the customers have an emotional relationship to the tractor, and it is more than just a machine for them. For some customers their tractor stands for prosperity and prestige, in a similar way to the automotive sector. External impact and appearance are important and sometimes a tool or an attempt to show the financial strength of a farm or contractor business. Good advertising, on the contrary, was only voted by 15%, which shows, that advertising has a low influence on a good or bad image and is, compared to the correlated cost, not an efficient way to improve the image of a tractor brand.

Customers are willing to pay more money for a tractor with a good image. The results show that John Deere and particularly Fendt customers have a higher willingness to pay more money for a high reputation compared to the average of all customers who took part on this survey. Almost every fourth Fendt customer would pay up to 15% more for a tractor with a good image. For tractor manufacturing companies that means, that spending money for a good image can bring a return on investment and a sustainable customer retention.

It requires a high time investment and significant financial input to increase the image of a brand and its products. In my opinion this differentiation step is the one which needs the most time and a long breath of the manufacturer but is necessary to sustainably raise market share and profitability, especially in the professional tractor segment. For big stock companies it means to convince the shareholders to invest money into image development that pays off only later, which is not so easy to realize. The owner and user of professional tractors have a higher demand towards image than other customer segments. Positive emotions and attitudes about the products and the brand are an important key selling factor. The results of the survey have shown that the two tractor brands, which are most popular in Germany and particularly in the professional segment, were voted for the best image by far. That underlines the significance of a good image related to the buying and decision process for tractors. The potential for Steyr to improve their image is in my eyes easier to realize than for New Holland and Case IH, because it is not so well-known, and the brand has a straightforward history. On the contrary, Case IH and New Holland had in the past some brand and product developments which were not appreciated by their customers and led to a reputation damage and sometimes to a loss of customers to the competition. One example on Case IH side was the closure of the tractor plant in Neuss, Germany and relocation to England. The product quality was perceived significantly worse by farmers and contractors and long-term customers were disappointed, also by new tractor models. Especially Fendt customers attach importance to the image of the tractor. These are the potential customers to convince with Steyr and its products. In order to target this customer group, a good image and reputation is the basis and mandatory. Therefore, one aim within this differentiation process should be the improvement of the Steyr image in order to leverage the potential for attacking professional competitive customers.

10.2 Status Quo: How do customers perceive the different CNH brands?

It was interesting to find out, how the three AG brands from CNH Industrial and their tractor products are currently perceived by the customers. Almost all participants knew CNH Industrial and the belonging brands Case IH, Steyr and New Holland, which was a good basis for the following questions and analysis. The result concerning the perception of the three brands of CNH Industrial AG was unanimously. About one third has the opinion that the brands are equal, but closely the same share voted for different product portfolio, different quality and price differences. Differences about the product portfolio are caused by the reason that New Holland offers small tractors below 50 hp, which Case IH and Steyr are not selling. In this regard a brand and product differentiation is still existing. It is the same for the product portfolio beside the tractor business. Some machines are only available for New Holland, such as tangential combines, SPFHs, hay production machines, etc. There are also two tractor model which are only offered by Case IH (Luxxum and Quadtrac) and one tractor model for Steyr (Multi).

The feedback for different technology was only 18%. From the supply side, the tractor product line up of the three brands, especially over 51 hp and the exceptions above, are quite similar. Small quality differences may be caused by different manufacturing locations and standards. Price differences for the “same” product could be only marginal because this is regulated by the brand governance department of the CNH Industrial company to be less competitive in the market. Price differences could be caused by different order dates or seasonal offers for different models. This feedback shows that the tractor product portfolio is not seen as equal by the customers as from manufacturing side and maybe some small product differences could have a big impact for the differentiation perception of the customer.

10.3 What is the potential of Steyr to develop towards a Premium brand?

I don’t see the fact, that Case IH dealers also sell Steyr tractors, critical. A few years ago, it was discussed within the CNH group, that the distribution network of Case IH, Steyr and New Holland should be separated according to the brands and the dealers have to decide if they want to sell Case IH products or Steyr tractors. At the present time there

are dual branded dealers in Europe which sell more than one brand of the CNH group. Especially in Germany, almost all Case IH dealer are also Steyr dealers and the other way around. There are some smaller exceptions which are insignificant. This is a result of the merge of Steyr and Case IH before the big amalgamation to CNH global and afterwards to CNH Industrial. In the market, these two brands are not as competitive as Case IH and New Holland are. The European headquarter for Case IH and Steyr is the same and also the production plant. A stronger differentiation process would help these dual branded dealers to gain new customers and serve more customer groups compared to today. From my point of view, a separation of the dealers is not feasible due to an in general shrinking number of dealers for agricultural machines in Germany and Europe and an increasing concentration in the future. Other brands, like Fendt and Valtra, show that a dual branded dealer network can work efficiently, when the brands and products differ from each other, and every brand has its own brand identity to be not or at least less competitive as described by Jungclaus. Therefore, the presence of dual branded dealers (Case IH and Steyr) is in my opinion not obstructive for a brand and product differentiation.

The brand Steyr is less known than its renowned worldwide brand sisters Case IH and New Holland, and only present in a few European countries. These countries are mainly Austria, Germany (especially southern Germany), Switzerland, Poland and Benelux. On the one hand, this can be an advantage and a chance to create a “new” professional tractor brand, on the other hand this would mean a big effort and investment for the company CNH Industrial to establish this brand in whole Europe and break into new markets. The question about the Steyr perception in the survey showed, that more than one quarter of the potential customers don’t know the brand or have no opinion about it. Steyr is the underdog in the European tractor business, except in the home country Austria where Steyr is market leader for tractors. In addition, the feedback on the potential of Steyr to become a premium brand is mixed. It is conspicuous, that only 8% answered with “very low” and 7% with “very high”, which implies that most of the farmers and contractors have currently no negative attitude against Steyr. This very little pronounced attitude is surely also due to the fact, that Steyr is not well-known, and potential customers are not familiar with this brand and mostly have no experience with it. With the brand Steyr they connect particularly that it is made in Austria, the CVT transmission and tradition. These are no negative connotations which shows that there is no or little

negative attitude towards Steyr. Negative statements like “old-fashioned” or “expensive” were only voted by a few participants and can be neglected.

The statements and attitude about the brand Steyr, which were collected and analyzed in this thesis are mainly congruent with the Master thesis from Lucas Zender, which was introduced in chapter 7.5. Both surveys lead to the conclusion, that there is a potential for Steyr to become a professional tractor brand on a comparable level like Fendt and John Deere but there are still some challenges to face. One important factor will be to build reliable tractors with a good spare parts availability, a good service, high quality, excellent comfort, and a well working order- and data management. This underlines even more the significance of a professional dealer network. Without the network it will not be feasible to deliver a good service and support. A professional dealer network for Steyr is essential to become a premium brand which is comparable with Fendt and John Deere. It is also essential for the manufacturer, that the focus of the engineering group has to be 100% on the drivers’ demands to provide an appreciated working environment. A strong brand and product differentiation is mandatory, to make sure that Steyr gets the possibility to become a premium brand.

10.4 What could be the steps for a successful product differentiation within the CNH group?

As described in the previous chapters, a brand and product differentiation within the AG segment of CNH Industrial comes along with a couple of requirements and challenges. The development of a product which differs from others in the best way and has unique selling features is a resource demanding process in terms of financials and HR capacity. There are many possibilities, how a product differentiation can take place. As mentioned in chapter 5.2, there are vertical and horizontal product differentiation and a mix of both. Transferred to this doctoral thesis there are some action plans required to implement a successful product differentiation which can be classified in 3 segments according to the time needed for the differentiation step. It can be said as a general rule, that the time which is needed for the differentiation process is proportional with the money which is needed for the development and differentiation process. The longer the differentiation process takes place, the more money will be required for the execution.

1) Short-term

Marketing is an instrument which is able to make the customer feel, that a product has attributes or technologies superior to another one.

This might be reached for example through offering specific models or features under certain brands exclusively. An adjustment of each product portfolio leads to an artificial shortage. Certain product ranges or models might be made available only under one single brand. For example, New Holland T6 is only available with 115, 135 and 150 hp, Case IH Maxxum on contrary offers 125, 145 and 150 hp and Steyr Profi is only available with 125 and 150 hp. Another possibility is to offer a specific transmission type not for all three brands. The AD 4 transmission (16x16 respectively 17x16 gears) for example might no longer be available for Steyr, only for New Holland and Case IH. It would be also possible to sell hhp Steyr tractors exclusively with CVT.

All these decisions limit the customer in his freedom of choice. The adjustments could be easily handled by changing the product catalogue and the according sales tools.

Another possibility is creating different key models for all three brands which are not congruent. The key models get an additional discount to be cheaper compared to the substitute model from the other two brands. A big advantage of this differentiation step is the quick implementation, but it is not a technology-based product differentiation and also puts pressure on margins and profitability. Therefore, this would not be the most sustainable way to differentiate brands. However, it could be used as a starting point of a product differentiation with a “real” product differentiation in the follow-up.

2) Medium-term

A “real“ product differentiation in regard to updated and unique design, usage of other components and materials, truly differentiated operating interface, other concept strategies, etc. need much more time and money to invest. The PLC, which was mentioned in chapter 6.4, described the whole lifecycle of a product. For a product differentiation the first stage (BOL) is significant and is specified in figure 9.

As shown in figure 9, the development of a product requires a lot of time beside a huge financial investment, which is depending on the complexity of a product and if it is a product update or completely newly invented product. For CNH Industrial tractors the PLC roughly requires between four and six years from first ideas to the roll out. Due to the timeline needed to create a new product which can differ from others, this differentiation approach is categorized as medium-term. The controlling department needs to ensure that cost for engineering and development and expected revenues are balanced. An efficient mix between cost saving and spending enough money for getting products with good quality and new developments is essential.

1) Long-term

In contrast to the two differentiation steps above, the focus of a long-term differentiation is more oriented on dealer network, customer experience, brand perception and customer loyalty, which takes much more time to evolve but is efficient and sustainable. The development and expansion of a professional and nationwide dealer network counts also to a long-term differentiation step and is significant for the profitability of a company and the customer segment they want to serve with their products.

Building up a deep customer relationship is a lengthy procedure and dependent on various factors whereby the dealer has a significant role and influence. The customer needs to feel comfortable with the tractor and the service delivered from the manufacturing company and the dealer as first contact person. Setting up a trustful relationship means years of good collaboration, sometimes through generations. Loyal customers are important for companies, because they don't or seldom change to another brand, even if they experienced problems with one specific product or personally with the dealer. Their buying decision is less influenced by the price of the machine, which raises the profitability for the dealer and manufacturing company. That means, that a good dealer-customer relationship is the essential base for a good operating company to be profitable and sustainably successful.

Image and brand perception is another very important parameter in being successful in the marketplace or not. Extending and maintaining a certain level of image requires time and financial investments. The attitude from customer side

towards a product is influenced by various impressions and emotions and not always rationally explainable. The image could be affected by marketing and advertising activities, but also by service, goodwill, technology, innovations, durability, design, etc. There is a long list of influencing parameters for image. Especially for tractors in the professional segment, image is significant for the reputation of a tractor brand and product.

10.5 Conclusion

It can be concluded that there is a potential for a product differentiation between the three AG brands of CNH Industrial. In the current situation the three brands Case IH, Steyr and New Holland are in direct competition and a separated distribution network for New Holland vs. Case IH/Steyr, as it is today, increases the competition. The currently high comparability of some product ranges, especially the tractor ranges between 55 and 400 hp, lead to a low argumentative scope for the dealers to convince potential customer from one or another product in this segment. In this case the local dealer and especially the price are significant for the buying decision. If there is a professional dealer for New Holland and also a professional dealer for Case IH and Steyr available, the pricing becomes more important which means a lower margin for the dealer and finally for the manufacturing company as well. In other segments like combines and SPFH there is low up to no competition between the sister brands because these product offerings differ in construction, application and in availability. For an efficient brand and product differentiation the products have to differ from each other. One good example is AGCO and also outside the agricultural business the VW group whose products and brands are different even though a lot of components are used for all brands to reduce complexity and save money. A technical and also software-based product differentiation would increase the profitability of each CNH Industrial AG brand and would result in a more efficient brand differentiation. The focus of every brand has to be clear for the customer and has to differ from each other. The different product portfolios and connected strategies (full liner vs. long liner vs. tractor only) is another step for the brand differentiation. Particularly, the distribution partners play a key role in the differentiation process. Especially large farmers and contractors have high expectations towards highly equipped tractors with advanced farming options such as telematics, connected services,

auto guidance, etc. Only professional and well-prepared dealers with a certain size of staff and specialists can handle these demands and are ready to satisfy these professional customers in a sustainable way. That means, for a professional tractor manufacturer a professional dealer network is essential in order to fulfill the needs of a professional farmer and contractor. Without best-in-class service and dealer-customer relationship, the products will not be appreciated by the customers. The highest priority for a tractor manufacturer must be a nationwide dealer network and the constant development of it. Due to the several open points within the Case IH and Steyr but also in the New Holland dealer network the question comes up if it would make sense to have dealers who are selling and servicing all three CNH Industrial AG brands and can offer the whole product lineup from CNH Industrial AG. As proven with this thesis a multi-branded dealer network can work efficiently as long as there is a clear differentiation between the products. Having this in mind, a stronger product differentiation could not only increase the target group for the products, but it could also open up the possibility to optimize the CNH dealer network in total and increase market coverage.

11 SUMMARY

CNH Industrial unites three agricultural brands, Case IH, Steyr and New Holland. With miscellaneous mergers in the past, these former independent manufacturers of agricultural equipment were combined in one company. A lot of synergies were used and are still being used to maximize the profit of the parent company CNH Industrial and to reduce complexity. Through this harmonization process, the tractor models of the three brands became more and more similar with less distinctive features which leads to a high comparability of the brands Case IH, Steyr and New Holland and its tractor product line up above 55 hp. This results in a strong competition between these brands because in most countries the dealer network is separated for New Holland and Case IH/Steyr and every distribution partner is independent and strives for their own profitability. Due to this, the internal competition prevents external competition with tractors from other manufacturers, which generates cannibalization effects and reduces the profit of the three brands, CNH Industrial and the dealers. Structural changes in the European agriculture led to bigger farms with in total less tractor registrations per year what intensifies additionally the competition for tractor manufacturers.

A survey with farmers and contractors from Germany, UK and France showed, that a brand and product differentiation would make sense and would bring a sustainable benefit for all three brands and their parent company CNH Industrial. Because of the history of all three brands and loyal long-term customers, a merger to one CNH Industrial brand is not efficient and expedient. It is important to identify the right customer group for each brand, to know the customers' requirements and to offer the appropriate products and technical solutions. The network of distribution partners (dealers) is the key factor for an efficient market development. The professionalism of the dealers is mainly determining the success of a brand and its products in the market and the perception of the farmers and contractors. The professionalization of the dealer and collaboration between manufacturing company and dealer is essential. Also, the country of production of the tractors has a significant impact on the customer perception and appreciation. "Made in Germany" is still a quality characteristic and explains partially the high appreciation of Fendt and John Deere as premium tractors for professional farmers and contractors.

Steyr as one brand of CNH Industrial AG which only produces tractors has a valid potential to establish to a premium tractor brand in Europe. Due to little negative

connotations of customers and a straightforward history the brand has a good base for this development purpose.

Bottom line, there are manifold possibilities to achieve a differentiation that is perceived by the customers as such. However, several actions are only feasible mid- or long-term. A product differentiation makes sense to reach a broad base of customers. Certainly, it is undisputed that a product differentiation is connected to high investment. If it is economically viable for the CNH Industrial group remains to be evaluated.

12 GERMAN SUMMARY

Der Konzern CNH Industrial beinhaltet drei Marken, die landwirtschaftliche Maschinen produzieren. Diese sind Case IH, Steyr und New Holland. Durch Fusionen und Zusammenschlüsse in der Vergangenheit wurden diese ehemals eigenständigen Hersteller in eine Firma überführt. Um die Profitabilität des neu gegründeten Konzerns zu steigern, wurden damals wie heute Synergien genutzt, die Produktionskomplexität reduziert und vermehrt auf Plattformlösungen mit einer hohen Anzahl an identischen Teilen gesetzt. Durch diesen Harmonisierungsprozess wurde zum einen die Markendifferenzierung, aber auch die Produktdifferenzierung der drei Marken bei dem Portfolio der Traktoren ab 51 PS stark eingeschränkt. Dies führte zu einer höheren Vergleichbarkeit und folglich zu einem stärkeren Wettbewerb zwischen den drei Marken, der insbesondere durch die Struktur des Vertriebsnetzwerkes verstärkt wird. Während Case IH & Steyr sich den gleichen Vertriebspartnerkanal teilen, unterhält New Holland einen vollständig getrennten Vertriebskanal. Dies führt zu einem starken Wettbewerb zwischen den Handelspartnern innerhalb des Konzerns, da jeder Vertriebspartner nach seinem eigenen wirtschaftlichen Erfolg strebt und somit im Markt als Konkurrent auftritt. Durch den internen Wettbewerb zwischen den 3 Schwestermarken wird der Wettbewerb zu anderen Marken außerhalb des CNH Industrial Konzerns geschwächt, was interne Kannibalisierungseffekte nach sich zieht und die Profitabilität der drei Marken, der Vertriebspartner und CNH Industrial im Allgemeinen gefährdet. Der Wandel in der europäischen Landwirtschaft führt zu größeren Betrieben und damit einhergehend zu geringeren Zulassungszahlen für Traktoren, was den Wettbewerb zwischen den Traktorenherstellern zusätzlich intensiviert.

Eine Befragung von Landwirten und landwirtschaftlichen Lohnunternehmern aus Deutschland, dem Vereinigten Königreich und Frankreich zeigt, dass eine Marken- und Produktdifferenzierung sinnvoll wäre und einen nachhaltigen Mehrwert für alle drei Marken und den Mutterkonzern CNH Industrial schaffen würde. Aufgrund der traditionsreichen Geschichte aller drei Marken und der langjährigen Kundenbeziehungen ist eine Fusion zu einer CNH Industrial-Marke nicht effizient und zielführend. Es ist wichtig, für jede Marke die richtige(n) Kundengruppe(n) zu identifizieren, die Anforderungen der Kunden zu kennen und die passenden Produkte und technischen Lösungen anzubieten. Das Netzwerk an Vertriebspartnern ist dabei ein entscheidender

Erfolgsfaktor für eine effiziente Marktbearbeitung. Die Professionalität der Händler bestimmt maßgeblich den Erfolg einer Traktormarke und ihrer Produkte am Markt und die Wahrnehmung der Traktoren durch Landwirte und Lohnunternehmer. Die Professionalisierung des Handels sowie eine gute Zusammenarbeit zwischen Hersteller und Vertriebspartner sind unerlässlich. Auch das Land, in dem die Produktion der Traktoren stattfindet, hat einen erhebliche Einfluss auf die Kundenwahrnehmung und Wertschätzung. „Made in Germany“ ist nach wie vor ein Qualitätsmerkmal und erklärt teilweise die hohe Wertschätzung der Kunden gegenüber Fendt und John Deere als Premium-Traktoren für professionelle Landwirte und Lohnunternehmer.

Steyr, als eine Marke von CNH Industrial, die ausschließlich Traktoren herstellt, hat das Potential sich zu einer Premium-Traktorenmarke in Europa zu etablieren. Aufgrund geringer negativer Konnotationen der Kunden und einer traditionsreichen Vergangenheit hat die Marke eine gute Ausgangslage dieses Ziel zu erreichen.

Abschließend kann gesagt werden, dass es vielfältige Möglichkeiten gibt, eine Differenzierung zu erreichen, die von den Kunden auch als solche wahrgenommen wird. Einige Maßnahmen sind jedoch nur mittel- und langfristig realisierbar. Eine Produktdifferenzierung ist sinnvoll, um eine breite Kundenbasis zu erreichen. Unbestritten ist allerdings, dass eine Produktdifferenzierung mit hohen Investitionen verbunden ist. Ob es für die CNH Industrial Gruppe wirtschaftlich nachhaltig ist, muss noch evaluiert werden.

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Anlage 3

Eidesstattliche Versicherung über die eigenständig erbrachte Leistung

gemäß § 18 Absatz 3 Satz 5 der Promotionsordnung der Universität Hohenheim für die Fakultäten Agrar-, Natur- sowie Wirtschafts- und Sozialwissenschaften

1. Bei der eingereichten Dissertation zum Thema

Potential and prospects of a brand differentiation in the agricultural engineering,

using the example of the multi-brand company CNH Industrial

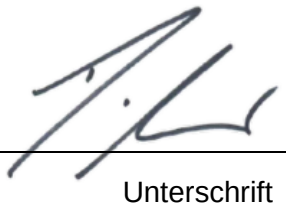
handelt es sich um meine eigenständig erbrachte Leistung.

2. Ich habe nur die angegebenen Quellen und Hilfsmittel benutzt und mich keiner unzulässigen Hilfe Dritter bedient. Insbesondere habe ich wörtlich oder sinngemäß aus anderen Werken übernommene Inhalte als solche kenntlich gemacht.

3. Ich habe nicht die Hilfe einer kommerziellen Promotionsvermittlung oder -beratung in Anspruch genommen.

4. Die Bedeutung der eidesstattlichen Versicherung und der strafrechtlichen Folgen einer unrichtigen oder unvollständigen eidesstattlichen Versicherung sind mir bekannt.

Die Richtigkeit der vorstehenden Erklärung bestätige ich. Ich versichere an Eides Statt, dass ich nach bestem Wissen die reine Wahrheit erklärt und nichts verschwiegen habe.



Heinzenhausen, 30.12.2022

Ort, Datum Unterschrift