Master's Thesis

How to translate digital trends in competitive advantages

The changing business model of the Daimler AG

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Abstract

The underlying thesis investigates how digital trends are opportunities to change the business model and sources to establish a sustainable competitive advantage. This investigation requires exploring the theoretical relation between business models and strategy. In this regard, the thesis reviews existing business model and strategy literature to determine how these fields can contribute to the understanding of competitive advantages. The literature review unfolds that business models and strategy con contribute mutually to establish a sustainable competitive advantage.

Following this argumentation, the researcher develops a theoretical model, which integrates the business model and the strategy to an encompassing framework for establishing a sustainable competitive advantage. This framework unites the business model for a consistent value creation and strategy for reaching the proposed business target. Interweaving both concepts to a complementary framework ensures that the required strategic fit for a sustainable competitive advantage can be reached.

In order to test the theoretical model, an empirical investigation of the Daimler AG, a German multinational automotive corporation, is conducted. Although the Daimler AG is positioned as quality and technological leader, the company is facing the threats of an industry in advanced maturity.

The Daimler AG introduced new services that take advantage of digital trends, which provides the case study for the underlying thesis. The first step of the empirical investigation concludes that the digital services can lead to a change of Daimler's classical business model, since these services involve business systems and revenue streams that are different from existing paradigms. In the second step, the application of the theoretical model reveals that Daimler's digital services can establish a sustainable competitive advantage.

The research contributes to the academic discussion how digital trends can change business models towards an increased service-orientation and how the integration of digital trends in the business model can establish a sustainable competitive advantage. Furthermore, the study provides managerial implications, which may represent new ways for establishing competitive advantages in the mature automotive industry.

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Abbreviations

MBV: Market-based-view

RBV: Resource-based-view

R&D: Research and development

VDA: German Association of the Automobile Industry

1. Introduction

During the Master's, the researcher of this thesis discovered the concepts of business models and strategy. Whereas business models attracted his curiosity due to strategic circumstances that require business model change, strategy captivated his interest to establish a sustainable competitive advantage.

The relation between the concepts is highly debated in the academic literature. Whereas one group of scholars argues for a complementary relation, another group argues that the concepts have a theoretical overlap. Contributing to this debate sets the theoretical foundation for the underlying study.

Business models enjoy increasing popularity and are widely perceived as essential to every organization, since they are a key element for the value creation. Nevertheless, changes in the environment of companies often require changes of the business model.

Especially the increasing speed of the digitalization puts the spotlight on the business model. Companies need to adapt their business models to digital trends for staying competitive. Among many others, the automotive industry is going through an episode of drastic change.

„We are in very hot phase within the mobility market. For the first time since the development of the car, there are new opportunities through the digitalization. These new opportunities offer in regard to autonomous and connected driving new ways to offer services and products for the customer" (TH A7).

Since the demand in the traditional markets is saturated, companies within the automotive industry are under pressure to create new sources of growth (HK A8). „The global automotive industry is about to enter a period of wide-ranging and transformative change" (Mohr, Muller, Krieg, Gao, Kaas, Krieger & Hensley, 2013). In this regard, digital trends present an opportunity to establish new competitive advantages.

Companies need to establish competitive advantages to develop and sustain new revenue sources. This puts the spotlight on the concept of strategy. Although this field is fragmented, the different strategic perspectives are aligned in their reasoning to establish a sustainable competitive advantage.

After making these observations about business models and strategy, the researcher deduced that there might be a valuable connection between the concepts to establish a sustainable competitive advantage by making advantages of digital trends.

I.1 Research target and research question

The development of the research topic started with the concepts of business models and strategy. Whereas business models include the dynamic ability to adjust to changes in the corporate environment, the strategic perspectives enable the establishing of a sustainable competitive advantage. The researcher relates these theoretical considerations with the opportunity to develop new revenue sources by making advantages of digital trends.

Having these aspects in mind, the researcher formulated the following target for the thesis:

The aim is to explore how the business model and the strategy can interact to establish a sustainable competitive advantage by making advantages of digital trends.

To conduct the research, the author of this thesis has chosen to conduct a case study in the automotive industry, more specifically on the quality and technological leader, the Daimler AG. Besides the interesting strategic positioning, the Daimler AG was chosen because the company is part of the stagnating automotive industry that is in urgent need to create new sources of growth.

Thus, the following research question has been formulated:

How is Daimler changing their business model to establish a sustainable competitive advantage by making advantages of digital trends?

To develop the answer to this research question, the literature on business models and strategy is analyzed and applied to the empirical data collected during the research.

I.2 Sub questions and structure of the thesis

For answering the research question, sub questions have been formulated as the guiding structure. Since the research question sets the focus on digital trends, an understanding about the relevance of digital trends for the automotive industry has to be established, leading to the first sub-question:

Sub question 1: How relevant are digital trends for the automotive industry?

Afterwards, the focus switches to the concept of business models. The concept is outlined and the business model components are presented. This leads to the second sub-question, which explains the ability of business models to change in different strategic circumstances.

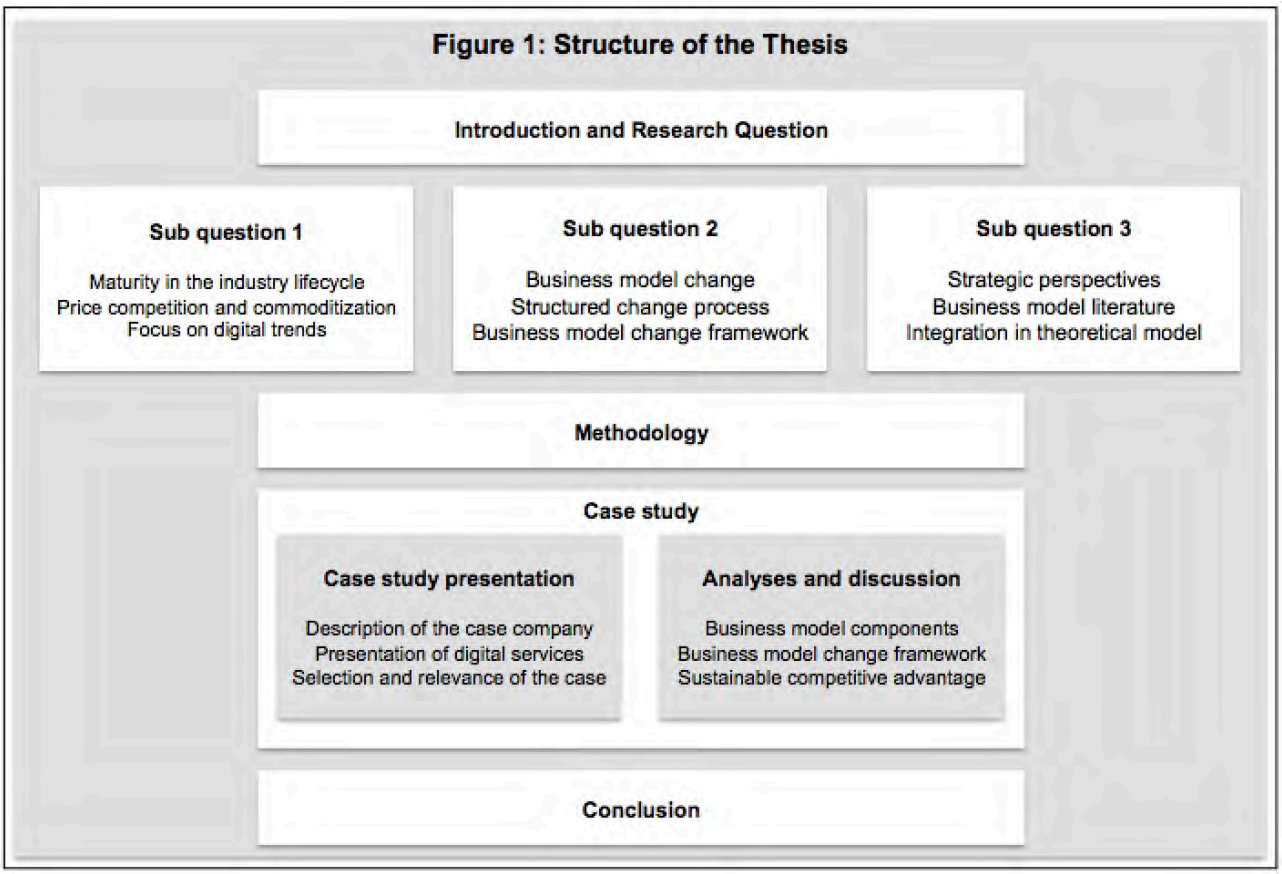
Sub question 2: How can business models change?

Then the thesis focuses on strategic perspectives, which are relevant to establish a sustainable competitive advantage. Since the study wants to contribute to the academic debate regarding the relation between business models and strategy, the third sub question is included:

Sub question 3: How are competitive advantages and business models related?

After these theoretical observations, the study argues for a complementary relation between the concepts. The researcher integrates the presented concepts in the theoretical model, which is guiding the case study of the Daimler AG. The case study is structured through an initial focus on the business model and the following focus on the establishing of a competitive advantage. Each section closes with a summary and a discussion. The results are presented in the conclusion.
The structure of the thesis is illustrated in Figure 1.

Figure 1: Structure of the Thesis



II. Challenges and key trends in the automotive industry

II.1 Introduction to the automotive industry

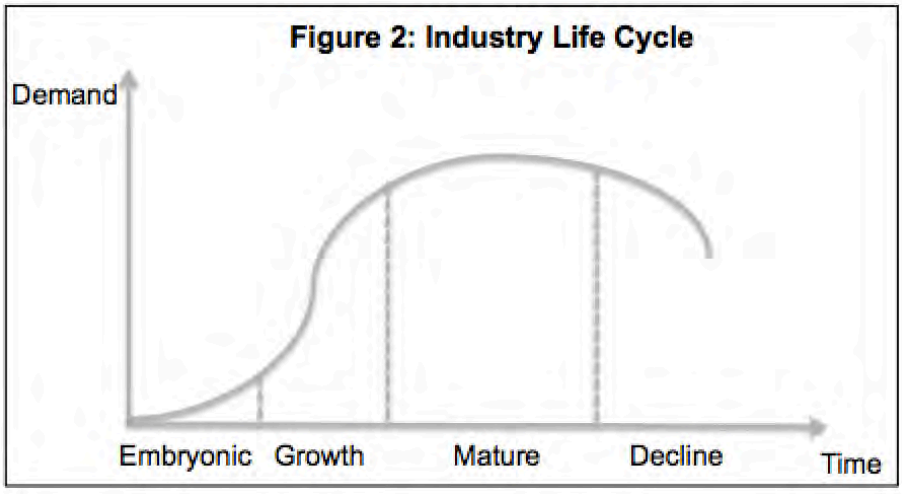
An industry is defined as “a group of competitors producing products or services that compete directly with each other” (Cassia, Fattore & Paleari, 2006, p.10). The automotive industry comprises companies involved in the design, development, manufacturing, marketing, and selling of motor vehicles. It is one of the world's most important economic sectors (Encyclopedia Britannica, 2016). The primary products of the industry are passenger automobiles and light trucks, including pickups, vans, and sport utility vehicles.

The car culture has spread over the entire globe. In 1890, the automotive industry pioneered the horseless carriage and developed the automobile as primary mode of transportation. Recent statistics state that about 1.015 billion motor vehicles are used around the world (Sperling & Gordon, 2014).

This great number indicates the importance of the automotive industry. The automobile production influences the global economy and how billions of people live. In Europe alone, the automotive industry accounts for roughly 12 million jobs (Mohr et. al., 2013). Due to its economic importance, challenges for the automotive industry are highly relevant for many countries.

II.2 Industry lifecycle and key challenges for the automotive industry

In the following chapter, the automotive industry is analyzed through the industry lifecycle, which unfolds many of the current challenges. The industry lifecycle divides the industrial development in four subsequent stages: embryonic, growth, mature and decline (see Figure 2).



Source: Obtained from Klepper (1997)

An innovation indicates the beginning of the embryonic phase. Companies experiment and converge toward a favorite design (Cassia et. al., 2006). The successful companies enter the growth stage and begin to benefit from economies of scale and scope, which increases the industry entry barriers (ibid.). When the industry develops towards maturity, demand stabilizes and prices begin to decline. The industry is now characterized by an increasing degree of convergence and standardization in terms of product attributes and business models. Establishing competitive advantages requires steep learning curves in terms of efficiency, productivity and financial resources (ibid.). If no innovations are created, price competition sets in and the industry moves towards advanced maturity. Commoditization, which describes the increasing competition based on price instead of differentiation, threatens the profitability of the industry. The customers become more demanding as their knowledge of the products, services and processes increases their bargaining power. The industry is challenged to raise the attractivity of the industry by introducing innovations. Otherwise, the industry is no longer profitable and will continue to decline until no actor is left.

The automotive industry has followed the pattern of the industry lifecycle. Many companies entered the industry at the end of 19th century, but experienced a massive shakeout in the following years (Klepper, 1997). North American automobile companies had the most success in getting through the industry shakeout. After the World Wars, Japanese and European manufacturers joined these companies. Automobile companies from these regions dominated the market for decades.

At the present day, automobile companies are facing diverging market developments. The growth rate of the automotive industry has been smaller than that of world GDP, which is an indicator for industry maturity. Employment in the industry has been decreasing, which is further evidence for the increasing price pressure. The characteristics of the automotive industry correspond with the indicators of advanced maturity in Table 1. Furthermore, experts agree that the automotive industry has reached the stage of advanced maturity (Maxton & Wormald, 2004; Orsato & Wells, 2007; Orsato, 2009).

Table 1: Industry Characteristics of Advanced Maturity

- Overcapacity
- Competition based on price instead of differentiation (commoditization)
- Decreasing number of firms
- Lower profitability margins
- Lower employment

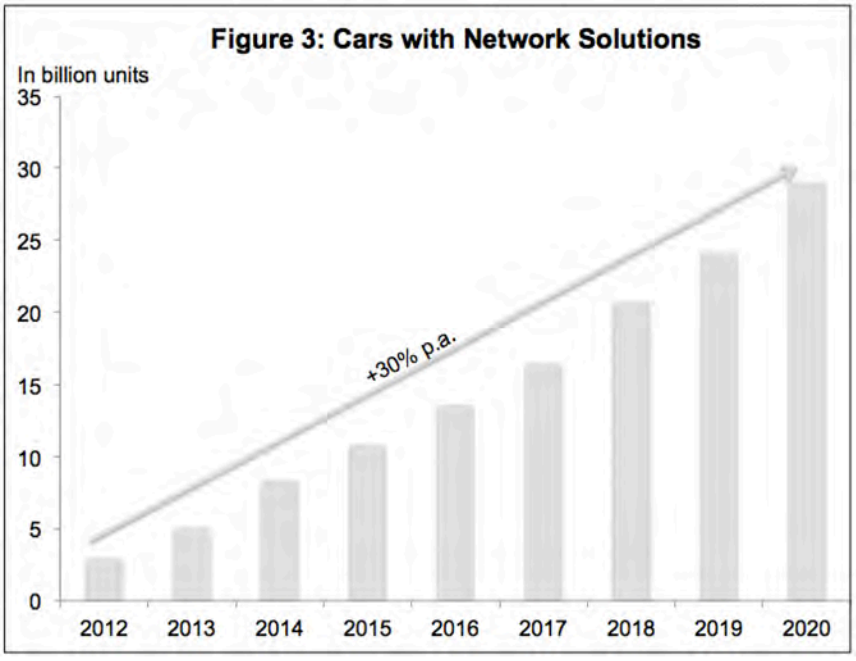
Source: Cassia et. al. (2006)

II.3 Focus on digital trends in the automotive industry

To get a piece of the future industry profitability, automotive companies need to address strategic trends. This thesis focuses on digital trends, which have been identified as highly relevant to overcome the challenges of industry maturity (Mohr et. al., 2013; Dussart, 2010). The technological advancement seems to have a major impact in the automotive industry. 10 years ago, the cost of electronics was less than 20 percent of the manufacturing cost. Today it is as much as 35 percent (Statista, 2016). The following subchapters outline the most relevant digital trends for the automotive industry.

II.3.1 Connectivity

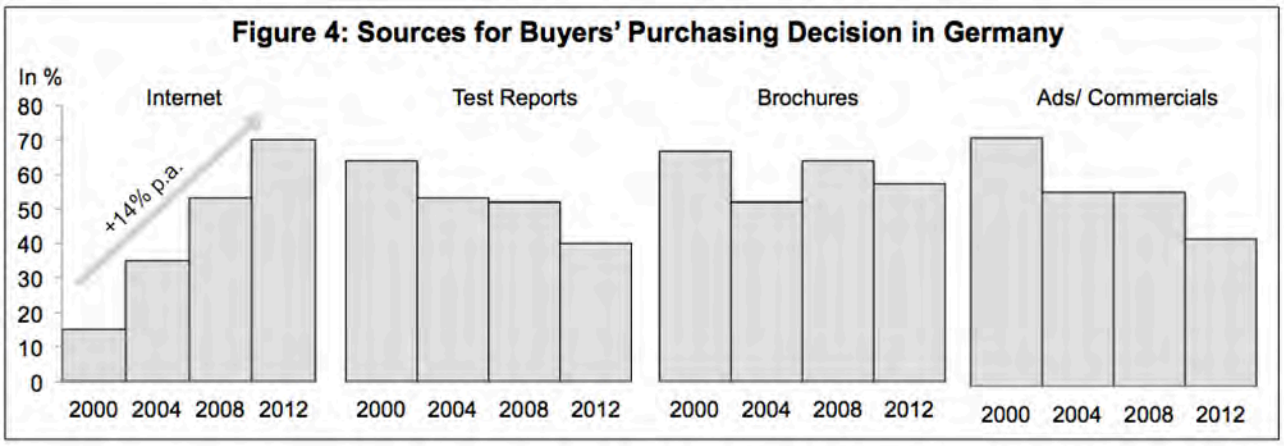
Digital connectivity brings significant benefits to consumers through car-2-car, car-2-infrastructure or car-2-home communication technology. Connectivity offers automobile companies opportunities to differentiate themselves with the help of new features in infotainment, safety and comfort. The delivery of these services through the car offers potential for future profits. 86% of all customers are willing to pay an extra premium for these kind of connectivity services and it is forecasted that in 2020 about 28% of the added value of car manufacturers will be related to connectivity services (Eichstädt, Walczyk & Schuler, 2016). The increasing demand for connectivity features underlines the dominant role of software development in vehicle innovation and clarifies the economic importance of the connectivity trend (see Figure 3).



Source: Obtained from Mohr et. al. (2013).

II.3.2 Digital customer experience

The digitalization creates consumers that research before making large purchasing decisions. Many of the related services were untradeable. For instance, consultancy in car dealerships has become available online, which offers new ways of customer interaction (Holmes, 2008). Research shows that especially in the automotive industry customers are increasingly using digital sources in making their purchase decisions (Mohr et. al., 2013). In 2012, 70 percent of the buyers stated the Internet as the major source for information gathering, which makes digital channels the primary information source for customers (see Figure 4).

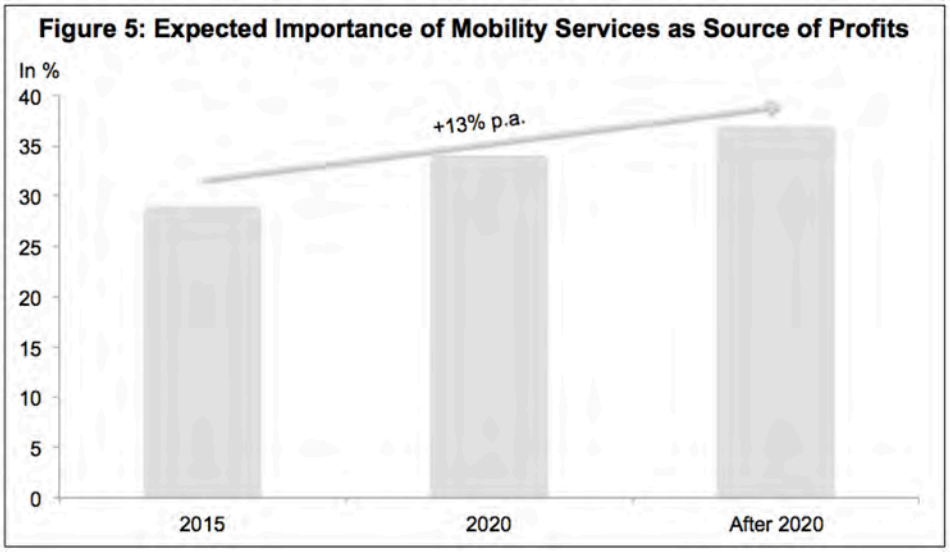


Source: Obtained from Mohr et. al. (2013)

But a digital purchasing process is not enough to satisfy customers. They demand a seamless car-buying experience, which includes the purchase decision, financing and insurance. Five years ago, customers visited dealers an average of five times before purchasing a car; now they enter the showroom well-informed, giving the dealer one chance to convince the potential buyer (ibid.). Therefore, companies need to determine the best combination of online and offline touch points to shape the customer's experience along the purchase journey (ibid.).

II.3.3 Mobility services

The ability to constantly be online for researching the location of cars and to book them on the go through mobile apps has been vital for the success of mobility services. Tech-savvy customers in combination with a greater awareness of the total cost of car ownership are creating a new mobility culture (Becker et. al., 2015). Analysts predict that by 2025, 20 percent of cars will not be owned by an individual (McElroy, 2015). In total the mobility market is growing far faster than the new car market and mobility services are forecasted to be an important source of profit (see Figure 5).



Source: Obtained from Becker et. al. (2015)

Due to the strong market growth, all car manufacturers "should be ready to provide easy-to-use and price-competitive mobility eco-systems" (Becker et. al., 2015 p.14). Almost all major automobile companies announced some sort of mobility service program. For instance, several service driven mobility concepts – like Daimler's Car2Go or BMW's Drive Now – have been implemented (Kley, Lerch & Dallinger, 2011).

II.4 Sub question 1: How relevant are digital trends for the automotive industry?

As outlined in chapter II.2, the automotive industry reached the stage of advanced maturity. At this stage, it is increasingly difficult to differentiate the product offering, since competitive advantages in the stage of maturity require steep learning curves. This leads to commoditization, which reduces the profitability of the entire industry. To overcome the vicious circle of falling prices and intensified industry rivalry, innovations are required to raise the attractivity of the industry.

The outlined digital trends have the potential to become new sources of profits. The digital trends connectivity, digital customer experience and mobility services grow far faster than the new car market. Since customers are willing to pay for these services, automobile companies have the opportunities to overcome the downward spiral of price competition and commoditization. Concluding, digital trends are offering new business opportunities to overcome the current stage of industry maturity. This makes digital trends highly relevant for the automotive industry. Without the reviving of growth through introducing digital innovations, the industry might decline and suffer under overcapacities and a fierce price competition.

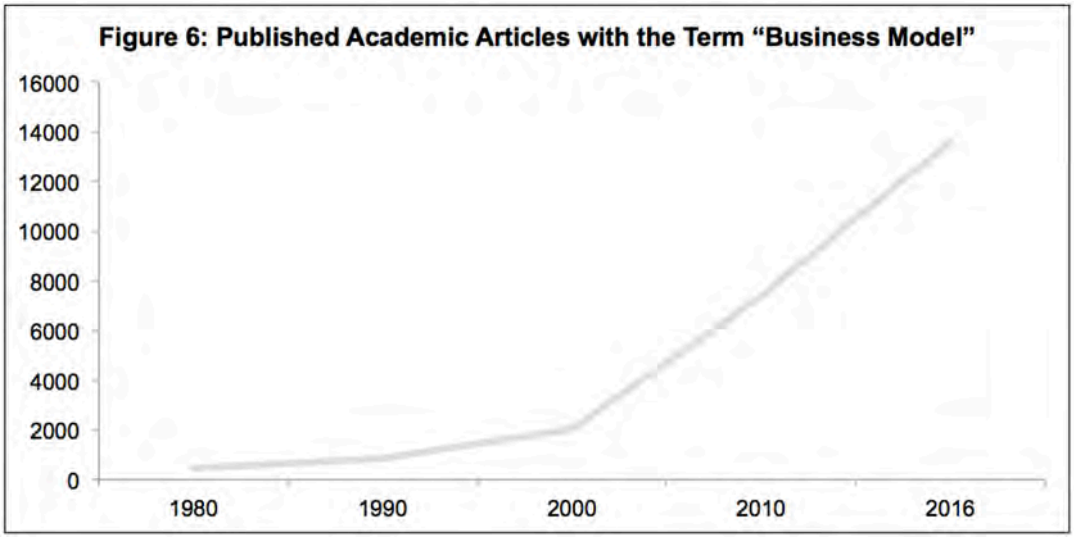
III. Theoretical framework and definitions

III.1 Defining business models

The following chapter outlines the theoretical concept of business models. The first section explains the emergence and the definition of the term, which lays the foundation for the introduction of the business model components. Afterwards, the basic types of business models in the automotive industry are presented.

III.1.1 Emergence and definition of the term business model

Since 1975, when the term business model has been mentioned for the first time in academic writing, the concept enjoys increasing popularity (see Figure 6). The business model provides an analytical approach to business planning. Every component of the model can be pulled apart into various subcomponents, which supports the testing and modeling of the business model (Magretta, 2002).



Source: Author (following a „business model" search on EBSCO)

Although the term business model is widely used, there exist several definitions (Perkmann et al. 2010). In spite of the consensus that a business model is essential to every organization, no definition of the term has been generally accepted (Morris, Schindehutte & Allen, 2005).
Meyer (2007) defines business models in regards to how a company intends to make money. This orientation towards making profit is also included in the view of Osterwalder and Pigneur (2010, p.14), who define business models as „the rationale of how an organization creates, delivers and captures value". Gambardella and McGahan (2010) agree that business models organize how a

firm captures value, but they add the dimension of obtaining returns at reasonable costs. The concept of value creation and value capture is further outlined by Chesbrough (2007). He defines value creation as generating a net value, which is mandatory to engage other actors to participate in the business model. His definition of capturing value is concerned with earning revenues for the company, which is the precondition for staying in business.

Although executing an effective business model is significant for value creation, the business needs to be renewed when competitors threaten its distinctiveness (Linder & Cantrell, 2000). Furthermore, strategic resources, competencies and the firm's positioning need to be integrated in the business model, since these are preconditions for value creating activities (Walters, 2004).

III.1.2 Business model components

The various definitions of the business model encompass a range of different components. In the following section, specific business model components are presented.

Working with components and subcomponents makes it possible to pull apart the different aspects of the firm's value creation and capturing. This enables the testing and modeling of the business model and allows taking a closer look at the fundamental functions that have to be performed to achieve differentiation from competition (Magretta, 2002).

For defining the business model components, the most recent business model concepts are outlined in the following. The features of Chesbrough's (2010) business model are: 1) Formulation of a value proposition, 2) Identification of relevant market segments, 3) Formulation of the value chain, 4) Articulation of profit and cost estimation. Osterwalder & Pigneur (2010) follow the same logic as Chesbrough (2010) and propose to work with specific building blocks. These building blocks cover the areas value proposition, customer relationships, target customers, distribution channels, key activities, key resources, key partners, cost structure and revenue streams. Taken together, the "building blocks" create the business model canvas, which is a concept that gained a lot of popularity in recent business model literature.

Johnson, Christensen & Kagermann (2008) agree that a business model has to integrate the components customer value proposition, profit formula and key resources. In addition to these components, Demil & Lecocq (2010) incorporated the value chain of activities, which is supposed to capitalize on the organizational resources and competencies.

The outlined components confirm the business model proposition of Chesbrough (2010). These components are setting the broader framework for integrating the more specific building blocks of Osterwalder & Pigneur (2010). In the following, the building blocks of Osterwalder & Pigneur (2010) are outlined and integrated in the framework of Chesbrough (2010).

Value proposition

The value proposition describes the value, which is delivered to the target customer. Value propositions are either solving a customer problem or satisfying a customer need. Businesses can have several value propositions and these can be as diverse as their targeted customer segments.

Market segment

Target customers

The target customers are the groups of customer segments a business aims to serve. „Customers comprise the heart of any business model“, since businesses depend on the ability to satisfy their needs (Osterwalder & Pigneur, 2010, p.20). Businesses need to be very precise in the decision, which customer segments to serve and which segments to ignore. Otherwise, businesses are not able to deliver their value proposition effectively.

Channels

Channels can be defined as the company's interface for interacting, distributing and selling their products. They enable a business to communicate with their customer segments and to deliver the value proposition. Businesses need to identify through which channels their customer want to be reached and how these can be integrated effectively in the business model.

Customer relationships

Customer relationships are characterized through the established types of relations with the target customers. The spectrum of customer relationships ranges from a very personal experience to fully automated impersonal interactions. These different forms of customer relationships can co-exist in a business, but they need to be integrated with the rest of the business model.

Value chain structure

Key activities

Key activities comprise the most important things a business must do to make its business model work. The key activities of a business model are closely related to the underlying value proposition. If the value proposition changes, the related key activities need to be adjusted as well.

Key resources

Key resources encompass the required assets to make a business model work. These need to interact for creating value and should always be defined in close coordination with the intended value proposition (Johnson et. al., 2008). Otherwise, resources are wasted and do not serve the delivery of the intended value proposition.

Key partners

Key partners include the network of suppliers and partners, which contribute to the activities of the business model. These partners can optimize the allocation of resources and activities to reduce costs, to gain economies of scale or to extent the firm's capabilities.

Profit and cost estimation

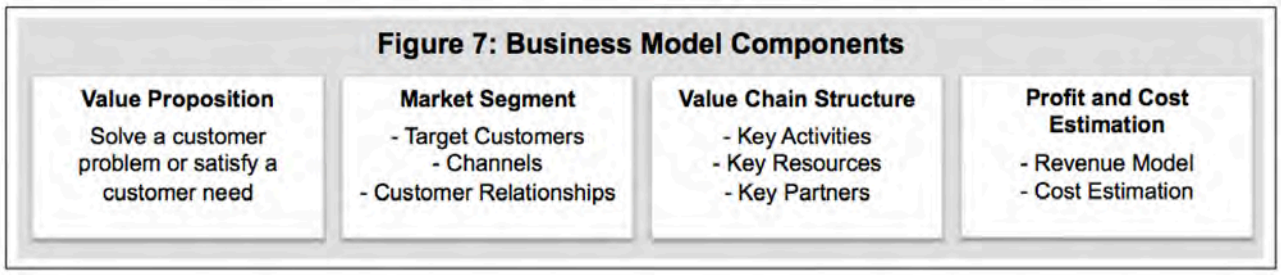
Revenue model

The revenue model describes the received cash inflows and is simply the multiplication of price and volume (ibid., 2008). Nevertheless, each business should be aware of their most valuable customer segments in terms of their contribution to the overall revenue, since the serving of different customer segments may also include different pricing mechanisms.

Cost estimation

The cost estimation comprises the costs for operating the business model. Naturally, it is important to minimize costs for the success of each business model. For cost-driven businesses it is the core of the business model to reduce costs. For value driven business models, cost efficiency should not be neglected, but fulfilling quality parameters is more important for satisfying the more sophisticated customer need.

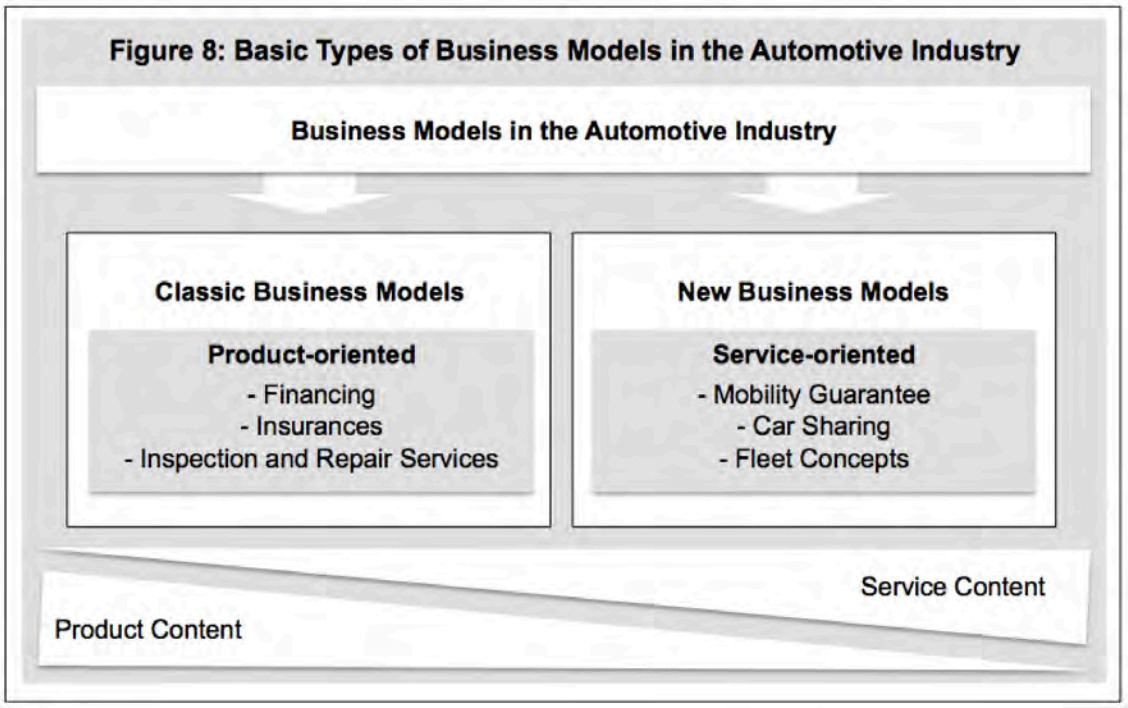
Figure 7 integrates the business model components of Chesbrough (2010) with the more specific building blocks of Osterwalder & Pigneur (2010).



Source: Obtained and modified from Chesbrough (2010) and Osterwalder & Pigneur (2010)

III.1.3 Basic types of business models in the automotive industry

The business models in the automotive industry can be divided in basic types, which are positioned between offering solely products and solely services (Kley et. al., 2011). Figure 8 summarizes these basic types of business models in the automotive industry.



Source: Obtained and modified from Kley et. al. (2011)

Product-oriented business models focus on selling cars and see services only as instruments to increase sales or to strengthen customer loyalty. Service-oriented business models are relatively new to the automotive industry. In these kinds of models, mobility becomes a contractually guaranteed performance, which is satisfied through providing a car. For example, car-sharing services guarantee the supply of vehicles without the customer having to actually own a car.

If the digital trends in the automotive industry are considered, “then it is inevitable that there will be shifts in the value chain, the revenue model and the value proposition” (ibid., p.5). Chesbrough (2011) recognized an increasing orientation of product-oriented business models towards servitization. Firms need to reconsider how they create value for their customers. Companies such as IBM and Xerox witnessed how their customers became more interested in the experience gained through using the products than in the products themselves (ibid.). Also in the automotive industry, the providing of services might be an opportunity to overcome the increasing product commoditization (Mohr et. al., 2013).

III.2 Defining business model change

III.2.1 Business model change

Many authors argue that a successful business model depends on its specific situational context. Mahadevan (2000) argues that choosing an appropriate business model is based on the specific context of the firm. It is also the context that provides meaning to the business model (Chaharbaghi, Fendt & Willis, 2003). Hence, a change of the context requires a change of the business model. Since companies are subject to continuous change processes, their business models can be defined as contingency models with optimal modes of operation for specific situations (Mansfield & Fourie, 2004). Therefore, business models need to be altered and calibrated, since the context changes over time (Vives & Svejenova, 2011).

Understanding these change processes is of significant importance, since companies need to recognize which elements of their business model remain profitable and how the altering of the components may have implications for the business model's sustainability. Especially, strategic circumstances often require business model change (Johnson et. al., 2008). These strategic circumstances are diverse and can be for instance, the opportunity to address the needs of potential customers or increased competitive pressure through a new market participant. Therefore, companies have to master the ability to change their business model (Linder & Cantrell, 2000).

New business models can create conflict with the old business model. The old business model works in many cases as the main barrier to the development of a new business model, which can cause a crisis for the company's future development (Christensen, 1997; Amit & Zott, 2001). Companies need to have a distinct clarity on the main motivation for pursuing their business model. The motivation has to give meaning to all interrelated activities of the business model and create coherence between the different elements. But not all changes in the corporate environment require the development of a new business model, since business models have a degree of flexibility that allows adding some new processes without modifying the core processes of the business (Cavalcante, Kesting & Ulhøj, 2011).

The rapid digital development requires a reaction of many established businesses. Geoffrion & Krishnan (2003) identified that the Internet and new technologies are one of the main triggers of changing business models. Although digital trends cause great dynamic in many industries, this can be seen as huge opportunity, since any „business model that's not new or game-changing to your industry is a waste of time and money" (Johnson et. al., 2008, p.56). In this regard, companies are challenged to change their business models to make advantages of digital trends.

III.2.2 Business model innovation

Business model innovation and changing business models are closely interlinked. This is due to the fact that changes in the business model can generate business model innovation, although these changes might only be incremental and do not have any disruptive effect (Amit & Zott, 2012). Incremental innovations are minor, gradual improvements, whereas disruptive innovations are completely new and have the potential to change an industry (Tidd et. al., 2005). The change of the business model can be defined in regards to the innovation degree. Whereas the extension of a business model to adjacent markets is an incremental innovation, disruptive innovations require the revision of the business model by, for instance, capitalizing on new technologies (Osterwalder & Pigneur 2010).

Business model innovation is defined as a new way of creating value, by altering one or more components of the business model (Teece, 2010). The value creation through business model innovation needs to „involve new business systems and revenue streams that are different from existing paradigms“ (Park, 2011, p.133). Nevertheless, any alteration of the business model components has the potential to create business model innovation (Amit & Zott, 2012).

Although the concept of innovating through the business model seems to be obvious, this kind of innovation does not have a long history in academic literature. Within the past years, business model innovation received increasing attention as trigger for value creation. Chesbrough (2007) emphasizes the importance of reinventing the business model compared with other types of innovations. Since research and development (R&D) for product development requires ever increasing costs, his solution suggests to include business models in the innovation process. Also Osterwalder & Pigneur (2010) describe the significance of business model innovation for entrepreneurial success. Business model innovation „creates value, for companies, customers, and society” (ibid., p.5).

If the degree of customer satisfaction is low, there exists a potential for disruptive innovations by satisfying the unmet customer needs through advanced value propositions (Johnson et. al., 2008). For instance, chapter II outlines that customers in the automotive industry are willing to pay for new mobility services. The imbalance between the satisfaction of needs and the current offering within the automotive industry can lead to changing business models and to the market entrance of innovative mobility providers. For example, the development of new car sharing companies is disruptive to the sales of cars, since the sharing of automobiles leads to the more efficient utilization of vehicles and accordingly fewer car purchases.

Besides the creation of advanced value propositions, business model innovation is an opportunity for differentiation. It might be more difficult to replicate a new business model, compared to replicating a new product (Amit & Zott, 2012). Hence, “innovation at the business model level can

translate into a sustainable advantage" (ibid, p.42). This is further outlined by Teece (2010, p.173), who defines business model innovation as „a pathway to competitive advantage if the model is sufficiently differentiated and hard to replicate for incumbents and new entrants alike".

Davenport, Leibold & Voelpel (2006) agree that business model innovation can contribute to corporate success. Companies should always be in a process of creating and destroying their own business models. Therefore, firms must manage a portfolio of several business models to act rapidly, when the existing business model is outdated (ibid.). Mitchell & Coles (2003) define this ongoing process as continuing business model innovation. The ongoing adjustment of the business model can be understood as a learning process, which contributes to the development of competitive advantages. According to Mitchell & Coles (2003), the best performing companies make frequent improvements and change their business models every two to four years. These companies integrate business model innovation on a regular basis into their business model.

Established companies rarely recognize the potential of addressing new customers, since the profitability of new value propositions is uncertain and the relative value compared to the old business model is very small. Therefore, first-moving innovators are often entrepreneurial companies, which are able to spot unsatisfied demand (Christensen & Overdorf, 2000). This ability of entrepreneurial companies pushes established companies and newly found start-ups in a severe competition.

Digital trends (see chapter II.3) offer business opportunities for new market entrants. For instance, Jeff Williams – Senior Vice President Apple – states that Apple is continuously looking at the automotive industry and evaluates where they can make a huge difference (Eichstädt et. al., 2016). Furthermore, the mobility provider Uber is a good example how a small entrepreneurial company can disrupt a whole industry through a new business model. Uber is an online transportation network that reduces the demand for the actual ownership of a car, since customers are able to use flexible mobility services. The company already provides rides to a million of passengers a day and is signing up 50,000 new drivers every month. Those kinds of numbers attracted many investors, which raised the market valuation of Uber to $62 billion. That's $7 billion more than the market value of General Motors or Ford (McElroy, 2015).

The rapid development of Uber underlines that the companies within the automotive industry are challenged to enhance their value creation potential by recombining their competencies in new business models. This is the only way to survive the increased rivalry for market segments through new players entering the automotive industry. Nevertheless, business model innovation should not be done just for the sake of changing something. If a company is profiting of a successful business model, then changes in the business model can also lead to inferior performance. In this kind of scenario, it is more advisable to increase the competitiveness through advanced products and

service offerings within the original business model.

III.3 Sub question 2: How can business models change?

As outlined in the previous chapter, business models need to change over time to satisfy the needs of the environment. Several frameworks support the change of the business model by structuring the change process in subsequent steps. The following steps change the business models to make advantages of trends in the corporate environment.

The first phase of the business model change process is the search phase, where businesses are exploring opportunities in the internal and external environment to innovate their business model. Companies need to „detect signals in the environment about potential for change" (Tidd et. al., 2009, p.79). To identify the potential for change, Johnson at. al. (2008) state four strategic situations, which are opportunities to change the business model: 1) Addressing the needs of a large group of customers that can not afford the product due to the high price; 2) Capitalizing on new technologies to innovate the business model; 3) Meeting unsatisfied customer needs and creating new markets; 4) Experiencing a shifting basis of competition and avoiding commoditization. Also Osterwalder & Pigneur (2010) identify opportunities to change the business model. These opportunities are satisfying unmet customers' needs, creating new markets and introducing new technologies. This list is corresponding with the stated opportunities by Johnson, et. al. (2008).

In the second phase of the change process, companies need to select the most promising business opportunities, since "innovation is inherently risky and even well-endowed firms cannot take unlimited risks. It is thus essential that some selection is made of the various market and technological opportunities" (Tidd et. al., 2009, p.80). The company's strategy and goals, but also their expertise and competence should guide the development of the value proposition. It is important to design the value proposition in strategic alignment to the corporate strategy and internal resources to keep the risk as low as possible. The generated value proposition needs to be tested with business experts or potential customers to prove its viability (Osterwalder & Pigneur, 2010). Early tests support companies to keep the balance between the inherent risks of the new business model and the target to achieve long-term profitability.

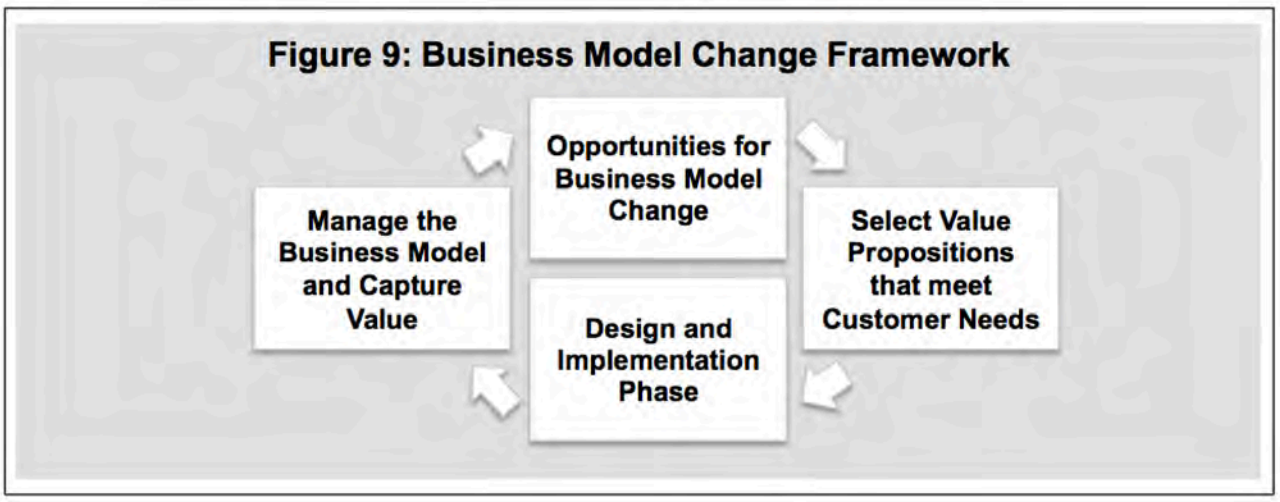
After selecting and testing the key components of the new business model, the next phase is to turn the ideas into reality. "The implementation phase may be seen as one which gradually pulls together different pieces of knowledge and weaves them into an innovation" (Tidd et. al., 2009, p.81). In this stage, the developed business model is implemented to deliver the value proposition to the target customers. Writing a business plan at this point in time is a viable tool for keeping the structure during the implementation phase, since all key resources and their further processing

needs to be defined (Osterwalder & Pigneur, 2010).

In the final stage, the created value needs to be captured, since “the purpose of innovating is to capture value, be it commercial success, market share or cost reduction” (Tidd et. al., 2009, p.85). All potential profit mechanisms need to be exploited to prove the functionality of the business model. Designing the profit formula requires to deliver the generated value successfully to the target customers. The successful delivery needs to monitored and evaluated on an ongoing basis. Osterwalder et al. (2010) call this final phase “managing” as it integrates the long-term perspective for the business model.

The business model change process does not stop after finishing the outlined steps. Osterwalder & Pigneur (2010) propose to establish a “beginner’s mindset”, so that the company is able to move on and change again when the new business model is not performing as good as expected. Also Tidd et. al. (2009) state that the launch of a new business model is only the first step to motivate further innovations. “An inevitable outcome of the launch of an innovation is the creation of new stimuli for restarting the cycle” (ibid., p.86).

Figure 9 visualizes the business model change process and integrates the outlined academic concepts into an encompassing framework.



Source: Obtained and modified from Johnson, Christensen & Kagermann, 2008; Osterwalder & Pigneur, 2010; Tidd & Bessant, 2009

III.4 Defining competitive advantage

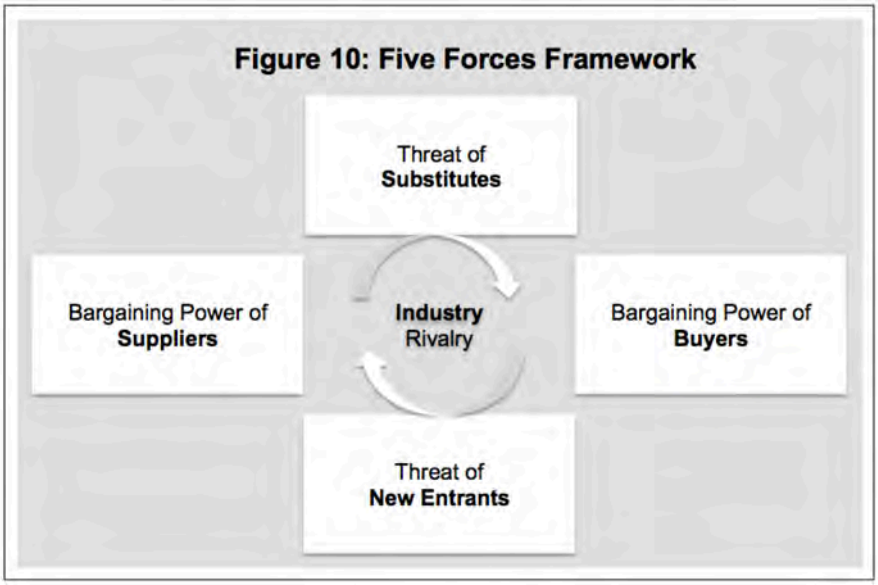
For analyzing how Daimler's business model is changing to establish a sustainable competitive advantage by making advantages of digital trends, the theoretical perspective switches now towards the field of strategy. Although this field is fragmented, strategy can be divided in two basic views: the market-based-view (MBV) and the resource-based-view (RBV). Both views have a different reasoning to establish a sustainable competitive advantage, which is outlined in the following chapters.

III.4.1 Market-based-view on competitive advantage

Porter (1991) defines the MBV as the integration of the diverse activities of a company to reach a common goal. This common goal is in many cases the reaching of a competitive advantage to raise the profitability of a company. According to Porter (1996), the key to establish a sustainable competitive advantage is choosing an appropriate industry and positioning itself within that industry. Furthermore, the value chain has to integrate and differentiate the diverse activities of a company. These concepts are outlined in the following, since they describe the reaching of a sustainable competitive advantage from the MBV.

Industry attractiveness

The relationship between the firm and the industry is essential for the firm's profitability (Porter, 1985). The principal model of this school of thought is Porter's (1985) "five competitive forces". This model defines industry attractiveness through five competitive forces as shown in Figure 10.



Source: Obtained from Porter (1985)

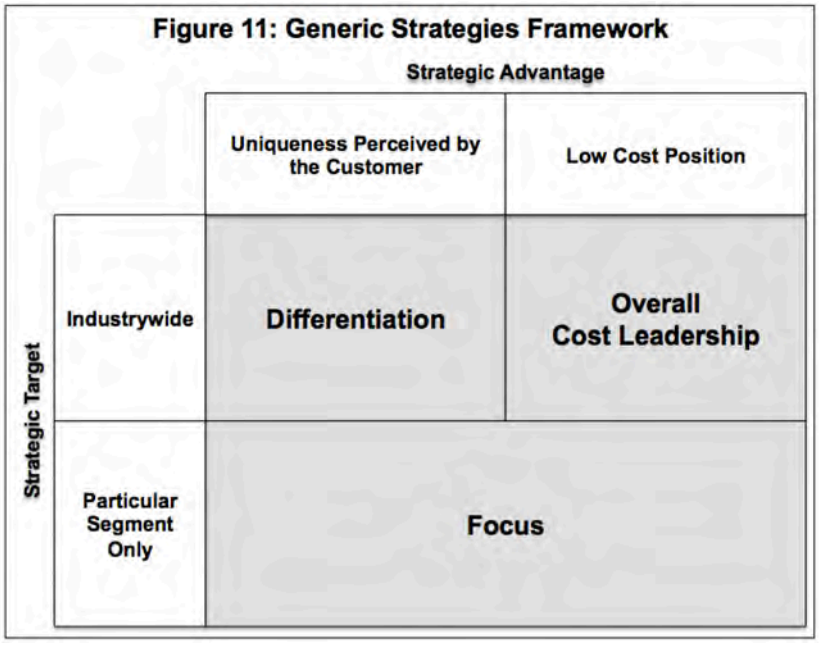
The firm has to adapt to the competitive forces to survive in the long run. If the firm fails to adapt to the industry requirements, it will be forced to exit the industry. Hence, the industry structure has great influence on the competitive setting and affects the firm's strategy. Porter (1980) argues that firms need to be aware of the competitive forces to define strategies suited for their environment, since the reaching of a sustainable competitive advantage is a result of excellent entrance and operation in attractive markets.

The underlying assumptions of the five forces framework need to be considered, since the framework assumes that companies within an industry are identical in terms of their resources. This has been criticized by proponents of the RBV, who define resources as highly mobile and different for each company (Barney, 1991; Hamel & Prahalad, 1994).

Generic strategies

For achieving a competitive advantage within the chosen industry, the firm must deliver greater value or create comparable value at lower cost (Porter, 1996). The firm needs to establish a difference to their competitors and it needs to be able to preserve this difference in the long run. For establishing this difference, the firm has to pursue one of the generic strategies: Cost leadership, differentiation or focus. According to Porter (1996), competitive advantages stem from choosing one of the generic strategies. The generic strategies enable a firm to outperform its competitors and create a defendable position within the industry. Figure 11 illustrates Porter's generic strategies.

Figure 11: Generic Strategies Framework



Source: Obtained from Porter (1985).

Overall cost leadership is the achievement of the lowest unit cost base. A company, which adopts the cost leadership strategy, seeks to have the lowest cost per unit compared to their competitors in all aspects of their business.

The ultimate goal of a differentiation strategy is to be perceived as unique in the industry. On basis of this differentiation, the company gains the ability to charge a premium price for offering added value to the customer. Among the different opportunities to differentiate are the design, brand image, technology, and customer service (Porter, 1996). If the differentiation strategy is implemented successfully, the company establishes a defendable position against the industry competitors. Furthermore, if the differentiated offering is attractive for customers, they are likely to develop brand loyalty, which decreases their price sensitivity. Nevertheless, the differentiated position does not allow ignoring the cost structure. Costs are relevant, but not be the primary strategic target of a differentiation strategy (Porter, 1980).

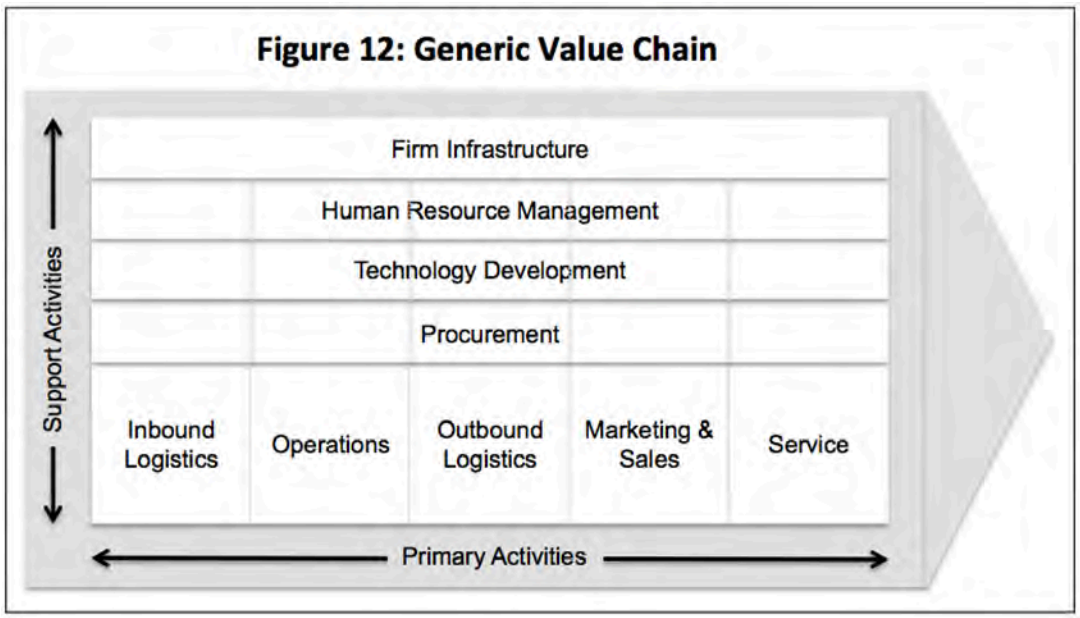
If a company adopts the focus strategy, it attempts to achieve either a cost or a differentiation advantage in a narrow market segment. Following this strategy, the company should be able to serve the particular segment more efficiently or effectively than others who have a broader focus. The focused strategy has natural disadvantages to the market share of company that is serving the whole customer base (Porter, 1980).

Companies need to avoid to be “stuck in the middle”, since this strategic position will most likely lead to low profitability. Being “stuck in the middle” happens to companies, which are not applying one of the strategic directions or pursue differentiation and cost leadership simultaneously (Porter, 1980). In this unfortunate position, companies are neither able to compete through cost leadership, nor through differentiation advantages.

Tidd et al. (2005) remark that companies should be very careful in the application of the generic strategies, since the rapidly changing environment, for instance through the digital trends, requires fast strategic reactions. The static framework of the generic strategies does not account for these rapid changes in the industry, which has to be considered in today’s strategic decision making.

Generic Value Chain

To establish a sustainable competitive advantage requires looking at each activity of a company (Porter, 1985). In this regard it is important to understand all activities of a firm, since each activity might offer the opportunity for differentiation. As shown in Figure 12, Porter (1985) created an activity based view on the corporate value chain.



Source: Obtained from Porter (1985).

Porter (1985) differentiates between primary and support activities. Primary activities take the direct way along the value chain. Operations are among the most important activities for manufacturing companies, since they include the transformation of the input goods into the final product. In addition, marketing and sales activities are important for achieving differentiation in mature industries.

The support activities supplement the activities of the value chain and should contribute to establish a competitive advantage. Especially the technological development is in the center of interest, since in the most companies the entire value chain needs to be integrated with information technology (IT). Besides the introduction and maintenance of IT systems, the technology development needs also to be seen in context with R&D activities. All primary and support activities need to be integrated in the firm's value chain and offer opportunities to be differentiated from other companies.

Scholars have argued that the added value through digital trends requires the modification of Porter's value chain (Bickerton, Bickerton, & Simpson-Holley, 1998; Johnston & Mak, 2000). Therefore, the value chain framework always needs to be seen in relation to the underlying technologies of the business model.

The activities of the value chain need to be consistent with the firm's strategy. This kind of fit is paramount to the sustainability of competitive advantages, since it is harder to imitate a position based on a variety of related and mutually reinforcing activities than it is to replicate single product features or processes (Porter, 2001). Accordingly, the stronger the fit between activities and strategy, the more sustained is the competitive advantage.

Concluding, the MBV illustrates the impact of the industry structure on the firm's performance and shows the need to apply either a cost leadership, differentiation or focus strategy as the basis for competitive advantage. The value chain framework complements the generic strategies by differentiating the activities of the firm's value chain.

III.4.2 Resource-based-view on competitive advantage

The RBV emerged as complement to the MBV (Barney & Arikan, 2001). In comparison to the MBV, the RBV outlines the importance of resources and competencies to establish a competitive advantage. Whereas the MBV assumes that the resources for all companies within an industry are the same, the RBV is based on the assumption that firms are fundamentally heterogeneous regarding their resources and competencies.

Wernerfelt (1984) was the first, who developed a theory of competitive advantage based on the strategic resources of a firm. Obtaining a competitive advantage from the RBV, deals with opportunities how firms can exploit their internal resource base (Barney, 1991). In this regard, the RBV perceives "firms as collections of productive resources" (Barney & Arikan, 2001). Strategic resources can be subdivided in tangible resources and intangible resources. Whereas tangible resources include physical and financial resources, intangible resources comprise human, technological and reputational resources.

Barney (1995) developed a framework to identify the potential of strategic resources to establish a sustainable competitive advantage. This framework is based on the attributes value, rareness, imitability and organization (VRIO), which are outlined in the following.

Question of Value

Firms need to ask themselves if their „resources and competencies add value by enabling it to exploit opportunities" (Barney, 1995, p.50). The current value of resources might not offer added value in the future, due to changing customer preferences, industry structures, or technology. Hence, a firm has to ensure that its resources add value under changing circumstances (Barney, 1995). Changing circumstances need to be seen as an opportunity to use resources in other ways to increase their value.

Question of rareness

The resource must be rare among a firm's current and potential competition to establish a competitive advantage. Otherwise, the resource will most likely not lead to a competitive advantage, since it will be seen as a commodity (Barney, 1995). If a company owns a rare strategic resource, it enables the firm to gain a temporary competitive advantage (Barney, 1995).

Question of imitability

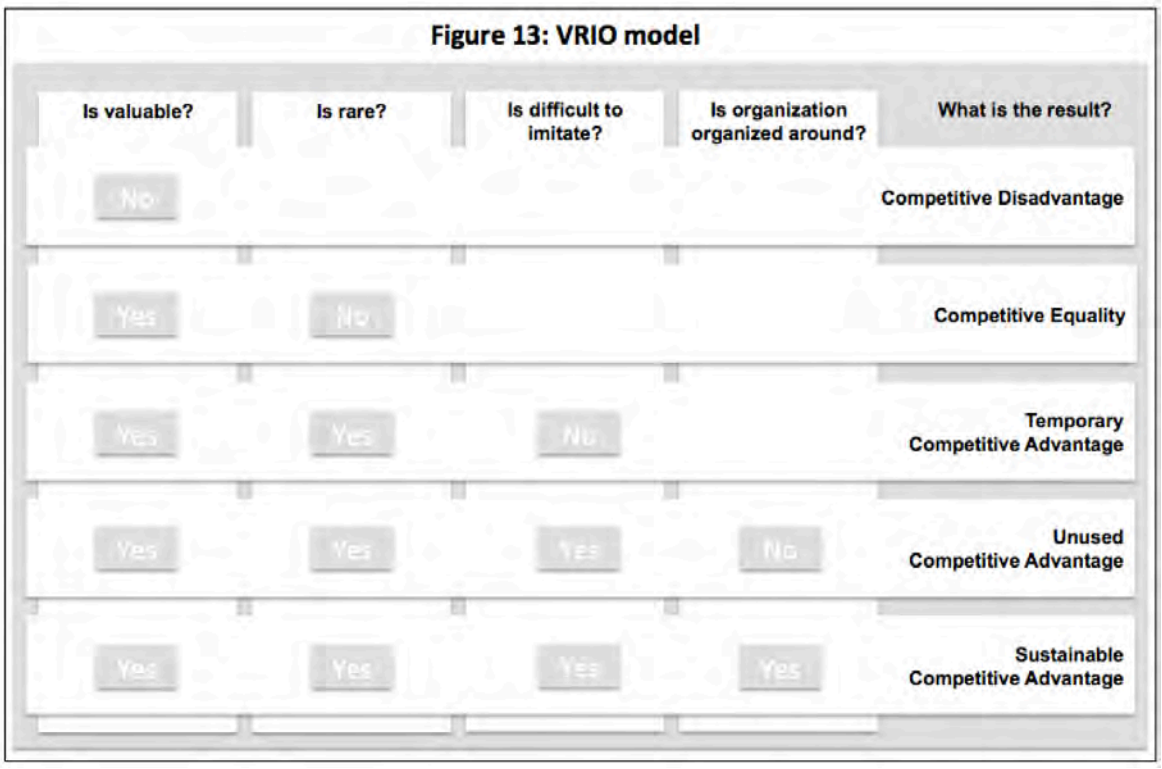
To develop the temporary advantage into a competitive advantage, the resource has to be imitable to avoid duplication or substitution. Factors for imperfectly imitable resources are unique historical conditions, causal ambiguity and social complexity (Barney, 1991). Unique historical conditions refer to the ability of companies to develop resources in specific times. Once this time has passed, the resource can be considered as imperfectly imitable. Causal ambiguity occurs when the relation between the established competitive advantages and the resource is poorly understood. Under these circumstances it is difficult for competitors to imitate the resource. Socially constructed resources are difficult to imitate, since they rely on reputation, trust, friendship, teamwork and corporate culture (Barney, 1995).

Question of organization

To harvest the competitive advantage created through valuable, rare and inimitable resources, the firm has to be organized to exploit the strategic resources. The organization is an important complementary resource, since it needs to be organized to sustain the competitive advantage by exploiting the entire value of the resources (Barney, 1995).

The VRIO model is summarized in Figure 13.

Figure 13: VRIO model



Source: Obtained from Barney (1995).

Core competencies

Another concept for establishing a sustainable competitive advantage through the RBV is presented by the notion of core competencies. Core competencies are related to a firm's resources, since these are the sources for developing core competencies. Core competencies are defined as "harmonized combination of multiple resources and skills that distinguish a firm in the marketplace" (Hamel & Prahalad, 1990). Whereas competencies are considered as abilities of a company, the notion core competencies includes the firm's capacity to earn money with its competencies. In order for a competence to become a core competence, it has to 1) provide access to more than one market, 2) give a significant contribution to the end product and 3) has to be difficult for competitors to imitate (ibid.).

Core competencies are difficult and challenging to achieve, but they are critical – especially in times of change – to enhance the firm's products and services for the future. Core competencies lead to the development of core products, which can be understood as the physical embodiment of the established core competencies. Accordingly, if a company possesses a core competence and knows how to take advantage of it, it can lead to a sustainable competitive advantage.

When applying the RBV, certain limitations need to be considered. It is not advisable to focus only on a firm's resources and competencies as the market environment might change. Hence, companies need to develop a more dynamic view on resources and competencies to manage talent, creativity, expertise, relationships and technology, which are important resources to compete in the rapidly changing business landscape.

IV. Theoretical model

The following chapter integrates the perspectives of the MBV, RBV and of the business model literature regarding the establishing of a sustainable competitive advantage. The first section outlines the relation between the strategic concepts of competitive advantages and business models. This serves as the foundation for the presentation of the theoretical model, which integrates the MBV, RBV and business model literature to analyze sustainable competitive advantages.

IV.1 Integration of strategy and business models

Magretta (2002) observed that the terms "business model" and "strategy" are among the most sloppily used terms in business; their meaning is often stretched and ends up meaning nothing. Since this thesis follows a research question, which deals with both concepts, it is relevant to argue that there is a theoretical rationale for doing this. Therefore, the following chapter answers

the question about the relation between the MBV, RBV and business models to establish a sustainable competitive advantage.

IV.2 Sub question 3: How are strategy and business models related?

The academic debate between strategy and business models reveals differing opinions about the relation of both concepts, which can be boiled down into two groups. The first group of scholars argues for a clear distinction between strategy and business models, which presents both concepts as complementary tools (e.g. Linder & Cantrell, 2001; Magretta, 2002; Mansfield & Fourie, 2004; Seddon, Lewis, Freeman & Shanks, 2004). The second group argues that the separation between strategies and business models is difficult, since the concepts have a theoretical overlap. These scholars even use the terms strategy and business model interchangeably (Shafer, Smith, & Linder, 2005; Hedman & Kalling, 2003).

Nevertheless, the majority of scholars conceptualize business models and strategy as complementary concepts. For instance, Amit & Zott (2001) define the integration of both strategic concepts as a new unit of analysis, which ensures that the important insights from both strategic views are used complementary. The business model as the logic for making money in the current business environment and strategy as the company's overarching aspiration and position in the industry (ibid.).

Due to the complementary relation of the concepts, companies need to be aware that the redesign of their business model does also affect their business strategy and vice versa. Whereas the business model is applied to unite the different business activities to a consistent value creation, strategy defines the plan to reach the proposed business target (Yip, 2004). Therefore, a company can operate several business models, but it has only one corporate strategy (Baden-Fuller & Morgan, 2010).

IV.2.1 Contribution from the MBV and RBV to establish a competitive advantage

Whereas the MBV analyzes the firm in regard to the external environment, the RBV considers the internal strategic resources and competencies. Scholars from both views acknowledge that the MBV and the RBV are complementary concepts to get the full picture of a sustainable competitive advantage. Both views cannot stand-alone and must be accompanied (Barney, 1995). This underlines that the identification of a sustainable competitive advantage should be conducted with a joint analysis of the MBV and the RBV.

The business model cannot establish a sustainable competitive advantage without the contribution of the MBV and the RBV. Whereas the MBV supports the differentiating from competitors, the RBV

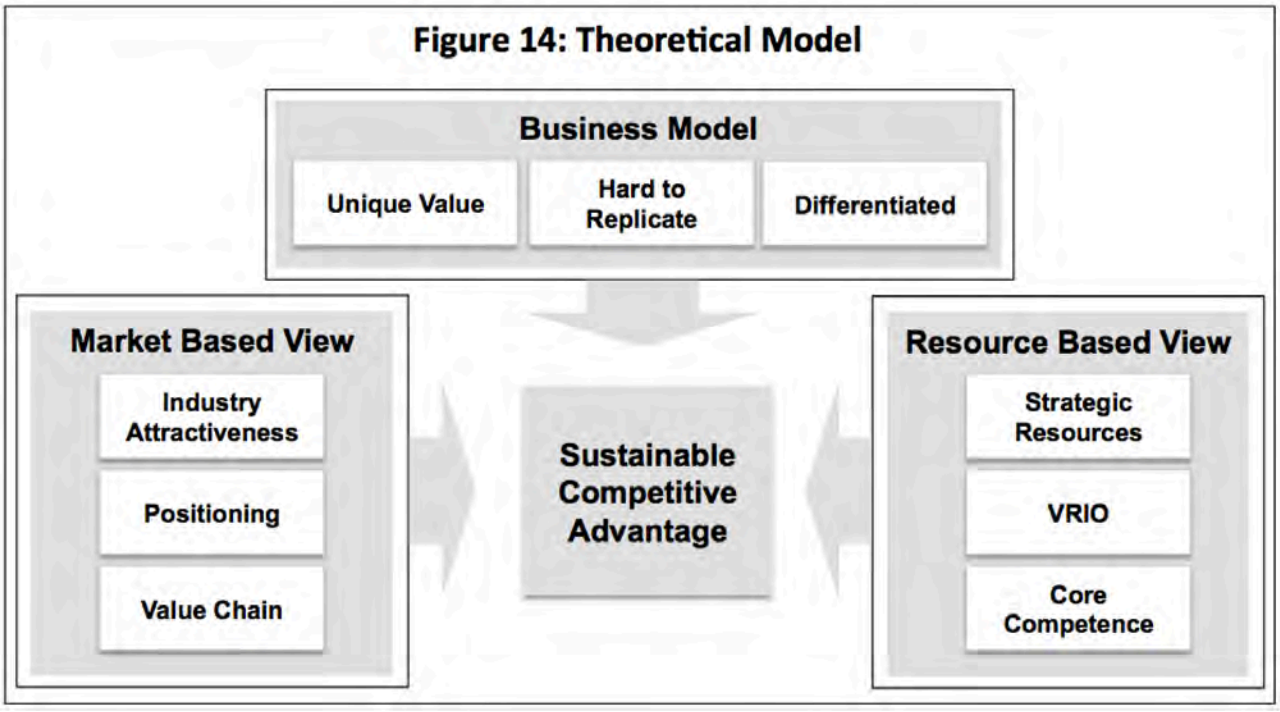
defines the required resources and competencies for the business model. Integrating both strategic concepts can lead to a sustainable competitive advantage based on differentiation and VRIO resources.

IV.2.2 Contribution from the business model to establish a competitive advantage

Strategy and business models need to be viewed as complements, since the literature provides significant effects on company performance when business models interact with product market strategy. Linder & Cantrell (2001) follow this argumentation and define that a business model has to offer three distinct attributes to establish a sustainable competitive advantage: 1) unique value; 2) hard to replicate; 3) differentiated from competitors. In this regard, the business model can be perceived as a strategy model, which unites the finer aspects of strategy. Therefore, strategic fit between between strategy and the business model is required, since the business model is a distinct concept for establishing a sustainable competitive advantage. Taken both stances together, the business model, the MBV and the RBV need to be interwoven to an encompassing framework for establishing a sustainable competitive advantage.

IV.3 Presentation of the theoretical model

The theoretical model (see Figure 14) integrates the outlined strategic concepts into an encompassing framework to analyze the establishing of sustainable competitive advantage. The model includes the business model, which has to provide unique value, should be hard to imitate and needs to be differentiated for establishing a sustainable competitive advantage. From the RBV, the strategic resources need to pass the VRIO framework and the concept of core competencies to establish a sustainable competitive advantage. From the MBV, the criteria of industry attractiveness, positioning and differentiation of the value chain need to be fulfilled to establish a sustainable competitive advantage. Each of the concepts is insufficient and limited when applied on its own; the concepts need to be integrated to analyze the basis for a sustainable competitive advantage. The reaching of a sustainable competitive advantage is in the center of the model and provides the uniting purpose for each of the strategic concepts.



Source: Author

V. Methodology

The methodology section outlines the used methods for answering the research question, which has the function to prove the trustworthiness of the study and to ensure its reliability and validity. The applied methods are described as foundation for a legitimate and scientific answer to the problem statement of this study.

V.1 Research philosophy

Research philosophy defines the "development of knowledge and the nature of that knowledge" (Saunders, Lewis & Thornhill, 2003). This is relevant for any research, which has the ambition to create new knowledge. Therefore, the underlying research philosophy is outlined in the following.
The research philosophy depends on the author's view on the world (Saunders et. al., 2003). This view can be shaped through four different kinds of philosophies. These are positivism, interpretivism, realism and pragmatism. Within the discipline of management studies, the positivist and the interpretative philosophy are the dominant paradigms (Malhotra & Birks, 2007). Whereby the positivist paradigm is based on a deductive approach, the interpretative paradigm follows an inductive approach. Nevertheless, both research paradigms are not mutually exclusive for the conduction of a study.

Since the interviewed people for this study behave in their social roles according to their own set of meanings, the researcher follows the interpretive philosophy. This philosophy focuses on the understanding of individuals in their role as social actors (Saunders et al, 2003). Applying the interpretative philosophy allows to generate different interpretations of the reality to answer the research question. Furthermore, interpretivism is an appropriate philosophy for researching unique situations within the business environment, since distinct sets of individuals and circumstances are interacting at specific times (Saunders et. al., 2003).

The interpretative philosophy follows an inductive approach. These kinds of studies create knowledge by interviewing relevant participants and observing specific circumstances. Hence, the researcher is „searching for the occurrence and interconnection of phenomena", which is useful for researching specific contexts that require detailed observation (Malhotra & Birks, 2007, p.161).

The detailed observation to explain specific business contexts does not require large representative sampling, since rather an in-depth level of research is demanded to answer the research question.

V.2 Research design

The appropriate research design for a study depends on the type of information, which is required to answer the research question. Hence, the identification of relevant information about the research topic is crucial for the decision about the research design.

As outlined previously, the target of research is the creation of knowledge. This process can be divided in different phases. Whereas explorative research is necessary for establishing an initial theoretical foundation, the phase of descriptive research is focusing on proving the established theory from the exploratory stage. Afterwards, research enters the phase of maturity, which changes the focus towards the "reaching of normative knowledge" (Karlsson, 2009, p.20).

Due to the novelty of the developed theoretical model (see chapter IV.2), the underlying study follows the explorative approach. This research design is appropriate for answering the research question, since the "problem needs to be defined more specifically" (Malhotra & Birks, 2007, p.79). Relating the concepts of strategy and business models for researching the impact of digital trends on establishing a sustainable competitive advantage represents the first scientific attempt on this topic. The explorative approach is suitable to "provide insight and understanding of the nature of the phenomena" (ibid., p.70). Furthermore, the novelty of research following the explorative approach requires a flexible, unstructured and agile research process, which is only possible with small empirical samples (ibid.).

V.3 Research strategy and methods

As outlined in the previous chapter, this study adopts an explorative research with a small empirical sample. The researcher uses a case study of the Daimler AG, for investigating how business models are changing to establish a sustainable competitive advantage.
Case studies are a useful research method to develop new theory through generating new creative insights. This has a proven high validity through the interaction with practitioners (Karlsson, 2009). Furthermore, case studies are a viable research method for answering "how" and "why" questions (Yin, 2003). For a valid answer to these kinds of questions, the researcher has to focus on a „contemporary phenomenon within some real-life context" (ibid., p.3). Hence, the appropriate research method for answering the research question is a case study, which combines a high capacity of knowledge creation with the in-depth analysis of a certain phenomenon.
The data collection for answering the research question has been chosen in accordance to the requirements of an in-depth analysis. An in-depth analysis requires a qualitative research strategy, since the data collection is aimed at describing specific phenomena. Qualitative research is useful for conducting exploratory studies, since it supports to observe the meaning and quality of the current phenomena (Willig, 2001). Furthermore, qualitative approaches are also aligned with the interpretative research philosophy, since they are "concerned with interpretation and perception rather than with identification of a rational objective truth" (Karlsson, 2009, p.66).
The qualitative methods for the data collection in the underlying case study were in-depth interviews with three employees of the case company, two employees of relevant daughter companies, an in-depth interview with the German Association of the Automobile Industry (VDA), observations of company stores, and internal and external reports.

V.4 Research approach

The research approach should be chosen in relation to „the extent to which the researcher is clear about the theory at the beginning of the research" (Saunders et al, 2003, p.124).
Research can either follow a deductive or an inductive approach. Whereas deductive approaches are suitable when the researcher tests a hypothesis for proving an already established theory, inductive approaches collect data and develop theory based on the collected data (ibid.).
Both approaches are not rigidly divided and can be used complementary. The combination of both approaches is „in our experience often advantageous" (ibid., p.127).
The underlying study applies a combined deductive-inductive approach for answering the research question. This is advantageous in the underlying case research, since the researcher studied the relevant theoretical concepts of strategy and business models during the Master programme.

Hence, the hypothesis of the relation between the concepts of strategy and business models was made before the data collection and analysis of the underlying research. This research method applies a deductive approach, since the formulated hypothesis is tested with already established strategy and business model theory. The formulation of the problem statement is answered in form of the theoretical models (see chapters III.1.2, III.3 and IV.2), which is supportive to conceptualize the theoretical findings.

However, the establishing of the theoretical frameworks did neither govern the data collection nor the analysis, since these chapters follow an inductive approach. The collected data from interviews, observations and reports was used to create new knowledge. Hence, the development of theory followed the data collection, which is a feature of the inductive approach.

Opposed to the deductive approach, inductive approaches prefer using smaller samples (ibid.). By applying an inductive approach for the case study, the emphasis could be placed on an in-depth analysis of the individual context. In this study the data collection methods are entirely qualitative and consist of a reduced sample, since the research analyses the phenomenon for one company.

V.5 Research plan

The research plan structures the scientific process to obtain and analyze the data for the underlying study.

Primarily, a broad review of academic literature was conducted to develop an understanding for the current state of strategy and business model literature. This provides the scientific base to define the contribution of the underlying study to the existing literature. Since there exists no specific theory that describes the relation between strategy and business models to establish a sustainable competitive advantage, the extensive review of literature review supported the development of the theoretical model (see chapter IV.2).

After establishing the theoretical foundation, the case study was conducted by applying various qualitative research methods, such as interviews and observations. The interviews with several employees of the Daimler AG and relevant subsidiary companies supported the understanding of how Daimler's business model works, how it evolves over time and how digital trends influence this development.

The first employee was interviewed to receive detailed information about Daimler's general business activities. This interview and a detailed research about the company, established an understanding of the details of Daimler's classical business model. This understanding is outlined in chapter VII.1.1.1, which outlines the classical business model components of the Daimler AG. The following interviews were conducted with employees, who are directly in charge for the development of digital trends. The obtained information of these interviews was used for the

analysis of Daimler's changing business model (see chapter VII.1.1.2) and the establishing of a sustainable competitive advantage by making advantages of digital trends (see chapter VII.1.2).
A final interview was conducted with the department of Networked and Automated Driving of the VDA. This interview had a broader focus and was conducted to obtain insights about the relevance of networked and automated driving for the automotive industry.
In parallel to the obtained information through the interviews, the collecting of data about the industry, the relevant partners and competitors was accomplished. These informations were necessary to develop expertise for conducting the industry analysis. The parallel process of data collection and data analysis was required, since many situations during the analysis opened additional questions. To answer these questions, it was necessary to iterate between data collection and data analysis for receiving the relevant answers in the next interview or observation.

V.6 Empirical base

The case study company represents the empirical base for this thesis. The chosen company Daimler AG is a German multinational automotive corporation. It consists of various car, bus and truck brands. By unit sales, Daimler is the thirteenth-largest car manufacturer in the world (Statista, 2015). While studying Daimler's business case, the researcher of this thesis analyzed the automotive industry and relevant technology to create a holistic picture of the changing business model and the influence of digital trends for establishing a sustainable competitive advantage.

V.6.1 Case selection

The case of Daimler was chosen due their interesting activities within the area of digital services. Since the industry is in the phase of advanced maturity, price competition and commoditization are reducing the attractivity of the industry. Car manufacturers are looking for business opportunities to revive growth. If Daimler is able to exploit new business opportunities through establishing competitive advantages in the area of digital services, many companies might be interested in Daimler's business model. Besides the relevance of Daimler's activities in the market for digital services, the close contact to various relevant employees granted access to relevant information about the company's activities.

V.6.2 Data selection: population, population frame and sample

The population is defined as "the entire group of people, firms, plants or things that the researcher wishes to investigate" (Karlsson, 2009, p.115). In this case study the company's employees and managers of the Daimler AG represent the population. The population frame describes the "listing

of all the elements in the population from which the sample is drawn" (Karlsson, 2009, p.116). The population frame includes one employee of the Mercedes-Benz Business Development, one employee of Daimler's connectivity services, one employee of Daimler's digital customer experience and two employees of Daimler's mobility services. As the population frame was very selective, the chosen sample for the qualitative interviews includes all interview participants. The sample "is a subset of the population: it comprises some members selected from the population" (ibid., p.116). Due their relevant positions and great industry experience, the five interviewees provided sufficient data for the case study.

V.7 Data collection

The data collection was performed according to Table 2.

Table 2: Data Collection Schedule

Data Collection Method	Name	Company	Position	Date
Interview	CB (A2)	Daimler AG	Project Manager Strategy and New Business Development	08.07.16
Interview	DF (A4)	Daimler AG	Product Manager Telematic Services	13.07.16
Interview	AG (A5)	Daimler AG	Manager Mercedes me Customer Integration	21.07.16
Interview	AS (A6)	Car2go Group GmbH	Market Research Manager	26.07.16
Interview	TH (A7)	Moovel Group GmbH	Project and Collaboration Lead	28.07.16
Interview	HK (A8)	German Association of the Automotive Industry	Senior Manager Advanced Technology	16.08.16
Observation	Mercedes me store (A9)	Daimler AG	Various marketing and sales representatives	June-August 2016

Source: Author

The first interview (A2) was conducted with CB, who is employed at Daimler in the department of innovation strategy as project manager. The target of his department is to develop new business models and to create encompassing solution systems, which are used to get deeper into the value chain of the customer and to develop more complex automobiles.

The second interview (A4) was taken with DF, who is Product Manager Telematic Services at Mercedes me connect. Mercedes me connect is the functional area, which cares about the development of the connected car. In the department of product management, new ideas and innovations are created. DF's ideas and innovations are evaluated together with the R&D department for new products, services and business models.
The third interview (A5) was conducted with AG, who is Manager at Mercedes me Customer Integration. As part of the IT department, he is in cooperation with the marketing and sales department to develop the best customer experience for Daimler's customers.
The fourth interview (A6) was taken with AS, who works as Market Research Manager for the car2go Group GmbH. She is working in a team of five employees and investigates everything regarding the car2go brand, brands of competitors and where car2go can be improved. She is specifically working on qualitative projects, which includes everything in direct interaction with customers.
The fifth interview (A7) was conducted with TH, who is working since two years for the Moovel group. He is part of the Moovel lab, which functions as research lab within the Moovel Group. He is interested in rapid project development, prototyping and in starting a discourse with people who are interested in the future of mobility.
Another source of primary data was the interview (A8) with HK, who works as Senior Manager Advanced Technology in the department of Networked and Automated Driving of the German Association of the Automotive Industry (VDA). He is working since 1999 in the automotive industry and was manager in different technological project before he joined the VDA two years ago. The VDA created the department for Networked and Automated Driving to bunch external professionals with their internal know-how for being faster in the development of networked and automated driving technologies.
Another source for collecting data were the observations in Mercedes me stores (A9).
For secondary data on the automotive industry, several Marketline and other industry reports have been used. Furthermore, various annual reports, corporate presentations and press conferences have been integrated in the data collection.

V.8 Data documentation and coding

The obtained data through the interviews has been documented through the transcription of the recordings (A2-A8). To "maximize recall and to facilitate follow up and filling of gaps in the data", the transcription was done directly after the interview (Karlsson, 2009, p.181). In case of the observations, notes and photos document the visits (A9).
The next step in the data analysis was coding the obtained data. All obtained data had to be sorted

and classified into categories. Due to the qualitative nature of the data, the coding was done manually. Hence, the interview transcripts, notes, and reports were categorized with different colors to structure the information. The categories were related to the theoretical concepts business model, business model change, and competitive advantage, which constitute the basis of the theoretical models (A10).

V.9 Reliability and validity

For producing a trustworthy research outcome, the reliability and validity of the research is critical for the research process. The concepts are defined as follows:

- Reliability tests if the research is repeatable under similar conditions on all occasions and describes "the extent to which the data collection techniques or analysis procedures will yield consistent findings" (Saunders et al, 2003, p.156).
- Internal validity outlines "the extent to which the conclusions regarding dependency between factors of a relationship are certifiable" (Karlsson, 2009, p.73). Triangulation and data triangulation are recommended methods to enhance the internal validity (see chapter V.9.1).
- External validity refers to the generalizability of the research (Karlsson, 2009). Since the challenges within the mature automotive industry are similar for many companies, this research can be generalized for other car manufacturers. This is due to the high similarity between the classical business models in the automotive industry (see chapter III.1.3). However, the research can also be useful for other industries, since digital trends have a great impact across industry borders.
- Construct validity refers to "the extent to which an observation measures the concept it is intended to measure" (Karlsson, 2009, p.77). In this study, triangulation was used to address the issue of construct validity.

V.9.1 Triangulation

Triangulation is based on „using different methods to study the same phenomenon", which increases the validity of research (Karlsson 2009, p.190). Applying triangulation reduces the "common problem of bias, poor recall or inaccurate articulation", since interviews can only be considered as verbal reports (Yin, 2003, p.93). The same subject to potential bias have the observations in company stores, which could have been influenced by personal preconceptions and beliefs.

Hence, the use of "multiple respondents for the same question" was used to limit bias as much as possible (Karlsson, 2009, p.126). The same set of questions has been repeated in the interviews

to reduce bias and to develop a holistic understanding of the company. By asking the same questions, the interviewees provided answers that revealed different opinions on the same situation. Therefore, the researcher was able to analyze the phenomenon from different perspectives, which increases the internal validity of the study. Furthermore, this approach increases reliability, since "multiple sources of data on the same phenomenon are used" (ibid., p.191).

In addition, several sources to collect the data – interviews, observations and reports – were used, which is classified as another type of triangulation. All these different sources contributed to minimize biased opinions, since data from multiple sources is less affected by misleading information through subjective perceptions of individuals.

V.10 Delimitation

The underlying research is delimited through constraints on time and content-length. Although the researcher would have preferred to expand the theoretical and the empirical analysis, the time frame is a relevant delimiting factor.

As outlined previously, the thesis is delimited by the "researcher's subjective view on the nature of reality" (Saunders et al, 2003, p.119). Especially the applied interpretivist approach is sensitive to generate a biased research outcome and "should be subject to constant review and revision" (Malhotra & Birks, 2007, p.161). In this regard, it should be mentioned that only interviews with employees of Daimler and relevant subsidiaries are conducted. Hence, the interviewees might be more willing to talk about the positive aspects and are less critical about potential threats.

Another delimiting factor for the validity of the research is the establishing of an own theoretical framework for guiding the analysis. This contributes to the tendency to analyze events as more patterned than they are to make them fit with the theoretical framework (Miles and Hubermann, 1985).

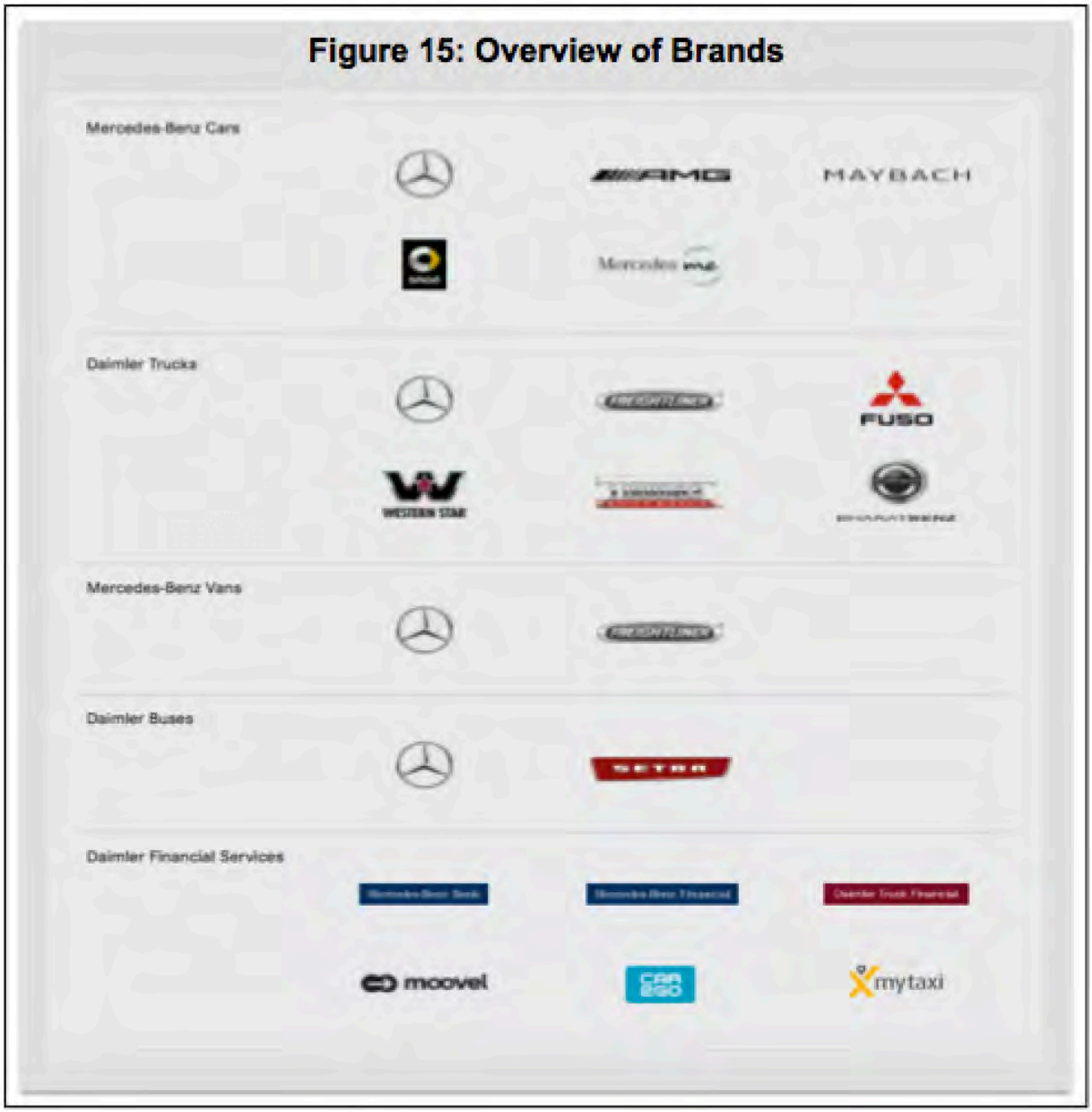
Since the underlying theoretical concepts were established before the case company was selected, it was not predictable whether these concepts can been analyzed in the context of the case company. Therefore, some elements of the initial theoretical framework were not relevant for the analysis of the case company, which required the iteration between theory and analysis to classify the obtained data. Hence, the development of theory in close alignment with the choice of a case company could be suggested for further studies.

VI. Case study presentation

The case of Daimler is used to answer the research question. To get an understanding about the company, the chapter begins with the company description. Afterwards, Daimler's activities in the area of the digital trends are presented. The chapter closes with outlining the considerations on the selection and relevance of the case study.

VI.1 Description of the case company

The history of the Daimler AG can be traced back to Karl Benz, Max Rose, and Friedrich Esslinger. In 1883, they established the Benz & Company Rheinische Gasmotoren-Fabrik. Benz & Company and Daimler-Motoren-Gesellschaft merged in 1924, which laid the foundation for the Daimler AG. The Daimler AG is the parent company of the Daimler Group, which is engaged in the development and manufacturing of various automotive products. Additionally, Daimler operates different kinds of services relating to its automotive businesses. Daimler has production facilities in 19 countries and operates in North America, Western Europe and Asia. The head quarter is located in Stuttgart and in total the Daimler Group employs 279,972 people. (Marketline, 2016)
The business operations of the Daimler AG are divided in five segments: Mercedes-Benz cars, Daimler trucks, Daimler financial services, Mercedes-Benz vans and Daimler buses. The segments consist of various brands like Mercedes-Benz, Mercedes-Benz-AMG, Smart, Freightliner, Setra, and Mitsubishi Fuso (see Figure 15). The Mercedes-Benz cars segment accounts with 83.809 Million € for the largest share of revenue (Daimler, 2015a). Under the Mercedes-Benz brand, the Daimler AG offers a broad spectrum of premium automobiles. Furthermore, the Daimler AG launched in 1994 the Smart brand, which offers small cars for urban centers.



Source: Daimler (2015a)

With their product and service portfolio, the Daimler AG belongs to the automotive industry. As part of this industry, the Daimler AG faces the challenges of price competition and commoditization that have been identified in chapter II.2. „Growth is not possible in the traditional markets, since these markets are saturated“ (HK A8). To overcome the vicious circle of price competition and commoditization, European premium car manufacturers need to differentiate themselves and discover new business opportunities for overcoming the stagnating demand.

VI.2 Daimler's digital services

To discover new business opportunities, the Daimler AG claims the strategic focus areas "leading in technology" and "pushing digitalization" (Daimler, 2015b). The Daimler AG focuses on technological development, since „digital trends are altering products and services, the communication with customers and the manner in which the Daimler AG creates value" (ibid.).
Daimler's enhances connectivity services, develops customer-focused services and improves the customer communication. This translates in "car-to-x communication, the Mercedes me service brand and our Moovel mobility concept, which are helping us to meet the changing demands of our customers and enabling us to enter new markets" (Daimler, 2015a). For analyzing, how digital trends are changing Daimler's business model, the digital services are outlined in the following.

Car-to-x communication

Car-to-x communication represents the continual dialogue between vehicles, passengers and the surrounding environment (Daimler, 2015a). Mercedes-Benz understands this kind of connectivity as 'enabling technology' for the areas of infotainment, electronic vehicles, safety, and autonomous driving.
Mercedes-Benz Cars and Daimler Trucks are very ambitioned in the rollout of connected vehicles and the increasing of digital services (Daimler, 2016). For instance, the new Mercedes-Benz E-Class is the world's first series-built vehicle that shares information with other cars and with the infrastructure (A 11).
Daimler Trucks wants to pioneer connectivity and autonomous driving in the segment of trucks. Dieter Zetsche – the CEO of Daimler – stated that Mercedes-Benz is going to demonstrate their technological leadership at the next IAA Commercial Vehicles Show with the Mercedes-Benz Future Truck 2025 (Daimler, 2016). This study demonstrates how connected driving will revolutionize goods transport, which leads to better drivers, vehicles and logistics management.
An important area of car-to-x communication is the field of autonomous driving, which is described as one of the biggest innovations since the invention of the automobile (Daimler, 2015a). Mercedes-Benz wants to make autonomous driving a reality. Their customers are already using autonomous features today in Mercedes-Benz cars.

Mercedes me

Daimler has the vision that the intelligence of a Mercedes-Benz should not end when the driver leaves the vehicle (Daimler, 2015a). Therefore, Mercedes me is about connecting with customers digitally to guarantee an ongoing relationship between the driver and his vehicle through digital

services. The focus is on the personal lifestyle and mobility needs of each user - regardless whether they drive a Mercedes-Benz, use car2go, Mercedes-Benz Rent, or Moovel, or own a vehicle from a non-Group brand.
Mercedes me allows Daimler to address people on the Internet and in the real world. Users can decide for themselves which Mercedes me services they want to take advantage of, and when and where. This could be at home on the couch via tablet computer, on vacation using a smartphone or at Mercedes me stores.
Mercedes me is designed as a web portal, which brings together all existing and future services. Five pillars outline the portfolio of different services. The connect pillar includes all connectivity topics; the assist me topics are about after sales services; finance me includes the leasing and financing of cars; move me includes everything related to mobility services; inspire me includes sub portals like She's Mercedes to increase customer loyalty. Daimler admits that the Mercedes me service brand is still in the early stages, but the digital concept will be continuously expanded with new features (AG A5).

Mobility services

The portfolio of Daimler financial services includes mobility services such as the Moovel mobility platform and the car2go car sharing service.
Moovel is a platform to utilize the opportunities on the interface between mobility and mobile Internet. The free available Moovel smartphone application allows users to compare the travel times and costs for various modes of transport and to select an optimal route for their trip. Using the app, it is possible not only to compare various mobility options, but also to book them and pay for them. Moovel's partners are car2go, Flinkster, mytaxi, Taxi-Ruf, Mietfahrräder, public transport operators and Deutsche Bahn (German Railways). With the full integration of online tickets, Moovel is the first provider to offer a genuine one-stop shop for urban mobility. The Moovel mobility service already has more than one million customers and wants to become one of the big players in the market for mobility services (TH A7).
Car2go is a free-floating car-sharing concept, which means that the cars can be rented and parked at any place within the defined rental area. This is different from stationary car sharing concepts, since it allows one-way rentals so that the customer can rent the car, drive to his destination and park the car without any further obligations (AS A6). The car2go customer uses his smartphones as the central interface for finding and booking a vehicle, unlocking and locking it, and paying for it. Car2go operates with cars of the Smart brand, since they are convenient in urban areas (AS A6).

VI.3 Considerations on the selection and relevance of the case study

So far, car manufacturers have responded to the increasing industry pressure by expanding their product portfolios through creating more and more derivatives (Mohr et. al., 2013). This production-oriented strategy was successful and delivered profitable growth. However, car manufacturers are increasingly challenged to establish profitable market niches, since the industry maturity leads to increasing price competition and commoditization. In this regard, car manufacturers need to look for market opportunities to establish new sources of growth (ibid.).

In this regard, networked and automated technology services are relevant for the automotive industry (HK A8). The outlined digital services of the Daimler AG represent opportunities to overcome challenges of an industry in advanced maturity. The technological trend towards an increased delivery of services could become a source for future profits. In addition, the providing of additional services could differentiate Daimler from industry competitors.

The digitalization of automobiles creates new business use cases and new solutions systems to satisfy customer needs (CB A2). To benefit of these new mobility use cases, Daimler's mission is to shape the future of mobility in a safe and sustainable manner with outstanding services. However, the digital services need to translate into a business model with the potential to establish a sustainable competitive advantage. Otherwise the threats of advanced maturity in the automotive industry cannot be compensated.

VII. Analysis and discussion

In the following, the theoretical models are applied in order to analyze how Daimler's business model is changing and to test if Daimler's digital services can establish a sustainable competitive advantage.

VII.1 Focus on the business model

In the first section of the analysis, the focus lies on the investigation of Daimler's changing business model. Primarily, the components of Daimler's business model are outlined, which creates an understanding for the classical production-oriented business model. On this foundation, the business model change framework is applied to analyze the changing impact of the digital services for Daimler's business model.

VII.1.1 Daimler's business model components

VII.1.1.1 Value proposition

There is not just one value proposition within the Daimler AG. "On the one side is the selling of automobiles under the Mercedes-Benz brand, but on the other side are already new business models like car2go, Moovel and the entire financial service business" (CB A2). Nevertheless, the selling of automobiles is still dominating (CB A2). The selling of automobiles is a production-oriented business model, which satisfies the customer need for mobility. In this market, the value propositions of car manufacturers are diverse and Daimler is able to differentiate the Mercedes-Benz brand through leadership in quality and technology (CB A2). In case of the new business models, Daimler is solving the customer need for mobility through digitally enhanced services like Moovel or car2go.

VII.1.1.2 Market segment

Target customers

The different mobility needs of Daimler's customers result in various customer segments. In the area of passenger cars, Mercedes-Benz is targeting customers with above average income, since the automobiles are differentiated through quality and correspondingly expensive. In addition, there is a huge B2B market, which includes fleet customers, rental companies and companies that use Mercedes-Benz as company cars. In the area of trucks, busses and vans, differentiation through quality is less important. "It is less decisive that the Mercedes-Benz star is on the car" (Borowski). Relevant for the B2B customer is how the car performs in terms of its price compared with competitors (CB A2).

Channels

Daimler has a very strong sales organization with many key account managers, who have a very strong presence in the respective markets (CB A2). These key account managers are the direct contact to the customers, which are mainly local car dealerships. The dealerships fulfill the demand for personal consultation, since automobiles are complex products that demand intensive customer consultation. Furthermore, the dealerships are presenting the cars in a well-defined atmosphere to support the qualitative image of the Mercedes-Benz brand. In this regard, car dealerships operate as interface for the Mercedes-Benz brand, since they manage the personal interaction, the presentation and the distribution.

Customer relationships

Daimler's key account managers have personal relationships to the local Mercedes-Benz branches and to independent dealers (CB A2). Furthermore, the key account managers have a close relationship with the purchasing responsible of fleet customers like Sixt or great leasing companies. These managers are in permanent contact with the customers to receive information for adjusting and improving the product (CB A2).

VII.1.1.3 Value chain structure

Key activities

Daimler's key activities are the developing and manufacturing of various automotive products. The activities of the business model rely on achieving the highest possible effectivity by using minimal resources (CB A2). The company also provides financial and other services relating to its automotive businesses.

The activities for the business model are almost the same for any car manufacturer, since it combines the manufacturing of the supplier parts and the combustion engines to deliver the product to the car dealerships. Nevertheless, Daimler has a strong focus on R&D to expand its product portfolio and to improve the functionality, quality, safety, and environmental compatibility of their products. The company constantly invests in research activities to stay acquainted with new technologies.

Key resources

Daimler is integrating various kinds of resources in their business model. Physical resources encompass the manufacturing facilities, buildings and machines, which are relevant for the production of automobiles. Financial resources encompass Daimler's capital to invest in new business opportunities. Human resources include the training, experience, judgment, intelligence, relationships, and insights of Daimler's managers and workers. Technological resources are for instance Daimler's owned patents, which are either for special engineering purposes or for technological solutions. Daimler's reputational resources include the patent rights for the various brands, which are increasingly important to achieve differentiation in the competitive market. Daimler is in an ongoing process to adjust, which resources are essential to make the business model work. Otherwise, resources are wasted and do not serve the delivery of the value proposition as quality and technology leader.

Key partners

Daimler relies on a diverse network of suppliers and partners. These companies are central to the business model of Daimler, since the carrying of all related activities would result in an over complexity of the business model. Hence, Daimler installed strategic partners forward and backward in the value chain. Moving forward in the value chain, car dealers are responsible for the product presentation and the final distribution. In addition, car dealers ensure personal customer contact and efficient servicing routines. This makes car dealers to an important partner in the after sales market. Moving backward in the value chain, the key suppliers of relevant input materials, like technological equipment or pre-manufactured parts, are highly relevant. In cooperation with the strategic partners backward in the value chain, Daimler can extent its production capabilities. Furthermore, these strategic alliances are optimizing the allocation of resources, which reduces costs and enables Daimler to establish economies of scale in their core business.

VII.1.1.4 Profit and Cost Estimation

Revenue model

The Daimler AG recorded revenues of 149,497 million Euros during the financial year 2015 (A12). Daimler generates revenues through their five business segments: Mercedes-Benz cars (54.6% of the total revenues in FY2015), Daimler trucks (23.3%), Daimler financial services (11.5%), Mercedes-Benz vans (7.4%), and Daimler buses (3.2%). In Daimler's classical business model, the customer pays for the car in form of a sales price or a leasing rate. This revenue stream has been the main source of revenue for Daimler in the past. All other payments like service routines are carried out with external service providers. Hence, Daimler is limited to the revenues through the selling and leasing of their products.

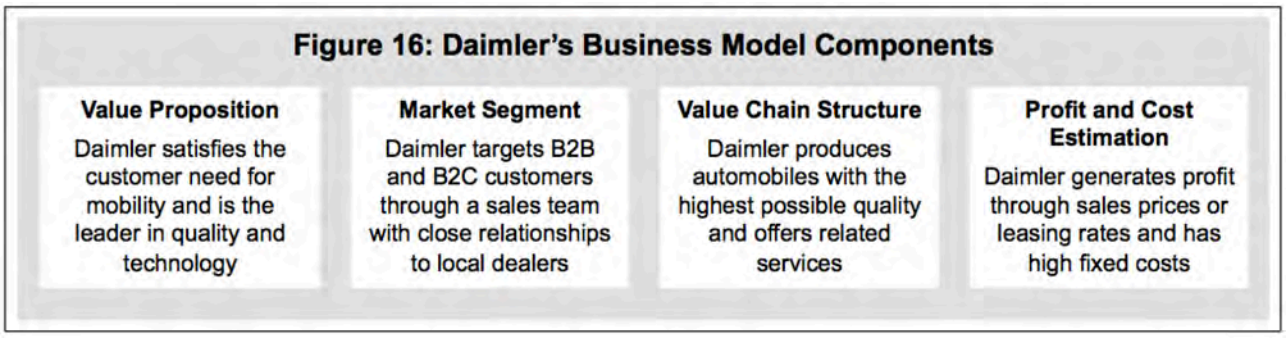
The digital services offer Daimler to generate new revenue streams after the delivery of the car to the customer. Therefore, digital services are an opportunity to expand Daimler's revenue streams.

Cost model

Daimler's classical business model is characterized by large capital requirements to establish production facilities, high fixed labor costs and significant limitations to reduce costs in automotive design and manufacture. The listed physical, financial, human, technological and reputational resources represent the core cost drivers. Furthermore, the global tightening of emission standards is increasing the production costs further. Daimler is interested in lowering their costs to increase the profit margin of the sold products (CB A2).

The components of the Daimler's classical business model are summarized in Figure 16.

Figure 16: Daimler's Business Model Components



Source: Author

VII.1.2 Applying the business model change framework

Although the outlined business model of the Daimler AG has been successful for decades, business models need to be altered and calibrated over time. Especially the increasing product commoditization and the price competition in the automotive industry require an exploration of new business opportunities. This is of significant importance for Daimler, since the company needs to recognize which elements of their business model remain profitable and how the altering of specific elements may have implications for the business model's sustainability.

The Internet and new technologies are one of the main triggers for growth opportunities in the automotive industry. This can lead to a change of the business model, if the value creation involves new business systems and revenue streams that are different from existing paradigms. For analyzing how Daimler can make advantages of digital trends, the business model change framework (see chapter III.2.3) is applied to identify the impact of the digital services for the business model. In the following, each of Daimler's digital services is outlined regarding the steps of the business model change framework.

VII.1.2.1 Opportunities for business model change

Opportunities for business model change are 1) the addressing of customers that can not afford the product due to the high price, 2) the capitalizing on new technologies, 3) the meeting of unsatisfied customer needs to create new markets, and 4) the avoiding of product commoditization through increased competition (see also chapter III.2.3). In this initial stage of business model change, Daimler has to explore these opportunities.

Car-to-x communication

Daimler's car-to-x communication is capitalizing on new technologies to increase the connectivity of automobiles. According to DF (A4), Daimler introduced many new connectivity services, which are using an Internet connection of the car to either improve existing services or to create new service offerings. Furthermore, Daimler is able to meet unsatisfied customer needs, since car-to-x communication increases the service experience of the customer (DF A4). The customers demand this kind of digital service, since they want to combine their individual need for mobility with communication (Mohr at. al., 2013). Hence, the connectivity services offer significant benefits to Daimler's customers. In addition, the offering of individualized connectivity features is an opportunity to avoid product commoditization, since this service is customized to the specific user profile. New features in infotainment and innovations directed at safety and comfort can serve as differentiator from competitors.

Mercedes me

Also Mercedes me capitalizes on new technology. This service combines digital communication channels like social media and online communities as platform for an exchange between Daimler and its customers. Furthermore, Mercedes me meets unsatisfied customer needs, since consumers are increasingly using the large variety of online channels before making large purchasing decisions. Nowadays, these channels are the primary information source for customers (see Figure 4). In this regard, „Mercedes me is a core strategy for the Daimler AG to have the best customer experience in the future" (AG A5). The Mercedes me services are an opportunity to avoid product commoditization, since customers can be addressed differently through the new communication channels. Therefore, Mercedes me focuses on connecting with customers to guarantee an ongoing relationship between the driver and his car. To achieve differentiation, the focus is on the personal lifestyle and mobility needs of each and every user. In addition the Mercedes me platform offers inspiration for travel, lifestyle and entertainment. This attempt of the Daimler AG to connect people, experiences and services with digital technology is a differentiating factor from industry competitors that can avoid product commoditization.

Mobility services

The mobility services Moovel and car2go enable the usage of automobiles without owning them, which addresses the needs of a large group of customers that cannot afford to buy a Mercedes-Benz. These services are capitalizing on new technologies, since the ability to constantly be online for researching the location of cars and to book them on the go through mobile apps has been vital for the success of sharing concepts. People are increasingly using multiple modes of transport to

get around and they also want to be able to organize their trips while on the go. Moovel and car2go offer solutions for this new mobility culture and satisfy the need for a more convenient integration of mobility in daily routines and lifestyles.

VII.1.2.2 Select value propositions to satisfy customer need

The value propositions of Daimler's digital services need to satisfy customers. It is important to design the value propositions in strategic alignment to the corporate strategy and the internal resources to keep the risk as low as possible. Afterwards, the value propositions need to be tested with business experts or potential customers to prove their viability.

Car-to-x communication

Car-to-x communication is aligned with Daimler's strategy to improve security and comfort. "We benefit of the already existing Mercedes-Benz service network, which is included in an optimal way in the different connectivity elements" (DF A4). For instance, the service network can be improved through the availability of relevant customer data, which leads to an increased customer experience. This example demonstrates, how car-to-x communication benefits of already existing resources, which are complemented by technological competencies to improve security, comfort and the customer experience.

The hardware and software for car-to-x communication services are tested in the loop to avoid any misconceptions and data leakages. Before the release, the services are tested in prototypes and afterwards partially introduced in Mercedes-Benz automobiles.

Mercedes me

Mercedes me is embedded in Daimler's marketing strategy to reach the "best customer experience" (Daimler, 2015a). The goal is to address new target groups while maintaining the brand loyalty of established customers. Daimler is utilizing Mercedes me as centerpiece of their best customer experience that includes new sales channels and an innovative interface with the brand. The multichannel approach links different sales formats with digital elements, thereby supplementing the services offered at traditional Mercedes-Benz showrooms. Mercedes me is also the name of a new chain of stores, which opened in inner-city locations (A9). This encompassing marketing strategy makes Mercedes me a highly relevant project for the strategy of Daimler. "It is a core project to be competitive in the digitalization, to gain new customers and to demonstrate that Daimler is able to offer digital services" (AG A5). For instance, Mercedes me integrates the competencies of Daimler Financial Services. The Mercedes me product finder and payments

calculator customizes financing solutions and allows customers to obtain their vehicle in the manner that fits their financial situation.
The additional value for the customer is tested on an ongoing basis with focus groups and test customers.

Mobility services

The readiness for providing new mobility eco-systems is evaluated high for Mercedes-Benz (Kley et. al., 2011). Using the small cars of the Smart brand for the car2go car-sharing concept is very convenient for customers in urban areas, which aligns the value proposition of the Smart brand for convenient urban mobility with the value proposition of car2go. The supply of the Smart automobiles enables car2go to develop the free-floating car-sharing concept. „The customer can be charged in minutes, which offers great flexibility and power for the customer“ (AS A6). Also Moovel increases the comfort in the area of urban mobility through the full integration of different mobility concepts. Furthermore, Daimler bought the digital mapping and location provider Here. The acquisition of Here provides the relevant technological resources to develop the mobility services.
The customer acceptance for the car2go service has been tested in two pilot projects before the initial implementation in 2012. The Moovel app is testing new features on an ongoing basis and has already one million customers.

VII.1.2.3 Design and implementation phase

The design and implementation phase pulls together the different pieces of knowledge and weaves them into an innovation. In this stage, the required key resources need to be identified and possible threats and challenges need to be explored. This serves as the foundation for the developed business model prototype, which is implemented to deliver the value proposition to the target customers.

Car-to-x communication

Car-to-x communication combines digital and automotive competencies. Both competencies were necessary to develop the new Mercedes-Benz E-Class, which is promoted as masterpiece of intelligence that takes autonomous and accident-free driving to the next level (A 11). Throughout the entire development process, “the Mercedes-Benz connect department had a very close coordination with the research and development department for creating new vehicles” (AG A5). Both competencies, the connectivity competencies and the automotive competencies, had to be

interwoven to create the autonomously driving E-Class. Further innovations of the E-Class are the emergency call, live traffic, remote control of the car, and security aspects so that the customer receives urgent support in case of a break down (DF A4).

Mercedes me

A key resource for Mercedes me is the software development that works in very fast project cycles compared with the development of new cars and is managed with completely different management methods (AG A5). This process needs to be consistently managed between the online and offline experience, since the customer demands a seamless car-buying experience. Therefore, the project cycles of the car development are relevant for the software development. „The IT needs to integrate their activities in the schemes of the car development, since for instance the requirements of quality assurance need to be considered by all related activities“ (AG A5). Through combining the aspects of technology and automotive development, Daimler has been setting the standard for personalized customer service with the Mercedes me service brand. “That customers see the portal, get interested and involved matters for the delivery of the value proposition to the customer” (AG A5). Nevertheless, many of the new services have just been started with the product launch of the E-Class.

Mobility services

Car2go and Moovel rely on a diverse portfolio of resources and competencies.

“There is the back-end development, which includes important aspects that are not visible for the customer. Then there is the front-end development, which ensures a qualitative usability and interface. Designers are relevant for the user experience and the buttons and icons to create a consistent look and feel for the applications. Then there are data specialists, who try to optimize specific forms of code. The team also includes for instance geographers” (TH A7).

Furthermore, the mobility service requires cooperation with various transport operators. Only through the combination of the diverse human resources with the different mobility providers, Moovel can integrate the different forms of urban mobility. A key resource for car2go is the fleet of around 14,500 Smart automobiles at 31 locations in Europe and North America. This great supply in cars, enabled car2go to become the world’s biggest car-sharing company (Marketline, 2016). For delivering car2go’s value proposition, „the business model requires to put the customer always in the center of interest“ (AS A6). However, for having a high availability of cars, many customers developed their own portfolio of mobility services, since free-floating concepts do not charge a

basic tariff. This allows the customer to decide individually, which mobility service is suited best for his use case. „Car2go wants to be top of mind for any kind of mobility use case“ (AS A6).

VII.1.2.4 Manage the business model and capture value

The business model has to be designed as an active trigger for value creation. The created value needs to be captured, since “the purpose of innovating is to capture value, be it commercial success, market share or cost reduction” (Tidd & Bessant, 2009, p.85). In this regard, Daimler needs to exploit all profit mechanisms of their digital services. This phase also integrates the long-term perspective, which requires managing the business model.

Car-to-x communication

The offered connectivity services lead to additional revenues for Daimler. “When more connectivity services are included in the car, the customer needs to pay a higher price” (DF A4). Besides the direct monetary return, connected cars generate huge amounts of valuable data about travelers’ habits and characteristics, which creates new business opportunities to target consumers with infotainment, education, healthcare and other services. The delivery of these services through the car – like smartphone capabilities, traffic information and entertainment services, driver-assistance apps like active safety features or tourism information – offers the potential for future profits. 86% of all customers are willing to pay an extra premium for these kinds of connectivity services (Eichstädt et. al., 2016). Additionally, connectivity features are an important aspect to increase customer loyalty. “The idea is that the customer feels comfortable in our eco system, so that the customer stays longer with Mercedes-Benz and decides again for buying new Mercedes-Benz products and services” (DF A4). Although car-to-x communication offers various profit mechanisms, legal and ethical questions need to be clarified before autonomous driving is introduced on a broader scale. Therefore, Daimler has to manage a broad-based dialogue about the legal and ethical issues associated with autonomous driving.

Mercedes me

Although the creating of additional revenues is not a focus in the current status of Mercedes me, the long-term strategy is to earn money with new and additional services (AG A5). Mercedes me is an opportunity to determine the best combination of online and offline touch points to shape the customer’s decision making along the purchase journey. This is important to gain knowledge about the activities of the customer. “The Mercedes me portal should bind the customer closer to the Mercedes-Benz brand, so that customers buy more Mercedes-Benz products” (AG A5).

Furthermore, Mercedes-Benz can use the increasing availability of data and information about the vehicle usage and the driver behavior through sensors and telematics systems in their cars to expand the service offering. Daimler manages the Mercedes me service brand to align their premium products with the new digital requirements of the customers (AG A5).

Moovel

The mobility market is growing far faster than the new car market and mobility services are forecasted to be an important source of profit in five to 10 years (see Figure 5). Car2go is currently offered in the markets of the TRIAD countries, which encompass the most important economical areas of the world. Many of these traditional markets are saturated, but car2go is an opportunity to overcome the stagnating demand in these regions. Car2go has made Daimler the market leader for free-floating car-sharing systems that operate without rental stations (Daimler, 2015a). The usage fee is the only source of revenue for car2go, but the visibility of the product in the street has an effect itself. „This is a way of an intelligent product placement, since potential customers notice the cars“ (AS A6). Furthermore, the opportunity to rent a car for a small price is a good way for customers to experience the car without actually buying the product. For instance, car2go introduced recently in Berlin besides the Smart cars also Mercedes-Benz cars for the car sharing (AS A6).

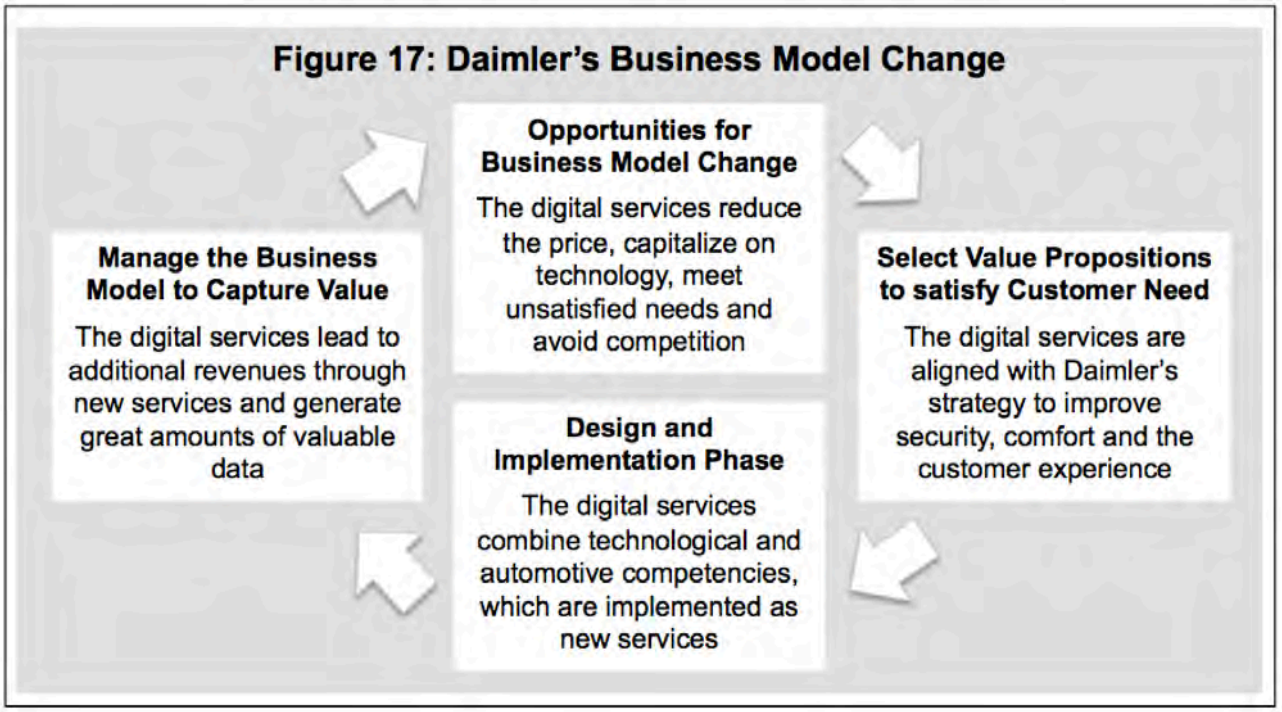
By allowing users to compare the travel times and costs for various modes of transport, Moovel offers to pay directly through the smartphone. Moovel receives a provision for each ride that is sold through the Moovel service – like for any ride with mytaxi or each ride with car2go that is booked through the Moovel application. Although this is the primary revenue model of Moovel, there are additional benefits like the data, which shows how different mobility demands within a city are developing. “There are different possibilities to utilize this data” (TH A7).

Due to the success of the mobility concepts, Daimler wants to expand the presence of Moovel and of car2go. Daimler announced that car2go begins to operate in Chongqing with several hundred Smart models. This marks the entry of car2go into the Asian market, whereby operations in Chongqing will serve as a pilot project for expanding into other major cities in Asia (Daimler, 2015a). This underlines that car sharing is not just a concept for Daimler, but a business model that needs to be managed and monitored. Furthermore, TH (A7) mentions that Moovel wants to become one of the big players in the market for mobility services. Therefore, the developing of relationships with additional transport providers has to be managed.

VII.1.3 Chapter summary and discussion

The business model change framework for Daimler's digital services is summarized in Figure 16. The circular character of the framework underlines that the business model change process does not stop after finishing the outlined steps. Daimler should stay attentive to the market development to create new stimuli for restarting the cycle.

Figure 17: Daimler's Business Model Change



Source: Author

As the business model change framework illustrates, the digital services can lead to a change of Daimler's classical business model, since they involve business systems and revenue streams that are different from existing paradigms. They present business opportunities to avoid the increasing product commoditization and the price competition in the automotive industry. Nevertheless, the impact of the digital services for the classical business model has to be identified, since production- and service-oriented business model have several differences.

Whereas Daimler's classical product-oriented business model is limited to the revenues through the selling and leasing of products, the digital services generate revenues after the delivery of the car to the customer. This is an opportunity to expand Daimler's stagnating revenue streams in the mature automotive industry. Besides the different revenue streams, also the interaction with customers changes through digital services. Whereas in the production-oriented business model

the car dealerships operate as interface for the Mercedes-Benz brand, the digital services present channels for Daimler to reach their customers directly. Since the Mercedes me platform also has the functionality of a virtual showroom, Daimler's service-oriented business model reduces the dependence on intermediaries. Furthermore, the production- and the service-oriented business model have different capital requirements. Whereas the production-oriented business model is characterized by large capital requirements, the development and operation of digital services does not require extensive production facilities and great investments in design and manufacturing. Although the differences between the production- and the service-oriented business model are significant, the business model change framework has shown that both business models can be complementary through aligned strategies. Since the digital services are aligned with the value proposition as quality and technology leader, Daimler's automotive and technological competencies complement each other. This mutual relationship between the underlying competencies for the production- and service-oriented business model is the foundation for Daimler's strategy to improve security, comfort and the customer experience. This is an important consideration, since the internal competencies should be the fundament to create the business model (Nair, Paulose, Palacios & Tafur, 2013). If Daimler sustains and leverages the underlying competencies over time, they offer new opportunities for business model development.

The relation between the production- and service-oriented business models is beneficiary for Daimler's current portfolio of products and services. For instance, the integration of aligned services in the new Mercedes-Benz E-Class was the foundation to offer the first car with car-to-x communication features. This illustrates the improving of products through the integration of aligned services. The combination of the business models enables Daimler to develop new features in infotainment, safety and comfort to be differentiated from the competition.

Nevertheless, the great relevance of the production-oriented business model for the Daimler AG has to be emphasized. The selling of automobiles is still dominating and accounts for almost 90% of Daimler's revenues. Certainly, digital services offer new revenue sources, but these are most likely not sufficient to replace the revenue sources of the classical model. The new sources need to be seen as highly relevant business opportunities that need to be exploited to sustain Daimler's competitiveness. Especially the generation of huge amounts of data about travelers' habits and characteristics creates new business opportunities to target consumers with infotainment, education, healthcare and other services.

VII.2 Focus on the competitive advantage

In the following is analyzed if the business model of Daimler's digital services can establish a sustainable competitive advantage. The first section of the chapter focuses on the establishing of a sustainable competitive advantage through the business model. Afterwards, the second section applies the RBV to analyze the digital services. Finally, the third section uses the MBV to investigate related competitive advantages.

VII.2.1 Sustainable competitive advantage through the business model

Business models can contribute to the establishing of a sustainable competitive advantage and help to explain why some firms outperform others (see chapter IV.2). For gaining a strong competitive position in the market, the business model has to offer unique value, it has to be hard to replicate and differentiated from the competitors. This framework is applied to analyze if Daimler's digital services are a source to establish a sustainable competitive advantage.

VII.2.1.1 Unique value

To offer unique value for their customers, Daimler is following the „mission to shape the future of mobility in a safe and sustainable manner with outstanding products and services and trendsetting technology" (CB A2). Car-to-x-communication, the Mercedes me service platform and mobility services are new channels for Daimler to reach their customers, which offers new ways to create and capture value.

Car-to-x communication

Digital connectivity offers significant benefits to Daimler's customers. „The customer will experience the same transformation from mobile phones to smartphones with the connectivity features of his car" (DF A4). The customer benefits from the connectivity services making his journey more comfortable, safer and faster. This support has unique value for the customer, since the "connectivity features improve the customer's ability to solve his tasks" (DF A4). The customer can already benefit of these features in the new E-class. Autonomous and accident-free driving offers unique value by increasing security and comfort. Furthermore, Daimler's progress in autonomous driving offers unique value for the transport sector, since it leads to better drivers, vehicles and logistics management making transporting safer and more efficient.

Mercedes me

Mercedes me offers the unique value to integrate the regular Mercedes-Benz customer service with new digital services. Customers can use services at any time, from anywhere, and have permanent access to the vehicle data. Dealers do not need to call their customers anymore, but customers receive the indication that their car requires a specific service. “Then the customer is able to arrange an appointment by using the Mercedes me portal” (AG A5). Furthermore, Mercedes me allows to present configured cars directly to the customer. This is demanded by most of the costumers, since they research the variety of possibilities through online channels before making large purchasing decisions.

„Mercedes me offers experiences that can go far beyond the automobile making Daimler a pioneer in the field of new digital service concepts“ (AG A5). Mercedes me offers the unique value to benefit of the intelligence of a Mercedes-Benz even when the driver left the vehicle. In this regard, “Daimler wants to increase the interaction outside the car with new offerings through the combination of autonomous driving and car-sharing services“ (AG A5). For instance, Mercedes-Benz can offer a more flexible leasing model in which the monthly payment is determined by the distance the customer has actually driven during the month (Daimler, 2015a).

Mobility services

Daimler’s mobility services offer the unique value that the ownership of a car is not relevant anymore and the dependence on the car moves to the background, since cars can be requested at any time (AS A6). Through these services, the user can compare the travel times and costs for various modes of transport to select an optimal route for their trip. The functionality of Moovel is unique, since searching, booking and driving are integrated in one application. The car2go customer also uses the smartphone as the central interface for finding and booking a vehicle, unlocking and locking it, and paying for it, which is very convenient for the customer. Furthermore, car2go is designed as a free-floating concept, which means that the cars can be rented and parked at any place within the defined rental area.

VII.2.1.2 Hard to replicate

Daimler constantly invests in R&D to stay acquainted with new technologies, which contributes to the great amount of patents that are a great resource to prevent replication. Furthermore, Daimler’s focus on R&D distinguishes the company as technological leader in the automotive industry.

Car-to-x communication

Daimler can capitalize on new technologies to increase the connectivity of their automobiles. „Technological and automotive competencies create a very close connection between hardware, software and connectivity services" (DF A4). For instance, both competencies had to be interwoven to create the autonomously driving E-Class. "The connectivity services benefit of the already existing high quality telematic products, which are improved through new digital services to deliver for instance better information about traffic jams" (DF A4). In terms of connectivity, the services are just starting when the customers has received the car. After starting the car, the customer receives customized connectivity services. These kind of individual services are hard to replicate since they rely on the collected customer data, which is not accessible for other companies.

Mercedes me

Mercedes me guarantees an ongoing relationship between the driver and his automobile through digital services. This is hard to replicate for Daimler's competitors, since the created service ecosystem offers new ways for customer interaction. Especially the seamless customer journey between online and offline services that integrates digital services with services at local branches is hard to replicate. Furthermore, the providing of an all-round service and focusing on the personal lifestyle and mobility needs of each user increases the loyalty of the customer. „The customer gets interested in the Mercedes-Benz brand, recognizes the additional value of the Mercedes me services and manages his car by using the portal" (AG A5).

Mobility services

The integration of Daimler's production-oriented business model with the service-oriented business model is hard to replicate for competitors. "Whereas the task of the traditional car manufacturer is accomplished with the supply of the car, the digital services are beginning to create value when the customer received the automobile" (DF A4). For the integration of service- and production-orientation, Daimler benefits of their technological and automotive competencies. For instance, wireless technologies and GPS ensure that vehicles and services can be linked with one another to be used in those locations where the customer happens to need them. Especially the full integration of online tickets for buses, trams and trains is very hard to replicate for competitors, since a diverse set of competencies and different mobility partners are required.

VII.2.1.3 Differentiated

With the digital services, Daimler wants to further strengthen what has traditionally differentiated the company, exceptional quality and technological leadership. Mercedes-Benz is the quality leader in the automotive industry and the providing of additional digital services could be an opportunity to achieve further differentiation.

Car-to-x communication

The improved security and comfort through car-to-x communication can differentiate Daimler from their competitors. „Daimler develops car-to-x communication features as premium service, which increases the service experience of the customer“ (DF A4). This is an opportunity to avoid product commoditization, since these new services in infotainment and safety can serve as differentiating factor from the competition.

Mercedes me

Daimler’s strategy for Mercedes me is to offer the best customer experience in the market. The platform offers mobility, connectivity and financial services, but is also an inspiration for travel, lifestyle and entertainment. This attempt of the Daimler AG to connect people, experiences and services with digital technology is a differentiating factor from industry competitors. Through combining the aspects of technology and automotive development, Daimler has been setting the standard for personalized customer service with the Mercedes me service brand.

Mobility services

Daimler’s mobility services are differentiated through the Smart and through the business model. Using the small cars of the Smart brand is very convenient for customers in urban areas. Car2go and Moovel are the only mobility services that offer these kinds of small city cars, which is a key differentiator to other mobility services. Furthermore, the free-floating car-sharing concept is an advantage compared to stationary car sharing concepts, since the customer must not return the car to the rental station. This kind of business model is an opportunity for differentiation, since it combines the production- and service-orientation of Daimler to a new form of value creation for the customer. Replicating a new business model might be more difficult compared to replicating a new product.

VII.2.2 Sustainable competitive advantage from the resource-based-view

In the following chapter, the emphasis shifts from a focus on the business model towards the RBV in order to clarify whether or not Daimler's digital services create a competitive advantage according to Barney (1991). If the underlying resources are valuable, rare, inimitable, and Daimler is organized to exploit them, the resources have the potential of giving the company a sustainable competitive advantage.
The analysis is based on the physical, human, financial, technological and reputational resources. Afterwards, the concept of core competencies is applied to evaluate, if the harmonized combination of the strategic resources distinguishes the digital services and increases Daimler's capacity to earn money.

VII.2.2.1 Physical resources

The physical resources encompass the manufacturing facilities, buildings and machines, which are relevant for the production of automobiles. These resources enabled car2go to become the world's biggest car-sharing company. Furthermore, the digital services benefit of the already existing Mercedes-Benz service network, which is included in an optimal way in the different connectivity elements (DF A4).
The listed physical resources are imitable in themselves. If Daimler is able to purchase these physical resources, then other firms should be able to purchase the same physical resources. This implicates that physical resources cannot be a source of competitive advantage. However, Barney (1991) argues that even though several firms possess the same physical resources, it might only be one firm that has the required social relations, culture and traditions to exploit them. Hence, Daimler may obtain a sustainable competitive advantage from exploiting its physical resources more completely than their competitors, even though competing firms do not vary in terms of the resources they possess.

VII.2.2.2 Financial resources

Daimler's financial resources include their retained earnings, as well as capital from equity holders, bondholders and other external sources. In the financial year 2015, the Daimler Group recorded revenues of 149.467 Million Euro, which is an increase of 15% over the financial year 2014 (A 12). This solid amount of financial resources is required to finance Daimler's costly R&D activities.

Daimler's financial resources are valuable, as they allow the company to develop digital services to establish themselves as quality and technology leader. Furthermore, the financial resources provide an advantage compared to new market entrants, since for instance the development of a free-floating car-sharing concept requires an initial funding. This financial involvement can be a difficult barrier to overcome for many competitors. Accordingly, this resource is rare, as it is not held by a large number of firms. Furthermore, it is difficult for new entrants to gain profits in the automotive industry, since the industry is in advanced maturity and market growth is very small. Daimler's financial resources are built on their unique historical conditions as quality and technology leader, thus making them difficult to imitate. Accordingly, this makes Daimler's financial resources imperfectly imitable. Moreover, the development of digital services demonstrates that Daimler is organized to harvest the competitive advantage created through their financial resources. Concluding, the financial resources have played a significant role in developing the digital services and create a competitive advantage, since the resource lives up to Barney's (1991) attributes.

VII.2.2.3 Human resources

Daimler had to combine diverse human backgrounds for developing the digital services, like back-end and front-end development, designers and data specialists. The integration of these digital professions influences Daimler's corporate culture and their way of working, since "Daimler's digital services are having a very open culture and a great diversity within the teams" (TH A7).

"This culture is the cornerstone for the visionary thinking, which is a key requirement to develop and to improve the Mercedes me portal. Nevertheless, the traditional thinking within an automotive company is sometimes constraining the developed visions" (AG A5).

That is why Daimler is currently in the process of a cultural transformation towards a participative leadership culture that gives the employees more scope to implement their ideas (Daimler, 2016). As a result, AG (A5) identified that „within the whole corporation you can feel the willingness to move something in the digital field".
TH (A7) mentions that Daimler benefits of these cultural aspects to be more attractive as employer. "This is especially relevant for the recruiting of web developers, who are actually not interested in large companies but rather in smaller and more agile start-ups" (TH A7). This has increased Daimler's attractiveness as an employer and made the Daimler Financial Service division, which includes many of the digital initiatives, to a first class employer that has been ranked as the first

German company amongst the world's top 25 employers in the "Great Place to Work" study (Marketline, 2016).
The diverse set of human resources employed in the digital services contributes to establish new ways of working. For instance, Moovel works with a management scheme that was developed by Spotify and has been adjusted to the needs of Moovel.

“We do not work in teams, but in squads. Squads are staffed interdisciplinary. The advantage is that the disciplines are diverse and that one squad can be responsible for one feature of the Moovel application” (TH A7).

These iterative and agile project management methods that include for instance Kanban, Scrum and Scrumban are designed to increase the degree of cooperation and freedom of the working teams (TH A7). AG identified that these methods are different from the traditional project management schemes of Daimler. “When I started my career, it was unimaginable that such a large company starts to think, to act and to work in agile project management methods” (AG A5).
The human resources may be considered a VRIO asset, since the underlying social relations, culture and traditions present opportunities to exploit digital technologies. This is of great value for Daimler, since the corporate culture and the new project management methods can establish new revenue sources through the digital services. As AG (A5) points out, it was unimaginable that such a large company starts to think, to act and to work in agile project management methods, which demonstrates that this way of thinking is rare in the automotive industry. The rareness of iterative and agile project management methods in the automotive industry was the opportunity for Daimler to establish their digital services as a first mover to gain a temporary competitive advantage. The corporate culture is rooted in the origin and the tradition of Daimler, which has recently been influenced by an open and participative leadership culture. The unique historical conditions for the cultural development and the social nature of these resources make them very desirable for many companies, since they are very hard to imitate. Through the success of the digital services, Daimler has already demonstrated that they are able to harvest the competitive advantage created through the changed corporate culture and the new ways of working. Hence, the human resources qualify for VRIO and are potential sources of a competitive advantage.

VII.2.2.4 Technological resources

Daimler’s technological resources include patents, copyrights and the R&D departments. As a pioneer of automotive engineering, the Daimler AG wants to lead the areas of drive system

technology, safety, autonomous driving, and connectivity. Hence, Daimler focuses on R&D to expand its product and service portfolio. In FY2014, Daimler invested 4.5 billion Euro and employed 21,700 people at its R&D units. The company also maintains close contacts with external research institutions (Marketline, 2016). Furthermore, Daimler owns a significant amount of patents. These patents are either for special engineering purposes or for technological solutions. In 2014, the company used more than 100,000 patents for the production of automobiles and a total of 2.049 new ideas were registered for patents.

These technological resources are relevant for the development of digital services. According to CB (A2), “Mercedes-Benz needs a high IT competence for the development of new business models”. DF (A4) and AS (A6) confirm that IT and digital competencies are increasingly in the center of interest for connectivity and mobility services. For instance, in the past, the car2go cars could only be rented by using a chip card; now cars can in some destinations only be rented through the smartphone. This demonstrates the change towards digital solutions. The development of technological resources is supported through initiatives like the DigitalLife Day, which is a „series of events to conduct a continual dialogue about the digital transformation“ (Daimler, 2015).

Daimler’s technological resources are valuable, since they contribute to the development of new digital business models. These resources allow Daimler that new markets can be seen as an opportunity. Furthermore, the technological resources are rare among the competition. Daimler offers the world’s first series-built vehicle with car-to-x communication services and Moovel is the first provider to offer a genuine one-stop shop for urban mobility. Hence, the technological resources enabled Daimler to establish a first mover advantage. Furthermore, the technological resources are imperfectly imitable, since the relation between automotive and digital technology is very complex. To a certain degree, competitors do not even know, which elements of the technological resources they need to replicate. In addition, patents and copyrights are securing the technological resources. Through implementing the digital services, Daimler is already harvesting their technological resources. This is confirmed by the Marketline report (2016), which states that the „robust R&D capabilities help Daimler to attain competitive advantage over its peers, maintain technological edge over its competitors and to stay ahead of industry trends“. Nevertheless, Daimler’s has to keep their high pace in the technological development, since CB (A2) remarked that the IT competencies of Mercedes-Benz are not “best case” yet. However, the current status of Daimler’s technological resources qualifies for VRIO and is a potential source of competitive advantage.

VII.2.2.5 Reputational resources

Daimler's reputational resources include the value of the strong brand portfolio (see Figure 15). Among Daimler's brands are Mercedes-Benz, Smart, Maybach, Freightliner, Setra, and the new digital brands Mercedes me, car2go and Moovel. These brands are among the strongest, most desirable premium brands in the world. For instance, Mercedes-Benz was in 2014 the world's fastest-growing premium automotive brand according to a study by industry experts (PwC, 2014). Also, the Interbrand "Best Global Brands 2014" study named Mercedes-Benz as one of the most valuable premium automotive brands. Furthermore, Daimler owns a portfolio of more than 32,900 trademarks, which protect the renowned and valuable Mercedes-Benz brand, the three-pointed star and all other product brands in each relevant market (Daimler, 2015a).

Daimler's reputational resources have the potential of providing a sustainable competitive advantage. The resource is highly valuable for signaling quality and technological leadership and ensures that even under changing circumstances – like the digitalization – customers associate Daimler's brands with good products and services. Furthermore, the strength of Daimler's brands is not a common resource for other automotive companies and is imperfectly imitable due to the social nature of the brand image. Especially the patent rights for the brands are increasingly important for Daimler, since the differentiation of cars is an important requirement in the mature automotive market. Daimler demonstrates that their strong brand image leads to higher sales growth in domestic and in international markets, which underlines the ability to harvest the reputational resources to establish a sustainable competitive advantage.

VII.2.2.6 Core competence

So far, the analysis has shown that the physical, financial, human, technological and reputational resources qualify for VRIO and are potential sources of competitive advantage. In the following, the theoretical concept of core competencies is applied to analyze how the harmonized combination of Daimler's multiple resources distinguishes the firm in the marketplace.

In regard to the focus on Daimler's digital services, a special emphasis is placed on the integration of technologies. If the strategic resources lead to core competencies, Daimler established the capacity to earn money with its digital competencies. If a company possesses a core competence and understands how to take advantage of it, it can lead to a sustainable competitive advantage (see chapter III.4.2).

According to CB (A2), Daimler has a "high competence in executing innovative business models". If this competence 1) provides access to more than one market, 2) gives a significant contribution

to the end products and 3) is difficult for competitors to imitate, it can be considered as a core competence.

All of the previously listed strategic resources contribute to the high competence in executing innovative business models. Whereas the financial resources enable the company to invest in innovative business models, the strong brands are an important factor that lead to an initial recognition and to higher sales in domestic and in international markets. Both resources support the access of Daimler's digital business models to more than one market.

The technological resources, in combination with the gained skills in agile and iterative project management, are the foundation to execute innovative business models. The improved skills in project management through the development of the digital services, improved Daimler's competence to shorten development cycles (CB A2). This is also an important factor to be fast in the execution of business models. Furthermore, the technological resources provide a significant contribution to Daimler's end products. For instance, Mercedes me integrates the competencies of Daimler Financial Services with the digital product finder and payments calculator to provide customized financing solutions. Also in the field of car-to-x communication, the already existing high quality telematic products are improved through digital services (DF A4). This underlines the significant contribution of Daimler's digital services to the end products and the ability to execute these innovative business models. In addition, the great amount of patents confirms the significant contribution of the technological resources to the end products.

Finally, Daimler's competence in executing innovative business models has to be difficult for competitors to imitate. The integration of the new employees with the required set of skills for developing digital services influences Daimler's corporate culture and the way of working. According to AG (A5), the open culture and the great diversity within the teams' leads to visionary thinking. This is a key requirement to develop innovative business models, which are difficult for competitors to imitate. "Our goal is to successfully combine the speed and risk-taking culture of the digital sector with our company's perfection and innovative capability" (Daimler, 2016). Daimler pursues to combine their traditional strengths as global corporation with the qualities typical of a startup. This cultural transformation supports the development of innovative business models and is due to the underlying social complexity difficult for competitors to imitate. The corporate culture increases the identification of the employees with new business models and raises the willingness to move something in the digital field. Furthermore, Daimler benefits of these cultural aspects to be more attractive as employer. Hence, the cultural transformation is difficult for competitors to imitate, since Daimler's strengths as global corporation are combined with the qualities typical of a startup.

Concluding, Daimler's competence to execute innovative business models can be considered as a

core competence, since it lives up to the relevant criteria. The success of the digital services is further proof for the assumption that Daimler has the capacity to earn money with these services.
Daimler's core competence in executing innovative business models contributes to the competitiveness of a wide range of their end products. For instance, the new E-Class can be considered as one of Daimler's core products, since it is the physical embodiment of the established core competence. For developing the E-Class, Daimler had to combine their competencies in business model execution and technological innovation to create a close connection between hardware, software and connectivity services. The digital competencies and the automotive competencies had to be interwoven to create the autonomously driving E-Class. The success of the E-Class demonstrates Daimler's ability to take advantage of their competencies, which makes the executing of innovative business models their core competence.

VII.2.3 Sustainable competitive advantage from the market-based-view

The following chapter analyzes the potential of Daimler's digital services to establish a sustainable competitive advantage from the MBV. This includes an analysis of the industry structure to determine if Daimler has managed to exploit the competitive forces to obtain and keep high profitability in terms of Porter (1980). Afterwards, the digital services are discussed regarding Daimler's generic strategy as quality leader. Furthermore, an analysis of the most relevant activities underlines the importance of differentiation in the value chain.

VII.2.3.1 Industry attractiveness

Industry attractiveness is a fundamental determinant of a firm's profitability and can be analyzed by the five competitive forces internal rivalry, threats of new entrants, bargaining power of suppliers, buyer power and threats of substitutes. The relationship between the firm and the industry is essential for the reaching of a sustainable competitive advantage (Porter, 1985).

Internal rivalry within the industry

Although Daimler has a significant market presence in a number of major markets, for instance the Mercedes-Benz cars segment has a 24% share of the Western European market, Daimler faces strong competition from other automotive manufacturers (Marketline, 2016). The competition among the market participants is likely to intensify in light of continuing globalization and consolidation. Daimler's key competitors include Volvo, BMW, Fiat Chrysler, Ford, General Motors, Honda, PSA Peugeot Citroen, Renault, Tata, Toyota, and Volkswagen. Rivalry is reduced slightly due to a degree of differentiation with market segments such as luxury and budget. For instance,

Daimler manages to serve various segments through producing budget cars under the Smart brand.

For gaining market share in the mature industry, some competitors are offering discounts or reduce vehicle prices. These actions have a negative effect on Daimler's market share and operating results. This intensifies the degree of rivalry, which is assessed as strong.

Daimler's digital services offer the opportunity to enter markets with less rivalry. For instance, the market for autonomous driving vehicles is expected to grow in the coming years. According to industry estimates, the market for self-driving cars is expected to have a value of approximately $87 billion by 2030 (Marketline, 2016). By 2035 self-driving cars, will account for half of the vehicles sold in North America with sales worldwide reaching about 11.8 million (ibid.). Nevertheless, there are also other producers, who offer intelligent solutions. "These can be completely new players like Uber and others, which try to get between Mercedes-Benz and their customers or service providers that manage great leasing fleets" (CB A2).

There are comparable digital services like connected drive from BMW and connect from Audi. Ford introduced their connectivity service at the mobile world congress 2016. Also car2go is facing relevant competitors. „There are also other free-floating concepts in the market like DriveNow from BMW, which is our most relevant competitor" (AS A6). Concluding, the rivalry in the classical automotive industry is strong, but the competitive rivalry for the digital services is moderate.

Threats of new entrants

The large capital requirements to establish production facilities present a significant entry barrier for the automotive industry. Furthermore, the global tightening of emission standards is increasing costs further. Due to the high fixed costs in automotive design and manufacture, as well as the economies of scale gained from mass production, new start-up companies are rare. In addition, brand strength and reputation are highly important in the automotive industry. The strength of the current brands makes it difficult for new players to enter the market. Concluding, the threat of new entrants is assessed as weak.

However, car manufacturers need to be aware that digital competitors might cause the disruption of their business model. Disruptive business models are especially dangerous, when their value proposition centers on the satisfaction of a new set of needs, which can be satisfied through innovative technical solutions.

"We know that future competitors are not only car brands. Therefore, we analyze the market very carefully. We are interested in the activities of Google, Facebook and others. This is also the reason for our Mercedes me strategy. Knowing that not only Munich and Ingolstadt are

competitors, but that very strong competitors might come from totally different areas. Large companies might not even recognize these disruptive forces. Therefore, digital services are important to recognize these market developments" (AG A5).

Daimler is aware that the digitalization is pushing established companies and newly found start-ups in a severe competition. For instance, Uber is a main competitor of car2go, "not because the service is similar, but the use case for the customer is the same" (AS A6). Nevertheless, the market for mobility services has relatively high market entry barriers. Significant investments are required to start a car sharing company. It is very difficult to enter the market without the required funding capital and know-how about the specifics of the market. „I cannot imagine that a new company is really able to become a dominating force in the market" (AS A6).
Also the VDA is convinced that newcomers to the industry cannot overrule the current market participants.

"Tesla is rather destroying the work of the industry, since functions that are not ready for series production have already been implemented. The German automotive industry could also offer the functions of Tesla, but we do not want that any harm is created with networked and automated driving" (HK A8).

Since „these kinds of competitors are not relevant at the moment", the threats of new entrants in the digital market segment is considered as moderate (kuhle).

Bargaining power of suppliers

The required key inputs by automotive manufacturers are typically commodity items, such as metals and fabricated components. These items are often outsourced to other companies. Nevertheless, the low differentiation between raw materials, offers little space to distinguish between suppliers, which reduces supplier power. However, the importance of high quality components (particularly in relation to safety concerns) increases supplier power. Suppliers – like Bosch, Continental and ZF – are playing in the first division of digital technology. „These companies are able to think systematically and can deliver the relevant electronic control units" (HK A8). Their research and development departments accompany the development of new automobiles, which increases the bargaining power of suppliers for the development of digital services. Concluding the overall supplier power is moderate.

Bargaining power of buyers

The main buyers within the industry are car dealerships, but the preferences by end-users are still important. Dealerships tend to have exclusive contractual agreements with manufacturers, which makes their switching costs very high.

Large international automotive companies dominate the industry. Hence, buyers have a low level of choice. Furthermore, there are a lot of car dealerships, which decreases buyer power. Dealers are forced to sell brands and models preferred by consumers, which also tends to reduce buyer power. Additionally, it is unlikely for dealers to integrate backwards into the manufacturers' operating area due to the different nature of the business. In addition, the digital services offer Daimler the opportunity for forward integration, since cars and services can be presented directly to the customers. Also in regard to the technological development, buyer power is assessed as weak.

Threats of substitutes

The main substitutes in the automotive industry are used vehicles, but alternative modes of transport also pose a threat of substitution. Consumers can use public transport instead of owning a vehicle; similarly, for businesses road or rail transport of goods is an alternative to owning a truck. However, the threat of alternative modes of transport is reduced due to Daimler's increased service-orientation. The integration of different forms of transport – like car2go, Flinkster, mytaxi, Taxi-Ruf, Mietfahrräder, public transport operators and Deutsche Bahn (German Railways) – limits the relevance of substitutes for Daimler's digital business models. Overall, the threat of substitutes has been reduced through digital services and is now moderate.

VII.2.3.2 Generic strategies

The following section focuses on the positioning of the digital services. These should be differentiated from their competitors, which can be achieved through one of the generic strategies: cost leadership, differentiation or focus.

According to Borowski, Daimler is able to differentiate the Mercedes-Benz brand through quality (CB A2). In addition, Daimler wants to further strengthen what has traditionally differentiated the company from their competitors, exceptional quality and technological leadership (Daimler, 2015a). This positioning is supported by the strong brand recognition that enables Daimler to charge premium prices (PwC, 2014). However, Daimler's differentiation strategy does not allow the firm to ignore costs. Nevertheless, Daimler's strategy to become a pioneer in connectivity and autonomous driving sets a different strategic direction and offers the potential to be perceived as

unique in the industry.
Among the different opportunities to be differentiated are design, brand image, technology, and customer service (Porter, 1980). These dimensions are outlined in the following to analyze, if Daimler's digital services are differentiated to establish a defendable position against the industry competitors.

Design

Daimler's mobility services are differentiated through the design of the Smart.

"Offering the Smart as automobile for the car2go mobility service is a differentiating factor. It is a small car with only two seats that fits in almost any parking lot and is very effective in the traffic of big cities. This is the key differentiator to the DriveNow concept" (AS A6).

Furthermore, Moovel and car2go try to convince their customers with a good design. "In the app industry, products need to be designed so that they are fun to use for the customer" (TH A7). The good design and functionality enabled Moovel to establish the deep integration of many different mobility services. This means that the tickets can be bought directly in the application. "The deep integration of different mobility services through the Moovel application is a key differentiator from competitors" (TH A7).

Brand image

Daimler is able to differentiate their digital services through the strength of their brands. "Other competitors are also offering services, but the experience is not as tangible as in the case of Mercedes me. The strong Mercedes-Benz brand can already lead to a differentiation in the market" (AG A5). Hence, the strong brand is a great advantage to differentiate the digital services.

Technology

The digital services benefit of Daimler's technological resources to achieve differentiation. This enables the connecting of people, experiences and services with digital technology. Furthermore, the enhanced online services are an opportunity to avoid product commoditization, since it is a new way to address people on the Internet and in the real world. "Whereas the traditional car configurator is already known by the customer. The Mercedes me portal is different from such a car configurator" (AG A5).
Also the autonomous driving function in the new E-Class is differentiated from other offerings. Whereas the drive pilot of Tesla is classified as tool for technology nerds, the Mercedes-Benz drive

pilot is recommended as the better solution that minimizes risk and improves comfort (Schwarzer, 2016). This example underlines the technological leadership in the area of autonomous driving. The importance of technology as differentiating factor is even going to increase in the future, since "networked and automated driving technology will become an important element to be differentiated from competitors like the earlier differentiation between six, eight or ten cylinders" (HK A8).

Customer service

Also in the area of customer service, the digital services offer opportunities to establish differentiation from industry competitors. For instance, Mercedes me functions as service ecosystem that provides the customers with all-round service and focuses on the personal lifestyle and mobility needs of each user. In combination with inspiration for travel, lifestyle and entertainment, Daimler has been setting the standard for personalized customer service.

Concluding, the design, brand image, technology, and customer service of the digital services provide protection against competitors. These factors are differentiating Daimler and underline the aspiration to be perceived as unique in the industry. On basis of this differentiation, Daimler gains the ability to charge a premium price for offering added value to the customer. In addition, customers may develop brand loyalty through the attractive and differentiated services.

VII.2.3.3 Value chain

Besides industry attractiveness and positioning, the differentiation of the activities is an opportunity to establish a sustainable competitive advantage (Porter, 1991). In this regard, the following chapter outlines how the digital services contribute to the differentiation of Daimler's value chain.

Daimler claims that „with our vision of industry 4.0, we are digitizing the entire value creation process - from design and development to production, sales and service" (Daimler, 2015a, p.8). This analysis focuses on the influence of the digital services on the activities operations and marketing & sales, since the impact is most relevant in these areas.

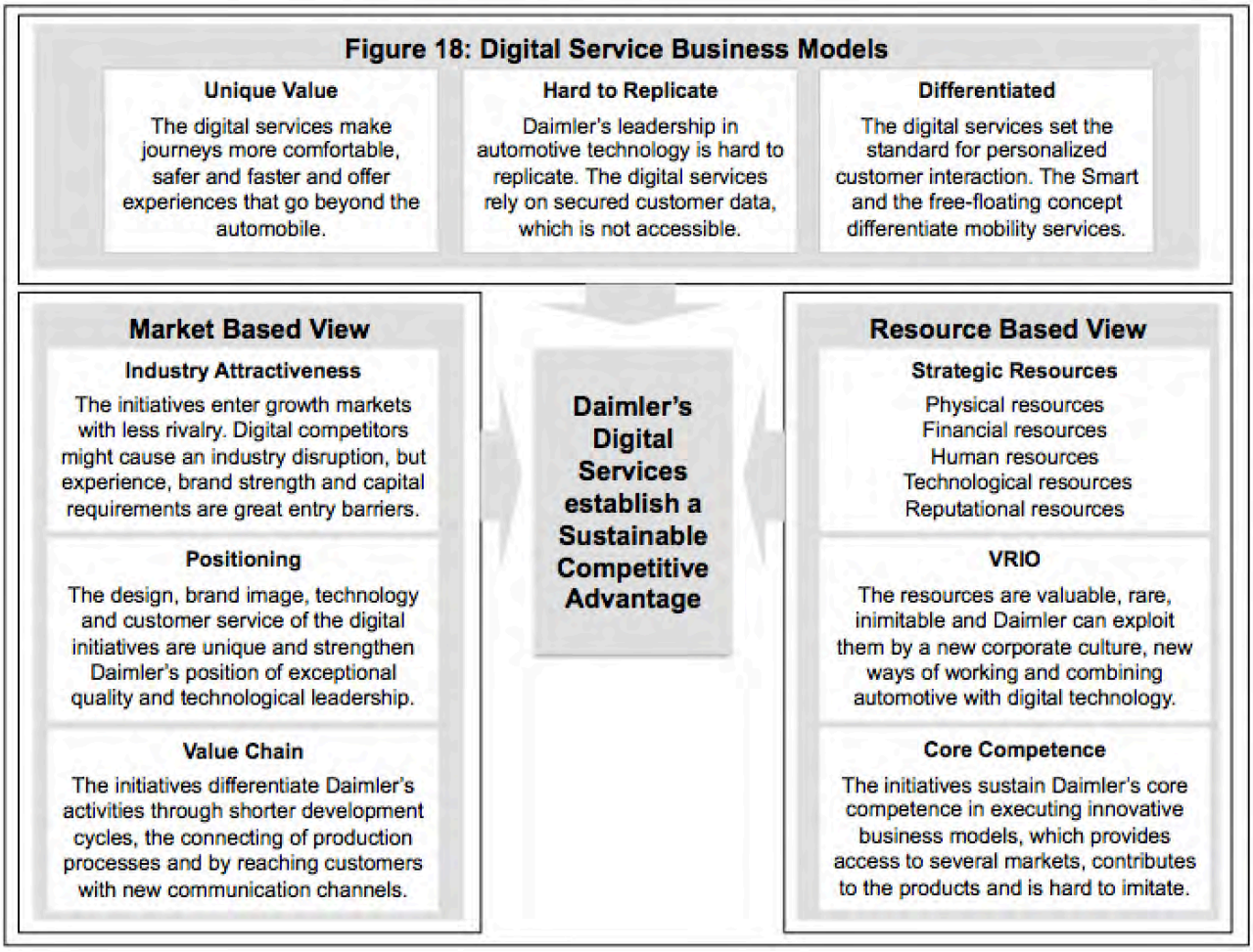
The operations activities are influenced by agile and iterative project management schemes. According to TH (A7), "there are many learning's for Daimler, where such a large corporation can benefit of insights from a smaller company". One of these learning's is the competence to shorten development cycles through new project management methods. Due to the agility of new digital project management methods, „the IT processes are increasingly getting to the center of interest" (DF A4). An example is provided by Daimler's TecFactory, which tests new technologies for series production. „The connecting of production processes enables us to respond to customer

preferences more quickly, individually and flexibly“ (Daimler, 2015a, p.24).
Furthermore, the digital services influence the marketing & sales activities. The traditional relation between Mercedes-Benz, dealers and their customers changes through the opportunities of new digital communication channels. For instance, the Mercedes me service platform and the car2go car-sharing concept are new channels for Daimler to reach their customers directly. This is an opportunity to exclude car dealerships and offers Daimler the opportunity to differentiate their advertising and promotion activities.
The differentiation in the primary activities of operations and marketing & sales, is enabled through the technology development in the area of support activities. The technology development is highly important, since the digital factory and the digital services make use of technology along the entire value chain. To differentiate their activities, Daimler keeps focusing on R&D. For instance, Daimler recently opened a new research and development center in China to expand the existing R&D network (Marketline, 2016).
Concluding, the digital services support the differentiation of Daimler's activities – especially in the areas of operations and marketing & sales. This technological differentiation is enabled through Daimler's strong focus on R&D.

VII.2.4 Chapter summary and discussion

After the analysis of the business model itself and the application of the RBV and MBV, the underlying research confirms that Daimler's digital services establish a sustainable competitive advantage. Daimler's digital services fulfill the relevant criteria of the theoretical model (see chapter IV.3). Firstly, the digital services offer unique value for the customers by making journeys more comfortable, safer and faster and offer experiences that go beyond the automobile. Secondly, the digital services are hard to replicate, since they rely on sophisticated technological competencies and use secured data, which is only accessible for Daimler. Thirdly, the digital services are differentiated from the competitors. Whereas the connectivity services are on the leading edge for personalized customer interaction, the mobility services are differentiated through the Smart and the free-floating concept.
Afterwards, the digital services were analyzed from the RBV and MBV. The analysis of the RBV indicated that the strategic resources are valuable, rare, inimitable, and Daimler is organized to exploit them. Accordingly, the resources have the potential of giving Daimler a sustainable competitive advantage. In addition, the concept of core competencies exhibited that the harmonized combination of the strategic resources sustains Daimler's core competence in executing innovative business models. Afterwards, the focus switched towards the MBV. An analysis of the industry structure confirmed that Daimler has managed to exploit the competitive

forces to obtain and keep high profitability. Through the digital services, Daimler enters markets with less rivalry, which is important in the highly competitive automotive industry. Furthermore, the digital services reduce buyer power through direct customer interaction and reduce the risk of an unexpected disruption of the market. Afterwards, the generic strategies confirmed the aligned positioning of the digital services with Daimler's image as quality and technological leader. The analysis of the MBV unveiled that Daimler managed to enter an attractive industry and positioned the digital services in strategic alignment with the corporate strategy. The design, brand image, technology and customer service of the digital services are unique and strengthen Daimler's position of exceptional quality and technological leadership. Nevertheless, Daimler has to be capable of fast strategic reactions due to the rapidly changing environment in the digital economy. This also includes the activities in the value chain, where the digital services contribute to the areas of production and marketing & sales through shorter development cycles, the connecting of production processes and by reaching customers with new communication channels.
The results of the analysis are summarized in Figure 18.



Source: Author

VIII. Conclusion

The purpose of this thesis was to explore the connection between the theoretical concepts of strategy and business models and to understand how business models can be changed to establish a sustainable competitive advantage. The study was lead by the following research question:

How is Daimler changing their business model to establish a sustainable competitive advantage by making advantages of digital trends?

After defining the research question, the industry lifecycle and key challenges for the automotive industry were introduced. The analysis unfolded that the industry is threatened by price competition and commoditization. In this context, digital trends are highly relevant for the industry to explore the establishing of sustainable competitive advantages. In the following, the theoretical framework was established, which set the foundation for defining the relation between business models and strategy.

This thesis follows the argumentation of the vast majority of scholars, which argue for a complementary relation between the concepts. The complementary relation guided the development of the theoretical model. Hence, the obtained data to answer the research question has been analyzed from the complementary perspective of strategy and business models. Firstly, the case company and their relevant digital services were presented. Afterwards, each component of the business model has been studied to understand the classical business model. In the next step, the business model change framework was applied to outline how the digital services influence the business model. In the second step, the complementary analysis of the business model and the strategy outlines how digital services establish a sustainable competitive advantage. The results of the analysis are summarized in the concluding remarks.

VIII.1 Concluding remarks

1) **Digital trends change Daimler's business models towards an increased service orientation**

Digital trends influence the existing business model through new business systems and revenue streams that are different from the existing paradigms. The service-oriented business models offer the following advantages:

- **Digital services expand revenue streams**. Daimler can generate significant revenues even after the delivery of the car to the customer.
- **Digital services establish new channels to reach customers directly**. Daimler can interact directly with customers, which reduces the dependence on intermediaries.
- **Digital services have lower capital requirements**. Compared with Daimler's classical business model, digital services do not require great investments in production facilities.

The listed advantages of service-oriented business models influence Daimler's existing business models and support the development of a portfolio of several business models to act rapidly, when the existing business model is outdated.

2) The integration of digital trends in Daimler's business model can establish a sustainable competitive advantage

Digital trends present an opportunity for Daimler to establish a sustainable competitive advantage, since the relevant criteria are fulfilled:

- **The business models of the digital services offer unique value for the customers, are hard to replicate, and differentiated from the competitors.** Daimler's digital services rely on sophisticated technological competencies and offer experiences that go beyond the automobile.
- **The strategic resources for the digital services are valuable, rare, inimitable, and Daimler is organized to exploit them. T**he harmonized combination of the strategic resources sustains Daimler's core competence in executing innovative business models.
- **Daimler managed to enter an attractive industry and positioned the digital services in strategic alignment with the corporate strategy.** Daimler enters markets with less rivalry, strengthens the unique position of exceptional quality and technological leadership, and differentiates relevant activities in the value chain.

The complementary analysis of the business model, the RBV and the MBV confirm the establishing of a sustainable competitive advantage by making advantages of digital trends. Furthermore, the aligned strategy and competencies between the classical and the new business model ensure strategic fit, which can sustain the competitive advantage in the long-term.
The answer to the research question is that Daimler is changing their business model towards an increased service-orientation. Although the product-oriented business model still accounts for the

great majority of Daimler's revenues, the increased service-orientation offers opportunities to make advantages of digital trends. Daimler recognized the opportunity and implemented digital services that establish a sustainable competitive advantage.

This answer is valid for the Daimler AG and could be generalized for other car manufacturers with similar business models. The generalization may be done taking into account that there are no significant differences between the classical business models in the automotive industry, which has been confirmed through an interview with the VDA (A8).

The thesis provides further validation for the complementary relation between business models and strategy. The developed theoretical model (see chapter IV.3) complements both perspectives and contributes to the academic debate that both concepts have a complementary relation.

Furthermore, the thesis outlines how digital trends can change the business model to establish a sustainable competitive advantage. This research is considered to contribute to the academic debate and to foster the curiosity for further research, since the existing literature has not analyzed the way strategy and business models interact to establish sustainable competitive advantages by digital trends.

Further research is necessary to deepen the understanding of the changing impact of digital trends on business models and the contribution to establish sustainable competitive advantages. Since this thesis focused on studying a company from the automotive industry, it would be very interesting to research how digital trends influence business models in other industries.

VIII.2 Managerial implications

This section is aimed at presenting the managerial implications, as a result of the analysis of the empirical data obtained during the research.

Daimler has been successful in changing their business model to establish a sustainable competitive advantage by making advantages of digital trends. Nevertheless, there is still potential to improve the business model. "The winners in the new mobility culture will be those companies that achieve the right balance of marketable technologies and apply the appropriate business models to cater to increasingly tech-savvy customer groups" (Becker et. al., 2015).

Through combining the technological and automotive development, Daimler was able to integrate an increased service-orientation in their business model. The co-existence of the production- and the service oriented business models might be the foundation to develop further competitive advantages.

According to the VDA, "there will be cooperation between traditional automotive and digital companies" (HK A8). Daimler should be actively seeking these kinds of cooperation, since they present an opportunity to sustain their position as quality and technology leader. Improving the

quality of the established digital services is highly important, since “networked and automated driving technology will become an important element to be differentiated from competitors” (HK A8). Hence, Daimler should develop the digital services further to escape price competition and commoditization in the classical automotive industry.

Further potential offers the closer integration of Daimler’s production- and service-oriented business models. This could lead to business model innovation, since the value creation involves new business systems and revenue streams that are different from existing paradigms. For instance, the digital services innovated the traditional relation between Daimler, dealerships and customers. Selling cars directly through digital platforms is different from the existing paradigms. This is an opportunity to establish new revenue streams and to gain full control of marketing and distribution.

The co-existence of the production- and service-oriented business models should be leveraged in the area of mobility services, corporate culture and new business opportunities. For instance, car2go is increasing the visibility of the product and an opportunity for customers to experience a car without actually buying the product. Introducing further Mercedes-Benz cars could leverage this. Whereas Mercedes-Benz benefits of the intelligent product placement, Car2go could keep the Smart as a differentiating factor and upgrade their mobility portfolio with higher quality cars. Furthermore, the different corporate cultures of the production- and service-oriented business models should be for leveraged. Whereas the production is characterized by efficiency and cost considerations, the digital services are thinking creative to exploit new business opportunities. Daimler can benefit of these different ways of thinking and become more attractive as employer. “This is especially relevant for the recruiting of web developers, who are actually not interested in large companies but rather in smaller and more agile start-ups” (TH A7).

These diverse competencies are required to develop new digital business models that focus on the analysis of data about the vehicle usage and the driver behavior. For instance, the integration of digital services – like entertainment, driver-assistance, safety features or tourism information – in the cars offers potential for future profits and differentiation.

Concluding, the co-existence of the production- and service-oriented business should be leveraged to sustain the outstanding quality of Daimler’s products and services. The precondition to integrate both business models relies in the alignment of the strategic positioning as quality and technology leader. While digital services become an ever-more important part of Daimler’s business model, the core area of expertise and the main source of revenue remains the production of automobiles. Nevertheless, the field of digital services needs further development to vanquish the pressure of price competition and product commoditization in the mature product markets.

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Appendixes

Appendix 1 - Interview guide classical business model

Date:
Company name:
Position:

Opening
I'm writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the business model of Daimler, how it works, how it makes money and how it is changing compared to 10-20 years ago.

1. Introduction
How long have you been working in the automotive industry? Tell me a little about your background?

2. Business model
What is the value proposition of Daimler?
Which customer segments is Daimler targeting with their value proposition? Which channels is Daimler using to reach their customers?
What kind of relationship has Daimler to their customers?
What are the key activities of Daimler to deliver the value proposition?
Which key resources requires Daimler's business model?
Which are the key partners of Daimler?
What kinds of costs are most relevant for Daimler's business model?
What kinds of revenue streams are most relevant for Daimler's business model?

3. Business model change
What are the most relevant challenges for Daimler's current business model? What is the impact of the digital trends for Daimler?
Is the digitalization an opportunity to change the business model?

4. Market based view
Who are the closest competitors of Daimler?

How strong is the rivalry within the market segment?
How relevant is the entry of new competitors into the market? How great is the bargaining power of suppliers?
How great is the bargaining power of buyers?
How relevant is the threat of substitutes?
How is Mercedes-Benz-Benz positioned in the market?
Is Daimler differentiated or does it follow a cost leadership strategy?
What are the most relevant value chain activities of Daimler? What are primary activities and what are secondary activities?
Are these activities differentiated from competitors?

5. Resource based view
What are Daimler's key resources?
Are these resources valuable, rare, inimitable and is Daimler ready to exploit them?
What are Daimler's competencies?
Are the competencies providing access to more than one market?
Are the competencies giving a significant contribution to the end product? Are the competencies difficult for competitors to imitate?

6. Closing
What is your view on the future of the automotive industry?

Appendix 2 - Interview transcription CB

Date: 08.07.2016
Company name: Mercedes-Benz-Benz
Position: Project Manager Strategy and New Business Development

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the business model of the Daimler AG, how it works, how it makes money and how it is changing compared to 10-20 years ago.

1. Introduction
Could you please tell me a little about your background?
I am employed at Daimler in the area of Mercedes-Benz-Benz Vans, which is one of the five business divisions. At Mercedes-Benz-Benz Vans I am working in the department of innovation strategy as project manager. The target of our department is to develop new business models and to create encompassing solution systems, which are used to get deeper into the value chain of the customer and to develop more complex automobiles.

2. Business model
What is the value proposition of Daimler?
There is not just one value proposition within the Daimler group. On the one side is the selling of automobiles under the Mercedes-Benz-Benz brand, where we are the quality leader. On the other side, there are already new business models like car2go, Moovel and the entire financial service business. Surely, the selling of automobiles is still dominating. This is a classical pipeline model, where we distinguish us through quality.

Which customer segments is Mercedes-Benz-Benz targeting with their value proposition?
In the area of passenger cars, Mercedes-Benz-Benz is targeting customers with above average income, since the automobiles are correspondingly expensive. Furthermore, there is a huge B2B market, which includes fleet customers, rental companies and companies that use Mercedes-Benz-Benz as company cars. In the area of trucks, busses and vans, emotional components are less important. Companies are primarily interested if the automobile pays off. It is less decisive that

the Mercedes-Benz-Benz star is on the car. Relevant for the customer is how the car performs compared with other competitors like Volkswagen.

Which channels is Mercedes-Benz-Benz using to reach their customers?
Mercedes-Benz-Benz has a very strong sales organization with many key account managers, who have a very strong presence in the respective markets. There exists one sales organization for each relevant market like Switzerland, Spain etc. These key account managers are the direct contact to the customers.

What kind of relationship has Mercedes-Benz-Benz to their customers?
The key account managers have a very close relationship to the local Mercedes-Benz-Benz branches and to independent dealers. Furthermore, the key account managers have a close relationship with the purchasing responsible of fleet customers. These can be the purchasing responsible of Sixt or of great leasing companies. Key account managers are in permanent contact with the customers to receive information, how the customer evaluates the products for adjusting and improving the product to the customer needs.

What are the key activities of Mercedes-Benz-Benz?
The production model relies on achieving the highest possible effectivity by using minimal resources. Mercedes-Benz-Benz wants to produce automobiles with the highest possible quality by keeping the highest possible flexibility in the production process.

What kinds of revenue streams are most relevant for Mercedes-Benz-Benz business model?
All relevant numbers are accessible in the annual report, which lists revenue streams for all the divisions of the Daimler group.

3. Business model change
What is the impact of the digitalization for Mercedes-Benz?
Through the digitalization automobiles are becoming part of the Internet. Just like everything else, automobiles will be connected, which creates new business use cases and new solutions systems to satisfy customer needs.

4. Market based view

Who are the closest competitors of Mercedes-Benz-Benz?

Among the closest competitors are the other original equipment manufacturers (OEMs), for instance Volkswagen, Ford etc. But there are also other producers, who offer intelligent solutions. These can be completely new players like Uber and others, which try to get between Mercedes-Benz-Benz and their customers or service providers that manage great leasing fleets.

How strong is the rivalry within the market segment?

The rivalry in the market segment increased in the last years also in regard to the new market participants.

How relevant is the entry of new competitors into the market?

The entry of new competitors is not a risk, but it is a challenge for Mercedes-Benz-Benz.

5. Resource based view

What are Mercedes-Benz-Benz competencies?

For the development of new business models, Mercedes-Benz-Benz needs a high IT competence and a high competence in executing innovative business models. Also the competence to shorten development cycles is relevant for Mercedes-Benz-Benz. The IT competencies of Mercedes-Benz-Benz are not “best case” yet. Many things are developing in different areas, but for IT professionals some companies are currently more attractive.

6. Closing

What is your view on the future of the automotive industry?

Generally speaking, Mercedes-Benz-Benz business model will change from a purely transaction based model with a focus on the selling of cars to becoming an encompassing mobility provider. The business model of Mercedes-Benz-Benz is developing towards a service orientation. The Moovel GmbH is just one of the services, but the Daimler group is also shareholder of mytaxi, Flixbus and Blacklane. Furthermore, there are many services, which are currently secret, but address the same target.

Appendix 3 - Interview guide digital services

Date:
Company name:
Position:

Opening
I'm writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the digital service of Mercedes-Benz, how it works, how it makes money and how it is changing the business model.

1. Introduction
How long have you been working in the automotive industry? Tell me a little about your background?

2. Business model change
How is this digital service an opportunity to change Daimler's business model?
What value proposition is Daimler offering with the digital service?
How is Daimler aligning the digital service with its strategy and competencies?
What are the key resources and competencies to deliver the value proposition of the digital service?
How is Daimler making money with the digital service?
Does the digital service also offer other benefits besides the monetary benefits?

3. Market based view
Who are the closest competitors in this market? How strong is the rivalry within the market segment?
How relevant is the entry of new competitors into the market?
How great is the bargaining power of suppliers?
How great is the bargaining power of buyers?
How relevant is the threat of substitutes?
How is the digital service positioned in the market?
Is the digital service differentiated or does it follow a cost leadership strategy
How is the digital service differentiated from digital services of competitors?

What value chain activities does the digital service include?
What are primary activities and what are secondary activities?
Are these activities differentiated from competitors?

4. Resource based view
What resources are required for the digital service?
Are these resources valuable, rare, inimitable and is Daimler ready to exploit them?
What are the required competencies for the digital service?
Are the competencies providing access to more than one market?
Are the competencies giving a significant contribution to the end product?
Are the competencies difficult for competitors to imitate?

5. Closing
What is your view on the future of the automotive industry?
What is the impact of the digital service for Daimler business model/ automotive industry?
What is the impact of the digital service for the automotive industry?

Appendix 4 - Interview transcription DF

Date: 13.07.16
Company name: Mercedes me
Position: Product Manager Telematic Services

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the business model of the Daimler AG, how it works, how it makes money and how it is changing compared to 10-20 years ago.

1. Introduction
Could you please tell me a little about your background?
I am working in the product management of Mercedes me connect. This is the functional area, which cares about the connected car elements. In the product management, we develop new ideas and innovations. These ideas and innovations are evaluated to develop together with the R&D department new products, services and business models.

2. Business model change
How would you describe Mercedes me to a customer?
Mercedes me is a new brand, which includes all services of Mercedes-Benz. Mercedes me puts the customer in the center of interest.

What value proposition is Mercedes-Benz offering with Mercedes me?
Mercedes me integrates all Mercedes-Benz services in one application.

How is Mercedes-Benz aligning Mercedes me connect with its strategy and competencies?
Mercedes me connect is a premium service, which increases the service experience of the customer. The services are customized to the user profile of the customer. In connect we introduced many new services since 2013, which are using an Internet connection of the car to either improve existing services or to create new service offerings. These are for instance the functions emergency call, live traffic, remote control of the car, but also security aspects that the customer receives urgent support in case of a break down through an evaluation of the vehicle

date and the geo position. This is the content of Mercedes me connect. For developing this content, we benefit of the already existing high quality telematic products, which are improved through new initiatives to deliver for instance better information about traffic jams. Regarding the vehicle service, we benefit of the already existing Mercedes-Benz service network, which is included in an optimal way in the different connectivity elements. The customer can use the service network, which is improved through all the relevant customer data. In general, Mercedes-Benz benefits of already existing competencies, which are complemented by digital competencies to extend the connectivity services of Mercedes-Benz.

How is Mercedes-Benz making money with Mercedes me connect?
Connectivity services lead to a certain extent to additional revenues, but also to higher costs. When more connectivity services are included in the car, the customer needs to pay a higher price.

Does Mercedes me connect also offer other benefits besides the monetary benefits?
The idea is that the customer feels comfortable in our eco system, so that the customer stays longer with Mercedes-Benz and decides again for buying new Mercedes-Benz products and services. The increasing of customer loyalty is an important aspect of Mercedes me connect.

How is Mercedes me connect an opportunity to change Mercedes-Benz business model?
The production oriented business model and the service oriented business model of Mercedes me are influencing each other. The task of the traditional car manufacturer is accomplished with the supply of the car. However, in terms of connectivity, the services are just starting when the customers has received the car. After starting the car, the customer receives connectivity services for a certain period of time. This is a completely different model than the production orientation. There is a very close connection between hardware, software and connectivity services.

3. Market based view
Who are the closest competitors in this market?
There are comparable services like Mercedes me connect in the market. Ford introduced their connectivity service at the mobile world congress. BMW offers connected drive. Audi has Audi connect and GM has OnStar.

How is Mercedes me connect differentiated from its competitors?

Mercedes me connect has a very broad offering in Europe. The services like remote control and geo fencing are unique in the market. The live traffic function has been evaluated better than the services of Audi and BMW.

What value chain activities does Mercedes me connect include?

In general, we combine a traditional car development process for keeping security aspects on a high level with different IT processes. These include agile development methods to be fast in the development of new services. The IT processes are increasingly getting to the center of interest in the development process.

4. Resource based view

What resources are required for Mercedes me connect?

Digital competencies are more and more relevant for the development of new connectivity services.

5. Closing

What is your view on the future of the automotive industry?

I think that connectivity services are more important and increasingly demanded by the customer. The customer will experience the same transformation from mobile phones to smartphones with the connectivity features of his car. The customer will benefit from the ecosystem making his journey more comfortable, safer and faster. The connectivity features will improve the customer's ability to solve his tasks.

Appendix 5 - Interview transcription AG

Date: 21.07.16
Company name: Mercedes me
Position: Manager Customer Integration

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the business model of the Daimler AG, how it works, how it makes money and how it is changing compared to 10-20 years ago.

1. Introduction
Could you please give me an introduction about Mercedes me and your position?
We are working in a large company with many different actors. There is the IT department - in which I am working - and there is a marketing and sales department with which I am cooperating. When you have a look at the Mercedes me portal, you see five pillars, which define the services of the portal. I am responsible for the portal area as so called product owner. The portal development relies on agile project management schemes. This is different from the traditional project management schemes of Daimler. When I started my career, it was unimaginable that such a large company starts to think, to act and to work in agile project management methods.
As already mentioned, Mercedes me consists of five pillars. These pillars are Mercedes me connect, Mercedes me move, Mercedes me assist, Mercedes me finance and Mercedes me inspire. Currently, the connect pillar is the centerpiece of Mercedes me, since all connectivity topics are part of Mercedes me connect. The assist me topics are about after sales services, finance me are all the Daimler Financial Services regarding leasing and financing of cars, move me includes everything related to mobility services like mytaxi and car2go, inspire me is purely a marketing driven topic that includes a sub portal like She's Mercedes, where the customer loyalty towards the Mercedes-Benz brand is increased.
This portal is a core strategy for the Daimler AG to have the best customer experience in the future. This includes a seamless customer journey for the customer. The customer gets interested in the Mercedes-Benz brand, recognizes the additional value of the Mercedes me services and manages his cars by using the portal.

2. Business model change

What kind of value proposition is Mercedes-Benz offering with Mercedes me?

The additional value for the customer is the service offering of the Mercedes me portal. These services can be booked individually depending on the car. Many of the services have just been started with the product launch of the e-class. For instance, the park pilot offers autonomous parking assistance, remote control includes switching on the air conditioner and the Mercedes me portal gives information about the gas consumption.

How is Mercedes-Benz aligning Mercedes me with its strategy and competencies?

Mercedes me is a highly relevant project for the strategy of Daimler. It is a core project to be competitive in the digitalization, to gain new customers and to demonstrate that Daimler is able to offer digital services to our customers.

In the software development we work in very fast project cycles compared the development of new cars, which is managed with completely different management methods. But the project cycles of the car development are relevant for the software development. Therefore, the IT needs to integrate their activities in the schemes of the car development, since the requirements of quality assurance need to be considered by all related activities. For instance, the connect me department has a very close coordination with the research and development department for creating new vehicles.

What are the key resources to deliver the value proposition of Mercedes me?

The external perception of Mercedes-Benz in the digital field is the key resource within my department. That customers see the portal, get interested and involved.

How is Mercedes-Benz making money with Mercedes me?

Creating additional revenues is not a focus in the current status of Mercedes me. Nevertheless, the strategy is to earn money with new and additional services.

Does Mercedes me offer other benefits besides the monetary benefits?

It is important to gain knowledge about the activities of the customer. The Mercedes me portal should bind the customer closer to the Mercedes-Benz brand, so that customers buy more Mercedes-Benz products.

How is Mercedes me an opportunity to change Mercedes-Benz business model?

Currently we are not selling cars in the Mercedes me portal. The traditional approach is still to have a personal customer assistant in the Mercedes-Benz store, but soon there will be opportunities to buy configured cars in the Mercedes me portal. This is a first sign towards the new opportunities of the digitalization. Furthermore, there is already a close integration between Mercedes me and the regular Mercedes-Benz customer service. Customers can already book their car service over the Mercedes me portal. Dealers do not need to call their customers anymore, but customers receive the indication that their car requires a specific service. Then the customer is able to arrange an appointment by using the Mercedes me portal.

3. Market based view

Who are the closest competitors in this market?

The closest competitors are the other premium car manufacturers and also Opel with the OnStar service.

How relevant is the entry of new competitors into the market?

We know that future competitors are not only car brands. Therefore, we analyze the market very carefully. We are interested in the activities of Google, Facebook and others. This is also the reason for our Mercedes me strategy. Knowing that not only Munich and Ingolstadt are competitors, but that very strong competitors might come from totally different areas. There are disruptive forces entering the market, which might not even be recognized by large companies. Therefore, digital initiatives are important to recognize market developments to be able to react to new competitors.

How is Mercedes me differentiated from its competitors?

The great advantage of Mercedes me is the strong Mercedes-Benz brand. Other competitors are also offering services, but the experience is not as tangible as in the case of Mercedes me. Mercedes me sounds more charming than telematic services. The strong Mercedes-Benz brand can already lead to a differentiation in the market. The Mercedes me brand benefits of the Mercedes-Benz brand and completes the customer experience with Mercedes me stores and events.

What are the relevant activities at Mercedes me?

Mercedes me already consists of 200 employees. We are all working in the world of online services.

The most relevant activities include the software and web development. Mercedes me is a lighthouse project of the Daimler AG. The customer already knows the traditional car configurator. The Mercedes me portal is different from such a car configurator.

4. Resource based view

What resources are required for Mercedes-Benz me?

Visionary thinking is a key requirement to develop and to improve the Mercedes me portal. Although the daily business is sometimes constraining the developed visions, we need to think about Mercedes me not as new software but as a new strategic concept. Within the whole corporation you can feel the willingness to move something in the digital field.

5. Closing

What is your view on the future of the automotive industry?

I love all kinds of cars and I am not bound in terms of brands. I like the traditional way of driving a car – entering a car, turning the key, inserting a gear and driving on the road. But this represents only a small percentage of the whole mobility market.

I believe that individual traffic is also in the future a great part of the market, since mobility is always a form of freedom. But the kind of mobility is going to change. For instance autonomous driving is a great opportunity to use time on the road more efficiently. Mercedes-Benz is well positioned in the market for autonomous driving. But I also want to drive the car by myself if I am, for instance, on a beautiful road in the Alps.

Mobility is going to change towards the inclusion of more forms of mobility services. I am going to start my journey with the rented bike to the bus stop, use the bus for getting to my car2go etc. The integration of the different forms of mobility is increasing. Already today each mobility service offers advantages for specific individual use cases.

Appendix 6 - Interview transcription AS

Date: 26.07.16
Company name: car2go Group GmbH
Position: Market Research Manager

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about car2go, how it works, how it makes money and how it is changing the business model.

1. Introduction
Could you please give me a short introduction about your background?
I am working in the market research department of car2go. We are a team of five employees and working on everything related to investigate the car2go brand, brands of competitors and where we can improve ourselves. I am specifically working on qualitative projects, which includes everything in direct interaction with customers – like group discussions and interviews.

2. Business model change
How would you describe car2go?
Car2go is a car sharing concept, but not one of the classical stationary car sharing concepts. Car2go is a so-called free-floating concept. This means that the cars can be rented and parked at any place within the defined rental area. This concept allows one-way rentals so that the customer can rent the car, drive to his destination and park the car without any further obligations. This concept provides a lot of flexibility for the customer, since the customer must not return to the rental station. This is key differentiator to many of the common car sharing concepts in the market.

What value proposition is car2go offering to their customers?
The one-way rental of car2go is an advantage compared to stationary car sharing concepts. But there are also other free-floating concepts in the market like DriveNow from BMW, which is our most relevant competitor. These business models also have different payment schemes than stationary car sharing concepts. The customer is charged in minutes using a free-floating car-sharing concept. This pay per use approach is like a pre paid mobile phone contract, which offers great flexibility and power for the customer.

How is Daimler aligning car2go with its strategy and competencies?

Mobility is going to change in the future. Therefore, all mobility companies need to position themselves in the market for new mobility concepts. The development of a modern mobility concept requires a great identification of the employees with the concept. Therefore, car2go employees can use the mobility service for free to increase their identification with the service. For the company it is important to develop new competencies to serve new mobility needs. Additionally, we all know that Google and other digital companies are also developing mobility services and products. Therefore, it is important to be very attentive to the market development, while not developing to fast, since this bears the risk to loose the customer. The customer is not always as fast as the market development.

The business model of car2go requires to put the customer always in the center of interest, since the customer can always decide which kind of mobility service suits his needs best.

What are the key resources and competencies to deliver the value proposition of car2go?

IT and digital competencies are increasingly in the center of interest for car2go. Earlier, the rental cars could be rented by using a chip card, now cars can in some destinations only be rented through the smartphone. This digital change also includes the car2go app, which is a key element as digital solution for the customer interaction. Furthermore, car2go reduced the number of physical stores like in Vienna and Berlin – everything takes place online or through the hotline.

How is car2go observing the market development?

The business development and business strategy department are central for observing the market development. When we are doing market research, we are not only looking at ourselves but also at the competitors. It is possible to learn from competitors and to analyze how to position car2go in relation to other mobility services. Therefore, we also integrate the customer perception in our analysis. Many customers in the car sharing market are using different offerings to have a high availability of cars. Therefore, many customers developed their own portfolio of mobility services, since modern free-floating concepts like DriveNow or car2go do not charge a basic tariff. This allows the customer to decide individually, which mobility service is suited best for his use case. Therefore, the market and relevant competitors need to be observed very carefully. Ideally, car2go wants to be top of mind for any kind of mobility use case.

How is car2go making money?

The usage fee is the only source of revenue for car2go. All other sources of income streams are only used to cover the respective costs.

Does car2go also offer other benefits besides the monetary benefits?

The visibility of the product in the street has an effect itself, since potential customers notice the cars. This is a way of an intelligent product placement. Furthermore, the opportunity to rent a car for a small price is a good way for customers to experience a car without actually buying the product. For instance, car2go introduced recently in Berlin besides the Smart cars also Mercedes-Benz cars for the car sharing.

3. Market based view

Who are the closest competitors in this market?

The competitors always need to be seen in regards to the relevant market, since car2go operates on three continents in 31 cities. Nevertheless, in Central Europe the main competitor is DriveNow of BMW, since the service is very close to car2go in terms of the free-floating concept and the pricing model. In the USA, Uber is a main competitor – not because the service is similar, but the use case for the customer is the same. Furthermore, there are smaller regional competitors in many cities.

How relevant is the entry of new competitors into the market?

The market for mobility services has relatively high market entry barriers. To start a car sharing company, high investments are required in the operation of the system. Without the required funding capital and know-how about the specifics of the market it is very difficult to enter the market. I cannot imagine that a new company is really able to become a dominating force in the market.

How is car2go differentiated from its competitors?

Offering the Smart as car for the car2go mobility service is a differentiating factor. It is a small car with only two seats that fits in almost any parking lot and is very effective in the traffic of big cities. This is the key differentiator to the DriveNow concept. In other markets, car2go is differentiated through the free-floating business model. But the Smart remains also in these markets the greatest differentiator. Hence, the Smart as a product and the business model are the differentiators of car2go within the market of mobility services.

4. Resource based view

What resources are required for car2go?

IT and digital competencies are increasingly getting to the center of interest for developing the car2go business model. There is the internal car2go infrastructure, which operates all the customer

data, the rides and payments. The cars are coupled to the car2go system, which means that, for instance, cars without gas or with damage are logged off automatically in the back office. In addition, there is a large team that cares about the car2go homepage, the smartphone application and all underlying processes. If a new application or homepage is developed, pre-tests ensure that the customer understands the new offering.

5. Closing

What is your view on the future of the automotive industry?

I think autonomous driving will be a great part of future mobility. This has a great influence on our current mobility schemes, since it supports concepts like car sharing. In my vision of the future, the customer has the need for mobility. Then the car drives to the customer and fulfills the need for mobility. The ownership of the car is not relevant anymore and the dependence on the car moves to the background, since cars can be requested at any time I definitely see autonomous car sharing concepts in the future.

Nevertheless, ethical and legal constraints are great obstacles for the introduction of autonomously driving cars. If a child runs on the road, how should the car react? Should the car hit the tree on the side of the street and threaten the life of the driver or should the car threaten the life of the child? These are considerations, which need to be programmed and this requires, time and thinking.

Appendix 7 - Interview transcription TH

Date: 28.07.16
Company name: Moovel Group GmbH
Position: Project & Collaboration Lead

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about the Moovel Group, how it works, how it makes money and how it is changing the business model.

1. Introduction
How long have you been working in the automotive industry?
Since almost two years I am working for the Moovel group. I am part of the Moovel lab, which is kind of a research lab within the Moovel Group. But this kind of research needs to be divided from the traditional research in the automotive industry. We are interested in rapid project development, prototyping and in starting a discourse with people who are interested in the future of mobility. My role within this interdisciplinary team is project coordination with the different project partners like universities or other departments.

2. Business model change
How would you describe Moovel to a customer?
Moovel in Germany is a company and a service at the same time, which enables customers to get from A to B by including different forms of mobility.

What value proposition is Moovel offering to their customers?
The Moovel service offers searching, booking and driving integrated in one application. These are the three relevant elements of the Moovel service. Customers are able to search a mobility service, book and pay this service directly through the application and use the mobility service with the online ticket.

How is Mercedes-Benz aligning the Moovel mobility services with its strategy and competencies?
The integration of different forms of mobility services is an important strategic consideration for the Moovel group.

What are the key resources and competencies to deliver Moovel's value proposition?
There is the back-end development, which includes important aspects that are not visible for the customer. Then there is the front-end development, which ensures a qualitative usability and interface for the customer. Designers are relevant for the user experience and the buttons and icons to create a consistent look and feel for the Moovel application. Then there are data specialists, who try to optimize specific forms of code. The team also includes for instance geographers. This demonstrates the diversity of the team

How is Moovel making money?
Moovel receives a provision for each ride that is sold through the Moovel service. This is the primary business model of Moovel. For each sold public transport ticket through the app, Moovel receives a provision – like for any ride with mytaxi or each ride with car2go that is booked through the Moovel application.

Does Moovel also offer other benefits besides the monetary benefits?
There are additional benefits besides the monetary benefits. If you think about data then it is very interesting to see how different mobility demands within a city are developing. There are different possibilities to utilize this data. Furthermore, there is the user data, which is valuable for many companies. There are many different aspects. For instance, if you think about how Moovel works compared to a large company like Daimler. There are many learning's for Daimler, where such a large corporation can benefit of insights from a smaller company.

How is Moovel an opportunity to change Mercedes-Benz business model?
The gained data and the business model of the Moovel Group might not influence the business model of Daimler, but I think that Daimler benefits of many activities of the Moovel Group like cultural aspects to be more attractive as employer. Especially for web developers, who are actually not interested in large companies but rather in smaller and more agile start-ups.

3. Market based view
Who are the closest competitors in this market?
There are many depending on the market. In Germany for instance, GoEuro and Google maps.

How relevant is the entry of new competitors into the market?
Competitors are a good opportunity to develop a stronger product, since specific strengths need to become very tangible for the user. But in the German market, Moovel is the only service that really

established the deep integration of many different mobility services. This means that the tickets can be bought directly in the application. The customer is not only receiving the relevant information about the best routes, but the booking and the payment are integrated in one application. This is very convenient for the customer. This is the focus of the Moovel application.

How is Moovel differentiated from its competitors?

The deep integration of different mobility services through the Moovel application is a key differentiator from competitors. Furthermore, Moovel tries to convince their customers with a good design. In the app industry, products need to be designed so that they are fun to use for the customer.

What activities does Moovel include?

Moovel works with a management scheme that was developed by Spotify and has been adjusted to the needs of Moovel. We do not work in teams, but in squads. Squads are staffed interdisciplinary. The advantage is that the disciplines are diverse and that one squad can be responsible for one feature of the Moovel application.

The teams are working with iterative and agile project management methods. An agile coach presents the relevant retrospectives. The different squads are working with different project management methods. One team may work with Kanban, the other by Scrum and another one by Scrumban. The design of the cooperation has a high degree of freedom and can be chosen by the team itself.

4. Resource based view

What resources are required for Moovel?

We are a very young and dynamic company, which requires a high degree of empathy and teamwork. We have a very open culture. Employees need to be willing to share their knowledge and to speak to the most relevant employees. Recruiting the right people ensures a good cooperation between the employees.

We are a holistic company. We also have marketing, communication, finance, controlling and a regular IT department. These departments are also necessary to establish the Moovel service in the market. Especially as business unit of the Daimler AG it is important to communicate, since the interest of the media is very high if a business unit of Daimler communicates their activities.

5. Closing

What is your view on the future of the automotive industry?

We are in very hot phase within the mobility market. For the first time since the development of the car, there are new opportunities through the digitalization. These new opportunities offer in regard to autonomous and connected driving new ways to offer services and products for the customer. The urbanization, the increased number of smartphones and the sharing economy open many doors in the automotive industry. I expect in the next five to ten years that one to three big players are able to establish themselves in the market for mobility services. These players need to position themselves now. Moovel wants to become one of the big players in the market for mobility services. Therefore, the area of mobility services is currently among the most interesting mobility markets.

I believe there will be two markets in the future. The mobility service market, where the customer is not interested in owning a car and the traditional mobility market with customers that are interested in owning a car. Also in the future people will be able to buy a car with advanced technology. But due to changing values, it will be more important to get fast from A to B and to get there conveniently independent from the mode of transportation. Exact this service needs to be covered from Moovel. But in the countryside it might still be relevant to own a car, since there are many parking opportunities and the public transport is not fully established. Both markets need to be integrated, but the markets will exist separately from each other.

Appendix 8 - Interview transcription HK

Date: 16.08.16
Company name: German Association of the Automotive Industry
Department: Networked and Automated Driving
Position: Senior Manager Advanced Technology

Opening
I am writing my master's thesis about changing business model with a focus on the automotive industry. I want to study how digital trends are influencing business models and if they can lead to competitive advantages. My interview includes general questions about Networked and Automated Driving, how it works, how it generates money and how it is influencing the automotive industry.

1. Introduction
Could you tell me a bit about your professional background and the work of the German Association of the Automotive Industry in the area of Networked and Automated Driving?
I have studied electrical engineering and I am working since 1999 in the automotive industry. I started in the area of security technology, for instance in the development of airbags and sensors, where I had the position as a project leader. Afterwards, I was engaged with comfort electronics and electric mobility. Now, I am working since two years in the department for Networked and Automated Driving of the German Association of the Automotive Industry. The German Association of the Automotive Industry created the department for Networked and Automated Driving to bunch external professionals with the internal know-how of the German Association of the Automotive Industry for being faster in the development of networked and automated driving technologies. In this regard, the German Association of the Automotive Industry bunches the opinions of their members and tries to create a consistent point of view.

2. Relevance of networked and automated driving for the automotive industry
How would you describe the relevance of networked and automated driving for the automotive industry?
The topic is relevant for the automotive industry, since many years. Currently, the media is creating a lot of noise about the topic. However, the automotive industry is engaged with networked and automated driving, since many years and developed the relevant sensors, lasers and radars already in the late 90s. The topic has been relevant for a long time, but not under the title of networked and automated driving, but to increase comfort, efficiency and security. The

combination of these systems has led to the development that machines may better execute certain tasks than the driver. This has led to an evolutionary process that is called networked and automated driving.

3. Internal perspective of car manufacturers on networked and automated driving

What kind of resources and competencies requires an automotive company to develop networked and automated driving?

Automotive companies already developed the relevant electronic control unit and the required IT competencies have been rising in the past years. In the luxury car segment, cars have between 80 to 100 different electronic control units, which rely on hardware and software. The automotive industry is not only bodies, metal structures and engines. The relevance of software is increasing. This has been recognized and automotive companies increased their competencies in the area of software development. Besides software developers, systematic engineers are required, who can notice the opportunities to combine different functions. Hardware and software are tested in the loop to avoid any misconceptions and data leakages.

Are German car manufacturers leading in the area of networked and automated driving?

The suppliers – like Bosch, Continental and ZF – are playing in the first division of digital technology. These companies are able to think systematically and can deliver the relevant electronic control units. The car manufacturers are including these components. These companies have research and development departments, which accompany the development of new automobiles. An iterative learning process is necessary to develop networked and automated driving further.

How are networked and automated driving technologies developed?

This is often a cooperation between different producers. I do not exclude that some suppliers and some car manufacturers are developing technology on their own, but about 80% is developed in cooperation. The question is how much time the technology needs for the development. We are not in the area of an old commodity. Companies need to get through the different stages of the automatization process. One company may have functions earlier than another company.

3. External perspective of car manufacturers on networked and automated driving

How are the growth opportunities in the automotive industry?

Growth is not possible in the traditional market, since these markets are saturated. Nevertheless, growth opportunities are in the US, China and India.

Are automotive companies already competing with digital companies like Google and Apple?
These kinds of competitors are not relevant at the moment. The German Association of the Automotive Industry is convinced that newcomers to the industry cannot overrule the great experience in the high-volume development and production of the current market participants. For instance, Tesla is rather destroying the work of the industry, since functions that are not ready for series production have already been implemented. The members of the German Association of the Automotive Industry could also offer the functions of Tesla, but we do not want that any harm is created with networked and automated driving. Nevertheless, it is important that the established companies need to react to innovative new companies. I believe there will be cooperation between traditional automotive and digital companies. Google and Apple are using components from the automotive industry. For instance, the Google car uses components of Bosch and Continental. The race in the field of networked and automated driving is open, but I am convinced that the advantages in quality and experience of our members are relevant factors. Therefore, I believe there will rather be cooperation than strong competition.

Is networked and automated driving an opportunity to achieve differentiation?
Definitely, comparable features are offered, but the branding is different. Networked and automated driving technology will become an important element to be differentiated from competitors like the earlier differentiation between six, eight or ten cylinders.

4. Legal and ethical issues in networked and automated driving
To what extent are legal and ethical concerns problematic for the introduction of networked and automated driving?
I am not too concerned about the area of the legal questions, since the legal frame needs to be set by the relevant organizations. Then the automotive industry can react and include the relevant technology. In terms of ethical questions, the discussion is infinitely long and difficult. We are not able to program “this is a grandma and this is a child”. There will be technical parameters and the car will not be able to differentiate between the importance of live. The question is rather, if I secure the lives of the people in the car or the lives of the people outside the car. There will be a technical solution, which leads to the smallest possible damage. This ethical discussion can decelerate the implementation of networked and automated driving features. Nevertheless, the topic of security is always relevant and a prime target of networked and automated driving. The technology is not about enabling the driver to read the newspaper, but it is about security, comfort and efficiency.

5. Closing

What is your view on the future of the automotive industry?

We are going to experience a change in the area of mobility. The usage of the car and of mobility services is going to change. This is an evolutionary process that changes the opportunities to use mobility.

Is the automotive industry developing an increased service orientation?

Certainly, the automotive industry is capable of learning. A good example is car sharing. Today each member of the German Association of the Automotive Industry has the topic on the agenda and is involved in one of the different platforms. Why should I have a car in an urban center, if I am using it only three times a year? But the automotive industry is not going to produce fewer cars, since the shared cars are used more often and need to be replaced more often. Mobility services will become relevant part of the business model in the automotive industry.

Appendix 9 - Observations in the Mercedes me store

- The Mercedes me store is located in Hamburg in one of the most prominent shopping areas surrounded by many other shops

- The store has regular opening hours from 9-19h. Customers are friendly invited to use the gastronomic offering and to experience different Mercedes products and services.

- Besides the offering of various coffee products, the store also offers high quality cocktails and cakes

- The marketing material is of very high quality

- The store has a very open and modern design with many different sitting areas

- Modern art is portrayed on the walls

- Different forms of mobility are presented

- From inside the store, the visitors have a view on the Inner Alster Lake

- The store is promoted as event location with events of many different facets. The different events take place several times during the month and are open for everyone.

Events & me

Entdecke unsere regelmäßigen Event-Reihen in all ihren Facetten.

INSPIRE ME
erweitert Horizonte – dank einer Vielfalt an Formaten: Workshops, Trainings, Vorträge oder Filmscreenings beleuchten das Thema des Monats stets in neuem Licht. Ob fesselnde Erfahrungsberichte, inspirierende Seminare oder aufschlussreiche Lesungen – Inspire me kennt keine Grenzen. Now you know!

GROOVE ME
spielt den Sound deines Lebens! Die Qualität und Bandbreite der Konzerte lässt mehr als aufhorchen: Im Programm finden sich vielfältige Musikstile – doch stets nur sorgsam ausgewählte Klangperlen zum Tanzen oder Entspannen. Lauscherchen gespitzt: Get the Groove!
Immer jeden letzten Freitag im Monat.

DANCE ME
hat den Rhythmus im Blut – und besteht immer aus zwei Teilen: Zuerst zeigen die besten Tanzschulen Hamburgs step-by-step monatlich abwechselnd die Grundlagen von Salsa, Swing, Discofox und Tango. Danach wird das Parkett für freies Tanzen eröffnet – entweder zu Live-Musik oder Live-DJ. Everybody dance now!
Immer jeden zweiten Samstag im Monat.

TELL ME
bietet immer eine bühnenreife Vorstellung: Der Watch Later Club zeigt die besten Webvideos auf großer Leinwand, die Hamburger Lesebühne präsentiert selbstverfasste Live-Literatur – gemischt mit Comedy & Spoken Word – und Selbstständige erzählen in den „FuckUp Nights" unterhaltsam vom Scheitern. Buchvorstellungen, Poetry Slams u.v.m. runden das bunte Kultur-Potpourri ab. Listen up!
Immer jeden zweiten Donnerstag im Monat.

DISCOVER ME
bereichert dich mit den schönen Dingen des Lebens: Auf den Pop-up-Märkten im Mercedes me Store Hamburg erwarten dich Kunst, lokale Fashion Labels und Designer. Dazu Selbstgemachtes von DaWanda-Shops, Food-Spezialitäten sowie viele weitere Highlights. Find your showpiece!
Immer jeden dritten Samstag im Monat.

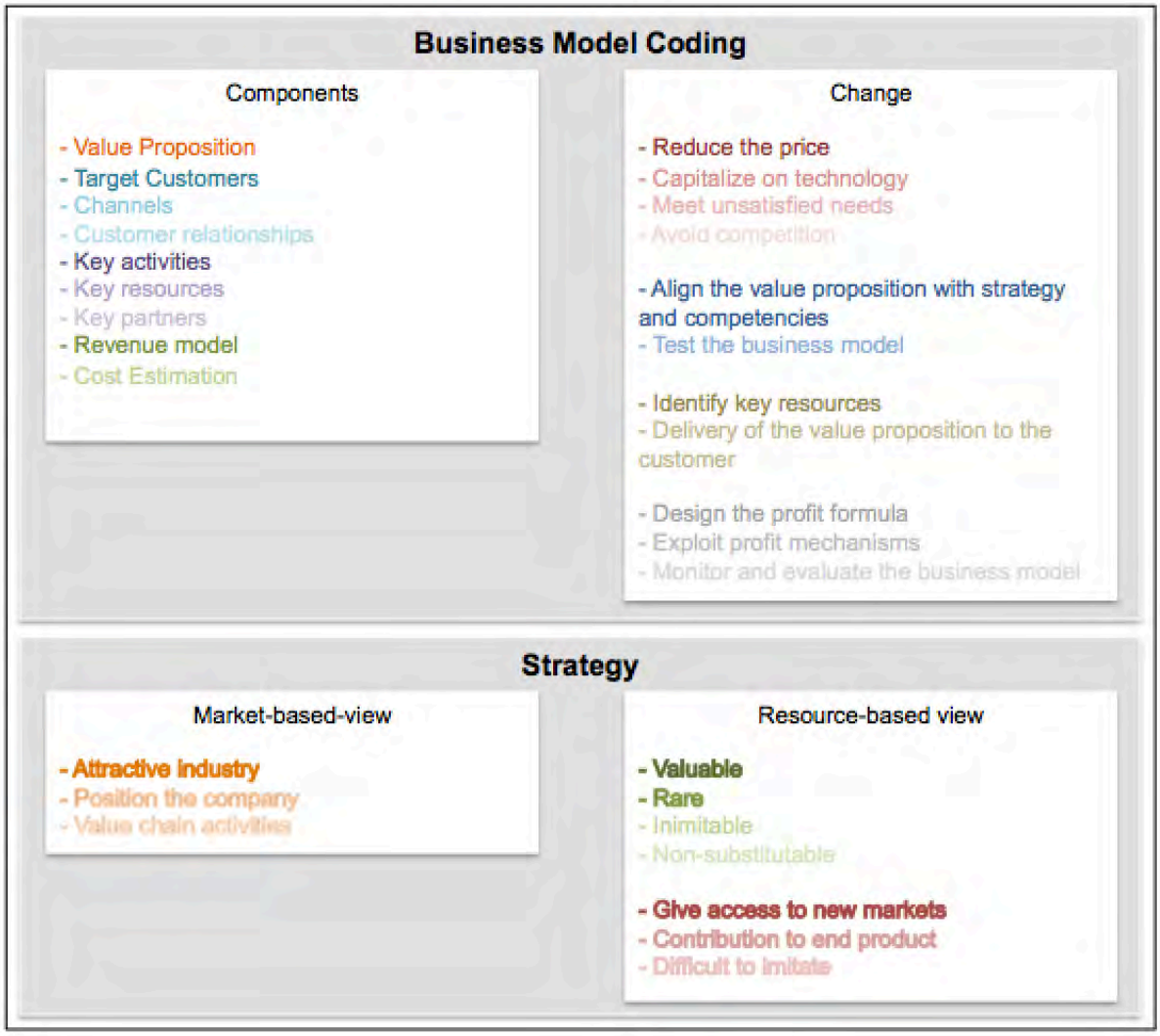
YOU & ME
lässt Herzen schneller schlagen! In Kooperation mit Parship lernen sich Singles durch ein äußerst erfolgversprechendes Speed-Dating kennen – denn in ausgewählten Mercedes-Benz Modellen endete schon so manche Probefahrt nicht in der Sackgasse. Dazu bereichern wechselnde Mitfahrer den Abend, der mit einem gemeinschaftlichen Essen im Mercedes me Store Hamburg ausklingt. Get together!
Immer jeden letzten Dienstag im Monat.

TASTE ME
ist zum Zungeschnalzen! Die köstlichen Tastings und Food Workshops reichen von Feinkost über Spirituosen bis hin zu süßen Delikatessen. Neues zu erfahren ist selten so schmackhaft wie hier im Mercedes me Store Hamburg. Try something special!

2016

Appendix 10 - Coding

The coding of the data was done manually by analyzing the interview transcripts, observations and notes. All the information belonging to a certain category was marked with the same color. The categories chosen were related to the theoretical concepts that constitute the basis of the theoretical models. An example of the coding is presented below. The following colors were used for each element:



Source: Author

Coding Example

1. Introduction

How long have you been working in the automotive industry?

Since almost two years I am working for the Moovel group. I am part of the Moovel lab, which is kind of a research lab within the Moovel Group. But this kind of research needs to be divided from the traditional research in the automotive industry. We are interested in rapid project development, prototyping and in starting a discourse with people who are interested in the future of mobility. My role within this interdisciplinary team is project coordination with the different project partners like universities or other departments.

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What value proposition is Moovel offering to their customers?

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How is Mercedes aligning the Moovel mobility services with its strategy and competencies?

The integration of different forms of mobility services is an important strategic consideration for the Moovel group.

What are the key resources and competencies to deliver Moovel's value proposition?

There is the back-end development, which includes important aspects that are not visible for the customer. Then there is the front-end development, which ensures a qualitative usability and interface for the customer. Designers are relevant for the user experience and the buttons and icons to create a consistent look and feel for the Moovel application. Then there are data specialists, who try to optimize specific forms of code. The team also includes for instance geographers. This demonstrates the diversity of the team

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Does Moovel also offer other benefits besides the monetary benefits?

There are additional benefits besides the monetary benefits. If you think about data then it is very interesting to see how different mobility demands within a city are developing. There are different possibilities to utilize this data. Furthermore, there is the user data, which is valuable for many companies. There are many different aspects. For instance, if you think about how Moovel works compared to a large company like Daimler. There are many learning's for Daimler, where such a large corporation can benefit of insights from a smaller company.

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3. Market based view

Who are the closest competitors in this market?

There are many depending on the market. In Germany for instance, GoEuro and Google maps.

How relevant is the entry of new competitors into the market?

Competitors are a good opportunity to develop a stronger product, since specific strengths need to become very tangible for the user. But in the German market, Moovel is the only service that really established the deep integration of many different mobility services. This means that the tickets can be bought directly in the application. The customer is not only receiving the relevant information about the best routes, but the booking and the payment are integrated in one application. This is very convenient for the customer. This is the focus of the Moovel application.

How is Moovel differentiated from its competitors?

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design. In the app industry, products need to be designed so that they are fun to use for the customer.

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4. Resource based view

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We are a very young and dynamic company, which requires a high degree of empathy and teamwork. We have a very open culture. Employees need to be willing to share their knowledge and to speak to the most relevant employees. Recruiting the right people ensures a good cooperation between the employees.

We are a holistic company. We also have marketing, communication, finance, controlling and a regular IT department. These departments are also necessary to establish the Moovel service in the market. Especially as business unit of the Daimler AG it is important to communicate, since the interest of the media is very high if a business unit of Daimler communicates their activities.

5. Closing

What is your view on the future of the automotive industry?

We are in very hot phase within the mobility market. For the first time since the development of the car, there are new opportunities through the digitalization. These new opportunities offer in regard to autonomous and connected driving new ways to offer services and products for the customer. The urbanization, the increased number of smartphones and the sharing economy open many doors in the automotive industry. I expect in the next five to ten years that one to three big players are able to establish themselves in the market for mobility services. These players need to position themselves now. Moovel wants to become one of the big players in the market for mobility

services. Therefore, the area of mobility services is currently among the most interesting mobility markets.

I believe there will be two markets in the future. The mobility service market, where the customer is not interested in owning a car and the traditional mobility market with customers that are interested in owning a car. Also in the future people will be able to buy a car with advanced technology. But due to changing values, it will be more important to get fast from A to B and to get there conveniently independent from the mode of transportation. Exact this service needs to be covered from Moovel. But in the countryside it might still be relevant to own a car, since there are many parking opportunities and the public transport is not fully established. Both markets need to be integrated, but the markets will exist separately from each other.

Appendix 11 - Connectivity services of the Mercedes-Benz E-Class

Source: Daimler (2015b)

Appendix 12 - Revenue and profit of the Daimler AG

Daimler Group				
	2015	2014	2013	15/14
€ amounts in millions				% change
Revenue	**149,467**	129,872	117,982	+15 [1]
Western Europe	**49,570**	43,722	41,123	+13
thereof Germany	**22,001**	20,449	20,227	+8
NAFTA	**47,653**	38,025	32,925	+25
thereof United States	**41,920**	33,310	28,597	+26
Asia	**33,744**	29,446	24,481	+15
thereof China	**14,684**	13,294	10,705	+10
Other markets	**18,500**	18,679	19,453	-1
Investment in property, plant and equipment	**5,075**	4,844	4,975	+5
Research and development expenditure [2]	**6,564**	5,680	5,489	+16
thereof capitalized	**1,804**	1,148	1,284	+57
Free cash flow of the industrial business	**3,960**	5,479	4,842	-28
EBIT	**13,186**	10,752	10,815	+23
Value added	**5,675**	4,416	5,921	+29
Net profit	**8,711**	7,290	8,720	+19
Earnings per share (in €)	**7.87**	6.51	6.40	+21
Total dividend	**3,477**	2,621	2,407	+33
Dividend per share (in €)	**3.25**	2.45	2.25	+33
Employees (December 31)	**284,015**	279,972	274,616	+1

1 Adjusted for the effects of currency translation, revenue increased by 9%.
2 For the year 2013, the figure has been adjusted due to reclassifications within functional costs.

Source: Daimler (2015a)