

MASTER THESIS



Power of E-Motion

Business Model Innovation for the Introduction of Electric Cars to China

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Acknowledgements

Being the last part of our masters studies we have been working and investigating in a truly interesting field over the last month. During our research in the area of Business Model Innovation in the automobile industry with a special focus on China, we could not only gain new knowledge but also learned to value perseverance and diligence as a way to conduct our work. We hope that our thesis will serve as a handbook for business model innovation when considering introducing E-Cars to China and will be of enjoyment to any potential reader.

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Abstract

E-Cars challenge prevailing business practices, especially in industrial sectors that heavily depend on the use of fossil fuels such as the automobile industry. The sustainable powertrain has to fight against prejudices towards a lack of performance, long charging times, the fear of too short driving ranges and a long list of other concerns. However, hazardous environmental pollution in Chinese megacities as well as changes among the consumers' mindsets and purchasing behavior claim for a change in the product portfolios of today's car manufacturers. In the western world we can see a successive (although hesitant) penetration of the markets by E-Cars. However, the Chinese market is still almost untouched and car manufacturers have just started to show the first signs of action. This phenomenon is mainly based on differences among the markets, especially the customer segment, partnerships and the proposition of value in China differ compared to the western markets. Furthermore, there are dissimilarities between China and the western car markets when it comes to political, legal and social aspects. To successfully introduce E-Cars to China, car manufacturers have to develop business models that transform the specific characteristics of E-mobility to create economic value and overcome the barriers that preclude them from penetrating the market. Of course, not an entirely new Business Model is needed. However, car manufacturers have to consider various aspects to innovate among their existing ones. A key prerequisite to enter a market with new products or services is to understand it. Based on a qualitative analysis about the introduction of E-Cars to China we therefore conducted an in-depth PESTEL-Analysis by hand of secondary data as well as an interview with a Shanghainese Business Manager of the Auto Components Working Group from the European Chamber of Commerce in China. After this market description we analyzed the Business Models of two German car manufacturers from the premium segment, which on the one hand operate successfully in the Chinese market and on the other hand, already show some movement in terms of E-Cars – the BMW AG and the Daimler AG. In our analysis we give valuable information about the two companies' current Business Models, according the nine building blocks of the business model canvas and in regard to the data emerging from the PESTEL-Analysis. The conclusion chapter gives an overall discussion of the most important findings emerging from the analysis with regard to the business operations and the existing business models of the two car manufacturers. Findings have been evaluated on a global level and substantially transferred to a national level on the Chinese market by hand of the information from the PESTEL-Analysis. Furthermore, we offer important implications for the adaption and adjustment of high consideration areas of a car manufacturer Business Model as well as the future of the Business Models of a car manufacturer to successfully introduce E-Cars to China.

Key Words: Business Model, Business Model Innovation, E-Cars, Sustainable Technologies, Automobile Industry China

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IV List of Abbreviations

\$ - Dollar

% - Percent

€ - Euro

BAIC – Beijing Automotive Industrial Holding

Bil. – Billion

BM – Business Model

BMI – Business Model Innovation

BYD – Build Your Dream

CEO – Chief Executive Officer

CO₂ – Carbon Dioxide

CRM – Customer Relationship Management

EBIT – Earnings Before Interest and Taxes

E-Cars – Electric Cars

ECCC – European Chamber of Commerce in China

FDI – Foreign Direct Investments

GDP – Gross Domestic Product

ICE – Internal Combustion Engines

IC – Internal Combustion

IT – Information Technology

Km – Kilometer

Mil. – Million

PESTEL –Political, Economic, Social, Technological, Environmental, Legal

PM – Particulate Matter

R&D – Research & Development

RMB – Renminbi

SWOT – Strengths, Weaknesses, Opportunities, Threats

UK – United Kingdom

US – United States

1 Introduction

This chapter presents a background about the automobile industry in China, including a comparison of recent key industry figures with Germany. It further gives background information from a Business Model perspective. Moreover, the problem area and the purpose of the study will be presented. The definition of our research question concludes this chapter.

1.1 Background

1.1.1 Industry Perspective

The automobile industry is, with a global turnover of around US\$2.6 trillion (SZ&W Group, 2013) one of the largest and most influential key industries in the global economy. The industry is expected to raise car sales from 45 million in 2004 (Worldometers, 2014) to approximately 85 million in 2014 (Ramsey and Boudette, 2013) which is an increase of almost 90 percent in the past 10 years. Compliant with a study conducted by McKinsey, the automobile industry is expected to further raise its profits until 2020 by approximately 50 percent due to an increase in annual car sales of 3.8 percent (Mohr et al., 2013). However, we can see a shift in the demand structure. While demands in developed countries like Germany, USA or Japan will decrease due to a prevailing overcapacity, the demands in countries like Russia, India, Brazil and especially China will increase. Referring to these increases we expect significant investments in the field of research and development (R&D) which contribute to this rapid development (ACEA, 2010). However, critical questions emerge like: will this unbalanced ratio remain and where will it lead to? How will car manufacturers handle the boom in the Far East and the overcapacity in the west? Or, will current technologies serve the market sufficiently or will any related problems emerge?

In 2009 China became the world's biggest car market with 8.4 million new car registrations (Autobild, 2010). By this time, the figure rose by approximately 115 percent to almost 18 million new registered passenger cars in 2013 (Savadove, 2014). In Germany, by contrast, car registrations decreased by 4.2% from 2012 to 2013 (Autobild, 2010). The dynamic in the automobile industry apparently seems to shift and engender an unbalanced ratio of distribution with a clear trend in direction; developing countries, and in particular China which will be just one of the issues car manufacturers will have to deal with in future.

The automobile industry is the largest single manufacturing sector worldwide and the response on pressures exerted by the environment adopted by the industry is important, however, also in terms of influencing many other industry sectors (Wells, 2006). Cars affect our lives, not only by providing personal transportation for millions of people every day, but also by bringing a variety of challenges for us and the environment we are living in (Wells, 2006). Therefore, one of the major challenges the automobile industry is facing affects the entire globe - global warming. Indirect as well as direct to the automobile industry related activities have a significant hazardous impact on the environment. Indirect activities are connected to raw material production and pre-machining or direct activities which are connected to the actual production and of course exhaust emissions emitted due to the use of the cars. A number of previously conducted studies show that the greatest and most dangerous

emissions emerge in the cars' operationalization phase (Keoleian, 1997; Kuhndt, 1997; Sullivan et al., 1998; Castro et al., 2003). Therefore, the question arises whether the use of E-Cars is effectively "clean" considering the pollutants produced during the energy production process?

The transportation sector is one of the major contributors to pollution problems at a local, regional and global level (Gan, 2002) and is the largest single source of PM_{2.5} in China – a secondary pollutant which is formed in the air and enters deep into the lungs (Watt, 2013). This high level of pollution leads to smog, which big cities in China are known for and sometimes makes the city appear to be suffocation under a big cloud of pollutants as shown in appendix A. If we compare China with Germany and have a look at some key indicators for the plausibility of the use of E-Cars, the following table results:

	China	Germany
Economic Output (GDP) [bil. US-Dollar]	8.94 ¹	3.59 ¹
Population [mil.]	1,364 ²	80.71 ³
Number of Cities with more than 1 mil. Inhabitants	over 150 ⁴	4 ⁵
Car Density [per 1000 inhabitants]	55 ⁶	573 ⁷
Registered Cars (Beijing vs. Berlin 2012) [mil.]	5.02 ⁶	1.14 ⁸
Share of the Global Energy Related CO₂ Emissions (2013) [%]	22.95 ⁹	2.23 ⁹
Energy Related CO₂ Emissions a Head [mil. Tons]	9,400 ¹⁰	816 ¹⁰

Table 1: Key Indicator Comparison (China vs. Germany)

From the table, various factors to explain the feasibility or rather the need for E-Cars in China arise. If we, for example, have a look at the population, we can see that China is the most populated country of the world, which implies a higher demand of raw material, commodities, groceries but also consumer products in general. According to the Global Automotive Forum, car sales in China will escalate up to 40 million cars by 2013 (Autocar, 2013). Matured markets are not expected to increase much and Germany, for example, is anticipated to see 3.7 million new car sales, as we can see in appendix B. From the table, the impression arises that the low car density in China connotes a low number of cars. However, China is as explained the most populous and in terms of size the fourth biggest country in the world. In

¹ World Economic Outlook Database (2013)

² World Population Review (2014a)

³ World Population Review (2014b)

⁴ Freitag (2013)

⁵ Statista (2012)

⁶ Suwei and Qiang (2013)

⁷ Welt (2014)

⁸ AMS (2011)

⁹ Statista (2013)

¹⁰ Sciencexx (2013)

China there are more than 150 cities with more than one million inhabitants as we can see in the figure below.

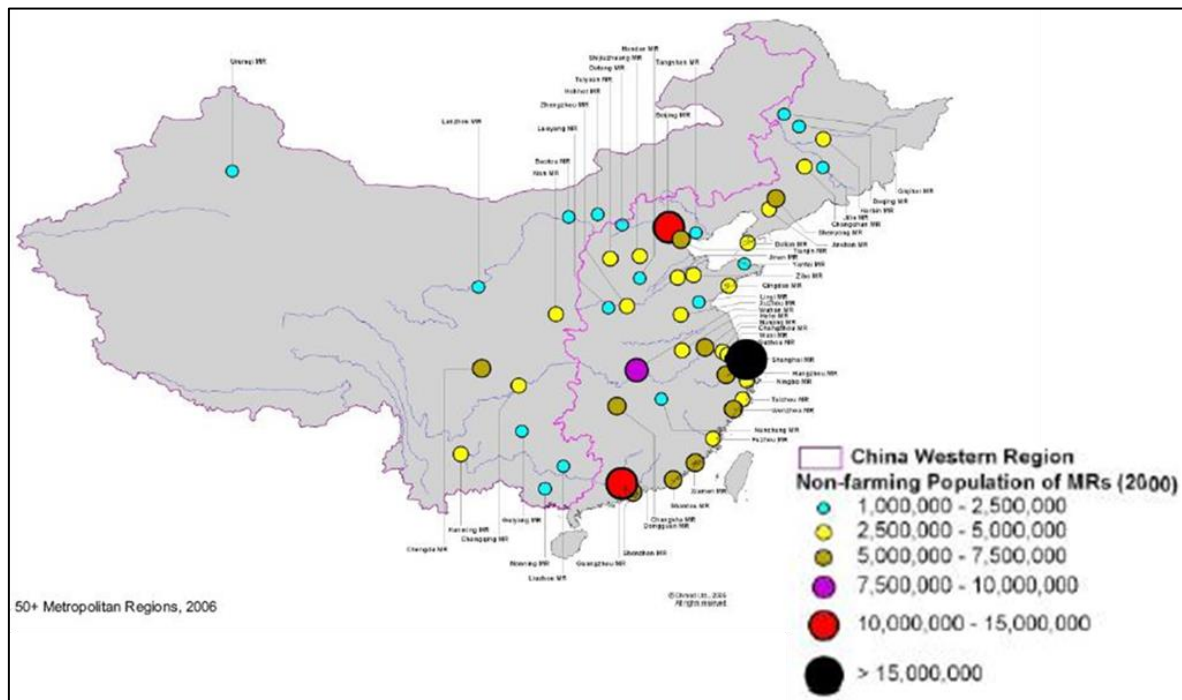


Figure 1: Chinese Cities with more than 1 mil Inhabitants (Source: Worldbank 2006)

In Beijing alone live more than 21.2 million people (World Population Review, 2014c). Germany, by contrast, hosts four cities with more than one million people and the population amounts to 80 million people in total which is displayed in figure 2.

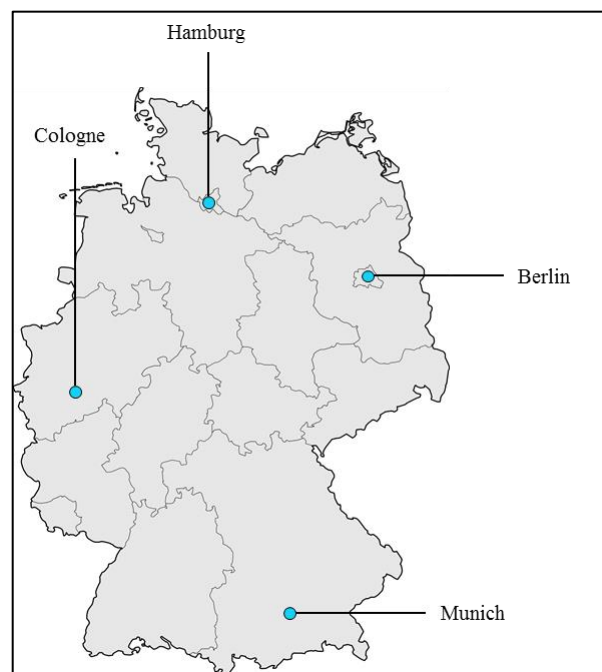


Figure 2: German Cities with more than 1 mil Inhabitants (Source: Own Illustration)

Due to the technical limitations given by the range an E-Car is able to cover, we see less potential in rural areas of Germany, for example. However, this big amount of megacities in

China, which will doubtless be the future market for E-Cars, leads to a concentration of many cars in a few conurbations. It further leads to the fact that people in such areas mostly use their car to drive short distances, which is a predestinated scenario for E-Cars and exactly what car manufacturers are aiming at. If we look at the illustration below we can see the populated areas in the greater Beijing area and we can see the maximum distance between two points would not exceed the 100 kilometer mark. Almost all of today's E-Cars are easily able to cope with a distances of 100 km without recharging.

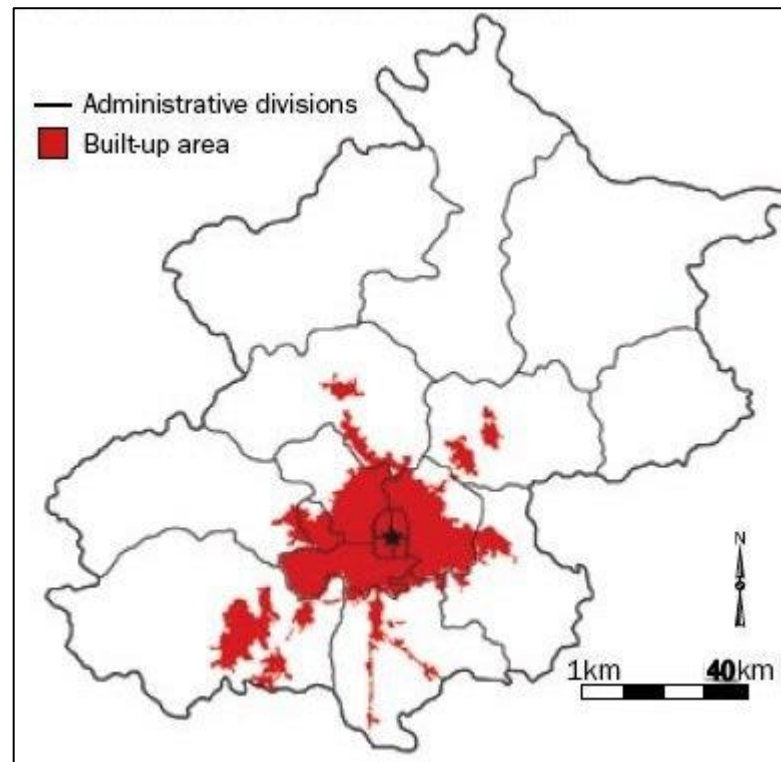


Figure 3: Urbanized Area in Greater Beijing (Source: NYU Stern Urbanization Project 2013)

BMW's i3 is able to drive for around 140 km which would be enough in the described scenario (AMS, 2014). Moreover, with a 23% share, China is the biggest emitter for global energy related CO₂ emissions, which forces the government to react and to take action to decrease the amount of pollution (Statista, 2013). One logic sequitur is to tighten the exhaust emission standards among cars, as we can already see in Europe with the EURO 6 restriction system. These emission standards in turn force car manufacturers to adjust their engines, dissolve their overcapacity of cars with old and inefficient internal combustion engines (ICEs) with outdated technology, and to introduce new and environmentally friendly cars.

Direct exhaust emissions produced by fossil fuel burning contain dangerous pollutants like nitrogen oxides, carbon monoxides, and small particles which are mainly responsible for environmental problems like smog, greenhouse gas emissions and biodiversity disturbances (Lane, 2006) with a particularly high amount in developing countries like China. These pollutants are of course not only a result of cars but rather of big production plants. However, the high number of cars in China's megacities also contributes to the terrifyingly high pollution values which are shown in the illustration below.

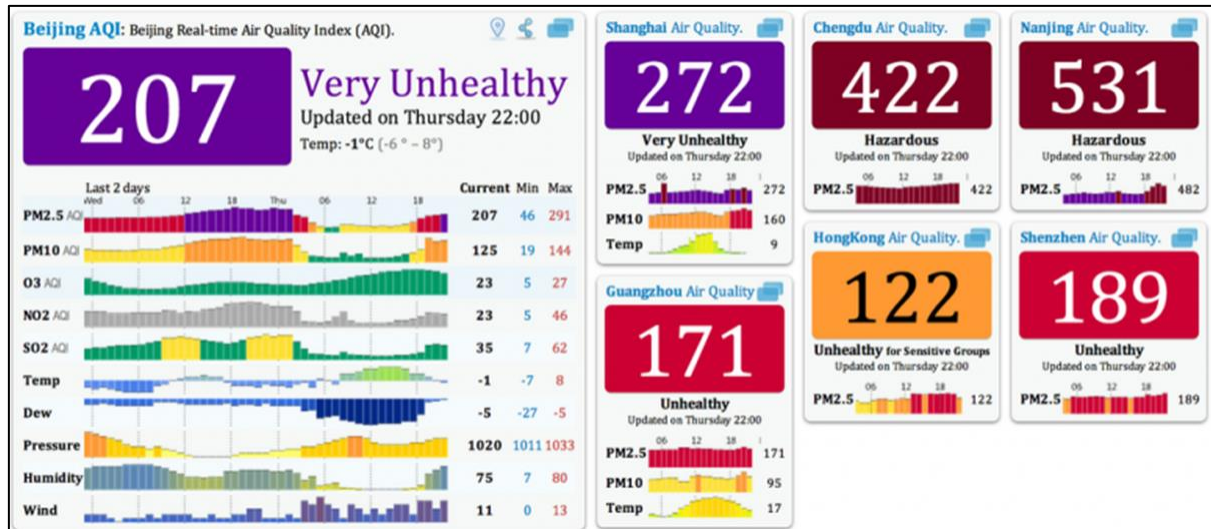


Figure 4: China Air Pollution: Real-Time Air Quality Index (AQI) (Source: International Business Times 2014)

According to Kimble and Wang (2013) the automobile industry is seen to have an adverse effect on public health, through the various forms of pollution it causes, and also contributes to global warming through carbon dioxide emissions from ICEs and is therefore facing a crisis. According to Gan (2002) investigations in how to reduce the environmental influence of the transportation sector are strongly related to energy use, choice of technology, regulatory frameworks, as well as issues of sustainable consumptions and social equity. The greening of the automobile industry has reached media and scientific interest and is a highly debated issue in international energy and environment arenas such as the United Nations Framework Convention on Climate Change. The 1997 launched Kyoto protocol intends to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (UNFCCC 2005: p5).

It has been argued that development and diffusion of sustainable automobile technologies such as E-Cars will have radical impacts on economics, politics, customer demand and market structures in developing countries (IIEC, 1996). Changes in consumption and production patterns of energy, trade relations as well as changes in social behavior and lifestyle will also be addressed to innovative and sustainable automobile technologies (Gan, 2002). According to Gan (2002) the process of greening the roads will influence the way industries respond to market changes. Further, Gan (2002) mentions this is a complex process by which directions and courses of action are shaped by various dynamic factors.

A variety of customer requirements, ongoing development in technology, mobility concepts, service offers, a growing number of new competitors, new legislations, global climate agreements and changes in the consumers’ mindset are only the tip of the iceberg forcing car manufacturers to adapt to these altered circumstances to stay sustainable and competitive (Lippautz and Winterhoff, 2010; Wijnen, 2013). Since developing countries such as China are able to respond to current markets and to not only draw on past experiences of developed countries, but also take advantage from new technological innovations, there is no reason why they should follow the footprints of industrialized countries and repeat their mistakes in developing an own passenger car market (Gan, 2002).

1.1.2 Business Model Perspective

Today's and future players in the automobile industry are confronted by several challenges and they have to recognize, come towards and adapt themselves to emerging trends like greening the industry. To stay sustainably competitive, companies have to identify these emerging opportunities and disruptions before they impact their supply chain (Stokes et al., 2013). The adjustment of the company's business model (BM) is clearly seen as one step of this process. Nielsen and Lund (2013:9) define a BM as a way that organizations can survive, create value and be profitable over a long-term period. Chesbrough and Rosenbloom (2002) go a step further and argue that companies need different BMs to transform the particular characteristics of sustainable technologies into new ways to overcome market barriers, which hinder, according to Johnson and Suskewicz (2009) and Kley et al. (2011) successful market diffusion. Christenses et al. (2012: p.499) state, "It might be that innovative technologies that have the potential to meet key sustainability targets are not easily introduced by existing BMs within a sector, and that only by changes to the BM would such technologies become commercially viable". In the case of vindication of this statement an elementary reconsideration of existing BMs could become effective (Chesbrough and Rosenbloom, 2002). However, we argue that the "vehicle" for innovation is the company's BM. Concerning the automobile industry, there is, according to Nielsen and Lund (2013) an amount of evidence that the nature of business environment is changing. "Globalization of markets, greater mobility of the workforce as well as monetary and physical goods and the application of informing technology and technology in general are just some of these driving factors which are responsible for this development" (Nielsen and Lund, 2013: p.87). This adjustment can already be seen if we have a look at BMW, for example. BMW presented their i3 and i8 model in 2009 and launched them in 2013 and 2014 respectively.

However, BMW separated their 'i series' from its ordinary business and created a new sub-brand called 'BMW i' (Bähnisch, 2011). Due to this innovation of their BM, BMW not only makes the brand financially and organizationally independent but also creates the opportunity to label and market their E-Cars with different strategies to change the consumer's perspectives. The BMW i sub-brand was marketed under the slogan "Born Electric" and BMW denoted the i3 as the "Megacity-Vehicle" with a consequent orientation towards sustainability (Bähnisch, 2011). The innovation of BMWs BM creates the chance for BMW to use existing knowledge from the mother company, but also consider the division as an isolated subsidiary. This step could give BMW a sustainable competitive advantage for the future.

We can therefore argue that a framework that can simplify business model innovation (BMI), what can be seen as the process of developing a new BM, becomes crucial to gain sustainable competitive advantage in a business environment, characterized by the rapid and discontinuous nature of change (Malhotra, 1999). According to Baden-Fuller and Morgan (2010) BMI considers the holistic BM as relevant unit of analysis for innovation. Moreover, BMI is the integration of all components with regard to a mesoscopic approach (Xu, 2009) which are, according to Zott and Amit (2012), adding new activities, linking activities in novel ways or changing which party performs an activity.

BMI for sustainable technologies could therefore not only imply an adaption to changes in the environment and customer behavior, but also create additional customer benefits in addition to their positive impact for the environment (Bohnsack et al., 2014) and strengthen the company's market position to remain sustainably competitive. Christensen (2001) argues "today's competitive advantage becomes tomorrow's albatross".

Sustainable passenger car technologies associate a wider range of goals, including economic, technological, social and environmental considerations (Litman, 2001). Based on the above explained factors, we therefore see a strong potential for E-Cars in China. Further, to successfully introduce them and to exploit the emerging benefits, we see a need for car manufacturers to innovate their BM.

1.2 Research Challenges

According to Chesbrough (2010) and Demil and Lecocq (2010) the need for BMI has received widespread attention. However, there is a necessity for extended managerial approaches for BMI within the field of sustainable technologies, a process which tends to be rather complex (Casadesus-Masanell and Ricart, 2010; Zott and Amit, 2010). Upon reviewing BMI for sustainable technologies it becomes evident, that this is a process which often requires considerable monetary investment in everything from R&D to specialized resources, time, new plants and equipment, and sometimes even entire new business units (Amit and Zott, 2012).

According to Johnson and Suskewicz (2009), the introduction of sustainable technologies, e.g. the E-Car, faces several problems concerning the production methods, managerial competence as well as customer acceptance, what is generally seen as social resistance. Considering BMI for sustainable technologies, it becomes evident that it could create new sources of value for customers and further apply a positive impact on the environment (Bohnsack et al., 2013). We see the BM of a company as the vehicle for innovation and therefore argue that car manufacturers need different or new BMs to adapt to environmental changes, fulfill the customers' needs, and successfully market E-Cars.

Currently, car manufacturers follow different strategies to introduce E-Cars. However, there is no clear strategy for the introduction in the Chinese market evident. China is the biggest car market and one of the biggest and fastest growing markets in the world and therefore of special interest for car manufacturers. However, there are some questions connected to the intention of introducing E-Cars to China. Is China ready for the diffusion of E-Cars? Which external factors influence the introduction of E-Cars to China? Which strategy will be most suitable for the Chinese market?

Considering the external influence factors, this framework could change the perspective in the theoretical field of BMI to introduce and market E-Cars to China and could enable R&D managers from the automobile industry to realize the necessity of BMI in terms of introducing E-Cars and to see greater and better innovation potential and opportunities.

1.3 Purpose of the Study

The purpose of this study is to explore if and how car manufacturers in the automobile industry have to innovate their Business Model to introduce Electric Cars to China. This will be done by exploring two cases among the nine building blocks of the Business Model Canvas with regard to the PESTEL-Analysis of the Chinese market. This goes in line with our research question, which therefore reads as follows:

“How do car manufacturers have to innovate their Business Model to introduce Electric Cars to China?”

2 Framework of Reference

This chapter presents the literature overview of the business model concept and explains the importance of handling sustainable innovations within a business model. Furthermore, it is the baseline for the development of our own business model framework in order to answer our research question.

2.1 Definition of Business Models

“Bill Gates knows that [...] competition today is not between products, it’s between business models. He knows that irrelevance is a bigger risk than inefficiency. And what’s true for Microsoft is true for just about every other company” (Hamel and Sampler, 1998: p.80).

Markets as well as the environment have changed rapidly over the last decades. With the introduction of the e-business in the late 1990, organizations are more than ever forced to observe the macro- and micro-environment to understand how businesses are conducted to stay competitive (Nielsen and Lund, 2013). This new technological development diversified the competitive landscape with the effect that business structures, processes and innovativeness are less understood by organizations (Sawy & Pereira, 2013).

Consequently, new analysis models are needed to classify resources and core processes to create customer value. Therefore, BMs generate an opportunity for organizations to structure and change their current way of doing businesses to a more profitable one (Nielsen and Lund, 2013).

The origin of the world of BMs goes back to Peter Drucker’s writing, that a good BM answers the question “Who is the customer [...] and what does the customer value?” (Magretta, 2002: p. 87). BMs have been part of the economics over a long time, but it was initially used to scan and analyze organizations and the corresponding industry in which they are competing. This can be seen by the works of Porter (1980) and Wernerfeld (Hoyer et al. 2009). However, there is a confusion of the definition of the words Business Model. Chesbrough and Rosenbloom (2002) argue that the word “Business model” is often used in today’s business world, but is not exactly defined. This goes in line with the search result in google, highlighting 1.17 billion references concerning BMs. Moreover, Casadesus-Masanell and Ricart (2010) as well as Zott and Amit (2010) state that BMs are intricate and not commonly characterized.

Some definition of business models are listed in Table 2.

Author(s)	Business Model Definition
Slywotsky (1996)	“The totality of how a company selects its customers, defines and differentiates its offerings, defines the task it will perform itself and those it will outsource, configures its resources, goes to market, creates utility for customers and captures profits” (p. 4).

Timmers (1998)	“An architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues” (p.2).
Stewart & Zhao (2000)	“A statement of how a firm will make money and sustain its profit stream over time” (p. 290).
Amit & Zott (2001)	“The content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities” (p. 511).
Chesbrough & Rosenbloom (2002)	“The functions are to articulate the value proposition [...] to identify a market segment [...] to define the structure of the value chain [...] to estimate the cost structure and profit potential [...] to describe the position of the value network [...] and to formulate the competitive strategy” (p.533).
Magretta (2002)	“Are stories that explain how enterprises work. A good business model answers Peter Drucker’s age-old questions: Who is the customer? [...] what does the customer value? [...] How do we make money in this business? [...] and how can we deliver value to customers at an appropriate cost?” (p. 87).
Osterwalder et al. (2005)	“A conceptual tool that contains a set of elements and their relationship and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating” (p.17).
Morris et al. (2005)	“A business model is a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets” (p. 727).
Johnson et al. (2008)	“Consists of four interlocking elements: [...] customer value proposition, profit formula, key resources and key processes” (p. 60).
Demil and Lecocq (2010)	“The description of the articulation between different

	business model components or building blocks to produce a proposition that can generate value for consumers and thus for the organization” (p.227).
Teece (2010)	“A business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering value” (p.173).

Table 2: Definition of Business Models

Under all definitions, BMs differ in their focus and are related to a “statement” (Stewart & Zhao, 2000), an “architecture” (Trimmers, 1998), a “conceptual tool or model” (Osterwalder, 2005) and a “framework” (Morris et al., 2005).

However, most definitions about BMs focus on the ability “how a firm will make money” (Stewart and Zhao, 2002; Slywotsky, 1996) and “how enterprises work” (Margretta, 2002; Osterwalder et al., 2005). After analyzing the different definitions of BMs, it can be assumed that the majorities of the authors define BMs by describing the terms of business and model separately and then combine them to the definition of BM. Although the explanation differs from researcher to researcher, they are complementary instead of contradictory. Figure 6 further outlines this correlation.

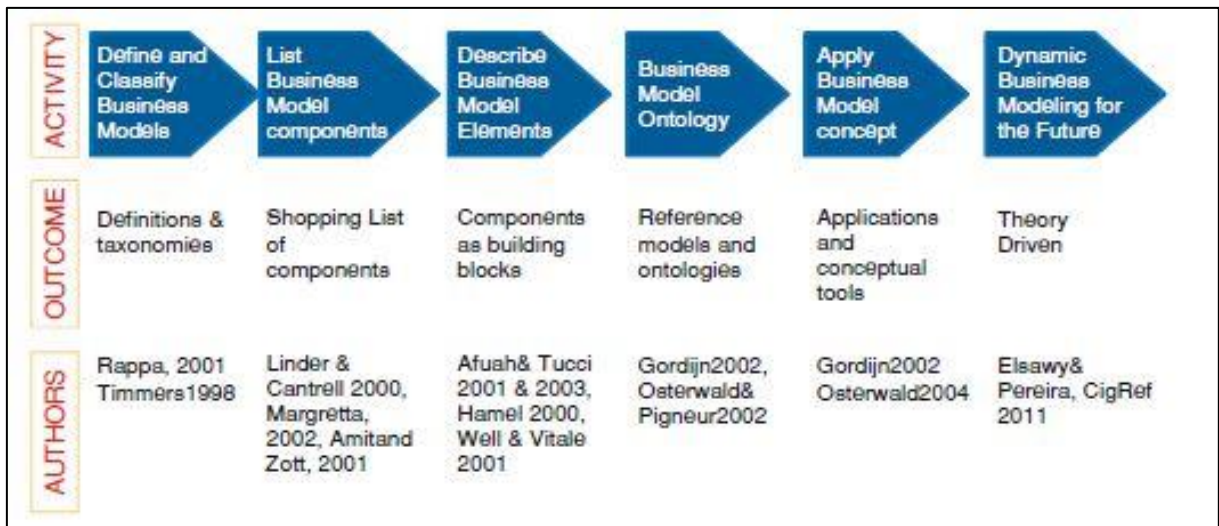


Figure 5: Stages of the Business Model Concept (Source: Sawy and Pereira, 2013)

The progresses in the concept of BMs can be described in six stages. The first stage, where BMs became more known due to the introduction of the e-business, was shaped by several authors by defining and clarifying BM. The researchers in the second phase started to list components that belong in a BM, whereas authors in the third phase described these components in a more detailed way. Researchers in the fourth phase modeled these components into conceptual BM ontologies and also started evaluating and testing them. In the fifth phase, the reference models were applied in management applications and right now, the sixth phase, focusing on theory building and dynamic modeling (Sawy & Pereira, 2013).

Another point that can be analyzed through all the definitions is that the focus is only set on internal processes and the architecture that empowers companies to create values. None of the above listed explanations consider the influence of the external environment that could have an impact on BMs. Nielsen and Lund (2013: p.9) outline that a BM is a way an organization can survive, create value and be profitable over a long-term period. Therefore, external drivers have to be included in order to obtain competitive advantages.

All the definitions about BMs outline the uncertainty. Zott et al. (2011: p.1022) assert that “of the 103 business model publications reviewed, more than one third do not define the concept at all [...] and fewer than half explicitly define or conceptualize the business model, for example, by enumerating its main components [...] and the remaining publications refer to the work of other scholars in defining the concept”. The reason for this uncertainty happens due to the fact that BMs can be analyzed from different viewpoints like technology, e-business, strategy and information systems (Shafer et al., 2005).

According to this uncertainty and lack of clarification of the definition of the term BMs, we define a BM in correlation to Osterwalder et al. (2005: p.17) definition: “A business model is a conceptual tool that contains a set of elements and their relationship and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and of the architecture of the firm and its network of partners for creating.” Due to this definition, a BM of an organization is a platform which consists of different building blocks that represents the operational and physical level to compete in a rapid changing environment. The question that can be asked in this section is how a BM is differentiated from a business strategy. The discussion can be found in the following section.

2.2 Strategy and Business Model

The debate between BMs and strategy is widespread under the researchers, due to the unclear definitions about BMs. Magretta (2002) uses both terms strategy as well as BM conversely. A review of the literature highlights that the terms BM and strategy are connected, but also diverse (Magretta, 2002; Mansfield and Fourie, 2004). On the one hand, the distinction of BMs and strategy can be seen that BMs are more characterized as “[...] how the pieces of a business fit together, while strategy also includes competition” (Osterwalder et al. 2005: p.13). On the other hand, BM can be seen a “[...] abstraction of a firm’s strategy that may potentially apply to many firms” (Seddon et al., 2004: p.440). According to Seddon et al. (2004), Magretta (2002) and Chesbrough and Rosenbloom (2002) the majority of BMs are concentrated on creating business value while strategy emphasizes competitive positioning as well as value capturing. Furthermore, Zott et al. (2011) highlight two factors to differentiate BM from strategy. First, the focus on strategy is set on competition, value capture and competitive advantage while a BM is concentrated on cooperation, partnership and joint value creation and therefore is inward oriented. Secondly, BMs emphasize the concept of value proposition as well as customers, which is less indicated in the strategy literature. To outline the shifting focus and purposes of BM that evolved over time, the following section will give insights to that.

2.3 Evolution of Business Models

Nielsen and Roslender (2013) outline six different frameworks which can be used to describe, understand and also contingently innovate BMs. Each BM framework which was developed over time has different pros and cons and focuses on contrasting purposes. Apart from the typical value chain, there are numerous other alternatives to understand a company's business and value creation process. Nielsen and Lund (2013: p.24) further outline that "[...] competition now increasingly stands between competing business concepts [...] and not only between constellations of firms linked together in linear value chains, as was the underlying notion in the original strategy framework by Porter (1985)". Therefore, this section will help us to analyze different frameworks of BMs in order to answer our research question and if necessary developing our own model.

The following frameworks were matured over time and therefore emphasizing different perspectives on BMs. Due to this fact, the undermentioned six frameworks are complementary:

- Service-Profit Chain (1994)
- Strategic System Auditing (1997)
- Strategy Maps (2001)
- Intellectual Capital Statements (2003)
- Open Business Model Framework (2006)
- Business Model Canvas (2008)

2.3.1 Service-Profit Chain

Heskett et al. (1994) developed the Service-Profit Chain as a marketing management tool and monitored that senior managers have to change their way of doing business. Instead of centralizing the profit goals and market shares, they have to concentrate more on the needs of employees as well as customers. This philosophy, having a satisfied and loyal labor pool goes in line with the strategy maps of Kaplan and Norton which will be explained in the following sections. Employees are ambassadors representing the organization to the customer and therefore a positive attitude of workers is essential (Nielsen & Roslender, 2013: p.56).

The Service-Profit Chain consists of three attributes: engaged employees, engaged customers and creating sustainable profit and growth. They are interlinked as follows. To create sustainable profit and growth which is the aim of each organization, customer loyalty is crucial. This customer loyalty is a conclusion of customer satisfaction which depends on satisfied employees creating value to the product and service (Nielsen & Roslender, 2013: p. 57). To measure the increased performance, Heskett et al. (1994) used a scoreboard with the focus on employee and customer metrics as well as actual business processes. However he found out that the financial performance indicators are not that crucial. All in all, Heskett et al. (1994) expect that organizations will gain long-term benefits if the relationship between the employees, customers and the firm is valuable and sustainable. Nielsen and Roslender (2013) argue that the Service-Profit Chain has a negative impact on the long-term evolution of

a company due to the fact that only an increase on the shareholder value is not enough to make profit.

2.3.2 Strategic System Auditing

According to Nielsen and Roslender (2013) a BM is not a pricing strategy, a new delivery network, an information technology or a quality observation on the production line, instead it is a stage or platform where strategic decisions were translated into profits. A BM is connected with the value proposition of the organization, but this value proposition is also interlinked with different specifications and characteristics. Therefore the question in the strategic systems auditing framework is “how is the strategy and value proposition of the company leveraged?” (Nielsen & Roslender, 2013: p.58).

After the Service-Profit Chain was established, KMPG, a well-known international consultancy agency and a team of financiers as well as auditing researchers from the University of Illinois, further developed the original framework by focusing not only on the attributes themselves like organizational structure, alliances, management processes, customer types, but rather how they are interlinked to each other (Nielsen & Roslender, 2013: p.58). This goes in line with the definition of Bell et al. (1997: p.37-39) describing the strategic system auditing model as a “[...] strategic system decision frame that describes the interlinking activities carried out with a business entity, the external forces that bear upon the entity, and the business relationships with persons and other organizations outside of the entity”.

The following six building blocks describe the attributes of this BM: 1. External forces, 2. Markets, 3. Business processes consisting of Strategic management processes, Core business processes as well as Resource management processes, 4. Alliances, 5. Core products and services and finally customers as the sixth building block (Nielsen & Roslender, 2013). The Strategic System Auditing Model is an analysis approach that starts with the strategic analysis of the external factors influencing the markets, alliances, products and customers of the organization, followed by an analysis of the business processes concerning strategic management processes, core business processes and resource management processes. This analysis is conducted through a risk based perspective to allocate the most relevant Key Performance Indicators that control the key risks of a corporation. Consequently, a company is capable to deliver the value proposition and classify the characteristics of the interlinked organizational elements (Nielsen & Roslender, 2013).

2.3.3 Strategy Map

The Strategy map can be seen as an advancement of the Balanced Scorecard, established in the 80s by Kaplan and Norton also using a scoreboard to measure the performance of the company as the Service-Profit Chain (Kaplan & Norton, 1992). The Balanced Scorecard is a strategic measurement tool to implement the strategy of an organization by looking at four different perspectives: learning and growth, internal business processes, the customer and financial perspectives (Kaplan & Norton, 1992). Furthermore, the Balanced Scorecard combines non-financial performance goals and financial performance goals. Kaplan and Norton (1996: p.31) outline that “as learning and growth is developed within a company,

upward links are made to the internal (business process) perspective. Business processes are in turn linked to customers who, ultimately, influence the financial perspective of the company”.

The strategy map which is based on the Balanced Scorecard is a scheme as well as a tool for the management team of an organization to achieve long term goals. Kaplan and Norton (1996) assert that customer loyalty is the secret of success for a company which is obtained by market offerings or so called value propositions. To achieve this success, internal business processes have to be managed effectively. Consequently, the objective of the Strategy Map is to operationalize the ideas of the Balanced Scorecard and make them tangible and therefore manageable. Designing the Strategy Map starts by examining the vision and mission of the organization and structure the base of the Strategy Map (Nielsen & Roslender, 2013). According to Nielsen and Roslender (2013: p.68) the following steps have to be done in order to structure the Strategy Map: “1. Define the vision of the company (what will we achieve?) [...] 2. Evaluate the mission of the company (why are we here?) and account for the core values (what do we believe in?) [...] 3. Work out the strategy of the company (how can we fulfill the vision?)”.

According to this scheme, organizations are able to characterize, convert and implement their strategy to identify the measurements of value creation, financial result and management of the organization on the basis of the Balanced Scorecard. Therefore, the Strategy Map can supply a variety of information helping to implement the selected BM of a firm (Nielsen & Roslender, 2013).

2.3.4 Intellectual Capital Statements

Due to the critical review of the discrepancy between the market value of organizations and their financial statements, intellectual capital reporting was evolved. On the one hand, it was sought to put financial values on intangible assets and on the other hand, a scorecard approach to go after intellectual capital values (Nielsen & Roslender, 2013).

The difference between the two approaches (Intellectual Capital Statements and Scorecards) for capital reporting is that the Intellectual Capital Statements is based on narrative indicators compared to numerical ones. Supporters of this approach emphasize the embodiment of a variety of qualitative reporting and moreover state that this approach visualizes intellectual capital, rather than reporting it (Fincham & Roslender, 2003).

Nielsen and Roslender (2013: p.70) outline that “[...] its supporters argue that an Intellectual Capital Statement should communicate a narrative of knowledge resources in a company, the challenges that a management faces in the process of value creation, the initiatives identified by the company to do so and the resulting performance indicators”.

Therefore the Intellectual Capital Statements consist of the following four elements: Knowledge narrative; Management challenges; Initiatives and Indicators (Nielsen and Roslender, 2013). The knowledge narrative building block focuses on the customers and looks for opportunities how the organization can create value for them with the usage of its knowledge resources. Furthermore, to derive and formulate a strategy for the firms’ know-

how on the long-term run, it identifies the goal setting of the companies' knowledge management. Three elements are part of the knowledge narrative block: "[...] 1. How the customer is taken into account by the products or services of the company (the use value)? [...] 2. Which knowledge resources (for example employees, customers, processes and technologies) it must possess to deliver the described use value? [...] 3. The particular nature of the product or service in question" (Nielsen and Roslender, 2013: p.70).

Formulating the knowledge narrative block, organizations have to provide answers for questions about their competitive advantage, like how can we be different compared to the others, what product or service do we provide and do we have enough knowledge to produce it. The second block, the management challenges has to realize the attributes of the knowledge narrative block and translate them into actions. Together with the knowledge narrative and the management challenges, a strategy of knowledge management is created and a range of initiatives e.g. knowledge containers (employees), customers or processes are identified. The final element, quantitative indicators, are used to control the findings of the initiatives like in the scorecard approach (Nielsen and Roslender, 2013).

Nielsen and Roslender (2013) assert that Intellectual Capital not only emphasizes knowledge resources in terms of human capital, but also has an influencing complementary attribute. This means that the improvement of one resource could have a positive impact on another one. However, Intellectual Capital Statements are not easy to identify and to understand.

2.3.5 Open Business Model Framework

As already discussed, all the above mentioned frameworks are complementary. Therefore, Chesbrough and Rosenbloom (2002) assimilated the previous view points on business designs and transferred them into an interrelated framework "[...] that takes technological characteristics and potentials as inputs, and converts them through customers and markets into economic outputs (Chesbrough and Rosenbloom, 2002: p.532).

Chesbrough and Rosenbloom (2002) assert that organizations have to understand BMs to generate profit with their technological developments and also create economic value. Consequently, six elements were developed describing the function of the BM of Chesbrough and Rosenbloom (2002: p.533-534): "articulate the *value proposition*, [...] identify a *market segment*, [...] define the structure of the *value chain*, [...] estimate the *cost structure* and *profit potential*, [...] describe the position of the firm within the *value network*, [...] and formulate the *competitive strategy*".

Chesbrough and Rosenbloom (2002) claim that open BMs utilize internal as well as external sources for creating value. They further outline the importance of a BM by stating that a well-established BM delivers more profit than a well-established technology. Chesbrough and Rosenbloom (2002) were the first to propose value creation as the center in order to understand and describe a BM (Nielsen and Lund, 2013). Moreover, what can be seen in this model is that Chesbrough and Rosenbloom integrated the strategy aspect in their BM framework.

2.3.6 Business Model Canvas

The Business Model Canvas of Osterwalder and Pigneur (2010) is the most recent one in the study of BMs. The value proposition is centered in the middle of the model and interlinked with the infrastructure of the organization and the customers (Nielsen & Roslender, 2013). Nielsen and Roslender (2013) argue that compared to the BM of Bell et al. (1997) the Business Model Canvas is more focused on how to generate value proposition and why it should be done. Moreover, the Business Model Canvas is a “[...] process of applying the canvas to describe the as-is model of the organization, and thereafter to focus on strengths and weaknesses and finally try to narrow down potential could be’s and evaluating this business model innovation in a SWOT-like manner” (Nielsen and Roslender, 2013: p.75). The Business Model Canvas consists of nine building blocks: 1. Customer Segments, 2. Value Proposition, 3. Channels, 4. Customer Relationships, 5. Revenue Streams, 6. Key Resources, 7. Key Activities, 8. Key Partners and finally Cost structure.

The *customer segments* consist of all the people or organization to which value is generated like simple users or paying customers. For each segment, a specific value proposition is generated to fulfill customer needs. The *value proposition* consists of several products or service to reach each customer. Due to the fact that BMs mainly focus on generating *value propositions* for the customer, this category can be found in the heart of the BM. For doing that, special *distribution channels* are required. The *distribution channels* describe through which touch-points each value proposition is delivered to the customer segment. The *customer relationship* outlines the different types of relationships which a company can establish under particular customer segments. To make it clear how and through which pricing mechanisms the BM is capturing value, is represented by the *revenue stream* category. To create, deliver and capture value, the infrastructure has to be considered. To keep the BM running, *key resources* are the most crucial assets. The *key activities* outline an organization the activities of which are necessary for a good performance. *Key partners* have the ability to help the company to leverage their BM due to the fact that the organization does not possess all the key resources or key activities by themselves. As soon as the infrastructure of the BM is understood, the *cost structure* with the aim to reduce costs is then also obvious (Osterwalder & Pigneur, 2010).

2.3.7 Review

To sum up, all the above mentioned BMs that evolved over a period of time have different advantages and disadvantages with a distinctive set of focus. The earlier BMs more or less described only one aspect of the business, the revenue model. The Service-Profit Chain helps an organization to increase their long-term relationship between the employees, customers and the firm, to gain a valuable and sustainable benefit. However, this long-term evolution of an organization has a negative impact due to the fact that only an increase of the shareholder value is not sufficient enough to make profit. The Strategic System Auditing Model is a tool that starts with scanning the external factors that could influence the market as well as the industry. This first step is very helpful in a competing environment with dynamic market changes. Moreover, the Strategic System Auditing helps to analyze how the structure of a company is interlinked. Another model that was described is the Strategy Maps. This tool can

be seen as a communication model, with the focus of how to deliver the strategy instead of how to formulate a strategy and is mainly focused on the macro environment level. Consequently, the Strategy Map is not useful to change a firm's BM, which goes in line with the Intellectual Capital Statements that is complex to understand. The Open Business Model framework of Chesbrough was the first one that positioned the value proposition in the center of the model and therefore highlighted the importance of it. Moreover, Chesbrough and Rosenbloom (2002) take technological characteristics as inputs as well as integrated the strategy aspects in their model. However, the interaction between each block is hard to understand and there exists a lack of causality. As an offset on this model, Osterwalder and Pigneur (2010) identified nine building blocks in order to analyze the firm's BM. Compared to the six building blocks of Chesbrough and Rosenbloom (2002), the Business Model Canvas is more operational. The advantage lies in its consistency, the discipline approach as well as in the structural way of thinking. It can be concluded that the Business Model Canvas is more oriented on the practical business level whereas other models are more focused on an academic perspective. Compared to the BM of Bell et al. (1997), the Business Model Canvas is more focused on how a value proposition is generated and why it should be so. However, to do that, external factors have to be considered to understand how an organization can create, deliver and capture value, which goes in line with the definition of BMs. It can be seen that the older BMs were more static. This static approach does not suit in today's environment.

As already mentioned, at the beginning, BMs considered the external factors more precisely, than the "newer" BM for example the Business Model Canvas. Therefore, in terms of our research question, we further develop the Business Model Canvas of Osterwalder and Pigneur (2010) and include the missing external factors that are mentioned in the former models, due to the fact that organizations compete in a dynamic and rapidly changing environment, where scanning these factors is crucial to stay competitive and increase profits. The development of our BM is explained in section 2.5.

After analyzing the literature about BM concepts, Lambert and Davidson (2012) classified three themes concerning BMs: 1. the BM as the ground for enterprise classification, 2. the BMs and firm performance and 3. the BMI. Our thesis is focused on the BMI for a sustainable technology which will be explained in the following paragraphs.

2.4 Business Model Innovation

Shaping a suitable BM is one step towards gaining competitive advantage, another more important issue is to innovate it. According to Lindgren et al. (2010) a BM is new as soon as a new product or a new process of making, selling or distributing the product or service exists. Therefore, a BM is considered as new, if one of the building blocks has been changed or innovated. Lindgren et al. (2010) tried to find an answer to the following questions: "When can we call something an innovation? Is it enough that one of the participants in the network thinks it is new or must all the participants agree that it is new before it is? Is it new if it is new to the participants but not within the industry as such?" (Lindgren et al., 2010: p.125). As stated in Skarzynski and Gibson (2008) to understand the innovation of BMs, each segment must be unpacked to see the correlation between each component and how they interact in

between. Moreover, Linder and Cantrell (2000) outlined four models of change to highlight the level of radical innovation of BMs: realization models, renewal models, extension models and journey models.

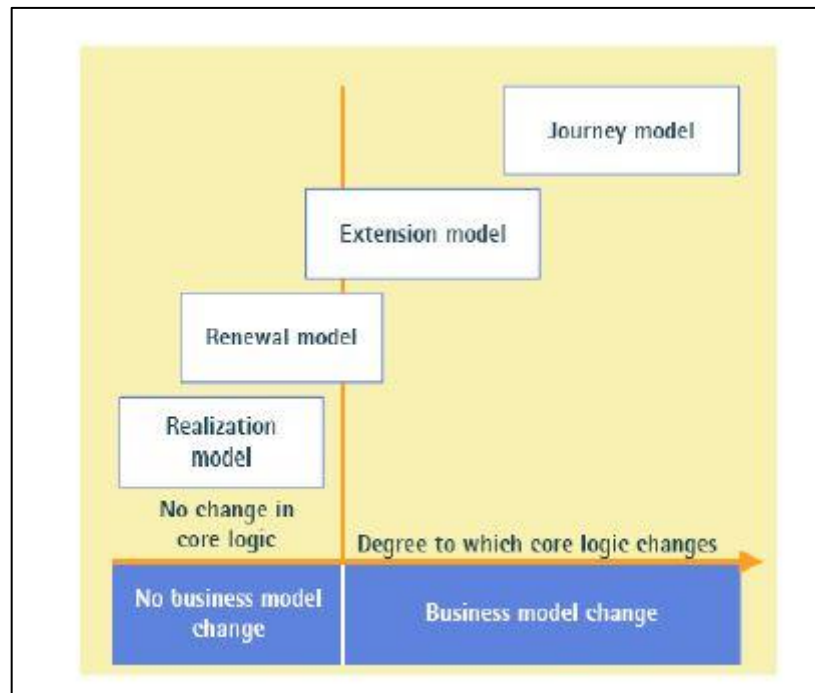


Figure 6: Business Model of Change (Source: Linder and Cantrell, 2000)

This is an elementary step in order to understand BMI. In general, the majority of organizations are located in the realization model, with the aim to maximize the current potential in the existing framework. This model can be seen as the model with the least potential of change due the firms' complexity. Changes can only be found in geographical expansions, small adjustments in the product line and customer service. Renewal models are "[...] firms that leverage their core skills to create a possibly disruptively new position on the price/value curve, e.g. revitalization of product/service platforms, brands, cost structures and technology bases" (Lindgren et al, 2010: p.126). Redesigning the value chain functions, the product/service lines as well as creating new markets is included in the radical changes of the extension models. The last model, the journey models completely changed the whole original BM to movement of a totally new operating BM (Lindgren et al., 2010). All in all, according to Lindgren et al. (2010) the realization model, most renewal models as well as some extension models cannot be seen as BMI due to the fact that no BM change occurred. Consequently, most BMs cannot be stated as BMI.

A survey from the Economist Intelligence Unit from 2005 outline that 50 % of the managers think that BMI will become more crucial than the innovation in products or services (Johnson et al., 2008). In the management literature on BMs, the definition of what BMI characterizes is ambiguous. Modifying the value proposition for the end consumer is often described as BMI. Nevertheless, BMI is not only correlated with the new offer of products and services for the customer. Amit and Zott (2012: p.42) state that BMI "[...] involves changing 'the way you do business', rather than 'what you do' and hence must go beyond process and products". Moreover Johnson and Suskewicz (2009) assert that BMI changes the emphasis from

establishing individual technologies to creating whole new systems. Boons and Lüdeke-Freund (2013: p.14) see BMs as a “mediator between technologies of production and consumption”. Therefore we define BMI as a process of modifying the existing BM to a new one and consequently overcome market barriers and gain competitive advantage.

2.4.1 Business Model Innovation for Sustainability

According to the UK Department of Energy and Climate Change, greenhouse gases, which are an end product of ICEs, have to be reduced by 80 % until 2050 (Bocken et al., 2014). Organizations therefore have to change their way of doing business to deliver long-term benefits, which are known as sustainable value propositions. A vehicle, to handle technological as well as social innovations, can be provided through a new BM (Bocken et al., 2013). In agreement with Lüdeke-Freund (2013) sustainable BMs are models with the aim to gain competitive advantage by remarkable customer value and also serve a sustainable development for society as well as the organization. Schaltegger et al. (2012) outline the challenges for such BMs for sustainability in that way that firms have to create economic value for themselves and also deliver social and environmental benefits, which are not perceived being trivial. Moreover, Bocken et al. (2013: p.3) assert that “[...] firms increasingly seek to identify opportunities to gain competitive advantage in a world characterized by tightening regulation, contracting resource supplies, climate change effects, and shifting social pressures”. Furthermore Bocken et al (2013: p.3) defines BM for sustainability as “[...] innovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organization and its value-network create, deliver value and capture value or change their value proposition”. The main challenges in this field of study arise with the question; if organizations are able to manage their BM to generate profits with their innovations.

2.4.2 Sustainable Innovation Challenges

Organizations are confronted with several challenges concerning the commercialization of innovations, starting with the identification of the customer segment and ending with the capturing of profits (Lüdeke-Freund, 2013). Hansen et al. (2009: p.687) highlight that “aggregating economical, ecological and social effects inevitably leads to trade-offs and is limited due to current methodological constraints [...] and that objective and specific labelling of innovations as being sustainable can only be achieved within a collective and social discourse”. Therefore, an example can be seen that most customers would purchase the most comfortable car instead of the most sustainable one. The achievement of this agreement can be seen as a main challenge with regard to sustainable innovations (Lüdeke-Freund, 2013). Moreover, companies are afraid to commence such innovations, as the risk and uncertainty is higher which can lead to profit losses. Moreover, Lüdeke-Freund (2013) argues that sustainable innovations have to change the current production and consumption patterns, radically, to be successful. Product-service systems approaches like using instead of buying (e.g. car sharing), leasing models or maintaining models, can be a solution.

BMI for sustainability has to overcome these challenges as the introduction of the new technology, economic barriers and also consumer acceptance (Geels, 2005). Boons and Lüdeke-Freund (2013) outline two scenarios showing how these challenges can be solved.

	Business Model	
	Existing	New
New Technology	(1)	(2)

Table 3: Business Model Challenges (Boons and Lüdeke-Freund, 2013)

In case (1), the new technology suits the purpose in the existing BMs of the organization or in case (2) the innovation suits only partly in the current BM and a new BM has to be innovated. In this case, the organization has to hurdle internal and external barriers to successfully introduce the new product or service to the market.

It is clear that BMI for sustainability is not economic from day one but will become so in the future due to changes and restrictions from the external environment (Bocken et al., 2013). Especially in the automobile manufacturing industry, the external business environment faces several obstacles. The market of E-Cars is very dependent on the governmental level, concerning carbon emission or the local level, concerning air quality. Governments can create a whole new market place for E-Cars by changing legal restriction as well as financial incentives (Wells, 2013). “These barriers indicate that introducing a sustainable innovation requires a far-reaching approach to change things at the company level while taking into account external barriers imposed by the wider environment of the respective production and consumption system” (Boons & Lüdeke-Freund, 2013: p.13). Introducing new technologies (sustainable innovations) is connected with the innovation of the BMs. Overcoming the production and consumption systems with only new technologies is not sufficient. Hence, the economic value of an innovation or new technology stays inactive till a BM is trying to commercialize it. Therefore the next section outlines a framework, where the BM works as a mediator between the sustainability innovations and commercial success (Lüdeke-Freund, 2013).

2.4.3 Sustainable Innovation Framework

As already described, a BM for sustainable innovations can be seen as a mediator between the sustainability innovations and the correlating commercial success. Figure 10 outlines this connection.

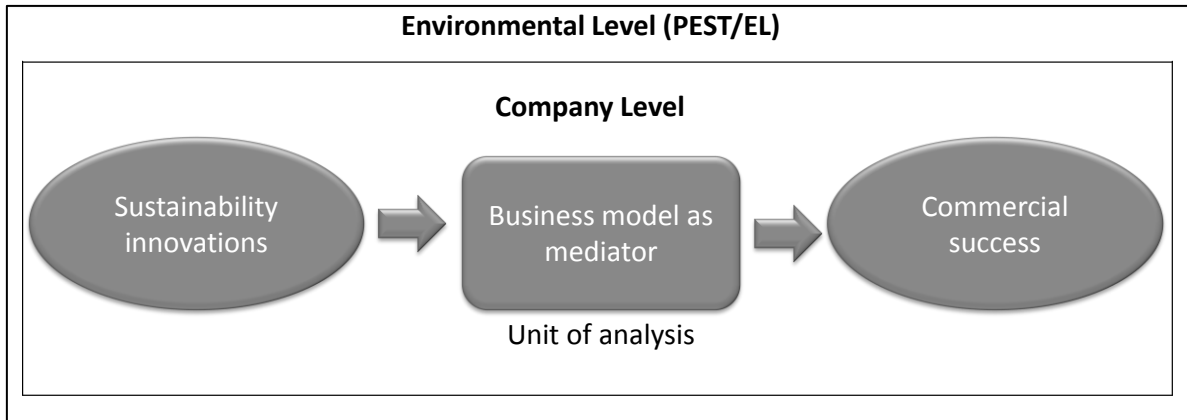


Figure 7: Sustainable Innovation Framework (Source: Lüdeke-Freund, 2013)

This framework is comparable to Lüdeke-Freund's (2013: p.19) "Business models for sustainability innovation framework". Lüdeke-Freund (2013) highlights the different influence factors of the business environment like munificence, dynamism, public policy, industry change, competition, stakeholders and financing that has an impact on the company level and consequently on the BM. As previously discussed, all the definitions regarding BMs focus only on internal processes that empower the value creation process of an organization. Moreover, during the evolution of the business modelling process, a shift from emphasizing external factors to the value proposition was seen. As the Strategic System Auditing Model first analyzed the external factors, "newer" BMs did not. However, due to the fact that organizations compete in a rapidly changing environment, we modified the sustainable innovation framework by considering the environmental level with regard to political, economic, social, technological, environmental and legal factors.

Sustainable innovations are the key driver for creating commercial success. The BM which is centered in the middle is the vehicle to support the commercial success of an organization within the company level. The outer layer, the environmental level, has also to be considered due to the influence of political, economic, social, technological, environmental and legal changes that affect the sustainable innovation framework. Consequently, the company has to manage these external factors. The linkage between the sustainability innovations and the BM as a mediator can be described as follows. The role of the BM is to understand and also limit the barriers to commercialize the sustainable innovation and generate profits out of it (Lüdeke-Freund, 2013). According to Lüdeke-Freund (2013: p.21) "the business model's mediating function is based on the constructability and adaptability of business model elements, which can compensate for innovations' competitive disadvantages (e.g. high costs, marginal market segments)". Moreover, Wells (2008) states that BMs have an influence of the consumers' perspective and therefore influence their mindset in relation to sustainable innovations, which correlates in commercial success and highlights this connection. Organizations which are able to use and manage their BM for innovating activities, will raise their business cases and therefore increase their commercial success (Lüdeke-Freund, 2013). All in all, BMs are the main driver in order to commercialize sustainable technologies. The main focus of this study is how the elements of the BM are assorted to introduce E-Cars to China as a sustainable innovation, while considering the external environment, which will be explained in the following section.

2.5 Business Model Framework

The analysis of the above mentioned literature review allows us to modify the Business Model Canvas of Osterwalder and Pigneur (2010) in order to answer our research question:

“How do car manufacturers have to innovate their Business Model to introduce Electric Cars to China?”

Due to our literature review through all the definitions about BM and also the evolution of the BMs, the focus is only set on internal processes and the architecture that empowers companies to create values. Moreover, Brocken et al (2013: p.3) already mentioned , that “[...] firms increasingly seek to identify opportunities to gain competitive advantage in a world characterized by tightening regulation, contracting resource supplies, climate change effects, and shifting social pressures”.

Consequently, by applying the political, economic, social, technological, environmental and legal categories (PESTEL) have to be included in the Business Model Canvas to scan the macro-environment and see the influence of these forces on the BM. With the help of this, we are able to zoom out of the industry and have a holistic view over the whole environment from different perspectives, which is essential for the BMI process. Furthermore, we get a better understanding of the market, which is seen as a prerequisite when entering a new one. As a result, our BM starts with an external PESTEL-Analysis like in the Strategic System Auditing Model, and then analyzing the different categories, according to Osterwalder and Pigneur’s Business Model Canvas (2010).

To answer our research question, the BM of car manufacturers have to be analyzed to see how or if they have changed their current BM concerning the introduction of E-Cars as a sustainable innovation. Additionally, a detailed analysis of the Chinese external environmental factors that influence the BMI process to introduce E-Cars is part of the BM and helps to answer the research question.

The Business Model Canvas of Osterwalder and Pigneur (2010) contains 9 categories and each of them are characterized by attributes and questions which will be used to gather and analyze our empirical data. The purpose is to see similarities between the different BMs that are used and consequently compare car manufacturers in that industry and see how they apply this sustainable innovation to gain commercial success. These attributes and questions can be found under Appendix C and D.

The Business Model Canvas consists of the following 9 categories as highlighted in figure 8.

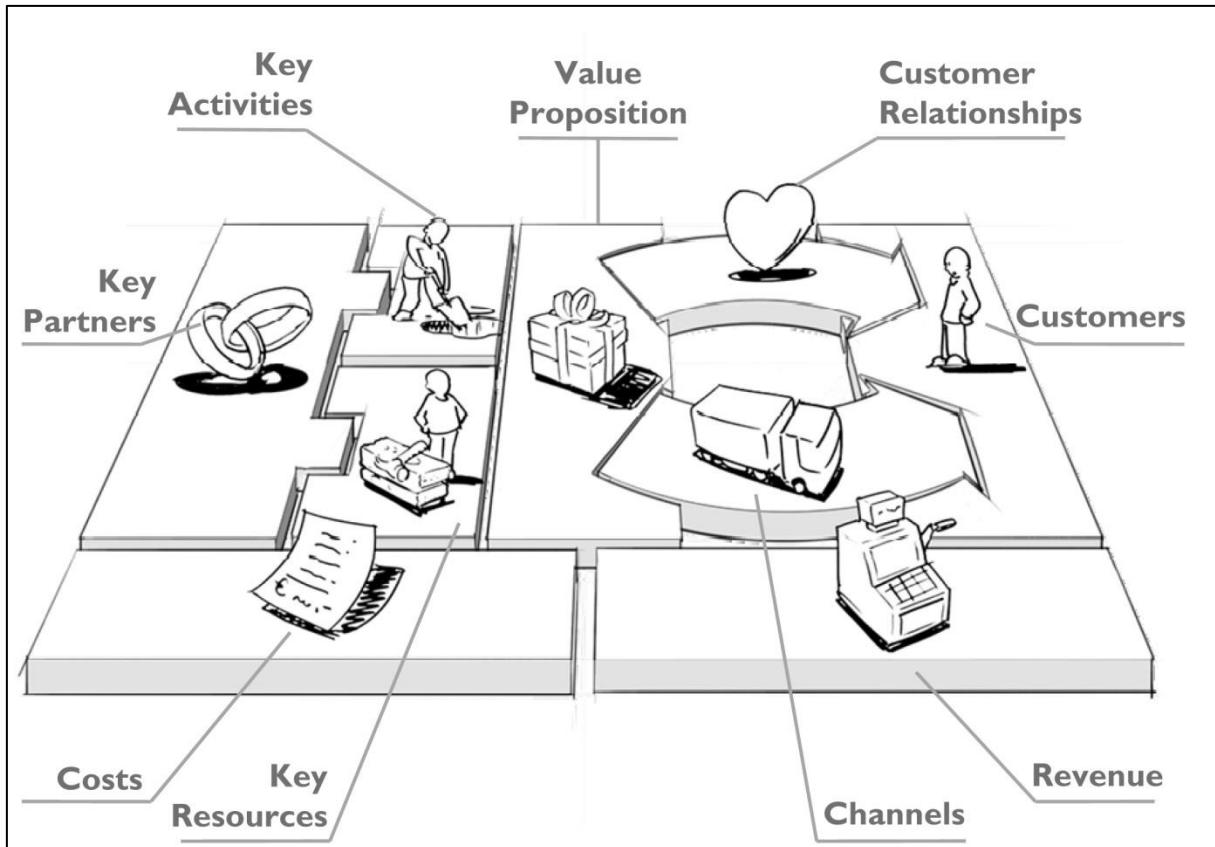


Figure 8: Business Model Canvas (Source: Osterwalder and Pigneur, 2010)

Customer Segments

One aim of an organization is to have satisfied customers who are willing to pay for the product. In order to fulfill this need and reach them, a company groups the customer into different segments with equal needs, equal behaviors or other characteristics. Different types of customer segments are for example mass market, niche market, segmented, diversified or multi-sided platforms (Osterwalder & Pigneur, 2010).

Value Proposition

Osterwalder and Pigneur (2010: p.22) state that the value proposition “[...] describes the bundle of products and services that create value for a specific customer segment”. The value proposition is crucial for customers to choose the offered product. Basically, a value proposition solves a problem for the customer or satisfies a customer need. On the one hand, value propositions can be innovative and represent a new offer, but on the other hand they can also be similar to the existing ones by adding new characteristics. Values are distinguished between quantitative e.g. price and speed of service, or qualitative e.g. design and customer experience. Customer value can be created through newness, performance, customization, design, “getting the job done”, brand/status and price, cost reduction, risk reduction, accessibility and usability of the product (Osterwalder & Pigneur, 2010).

Channels

To deliver the value proposition to the customer segments, channels are needed to communicate in-between. To gain customer experience, channels are interlinked through customer touch points where value can be delivered. Osterwalder and Pigneur (2010: p.26) state that channels have several functions as “[...] Raising awareness among customers about a company’s product and service, helping customers evaluate a company’s value proposition, allowing customers to purchase specific products and services, delivering a value proposition to customers and providing post-purchase customer support”. The organization has the opportunity to reach its customers through their own channel e.g. direct sale through in-house sales force or webpage, to partner channels e.g. indirect sales through wholesalers or through mixed channel (Osterwalder & Pigneur, 2010).

Customer Relationship

The Customer Relationship building block outlines different types of relationships which a company can establish under particular customer segments. An organization has to define the established relationship within the customer segment clearly. Customer Relationships are characterized with the following motivations that range from personal to automated relations: customer acquisition, customer retention and boosting sales. Customer experience is mainly influenced by customer relationships and therefore crucial for being successful. Customer relationships are distinguished as follows: personal assistance, dedicated personal assistance, self-service, automated services, communities and co-creation (Osterwalder & Pigneur, 2010).

Revenue Streams

The profits which can be obtained from each customer segment are represented by the revenue streams building block. According to Osterwalder and Pigneur (2010: p.30) two different types of revenue streams can be involved in a BM: “Transaction revenues resulting from one-time customer payments and recurring revenues resulting from ongoing payments to either deliver a value proposition to customers or provide post-purchase customer support”. Generating these revenue streams can be transacted by various ways: asset sale, usage fee, subscription fees, lending/renting/leasing, licensing, brokerage fees and advertising. For each revenue stream, two different pricing mechanisms occur: fixed pricings where the prices are predefined due to static variables and dynamic pricing where prices change due to market conditions (Osterwalder & Pigneur, 2010).

Key Resources

To keep the BM running, key resources are the most crucial asset. “These resources allow an enterprise to create and offer a value proposition, reach markets, maintain relationships with customer segments and earn revenues” (Osterwalder & Pigneur, 2010: p. 34). Key resources can be distinguished from physical, financial, intellectual or human and can be owned by the company itself or be leased from another organization or key partner (Osterwalder & Pigneur, 2010).

Key Activities

Operating successfully in a competitive environment, key activities are an essential part for a profitable BM. As key resources, key activities are vital to create value proposition, reach markets, maintain customer relationships and finally earn revenues. Depending of the BM type, key activities differ and can be grouped by production, problem solving and platform/network (Osterwalder & Pigneur, 2010).

Key Partners

Organizations build up networks of suppliers and other partners to keep the BM working. Osterwalder and Pigneur (2010: p.38) differentiate between four types of partnerships: “[...] strategic alliances between non-competitors, coopetition: strategic partnerships between competitors, joint ventures to develop new businesses and buyer-supplier relationships to assure reliable supplies”. The main reason for companies to establish partnerships is due to the optimization and economy of scale, minimization of risk and uncertainty and sourcing of specific resources and activities (Osterwalder & Pigneur, 2010).

Cost Structure

The purpose of each BM is to reduce costs. In the cost structure building block, all costs are being described which arise from operating the BM. All the activities, such as creating value proposition, maintenance of customer relationships and generating revenues arouse costs. The cost structure of the BM can be differentiated between two classes: the cost-driven, focusing on reducing costs and the value-driven BM, focusing on value creation instead of low-cost offers. The characteristics of the cost structures are as follows: fixed costs, variable costs, economies of scale and economies of scope (Osterwalder & Pigneur, 2010).

3 Methodology

This chapter presents our research approach as well as the overall study design and strategy of the research. Furthermore, it elucidates the methodological approach of how this thesis is conducted and provides information about the data collection methods and the data analysis.

3.1 Research Approach

According to Bryman and Bell, there are two strategies to use when conducting business research. The deductive and the inductive strategy relate theory to reality (Bryman and Bell, 2007). According to Eisenhardt and Grabener (Eisenhardt and Grabener, 2007) inductive and deductive research logics are mirrors of one another, with inductive theory forming from cases develop new theory from data and deductive theory testing completing the cycle by using data to test theory. However, in general it can be stated that inductive research facilitates combining emergent theory with social reality of research subjects (Saunders, Lewis and Thornhill, 2003). The deductive approach represents the coherence between theory and research. According to Bryman and Bell (2007) the researcher using a deductive approach deduces a hypothesis from a known set of theories which will then be tested with the empirical findings. We can see the deductive approach as a top down approach to step by step isolate data from a data surplus and to finally localize the necessary core data, which represents the relationship between theory and research. Furthermore, the deductive approach implies testing a known theory on a case that allows developing a new knowledge in the investigating area (Saunders et al. 2009).

Inductive research by contrast implies the researcher developing a new theory based on gathered data (Saunders et al. 2009) and then going back and testing it against apparent theory (Bryman and Bell, 2007). Opposed to the deductive approach, an inductive approach goes from a specific point of view to a more general one and can be viewed as a bottom up approach.

By mean to a deductive approach the in this study used theoretical framework as well as the research question were developed on the basis of already existing theory and tested against our empirical findings. The inducement of this approach is that it was predetermined what will be studied, based on our background and affinity to the automobile industry. This underlies the reason to have a focus area and therefore deduction offers a structured way of investigation. According to Cua and Theivananthampillai (2009) the main weakness when following a deductive approach is the limited amount of organizations that can be analyzed adequately. As this study is focused on a specific industry in a region where the number of competing companies is not too high yet, the organizations selected will provide the best insights to get a result of high quality and credibility in this study.

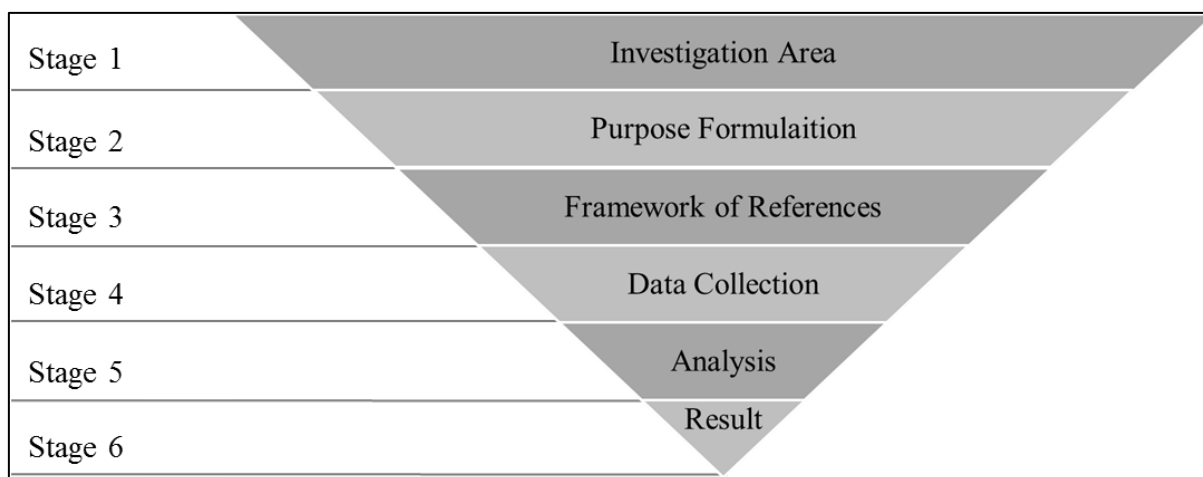


Figure 9: Pedagogical Research Approach (Source: Own Illustration)

Figure 10 shows the deductive approach according to how the theory proposes it. This approach however, characterizes the pedagogical book model which is too static and cannot be followed because it proved to be rather iterative in reality. Although we are well aware about the reputation and the widespread application of this approach, we have to argue that this approach could not be followed during our research and that we are well aware about its inflexibility and inelasticity. Since our research process was a flexible going back and forth between the different stages, we only treated the figure as an overall guideline. In contrast to the static model, our research approach can be seen as a flexible system of the individual factors and a dynamic interaction of the different stages.

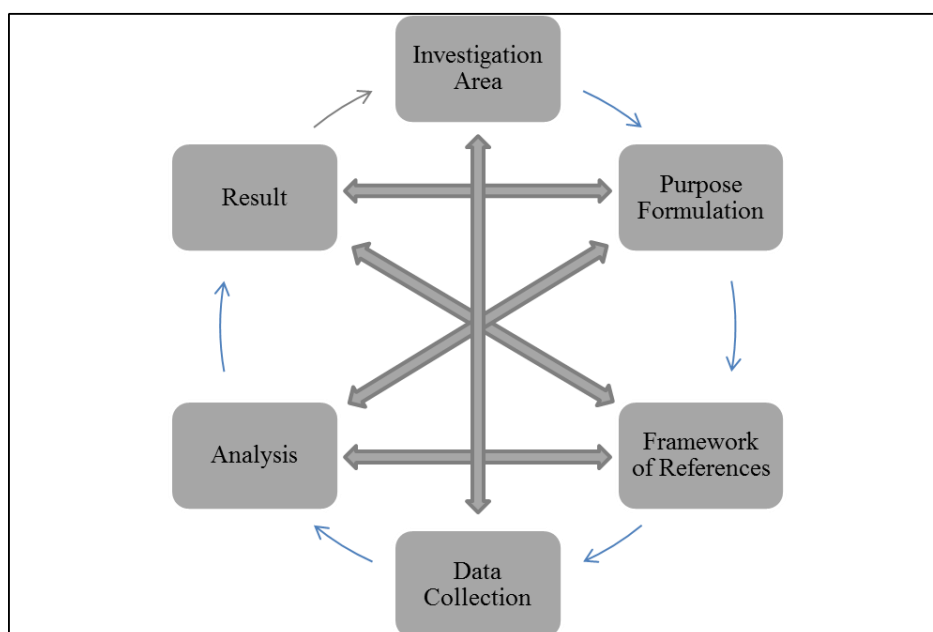


Figure 10: Actual Research Approach (Source: Own Illustration)

Our research approach can be seen as a top down strategy, which is implemented in a deductive way. Due to our personal relations with the automobile industry, we were interested in current topics related to the use of sustainable technologies by car manufacturers. Since China is the biggest market for car manufacturers, we see a great potential for new technologies within the automobile industry. Based on current news and a personal stay in

China for one month, we further see a strong demand for the use of environmentally friendly technologies in China, which led us to investigate the Chinese market. Together with our supervisor and some members from the Centre for Technology Innovation and Marketing Management from the School of Business and Economics at Halmstad University, we elaborated a rough draft of the topic in a meeting and localized a broad scientific field. In the further process, we aligned our interest related to current issues of the department which go along with current interests from the industry. After this step we narrowed the alignments down to our investigation area. From this investigation area we derived our purpose and formulated a corresponding research question. In stage three of our research we started to review literature and developed a frame of references derived from existing theories which led our approach to a deductive one. In order to make our data more robust, we applied this framework to multiple cases by using a qualitative method. Our research therefore leans towards Yin's recommendation of combining a deductive approach with a qualitative method in the form of case studies (Yin, 1994). The frame of references can be seen as the basis for our analysis. Based on the data available, we conducted an exploratory research. We collected the data in a versatile way by reviewing literature as well as conducting an interview. In regard to our frame, the analysis of our empirical data led us to the formulation of our conclusions and results in stage six.

3.2 Research Strategy

Since the research strategy and the design are directly influenced by the research question, researchers have to carefully consider their choice (Saunders et al. 2009). The aim of the strategy is to provide a scheme for the researcher to find an answer on the research question. Due to the interdependency of the research strategy and the stated research question, as well as the researcher's knowledge, the strategy is very important for the research process (Saunders et al. 2009). According to Yin (2003) there are five different strategies available to use: experiments, archival analysis, survey, history and case study. Since our research question reads as a "how" question, we can, according to Yin (2003), immediately exclude a survey and an archival analysis strategy. Further, as we have no control of the events we observe, an experimentation method can also be excluded. Yin (2003) suggests a history strategy when dealing with the past. However, since our study will focus on BMI in the automobile industry and among sustainable technologies in form of E-Cars in China there is, to our knowledge, no past data available. To find an answer to our research question, we need deep insights in internal as well as external factors of influence and therefore applied the case study approach. According to Saunders et al. (2009) the case study is the right strategy for the researcher to understand how decisions were made by a company and to analyze the incentives behind the corresponding choices. Yin (2003: p.13) defines the case study strategy as an empirical enquiry that "investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". According to Eisenhardt (1989) building theory from case studies is a strategy which involves using one or more cases to create theories and propositions. Eisenhardt (1989) defined the case study approach as a research strategy which focuses on understanding the dynamics present within single settings. There are three categories of case studies (Yin,

1984): exploratory, explanatory and descriptive case studies. The exploratory case study investigates the researcher's field of interest. An explorative case study is denoted by questions which rather tend to be general and the intention of leaving a leeway for further research. Shields and Rangarjan (2013) argue that exploratory research is research conducted for problems that have not been clearly defined. According to Saunders et al. (2009) the purpose of an exploratory study is to obtain a deep understanding of the actual problem, the current situation and to gain useful insights. Furthermore, secondary research, such as reviewing available data and/or literature as well as informal qualitative approaches like discussions or more formal qualitative approaches like focus groups or in-depth interviews are the base of exploratory research. The question of how car manufacturers have to innovate their BM to introduce E-Cars to China is in the main focus of the exploratory research in this study. The exploratory study allows us to change the direction and gives us a certain degree of leeway and flexibility (Saunders et al., 2009). Zainal (Zainal, 2007) states an explanatory study examines the data at the surface as well as a deeper level, in order to explain the coherences and appearances in the data. Therefore the study by hand is conducted as an exploratory research.

A further reason why we chose the case study strategy is because it gives a certain extent of flexibility as it starts with a question which then gets narrowed down gradually. In our research we see it as a prerequisite to begin with a broad question, by introducing the industry and the corresponding factors of influence and gradually narrow it down. Yin (2003) emphasizes that case studies should be conducted when it is hard to differentiate the phenomenon and the environment. Yin (2003) also mentioned the single case strategy and the multiple case strategy. By using a single case strategy the disadvantage appears to be dependent on one single source. The multiple case study, by contrast, enables the researchers to gather additional data to explore differences between cases (Bryman and Bell, 2011). To get a broader set of information we applied a multiple-case design in this study which has the advantage that the results collected are more robust and more descriptive (Yin, 2003). Further, this approach was chosen to see whether contrasting or similar results within the industry will occur. In regard to Eisenhardt (1989) we first conducted a within-case analysis to become acquainted with the data which has been collected. This accomplished, we compared the collected data to find similarities, nexuses and differences among the different cases, as Eisenhardt (1989) suggests.

Quoting Yin (2003: p.27) there are five components of research design which are of particular importance:

- “1. a study's question;
2. its propositions, if any;
3. its unit(s) of analysis;
4. the logic linking the data to the propositions; and
5. the criteria for interpreting the findings.”

This framework outlined by Yin provides a good structure and gives a picture of how our strategy looks. In our case however, there are no propositions. Instead, we are focusing on a research question to be answered which will be in the center of our analysis. We can therefore say, if we apply Yin's components to our study, we come to the following statements. Yin (2013: p.27) describes the studies question as in terms of: ““who”, “what”, “where”, “how”, and “why” which provides an important clue of the most relevant method to be used”. He further outlines that the case study approach is likely to be most suitable for “how” and “why” questions which is the case here. In our analysis the studies question has already been described in the first chapter which is “*How do car manufacturers have to innovate their Business Model to introduce Electric Cars to China?*”

In point two Yin (2003) outlines to name the proposition if there are any used. In our study we rather focus on our research question. Since we were conducting an exploratory research, we had a legitimate reason for not having any propositions and could therefore neglect this point. The unit of analysis which is related to the fundamental problem of defining what the case is going to be, are the car manufacturers, since the paper is investigating into BMs of organizations. Components four and five are interlinked and foreshadow the data analysis steps in case study research (Yin, 2003). Although these components can be done in a number of ways and no precise method has been developed (Yin, 2003), Eisenhardt (1989) outlines them as the most difficult part.

3.2.1 Case Selection

In accordance with our area of investigation, we chose car manufacturers which already produce E-Cars and are also present in the Chinese market. For our study, we focused on the German car manufacturers BMW and Daimler. Both companies are well accepted and strongly represented in China. In 2013 BMW sold 390,000 cars, Daimler 218,000 at the same time respectively (RP online, 2014). The reason for choosing these cases was that both manufacturers are in the car business and have been so for many decades and used to rely on ICEs in the past. However, both of them started to adjust their BMs by moving into the E-Car business a few years ago. Both cases are therefore working with BMI in terms of electro mobility and E-Cars in accordance with the presented definition and therefore serve well as a basis of our analysis and help to answer our research question. We also argue that we chose these two cases because both car manufacturers have been in business for a long time and therefore provide the required financial stability. Due to rising sales figures they seem to remain key players, in the automobile industry and especially in China, at least within an intermediate-term, in case they do not make any strategic mistakes or other unforeseeable events occur which will stop them doing business. Both companies are seen as working with high standards, delivering top-notch quality and are known as two of the most innovative car manufacturers in the world. During the research gap identification phase, we considered other cases like Audi, Fisker Karma, Nissan or Ford. However, because of a mismatch of some crucial factors such as E-Car activity in China, for example, we decided to not use them. Furthermore, we also considered starters from the scratch such as Tesla, who show strong movement by penetrating China with E-Cars. However, these manufacturers are still in the minority. With our study we wanted to reach a broader audience and wanted to provide results

which give information on a wider basis of comparison. Since BMW and Daimler have been in business for many years, they also provide the needed level of experience to take this step and to expand the product range by E-Cars as well as to innovate their BMs to successfully introduce them.

BMW

The German car manufacturer BMW started business with cars in 1916. The company introduced a sub-brand called “BMW i” in 2011 which has supplied the market with E-Cars since 2013. In 2013 BMW was the biggest car manufacturer within the premium segment and sold 1.963.798 cars. In the same year the company created an EBIT of 8.3 billion Euros. Together with Daimler, BMW is competing in the premium segment, which is known for high quality standards, it’s luxurious image and therefore is especially popular in China (BMW Group, 2013a).

In 2013 BMW started to sell its i3 which they branded under the name “Megacity-Vehicle” with consequent orientation towards sustainability. By starting a joint venture with the car rental company Sixt, BMW introduced the mobility service concept DriveNow in 2011. Cars used for this car sharing approach are powered by the usual ICEs but also pure electric as we can see in appendix F (DriveNow, 2014). We chose this case since we see BMW as one of the pioneers in successfully introducing E-Cars from an existing product portfolio based on ICEs. With (according to BMW) 11,000 orders of the BMW i3 (Handelsblatt, 2014a) and the imminent introduction of the BMW i8, the company starts to open up new segments among E-Cars which we see of particular interest and value for China’s megacities.

Daimler

Daimler is a German car manufacturer doing business with mainly ICE powered cars since 1926 and they started to diffuse the market with their first electric powered model, the E-Smart, in 2008. The car manufacturer is a multinational player in the automobile industry and has subsidiaries all over the world. Last year Daimler sold 1,565,600 cars and generated EBIT of 4.0 billion Euros (Daimler, 2013a).

In 2009 Daimler introduced a car sharing concept called “car2go” with their E-Smart, as we can see in Appendix E. Currently the company is working on a connected interface platform called “moovel” to provide the user an end solution for mobility services with the E-Car as a key element (Daimler, 2013a). We chose this case since we think Daimler is, according their financial figures in China as well as in their home market, stable enough to stay competitive in future. However, our main reason to analyze Daimler deeply was the fact that the company already shows reaction to changes in the environment and started to adapt and innovate its BM in some countries.

As well as Daimler, BMW shows some movement in accordance with the changes in the environment and the “greening strategy”. We therefore expect to be able to provide contributive information resulting from the two cases, which is relevant to answer our research question.

3.3 Research Method

In terms of research methods we consider two major research methods which are quantitative and qualitative. The major differences of these two methods concern the way of collecting and analyzing data (Thornhill et al., 2009). According to Given (2008) quantitative research refers to the systematic empirical investigation of social phenomena via computational techniques or statistical, mathematical or numerical data with the objective to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena. Hyde (2000) mentioned that quantitative methods generalize characteristics and therefore ignore details of a particular element. Bryman and Bell (2011) formulated a similar statement by saying that quantitative research focuses primarily on the quantity, regarding the size of the sample by using questionnaires as a methodology to collect data. Within our research field of BMI for E-Cars, there are, to our knowledge, no quantitative studies available.

A qualitative research method, by contrast, focuses, according to Hyde (2000) on the explanation of the particular. The qualitative research data collection methods therefore try to gain detailed information of a small number of individuals (Hyde, 2000). Furthermore, qualitative research is considered to focus more on the researcher's interpretation of the studied area within the topic's natural setting (Denzin and Lincoln, 1994, Saunders et al., 2012). Shank (2002) argues that qualitative research is a method of systematic investigation in a certain area with the purpose of creating findings out of collected evidence. According to Bryman and Bell (2007) and Denzin and Lincoln (1994) qualitative research uses various methods to collect data in order to get a deeper understanding of the studied topic. The qualitative research approach concentrates on the quality regarding the cases, as well as the use of particular methods to collect the corresponding data. These methods include focus groups, in-depth interviews, observation and reviews of documents according the research field. All of these methods have, according to Yin (2003), individual strengths and weaknesses. Thornhill et al. (2009) describe that the researchers have to choose between a single data collection technique and a multiple data collection technique. Since we applied one method to collect primary data as well as different methods to gather secondary data, our research method is considered to be a multiple data collection strategy.

E-Cars can be considered as an alternative to conventional cars with ICEs, which therefore appear to serve as a useful context to analyze the BM, because the industry is still in the process of discovering a BM which attracts a broader range of customers (Budde Christensens et al., 2012; Kley et. al., 2011). Further, we can see a frequent development of BMs over time. Starting with the concepts of Slywotsky (1996) we considered different definitions and concepts of BMs in our frame of references. Based on several factors, such as relatedness, accessibility or applicability, we decided to use the definition of Osterwalder et al. (2005) within our research.

Since we investigated the field of BMI to introduce E-Cars to China, focusing on political, economic, social, technological, environmental and legal factors of influence, we modified Osterwalder and Pigneur's (2010) Business Model Canvas and established our own model by using the elements of the nine building blocks developed by Osterwalder and Pigneur (2010). In this model we can see Osterwalder and Pigneur's (2010) categories and aspects acting in an

environment defined by the PESTEL-Categories. That means every move and every action to introduce E-Cars to China is strongly connected to factors in the corresponding environment. Especially in China, we see the necessity to consider these factors and therefore see our model as permanently surrounded by these factors. The PESTEL-Analysis gives a bird's eye view of the whole environment from different perspectives. By considering the PESTEL-Analysis, the applicability of the model becomes more trustworthy. Market requirements in China are different from those in Europe, for example. Therefore, we see the use of PESTEL when innovating BMs as a necessary factor.

3.4 Data Collection

Data collection is considered to be an important part of the paper (Ghauri and Gronhaug, 2005). Without the correct data the research objectives cannot be fulfilled. In qualitative research there is a need to gather several sources of data needed to provide evidence for the field which is analyzed (Polkinghorne, 2005). The general term of data can be divided into primary and secondary (Kothari, 2008). Primary data can be seen as a first hand source (Bryman and Bell, 2011). In this paper we collected primary data through an interview. Secondary data, by contrast, is data which has already been collected by others (Ghauri and Gronhaug, 2005). For our thesis we strive to collect both, primary and secondary data. However, since the topic of BMI to introduce E-Cars to China is very sensitive and confidential, we consider the secondary data as the most valuable. During the data collection process we received many rejections related to our request to conduct an interview. In all of the cases the reason was confidentiality and the degree of sensitivity of the data. However, we see primary data as a helpful additional source of information to get a better understanding of the topic and the issues which have to be considered.

3.4.1 Obstacles in the Data Collection Process

Based on the interest of our research questions, we decided to collect data by conducting interviews among car manufacturers and related institutions. However, a major obstacle during our research process and in particular in the data collection process, was that all car manufacturers we contacted were not willing to co-operate, since the data we needed is recently too confidential and sensitive. In the first step we tried to get data via the formal way by contacting the companies by way of sending inquiries per email to well-known German as well as Swedish Car manufacturers. We chose them because we could see the best potential to get valuable data as well as a good source for answering our research question. However, either we did not get any response or we were told that our questions contain data which is from corporate departments and related to strategic business areas that they do not wish to answer at the moment. Further, they do not reveal those areas outside the company at present. After that we tried to use our own contacts which we established during our personal time within the German automobile industry. However, we got almost the same response. The topic is currently too sensitive and the data is subject to a confidentiality agreement which is not even communicated among all departments inside the companies. These obstacles led us to a mainly secondary data based approach. However, due to these difficulties, we had to react and find another solution to generate data. During a stay in China we were talking to many

people and made a valuable contact with a Business Manager of the European Union Chamber of Commerce in China in the auto components working group, which gave us some good insights about the Chinese market.

3.4.2 Primary Data

Primary data can be seen as new data; collected with a specific purpose (Thornhill et al., 2009). There are different methods to collect primary data. The most common are interviews, observations and questionnaires (Yin, 2003). Since the topic of BMI to introduce E-Cars to China is not matured yet and most data concerning this process is confidential and treated very restrictively by the manufacturers, an observation method to acquire data can be excluded. Furthermore, since we do not see any potential to get the required data, we see no reasonable applicability of questionnaires in this field of investigation. To gather primary data, we will use an interview by hand of an interview guide (Appendix G). According to Yin (2003) primary data is one of the most important sources for case studies and further Yin (1994) mentions that interviews are able to aim directly at the purpose and the research topic. It was our aim to get additional information by asking specific questions related to the market and the industry. However, since the process of gathering data related to insider information from car manufacturers tended to be complex and difficult, we rather focused on information concerning the PESTEL factors which are necessary to describe our model.

Interviewing can take place either in person, via email or through conversations via telephone or Skype respectively. Since our interview partner was not located in Sweden, we conducted the interview via Skype. Interviewing can be divided into three different types (Bryman and Bell, 2007), the unstructured, the semi-structured and the structured interview. Since we prepared our questions in advance and we used an interview guide, we conducted a semi-structured interview. Before we conducted our interview we sent out our questions to our interview partner to create a higher level of trust.

3.4.2.1 Interview

During our stay in China we made contact with Simon Campostrini, Membership Manager at the European Union Chamber of Commerce in China (EUCCC). He forwarded us the contact of our interview partner whose name and position is given below.

Date of the interview: 18.04.2014

Time: 09:00 – 09:45 (CET) / 15:00 – 15:45 (CST)

Format: Skype

Interview Case: PESTEL Factors regarding the Automobile Industry in the Chinese Market

Interview Partner: Tiantian Qi

Position: Business Manager - Auto Components Working Group, Retail and Distribution Forum and Corporate Social Responsibility Forum of the European Union Chamber of Commerce in China.

During the interview process, one pilot interview with a friend working at a well-known German car manufacturer who is familiar with the Chinese automobile industry, was conducted. Based on Bryman and Bell (2011) more focused on how a value proposition is generated and why it should be so, conducting pilot interviews can help to find deviations and possible mistakes within the questions and further gives the possibility to adjust and rectify the intended questions before conducting the actual interview.

The final interview started with an introduction of us and our interview partner. In the following we explained the purpose and intentions of the interview and gave our interview partner a brief picture of the background. The interview took 45 minutes and was held via Skype. We conducted the interview by using an interview guide. The interview guide was structured in six categories which are: political category, economic category, social category, technological category, environmental category and legal category. All of them related to the Chinese market. By using the interview guide, we worked through the different categories. At first we clarified ethical issues to get permission to record the interview and to use the interview partner as a reference in our thesis. To avoid forgetting information (Bryman and Bell, 2011) and to ensure a higher level of correctness, we recorded the interview and transcribed it afterwards.

3.4.3 Secondary Data

We think we can generate a better understanding of the coherence of the theory applied and possibly answer our research questions by using qualitative data. We therefore exploited a qualitative method and gathered the corresponding information for the theoretical framework in a systematic way through empirical sources, such as the examples which are outlined below:

- Case studies: Business Cases for Sustainability (Lüdeke-Freund & Hansen, 2012),
- Books: Economic Tsunami: China's Car Industry Will Sweep Away Western Car Makers (Baker, 2007),
- Journals: The Wall Street Journal, Cambridge Journal, Elsevier Journal,
- Magazines: Auto Motor Sport, Autobild, Carmagazine, AutoVox, Ecartec,
- Consultancy Reports: Arthur D. Little (Winning on the E-Mobility Playing Field),
- Newspapers: China Daily, Der Spiegel, Handelsblatt, Die Welt,
- Databases: DiVA Halmstad, Stockholm University Library,
- Reports: Annual reports of BMW and Daimler from different years, International Energy Agency HEV (Hybrid and Electric Vehicles, 2013),
- Official- and governmental announcements: China's Annual Political Gathering – A review of the Second Plenary Session of the 12th National People's Congress and the government's reform agenda (March 2014),
- etc.

The sources used stand for quality and credibility due to their national and international validation and recognition. Most of the sources are characterized by a high number of hits and their widespread use in national and international expert groups.

However, the above mentioned sources are just examples which stand as a *pars pro toto* for the literature and the data sources we revised to get inspiration, as well as to derive valuable information to conduct our study.

The data which is applied in this study can be found in databases in Halmstad University's library or Stockholm University Library. Moreover, Google Scholar has been used. Since the research fields of BMI for sustainable technologies and the introduction of E-Cars to China are wide, the articles have been selected by using the following key words: Business Model, Business Model Innovation, E-Cars, Sustainable Technologies, and Automobile Industry China. These words have been combined in various ways. We have also been inspired by a scientific reference list of the articles, which allowed us to find more specific theory.

Secondary data like this has the advantage of being more available to review for the reader, which will increase the studies' credibility. Further, the gathered data from a number of sources is used as pieces of the "puzzle" within the analysis in order to better understand the case (Baxter and Jack, 2008). A disadvantage may be that the data is no longer relevant for use (Dahmström, K, 2005) and possible mismatches with the research purpose. Moreover, the indicators compliance, reliability, and accurateness are also considered as adhered to, because the empirical data used has been gathered among official sources which have been approved by different institutions. We argue that the use of secondary data was a time-saving way to receive detailed and up to date empirical data. However, we support Eriksson's and Wiederheims-Paul's (2001) argument that the researcher is creating questions from a particular perspective and later on makes an interpretation of the answers, in which errors might occur and differ from the true interpretation. Furthermore, the choice of a qualitative method in this study can be valorized by the fact that the answers and findings according to the research question are based upon the scholar's interpretation. We did not use measurements in our data collection or the corresponding data analysis. The actual purpose of this study is to answer the research question in order to find results and draw conclusions.

3.5 Data Analysis

In the first instance, we transcribed the data gained from the interview we conducted. After the revision by our interview partner, we categorized and selected the raw empirical data which goes in line with what Saunders et al. (2009) suggest. Since we have not just primary data resulting from the interview, but also secondary data based on market reviews, annual reports, newspaper articles, scientific articles and so on, we treated this data in a similar way and categorized it. In the categorization process we were faced two steps: category development and selection and simplification of the raw material data. Since we arranged our interview guide based on different categories related to the individual factors we were interested in, we could also make use of them in the categorization process for our secondary data and retained them as we chose them before. Regarding the use of secondary data we categorized the data according to the elements of the nine building blocks of the Business Model Canvas. According to Saunders et al. (2009) to provide context it is important that the applied categories provide an internal meaning as well as a rather external arranged relation to the other categories as well. Since we made use of factors known from the PESTEL-Analysis in our interview guide, and also implemented these factors in our model, we made sure to first consider them as isolated factors and afterwards emphasize and describe nexuses and dependencies between those categories. By using the nine building blocks as a framework, we could exploit the advantage to provide a good structure to analyze each block individually as

well as the entire model, from a conceptual perspective. After categorizing, we simplified the raw material data to emphasize those elements which are important to answer our research questions and have a valuable contribution to our study. Saunders et al. (2009) describe this process as reduction of data and according to Eisenhardt (1989) the researchers can simplify the data and selectively focus on the information which is regarded as relevant for the analysis. The data we localized and regarded as valuable and contributive to answer our research question was allocated in our empirical data.

Since categorizing and selecting valuable and contributive data is the basis of our analysis, we regarded it as appropriate to conduct a within-case analysis to analyze each case isolated from each other, as well as a cross-case analysis to see possible nexuses, relations or contrasts as Eisenhardt (1989) suggests. The within-case analysis gives the advantage of finding unique patterns of individual cases before the researchers try to find common information and coherences among the cases (Eisenhardt, 1989). The cross-case analysis opens up the possibility to evaluate data from a different perspective and go beyond the first impression the researcher might have after analyzing the data. The chart below tries to outline the approach we followed during our analysis and gives a picture for what is meant.

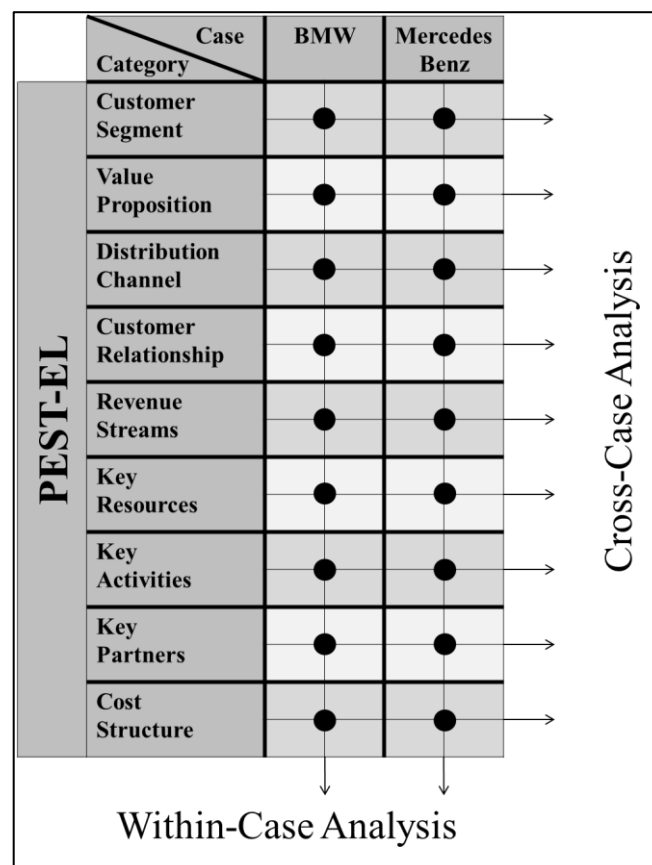


Figure 11: Within-Case and Cross-Case Analysis Strategy (Source: Own Illustration)

In our analysis we decided to analyze the cases successively, according to the nine elements of the nine building blocks which we defined as our categories. This approach helped us to structure our analysis as well as the reader to understand the relations and coherences between the cases. Before we analyzed each block, we interlinked every category with a corresponding statement from our frame of references and a finding from our PESTEL-Analysis. Our within-

case analysis is divided into the same categories which we also chose for gathering our data in the empirical chapter. We analyzed both cases according to the same elements to ensure consistency throughout our analysis. According to Eisenhardt (1989) the cross-case analysis aims to find patterns across the cases and also to understand them. After we analyzed the cases in accordance to each category individually we arranged the cross-case analysis as a final paragraph. To formulate a meaningful conclusion, we combined the findings of our within-case analysis with the findings of our cross-case analysis. We consider this third stage of our analysis as final analysis in order to find and emphasize the gist of the previous analyses. In our analysis we focus on two different levels of analysis. On the one hand, we consider the industry level where we have a look at the aforementioned cases and analyze their BMs. On the other hand, we look at the industry level. This shift in the level of analysis needs to be done since the industry itself does not provide a BM and therefore cannot be analyzed as such. To analyze the industry we needed to utilize the PESTEL analysis which gave us the chance to get valuable information regarding several factors necessary for our BM analysis afterwards.

3.6 Credibility and Trustworthiness

According to Guba (1981) there are four evaluation criteria in qualitative research which need to be considered when pursuing a trustworthy study: (a) credibility, (b) transferability, (c) dependability, and (d) confirmability. In our research we consistently applied all of these factors and we will briefly outline them in the following section.

(a) Credibility: Lincoln and Guba (1985) argue that one of the most important keys to establish trustworthiness is credibility. Krefting (1991) elaborated several aspects which influence credibility. To name the most important we can state (1) through the contact with informants, (2) through the researchers' interest and perceptions, (3) through the interview process, and (4) through unexplained inconsistencies. To increase our credibility, we collected background information about our interviewee and built up an interpersonal relationship which is called "Guanxi" in China and will be explained in the next subchapter. It increases the level of trust and is crucial for communication as well as conducting business with Chinese business partners. Due to the developed Guanxi we had better access to our interview partner and the willingness to share information was higher.

Reflecting what we did by writing a field journal could in regard to Krefting (1991) reduce our perceptions and interests, however not quash them. During the elaboration process of this paper we wrote a logbook, with frequent submissions, where we recorded our process and what has been added and changed since the last entry. Due to this process we could frequently check our process in accordance to our Gant-Chart with individual milestones and see whether we have delay or if we match our plan. This Gant-Chart served as a guideline through the entire research process and proved to be helpful. In order to Krefting (1991) to improve our interview guide we discussed and reviewed our interview guide with other researchers. After this we expanded the range of questions and made some minor adjustments. To further ensure credibility we conducted a pilot interview and reviewed the questions again, which ensured us a higher level of confidence for the actual interview. We could also reduce

inconsistencies and incomprehension during frequent supervisions and seminars with other researchers and colleagues.

(b) **Transferability:** Transferability gives, according to Krefting (1991), information about the degree to which findings can be applied to other situations. Bassey (1981) suggests, if practitioners believe their situations to be similar to the one described in the study, findings may be related to their own position. Lincoln and Guba (1985) and Firestone (1993) present a similar argument and propose that it is the responsibility of the researcher to ensure corresponding contextual information about the fieldwork sites is given to enable the reader to make such a transfer. We therefore argue that it is important to provide the reader with a sufficient level of background information about the cases that they can make their own decision whether the findings are helpful or not. In this study we described the case selection and the corresponding procedure in the methodology chapter and emphasized the advantage of the use of them as well as we described their individual characteristics in the empirical data chapter. Furthermore, we provide the reader with a specifically defined purpose of our study as well as a description of our data collection process.

(c) **Dependability:** According to Lincoln and Guba (1985) there is a close relationship between credibility and dependability, by arguing that in practice, a demonstration of the former goes some distance in ensuring the latter. “Overlapping methods” such as individual interviews might be a tool to achieve this. Research consistency reflects according to Krefting (1991). In order to address the dependability issue more directly, we reported the process of the study in detail in our methodology chapter. By doing this we also enable future researchers to repeat the work if not necessarily to gain the same result.

(d) **Confirmability:** Krefting (1991) states confirmability in qualitative research is not referring to the researchers’ objectivity, which will be explained in the next subchapter, but to data and interpretational confirmability and concerns neutrality. A possible way to increase confirmability for researchers is according to Miles and Huberman (1994) to admit personal predispositions. Another tool might be reflexivity which we have been using during the entire process. Since we worked as a team we had the chance to permanently reflect our work in bilateral and casual as well as professional discussions. We further had the chance to get feedback in frequent supervisions and seminars which helped us to reflect our findings. Further, our constant logbook entries as well as the participation in a university course for research methods, gave us the confidence to critically scrutinize our paper as well as to proactively reflect the progress and the results.

3.7 Ethical Considerations

Ethical considerations and values in social work are, according to Munson (2002), based on personal and professional principles to which a researcher is committed. The core value which defines the basis of social work however, is based on is the preservation of the human dignity. It also implies providing a service to the researchers’ fellow human being while maintaining professionalism and truthfulness as well as the pursuit of social justice (Munson, 2002). Personal values and principles are important, since they encompass how people work (Munson, 2002). Within these principles are guidelines which state the responsibility of the

researchers such as objectivity, for example. According to Payne and Payne (2004) objectivity in social research is the principle, that the researchers should remain dissociated from what they study, so that the findings depend on the nature of the field which was studied rather than on beliefs, values or personal thoughts of the researcher. However, since our motivation for this study emerged from our personal interest as well our own experience in the automobile industry, we are well aware about the lack of objectivity in this study. We were working for a German Sports car manufacturer in the premium segment for about one year. We have broad experience in the international business of premium car manufacturers due to the international alignment of the departments we worked for. Furthermore, we could gain useful experience of the Chinese market due to a one month stay in China. In accordance with another research, one of us also did a four month research project in the Japanese car market which helped to understand the overall image of Asian business structures. The other one conducted a research project aligned to the international car market for six month. We state that our previous knowledge and our personal affinity will doubtless have an influence on this study. However, the study was conducted diligently and sincerely and we treated the data in a conscientious way to ensure a high level of quality and trustworthiness.

Saunders et al. (2009) state that appropriate behavior related to all participants involved in the research process is one of the keys. They further argue that ethical considerations are connected to the researchers' moral responsibility to the research design, data access, collection, storage, and analysis as well as the interpreted conclusion (Saunders et al., 2009). With regard to Bryman and Bell (2011), we avoided any harm to the participants of our research and we gave them as much information as needed to decide themselves to be a part of our study or not. Privacy is seen to be the basic policy during this research and we do not present our research as something different than what it actually is.

We based our framework of references on previous research results developed by other researchers which we appropriate, complete and explicitly outline in our corresponding reference section.

We collected our primary data by conducting a semi-structured interview with a member of the ECCC. Since we live in a world with a variety of values and perspectives based on cultural differences, every country has a personal code of ethics which outlines details and needs to be followed by the researchers to guide decisions in difficult situations. Due to a one month stay in China we were used to the way of conducting business, communicating with Chinese people and how to ask questions. In China the interpersonal relationship *Guanxi* plays an important role. *Guanxi* is the central idea in the Chinese society and describes basic dynamics in personal networks. It is further known as a major influence on business and management conducted or based in China (Gold et al., 2002). To establish such a relationship we first made a contact with Simon Campostrini, Membership Manager of the ECCC of western European origin, who brought us in contact with our Chinese interview partner. To build up trust, Mr. Campostrini informed our interview partner via email before we started to introduce ourselves and explained the reason as well as the purpose of our request. According to the checklist given by Bryman and Bell (2011) we informed our interview partner about her

contribution, the implication of taking part in our study, the right to not answer and to withdraw at any time. We further explained that she has the control over the right to record the interview, her right of anonymity and that we will treat the data in a confidential way. We outlined the use of the data of how and where it will be published, persons who will have access to the data and the corresponding storage process. Before we started the interview we asked our interview partner to give us permission to record the interview and she agreed. We informed her that she should only answer questions which she feels comfortable enough to answer. We further told our interview partner that our thesis will be published in a storage portal DIVA administered by the library of the Halmstad University and therefore cannot guarantee an obligation of confidentiality. She therefore asked us to send her our interpretation of the answers developed from the interview to review and release them. To maintain trust and ensure transparency, we sent her the transcribed version of the interview to review and release it. We ensured a confidential treatment and guaranteed that we, as well as our supervisor and examiner, are the only persons who have direct access to the raw data revealed in the interview.

Since we conducted a within-case and a cross-case analysis, we considered the importance of data accuracy given by Saunders et al. (2009). Further we tried to not be selective about the data report to take different perspectives into account. We are aware that using data and written thoughts of other researchers' without referencing is considered as plagiarism. We therefore certify that the thesis by hand is written in our own words and we did not use any other than the specified resources. The passages in the text, which are literally abstracted or give the gist of other writings, are explicitly identified by naming the source.

4 Empirical Data

This chapter presents the empirical findings from our interview and our secondary data collection process. In the first part of the chapter we give information about the Chinese market according to our categories. Every category is concluded by a quotation from our interview partner from the European Chamber of Commerce in Shanghai. In the second part we structured our cases according to the nine categories of our model.

4.1 PEST/EL Analysis

In this section we will gather data regarding the Chinese market in accordance with our predefined categories from the PESTEL-Analysis emerging from our BM. The corresponding categories in the analysis are consequently not only surrounding but rather influencing a company's BM. As explained, we live in a world with a variety of values and perspectives based on cultural differences which implies that every country has a special code. The same level of individuality and differentiation which comes with such a code is true when it comes to geographical texture, the way how people think, or the level of know-how a country holds. Given that all of these factors are able to influence a company's undertakings and movements in a country, it is of particular importance to consider them as part of the BM.

Political Category

As explained above, in 2009 China became the biggest car market of the world. This step enabled the Chinese automobile industry to further increase sales figures and become an important pillar of the national economy. China's large population and its increasing purchasing power made the market highly attractive for international car manufacturers.

To strengthen the national economy and to attract investment in the automobile industry from foreign car manufacturers, the Chinese government made access to the industry easier. Furthermore, a certain level of protection and privilege has been provided. As a consequence of entering the World Trade Organization, the Chinese car market became more open and accessible for car manufacturers from abroad. Hence, a lot of regulations and policies in the automobile industry have been lowered. However, the main purpose of these movements is based on the idea to encourage domestic car manufacturers with the help and the know-how transferred by car manufacturers from abroad, which is also supported by our interview partner in saying:

"The Chinese government tries to protect its own industry to be on the right way. The kinds of policies exist for a long time and were created by the Ministry of Commerce People's Republic of China. If you want to enter the Chinese market, you have to establish a joint venture. There is no solution in between." (Tiantian Qi)

A foreign car manufacturer is, according to governmental regulations not allowed to own more than 50% of the ventures shares. This gives domestic car manufacturers the chance to utilize technologies such as platforms or engineering methods from international manufacturers to better compete with products from abroad. It further shows how strongly foreign manufacturers depend on decisions by the government and how the government

contains their business. In 2009 the Chinese government presented a new development outline for the automobile industry 2009 to 2011, which gives widespread information about development strategies including: promotion of new engines, industrial expansion and technological improvement (Yu and Yang, 2010). There are three main objectives connected to the outline which are: (1) Changing the production from low-end to high-end manufacturing and products. This strategy should also enable a domestic manufacturer to better compete on a global level. (2) Increase of the level of attention paid to R&D of environmentally friendly and energy saving vehicles such as E-Cars. The development of cars powered by renewable energy drivetrains is a key issue to reduce the level of pollution and to protect the environment. According to Miao Wei, the head of Ministry of Industry and Information, the development of new energy vehicles also requires innovative BMs to tackle the future challenges (China Daily, 2014a). (3) Increase of the domestic vehicle demand is a key to stimulate the economic growth. Financial incentives and tax policies set by the government are expected to encourage consumers to purchase new cars.

The movement in the direction of environmental cars expressed by the government can be seen by another strategic decision. On May, 5th China established, according to China Daily, a non-profit organization to boost the E-Car industry with a higher level of cooperation in research, policy making and business management (China Daily, 2014a). Furthermore, the Chinese government is about to introduce protectionism programs for their national car manufacturers. At the moment one can go to any Chinese city, or even provincial town and it seems that there are hardly any bureaucrats who do not own a foreign branded car (Sudworth, 2012). However, they will be gradually banned in the future and Chinese bureaucrats will be forced more and more to purchase Chinese cars. China's government is seen to have a great influence on public awareness. If Chinese bureaucrats set an example by driving foreign cars they make people believe that these cars must be good quality. It can be said that at the moment the Chinese government shows more action towards the introduction of E-Cars than any other country in the world. However, it also needs to be considered, that the government also exerts high pressure on foreign car manufacturers due to strict regulations and clauses which makes it difficult to compete in the market.

Economic Category

For over two decades now, China's economy has grown rapidly. The country has shifted itself from a centrally planned economic system to a more market oriented one. China has become a key player in the global industry and overhauled the US in terms of their GDP (adjusted for purchasing power) (Eckert and Zschäpitz, 2014). Furthermore, according to China Daily, Chinese consumers bought 47 percent of all luxury goods in the world in 2013 (China Daily, 2014b). Most of these products are brands from Europe or the US. These figures demonstrate the purchasing power and how well-funded the Chinese market is.

Because of its large population and a variety of other factors China has become one of the most attractive destinations for foreign direct investments (FDI) of multinational car manufacturers. The amount of FDIs has been increasing steadily and amounted to more than 340,000 in 2013 (Hang, 2014). Only in June 2013 China drew, according to the New York

Times (2014), \$14.4 billion from foreign investment with further growth in the following month (NYT, 2013).

China attracts international car manufacturers because of the high profit potential which the automobile industry holds, its large market size and its well established position in the global market due to a current boom in the economy. Furthermore, China seems to have become an interesting place to produce and sell E-Cars because of several factors. One of these factors is financial subsidy programs imposed by the government. It has to be mentioned that the government only supports E-Cars produced by Chinese Manufacturers. As explained earlier, the Chinese government sees it as a current issue and a future necessity to invest in environmentally friendly technologies. This opinion is also supported by the statement of our interview partner:

“China introduces pilot cities who are doing emission trading scheme before the government applies it into a national scheme. This emission trading system development is a kind of pilot to show that actually the government is trying to do something workable for the emission that are created and to subsidize environmental friendly technology. Those are the kinds of subsidy programs or policies that they are doing. The players of course are domestic, but also car manufacturers from abroad since they have to do a joint venture with a Chinese manufacturer to produce in China.” (Tiantian Qi)

Social Category

In a previous section we talked about a cultural code which every country possesses. China's cultural code is based on their traditions, their history, habits, values and many other factors which are different from western cultures. We also discussed the influence of Guanxi, the Chinese concept of relationship. The Chinese society is strongly influenced by Guanxi in almost every area such as commercial activities, organizational behavior, business ethics, as well as formal and informal relationships. However, the Chinese perspective on Guanxi is completely different from a western perspective on business relationships (Liang-Hung Lin, 2010). Guanxi is at the center of understanding the Asian society and its business behaviors (Boardman and Kato, 2003 and Luo, 2002). The formation of Guanxi in the Chinese society involves complex social and affectionate networks within families, friends or peers (Kipnis (1997). Guanxi can also be regarded as one the main dynamic characteristics in Chinese society (Alston, 1989).

Based on the cultural code, Chinese consumers have different perspectives than those in the western part of the world. The consumers have different moral concepts and opinions on products they buy. From our interview a similar statement emerged:

“When you enter the Chinese market the question for you is more talking about consumer interest, which is a good direction to go. This question can be applied to all kinds of manufacturing; you need to think about the culture difference and the consumer's behavior, before you enter the market; to use the different policies upon different targets.” (Tiantian Qi)

Furthermore, as described previously, most of the luxury products purchased by Chinese consumers are brands from western countries. Chinese consumers also value cars from

foreign manufacturers and in particular German ones. Our interview partner put it even more precisely:

“Chinese consumers have a public acknowledge to German cars because German cars stand for good quality. That is why they would spend double the price to buy a VW or other foreign car brand. This is something that Germany has gained among the Chinese consumers, which is a good thing, and this is what the other competitors have to learn. It also raises the pressure on domestic manufacturers to think about things like quality and after sales market. You have to be concentrated to do something to make sure you have the reputation obtained and then you move on.” (Tiantian Qi)

Technological Category

China's subsidy programs, new regulations and the general attitude towards environmental friendliness in the automobile industry led domestic and international car manufacturers to heavily invest in their joint R&D, as well as their production facilities in China. To detach from foreign manufacturers, China is making efforts to create its own standards. Chinese manufacturers noted that labor intensive and low-end manufacturing of imported technology is no longer a sustainable strategy. Large investments in R&D in the automobile industry should therefore serve as a game changer and restructure manufacturing by way of technological advancement.

In 2010 the government spent about 10 billion RMB to subsidize car manufacturers to upgrade their technologies to develop new car engines powered by alternative drivetrains (Yu and Yang, 2010). In 2013 the central government promoted the use of lithium batteries in E-Cars directly to the manufacturer which gives them another incentive and security to invest in R&D as well as new production methods (Monarch, 2013).

Due to the implementation of cleaner vehicle technology and stricter emission control, China's automobile industry shows their efforts in order to find their balance of the challenges of economic development and environmental protection (Gan, 2003). Therefore, the programs imposed by the government and adaption to international technology standards play a crucial role in China's process to green the automobile industry. This shift towards a cleaner attitude, due to the use of modern technology, also appears as a result of the reinforcement of vehicle emission standards. These standards require sophisticated engines and technological standards of a high level, which goes along with the information from our interview:

“Right now we have Beijing, Shanghai and I think Guangzhou which are the first cities applying for the Euro 5 norm. They have been fighting for a long time for Euro 3, Euro 4 and now Euro 5 and are aiming to reach Euro 6. The reason is the pollution which is also partly a result of exhaust emissions produced by cars although most of it is produced by the diesel engines of the trucks. However, they think the stricter fuel standards will give fewer emissions.” (Tiantian Qi)

Environmental Category

Generally said, the environmental factors in the Chinese automobile industry can be seen as global megatrends driving the automobile industry. The consultancy PWC identified five

global megatrends which have potential implications on business now and in the future. The trends identified are interconnected in many ways and are the following: demographic shifts, shifts in economic power, accelerating urbanization, climate change and resource scarcity, and technological breakthroughs (PWC, 2014).

Owing to better health, the demographic change becomes an important player. People will get older and can drive their cars longer. Together with the accelerating urbanizations and the prevailing poverty in China's hinterlands, China's megacities will expand to an unimaginable size with millions of people. Furthermore, the rising number of people, as we can already see, led to an overconsumption of oil and hazardous air pollution caused by production plants, as well as the high traffic density.

According to our interview partner, people realize these climate changes and the resource scarcity as a future jeopardy and already started worrying about this development and see the E-Car as a step in the right direction:

"I think the main driver for the introduction of E-Cars is environmental pollution emitted by exhaust emissions. Most of the cities like Shanghai are already applying the EV in their public transportation systems like buses to create less emission within their city centers. However, the E-Car market in China is not so matured by now and the car manufacturers have to find the right strategy to introduce them. That's the reason why they apply the strategy of electric powertrains on public transportation like the buses first." (Tiantian Qi)

Furthermore, the growing number of cars on the roads based on accelerating urbanization will cause a lack of parking spots and more congested areas, which slows down mobility. However, technological breakthroughs will potentially shape the future of the automobile industry and therefore have a big influence on its environment.

Legal Category

There are several regulations, restrictions and clauses for foreign direct investments in China. What comes along with these issues is a lack of transparency from the government and related institutions. In fact, as explained earlier, the Chinese government has recently tried to make the legal and regulatory environment less complicated. However, there are still a lot of confusing Chinese regulations and laws which are either difficult to understand or just poorly communicated among the corresponding parties.

Ambiguous and subjective enforcement of many regulations, inconsistency, the lack of transparency and contradictory legal issues are the source of the main problems for investments in China. Some foreign investors, therefore, struggle to make efforts to invest in the Chinese market due to the necessity of due-diligence and professional advice (Icon Group International 2004).

However, what emerges from our interview is that the government tries to ease the way to introduce environmentally friendly cars by reducing taxes or diminishing the legal barriers to register these kinds of cars. One move in this direction is the costless access to a number plate which is usually only accessible via a costly lottery system in cities like Beijing or Shanghai.

“E-Cars are supposed to use renewable energies. These industries concern to the lobby and the government sees potential in next generation vehicles which include other drivetrain systems than E-Cars as well. Hence the focus is on reducing barriers for all these types of environmentally friendly cars. Regarding the number plate it is the governments’ intention to raise the consumers’ awareness about E-Cars. Therefore they reduce the barriers to get a number plate and also diminish the taxes if someone purchases an E-Car.” (Tiantian Qi)

4.2 Business Model

In this section we will gather data from our cases BMW and Daimler, according to our predefined categories from the nine building blocks emerging from the Business Model Canvas. The comparison of the underlying cases is therefore valuable, since the companies are engaged in a permanent battle to be the world’s largest luxury car (Innovation Leaders, 2014). This rivalry between the two companies makes it particularly interesting to analyze them in the form of a within-case study and compare them from a cross-case study perspective afterwards.

4.2.1 BMW

BMW was founded in 1917 and is now one of the world’s ten largest car manufacturers. With its brands BMW, MINI and Rolls-Royce, the company possesses three of the strongest premium brands in the automobile industry. BMW aims to generate profits and above-average returns by concentrating on the premium segments of the international car market. On a global basis BMW sold 1,963,798 cars in 2013 (BMW Group, 2013a). The company brand, which is associated with performance, excellence, engineering, and especially innovation, is very strong. With regard to their power of innovation, BMW introduced their new sub-brand BMW i in 2011, which reaffirmed the company’s leading position as the most innovative and sustainable premium car manufacturer (Innovation Leaders, 2014). The brand stands for sustainable vehicles and mobility solutions and provides two models at the moment which are the BMW i3 and the BMW i8. BMW i Ventures holding is company founded and additional mobility services complement its core business. The sub-brand, which is also known as “Born Electric”, focuses on the development of sustainable mobility solutions. The introduction of the sub-brand is the response to changes in the environment and changing customer needs, which includes an increasing demand for alternative drive trains such as E-Cars. BMW also noticed the desire in megacities for solutions which combine the benefits of different mobility concepts in one package most efficiently (BMW Group, 2011).

In China BMW sold about 390,000 cars in 2013 and counting (RP-online, 2014). In 2003 the company founded the joint venture called “BMW Brilliance Automotive Limited” with the Chinese car manufacturer Brilliance Auto (BA). According to BMW, their plant in Tiexi is the most sustainable vehicle plants in China and one of the most innovative and flexible automobile production facilities worldwide (BMW Group, 2011). In accordance with the shared business activities, BMW produces a part of its 3- and 5 series, as well as the X1 in China. Furthermore, Brilliance Auto is building and selling cars under their own brand by utilizing BMWs technology. In November 2013 the company introduced the Zinoro 1E which is a Chinese version of the BMW X1. However, the Zinoro 1E is a completely electric

powered car with an approximate range of 150 km. In the beginning the car will not be offered for sale but rather just for leasing (Autobild, 2013).

We can see, BMW shows a lot of movement to electrify their cars and also the company shows some small steps to introduce their E-Cars to China. To have a more detailed look at BMWs business activities related to their BM, we will utilize our categories from the Business Model Canvas. By doing so, we will gather data according to every category which allows us to analyze the individual categories and compare the emerging data with the data collected for our second case. This gives us the possibility to see relationships or nexuses between both car manufacturers.

1. Customer Segments

According to BMW, customers are all people who drive or utilize a BMW (BMW Group, 2013a). Generally speaking, BMW builds luxurious cars for those people who can afford them. A BMW is associated with performance, luxuriousness, excellence, engineering, and especially innovation. In the last years BMW strongly expanded its product range and offers cars in many segments which are targeting different customers. Most people who buy a BMW want to have a luxurious sports car with innovative features. Since the car manufacturer is one of the most innovative companies in the automobile industry, many people also buy a BMW because of its persuasive technology and specs.

By introducing their sub-brand BMW i and therefore extending their product range by the offer of E-Cars, BMW now aims at another customer segment in another target area. Clear targets for these cars are the Chinese mega cities. China comprises of more than 150 cities with more than one million dwellers. The company reckons most of these urban dwellers have a low annual mileage and therefore do not care about the limited driving range. Since the company claims to be the most sustainable company in the automotive industry, we can clearly see to whom the company is aiming. In 2013 BMW started to sell its i3 which they branded under the name “Megacity-Vehicle” with consequent orientation towards sustainability. The BMW i3 is a 100 percent electric powered car with no exhaust emissions. Hence, the car manufacturer tries to reach environmentally friendly customers with its new and sustainable offer.

By offering mobility services in the form of a car sharing concept, DriveNow, the company is now targeting people who want to drive a car – but don’t want to own one or people who are environmentally conscious – and reduce the environmental impact at the same time, due to the use of E-Cars and the decreasing number of cars in the road traffic (DriveNow, 2014).

2. Value Propositions

Above all, BMW creates value for their customers by delivering individual mobility to them with cars and motorcycles. However, the company’s value proposition rather consists of offering a package of individual elements. Therefore, we can say BMW delivers a variety of sub-values, which together give the company its image. To name just a few, we can say BMW creates further value among their customers by delivering safety, improved fuel efficiency, performance, experience, luxuriousness and innovation. BMW builds luxurious cars for those people who can afford them. By introducing their sub-brand BMW i and therefore extending

their product range by the offer of E-Cars, BMW now offers an additional value, sustainable technology. This might be also seen as innovation however, since it opens up an entire new segment, it is more than just innovation. In addition to sustainability, the sub-brand now delivers value in terms of environmental cleanness, new technologies, cost reduction because of lower overheads and maintenance costs, and a new way of driving pleasure. Also in China the brand of their joint venture is used to not inflict potential damage due to possible customer rejection.

Furthermore, BMW does not just propose value to their customers by way of their core business of selling cars. BMW also offers financial services to their customers, which gives customers the chance to get good conditions and leasing rates when buying a car. Moreover, the company also creates additional value due to the car sharing platform, DriveNow, and the parking platform ParkNow, which are already introduced in some German cities as well as San Francisco in North America. This approach serves to raise customer awareness and get customer in touch with the new technology for a comparably low price. With DriveNow, BMW offers a concept that the customers do not own a car and therefore do not have to buy it. The reaction on the concept allows deriving valuable feedback. As soon as the customers are members of the system, they can rent a car and they are allowed to drop it at any station they want without having trouble to find a parking spot. With the corresponding app, customers are also able to find available cars, spots for parking and charging stations for E-Cars (Business Moldes INC, 2013). For this concept BMW uses cars with conventional ICEs as well as the ActiveE cars, which are powered by pure electricity (DriveNow, 2014).

3. Channels

BMW uses indirect distribution channels. The company has dealerships in more than 100 countries all around the world (BMW Group, 2013a). BMW moves their products from their manufacturing plants to their dealerships. These dealerships then sell the products to the final customer. All of the dealers are trained in order to cope with BMWs corporate values and follow the corporate identity predefined by the car manufacturer. To get familiar with this, BMW performs frequent product training sessions to ensure a proper level of product knowledge among their dealers. Further, BMW uses their webpage with a direct contact linkage to the corresponding dealer as a distribution channel for their pre-owned cars (BMW Group, 2013a).

In addition to their usual core business, BMW offers, as mentioned, the car sharing service, DriveNow. Together with this car sharing platform the car manufacturer also introduced ParkNow, a service to find and check the availability and also book car parks. By offering such services BMW also had to expand their distribution channels. Both of the services are accessible via smart phone application. Furthermore, the company also provides access to the platforms by utilizing the internet as another distribution channel (BMW Group, 2013a).

For their sub-brand BMW i, the company strives to pursue a more innovative way. Roland Krüger, Chief Executive of the BMW Group region Germany said, in an interview for the BMW Group press release: “Innovative vehicles need innovative distribution channels. For

this reason, the BMW i3 can now also be ordered over the phone and online. However, the most important role in distribution is still that of our retail partners. (BMW Group, 2013b).”

In China, BMW utilizes their usual dealerships, as well as distribution centers as their distribution channels at the moment, which totaled at around 360 outlets in 2013 (Bloomberg, 2013). Furthermore, it is most likely that BMW Brilliance is going to be the company’s electric brand in China. According to the newspaper China Daily, the Zinoro 1E, the electric Chinese version of the X1, is especially made for China. The joint venture BMW Brilliance, therefore seems to be another distribution channel for BMW and in particular for their E-Cars.

4. Customer Relationships

Customer Relationship Management (CRM) is a key factor for BMW. In 2001 BMW then-senior executive president sales, mentioned that it is the aim of the car manufacturer to differentiate themselves from their competitors by hand of CRM (CRM-Expert, 2007). To maintain good customer relations, BMW introduced its CRM-system “Top-Drive”. According to a former project manager of the BMW Group, Top-Drive includes the management of customer communication, relationships and information. The overall aim of the company is to intensify the relationship between the customers and the dealerships. According to a press release of the BMW Group customers and interested people sought more and more contact with the manufacturer. Top-Drive created the necessary preconditions to cope with the increasing contact volume across all contact media.

To reach the customers and to get as close as possible, BMW connects all relevant systems to integrate all contact data of a customer in one single history. Hence the car manufacturer shows “one face to the customer”. This approach extends according to BMW not only for different media, but also across national borders: every customer should be treated with the same premium quality. BMW implemented the system internationally and reworks and adjusts the software frequently to know its customers as well as possible (Presserelations, 2001).

To get customer awareness and to maintain existing relationships, BMW additionally introduced a so called “Driving Academy” in Germany. It offers potential customers the chance to get in touch with their i3 (BMW Group, 2013a). The offered program is labeled with the slogan “Lassen Sie sich elektrifizieren” which means “Let us electrify you”. This program is utilized as another door opener to bring the i technology closer to the customers.

5. Revenue Streams

As a car manufacturer and in relation to their value proposition, BMW creates most of its revenues by selling cars. In 2013 BMW generated an operating profit of 6.66 billion Euros due to the sales of approximately 2 million cars. The profit decreased by about 12.4 percent compared to the year before. However, this drop is based on the high investments for the production and the introduction of the BMW i3 (Handelsblatt, 2014b). According to the German daily Tageblatt, in the first quarter of 2014 BMW earned significantly more money. A big share of the increase is, according to the newspaper, based on the business with the Chinese joint venture partner Brilliance. Increasing sales ensure a further steady rise in

profits. Another piece of BMWs first quarter profits is generated by selling 2022 of their BMW i3 (Tageblatt, 2014).

Additionally, the core business BMW Financial Services, generates revenue by offering a product portfolio with a focus on leasing and credit, insurance, dealer financing and fleet business. Another side-business which generates revenue for the company is the DriveNow joint venture with the car rental company sixt. To join the DriveNow system, customers pay a registration fee of 29€ (\$39) and 31 € cents (32 \$ cents) per minute or 89€ (\$90) per day (24h) for driving the car with a kilometer limit of 200 km (DriveNow, 2014).

A further stream to generate revenue for BMW is a classical supplier – customer business. In 2010 BMW delivered 240,000 diesel engines for American police cars to the car manufacturer Carbon Motors. Moreover in 2011 BMW and the car manufacturer Fisker signed a contract which states that BMW will deliver about 100,000 engines to Fisker annually. Furthermore the Swedish car manufacturer Saab and the PSA Peugeot Citroen group used engines delivered by the German car manufacturer (Handelsblatt, 2011).

6. Key Resources

To remain competitive in the international market BMW has various, and in some cases also different, key resources than their competitors. One of the most important resources is at the same time one of BMWs strengths. Human resources are crucial to successfully run a business. BMWs human resources and especially the engineers, bring a high level of know-how and frequently develop innovative products, which made the company, according to the consultant company PWC, into the most innovative car manufacturer in 2012.

However, in accordance with well trained and well educated personnel, the technology BMW holds in-house as well as their production facilities, is another core of their resources. With their joint venture BMW Brilliance production plant in Tiexi in China, the company claims to possess the most advanced and sustainable high-end car manufacturing plant in the world (China Daily, 2012). According to China Daily, the production plant is not only extremely sustainable, but also highly efficient, which gives BMW big advantages in terms of lean and efficient production to save time and cost at a stroke.

Especially for the E-Car business, raw material becomes more and more important. To extend an E-Cars range, multiple factors play a role. However, automotive lightweight construction and the car's battery are one of the most crucial ones. Therefore, the company's raw material as well as the company's supplier network can be seen as another key resource with a major influence on its performance. This in turn also extends to the dealer network. BMW has more than 3,000 dealerships around the world and more than 330 are strategically located in China, which is more than 10% of the overall amount (BMW Group, 2012).

In 2013 BMW sold more cars than ever before and generated about 6.6 billion euros profits, which is, however, more than 12 percent less than the year before. According to the statements of the German daily Handelsblatt this decrease is based on heavy investment in the production of BMWs i3 (Hndelsblatt, 2014). We therefore identified BMWs investment capital as a further key resource. Due to its high profits the company is able to invest in new

projects and develop new markets, as we can see with the production of the i3 or the development of the BMW Brilliance joint venture in China.

For their mobility service Drive Now, the company's key resources are 70 E-Cars, which are currently in use, 8 DriveNow stations to charge the cars and financial assets provided by the iVentures fund.

7. Key Activities

BMW's core business is the production of cars and motorcycles, which is, as described, responsible for most of BMW's revenues. However, the production is just one part of a car manufacturer's business. BMW separated its business units in the following departments: finance, R&D, production, purchase and supplier network, distribution and sales, human resources, and MINI, BMW motorcycles, Rolls-Royce and aftersales. BMW's finance department is responsible for all payment transactions, whereas the R&D department focuses on scouting new trends and working together with new partners to develop innovative products. The production department's key activity is the production process of BMW's cars or motorcycles respectively. When it comes to production, BMW focuses on lean production, to produce as efficiently as possible. Key activities of BMW's purchase department are the scouting process for potential suppliers, as well as the contract conclusion. BMW only works with suppliers which cope with the company's responsibility and compliance rules. The department also maintains existing contracts with suppliers and the entire supplier network. The distribution and sales department covers all the company's marketing activities, as well as sales planning and strategic market developments. Another key activity of the sales department is the strong relationship with the dealerships and to provide them with product training, as well as in-house information about BMW's products. Human resources activities are mainly related to the company's personnel. Some of the key activities are recruiting, personnel development, labor displacement, or labor demand planning. Furthermore, BMW Financial Services describes its key activities by focusing on the appropriation of leasing and credit, insurance, dealer financing and fleet business to their customers (BMW Group, 2013a).

The key activities for BMW's mobility service, DriveNow, however can be seen as managing and developing apps, engaging with necessary partners, as well as maintaining the relationship with those partners, and asking for customers' feedback (Business Models INC, 2013). In particular for the DriveNow service, the partner network is a crucial factor which claims a high level of attention.

8. Key Partnerships

Since the introduction of E-Cars requires a variety of different interfaces with partners from related industries, we talk about a cross industrial key partner network. The areas those partners are playing in are different. One big advantage of BMW i is that the company can utilize the same network as the parent company BMW does. By doing so, the subsidiary firm BMW i can save costs and utilize established channels.

However, since E-Cars also require different aspects as cars with combustion engines, BMW i had to establish a lot of contacts with new partners as well. For example, to save cost for R&D BMW founded in 2011 together with Peugeot and Citroën the joint venture BMW

Peugeot Citroën Electrification. This partnership, however, ended in the beginning of 2013. Moreover, in 2011 the biggest premium car manufacturer, BMW and the biggest car manufacturer of the world, Toyota, closed a deal to work together to electrify some of their cars (Seiwert, 2011).

To produce some of their cars in China and utilize the in-house technology, BMW founded the BMW Brilliance Automotive Limited in 2003. The company produces parts of BMWs 3- and 5 series, as well as the X1. However, the joint venture announced to produce an E-Car labeled under the name “Zinoro”, which will be a Chinese version of the X1 (Automobil Produktion, 2013). Besides the cooperation with the joint venture partner, BMW sees the cooperation with the government as a crucial factor not just in China but also in the rest of their markets. A well-established lobby network is their key for this partnership. In particular China is emphasized to be most influenced by the government.

Furthermore, BMW founded numerous joint ventures in relation to their electro mobility projects. Since the range of an E-Car is a key factor, the cars have to be light weight. Therefore, BMW closed a deal with SGL Automotive Carbon Fibers to produce their own carbon fiber chassis (BMW i Innovationstage, 2013). Another key partner for BMW is Bosch. Bosch has provided BMW with parts for their cars from the beginning. Together with its Japanese partners Bosch produces BMWs batteries, which are used in their E-Cars (Krust, 2013a). Moreover, the car manufacturer cooperates with different partners like “The Mobility House” or “Schneider Electric” to provide customer friendly and efficient charging possibilities for their home garages. BMW also seeks for strategic cooperation with energy suppliers like the already established one with Naturstrom AG (BMW i Innovationstage, 2013).

To use an E-Car there is a problem with the corresponding infrastructure. There is no use for E-Cars without the possibility to charge them outside of the owner’s garage. Therefore, BMW made car park operators and provider of public charging stations to provide recharging facilities to their key partners. Furthermore, to expand the public charging infrastructure, the company is part of the joint venture which is called Hubeject GmbH. It’s a joint venture between BMW, Bosch, Daimler, EnBW, RWE and Siemens. Together the companies work together to simplify the charging process for people with E-Cars (BMW i Innovationstage, 2013). Further, BMW works with other energy provider to mainly use 100% green energy for their BMW i cars.

To run their mobility service business, for example, the car sharing concept, DriveNow, BMW further works with various app suppliers, IT companies and participates in numerous councils on a regional level. To connect all their services BMW strongly focuses on telematics. In China the company already works together with the telematics-specialist “WirelessCar” and the wireless carrier “Unicom” (Krust, 2013b).

To implement these services, as well as to introduce their products, the government plays a major role. Since the automobile industry is driven and strongly influenced by lobbyism, we see the government on a country level and the municipally on a regional level, in every

country BMW is acting in, and especially in China as a very important key partner with huge power.

9. Cost Structure

BMW produces high quality cars and therefore hires skilled workers and engineers. Hence BMWs biggest matters of expense are the costs for production facilities and raw materials as well as costs for personnel. Furthermore, as explained, in 2012 BMW heavily invested in their sub-brand BMW i. Most of the costs originated within these undertakings are based on R&D. Because of technological sophistication and more complex structures among new technologies, prices for raw materials increase, which especially affect the development of E-Cars. Materials have to get lighter and durations of batteries have to increase. According to Ian Robertson, BMWs senior executive president sales, it was especially difficult to maintain future investment strategies during the time of the financial crisis in 2008-2009 (Leggett, 2011). Even though the company did a lot of changes in that time, they did not stop any of their future investments for their electrification strategy.

One major example of BMW's cost structure to save expenses is in the engineering of new products. The company lowers their cost structure due to their modular manufacturing strategy. This strategy allows the company to produce different vehicles on the same manufacturing platform and is helping to raise the margins. The long term goal is to lower the cost base structurally to achieve an 8-10% margin range on a sustainable basis, a member of Creative Global Investment says (Leggett, 2011). The company expects that the economic benefits from this strategy will further continue to grow.

Of course all these factors also concern BMW's business in China with their joint venture. However, buyers in China generally seem to go for high-end models and China is already the biggest market for 7-Series, the X6 and the 5-Series which ensures a higher profit margin (Leggett, 2011). In Germany, for example, the price for the i3 is set at around 35,000 Euro (BMW Group, 2013a). In China, however, the price will, according to Car News China (2013), amount to about 70,000 Euro.

For their mobility service DriveNow, the company's cost structure mainly focuses on expenses like marketing and operations like administration. However, a continuous app development, maintenance costs and renewable energy credits play a considerable role (DriveNow, 2014).

4.2.2 Daimler

The Daimler AG is listed as one of the most successful automotive companies in the world and is divided into the following divisions: Mercedes-Benz Cars, Daimler Trucks, Mercedes-Benz Vans, Daimler Buses and Daimler Financial Services. With these divisions, Daimler is under the biggest producers of premium vehicles as well as under the largest manufacturer of commercial vehicles. The division Daimler Financial Services is responsible for financing, leasing, insurances, fleet management and also developing smart and innovative mobility services and solutions for the future.

In 1886, Gottlieb Daimler and Carl Benz invented the first automobile. This milestone made the Daimler Group into a pioneer of the automobile industry. However, as well as other players in the segment, Daimler is now facing the challenges of future mobility brought about by changes in the environment and among the society. The emphasis is set on innovative and green technologies to increase the customer satisfaction of the Mercedes-Benz brand and to enable emission-free driving to a reasonable price (Daimler, 2014a). In recent years, the Mercedes-Benz brand, which consists of more than fifteen of their own models and also of the two models from their sub-brands, Maybach and smart, invested heavily in the commercialization of E-Cars. The company already offers some environmentally friendly cars and hence has the largest range of emission-free E-Cars that are run on batteries and fuel cells (Daimler, 2014b).

Daimler operates worldwide with more than 8,000 dealerships and produces on five continents. Consequently, in the financial year 2013, Daimler sold almost 2.3 Mil. vehicles worldwide and generated a total revenue of €118 billion (Daimler, 2014a). To remain competitive and profitable, Daimler focuses four strategic growth areas: strengthen the core business, expand and grow new markets, become a leader in green technologies and establish new mobility concepts as well as services for the overall society (Daimler, 2014c).

China is for Daimler one of the most important markets and in 2013 239,000 vehicles were sold. With their joint-venture, the Beijing automotive Industry Holding (BAIC), the new GLA-Class is fully produced in China, as well as a new plant for the production of the 4-cylinder engine was opened in 2013. Moreover, Daimler's second Chinese joint venture with Build-your Dreams (BYD) was set up in 2011 to strengthen the position in the E-Car segment. As a result, the DENZA, Daimlers first purely E-Car with a driving range of 300 km, was introduced only for the Chinese market at the Beijing Auto show in 2014 (Daimler, 2013a).

1. Customer Segments

Daimler specifies their customers as people who are on the road all over the world by travelling through cities and rural areas. The company is focused on the premium segment of the mass market including senior citizens, singles, families, business travelers, young people, as well as professional truck drivers (Daimler, 2013b).

The strategy „One size fits all is not enough for us“ said Schmidt, Executive Vice President Mercedes-Benz Cars, Sales and Marketing. Hence, Daimler identified different target groups, in addition to the typical buyers and set a new focus on young people (Format, 2013).

With the introduction of new models, Daimler reduces the average age of their buyers and therefore aims at a broader target segment. The number of buyers between 25-34 years increased by 7 % (Auto-Medienportal, 2013).

With the offer of their car sharing platform car2go and car2go black, Daimler opened an entirely new customer segment. The focus is set on yuppies traveling within the city. Furthermore, this new mobility service targets people who do not want to possess a car but simply want to have the feeling of the unrestricted mobility. “More than half of the car2go

users are under 35 years old and therefore significantly younger than the average Mercedes-Benz customer” as stated by Henrich, car2go Project Manager (Handelsblatt, 2009).

2. Value Propositions

Daimler delivers a variety of values to their customers by offering a wide portfolio of cars, trucks, vans, buses and financial services. The key value proposition is set on selling perfect, fascinating and responsible cars to increase customer satisfaction, as well as to deliver a unique experience of buying, possessing and driving a Mercedes-Benz. Offering safe, efficient and clean vehicles as well as services is the driven strategy with the vision of creating a smart mix of drive systems (Daimler, 2013). In China together with BYD, Daimler introduced the DENZA model to “deliver the safest, most reliable, and most convenient electric vehicle to our Chinese customers – designed, engineered, and produced for China, in China” (Daimler, 2014d).

However, apart from the typical value proposition of producing and selling vehicles, Daimler offers a wide range of financial and mobility services, under the name Daimler Financial Services. The services include, leasing, retail financing, insurances, banking and innovative mobility services (Daimler, 2014e).

By introducing the car2go brand, a car sharing program where customers can rent a Smart anywhere and to any time within the corresponding operation area, Daimler offers their customers a new and innovative mobility service and is the world’s leading vendor in the car sharing segment. With the car2go concept, customers can rent a Smart and use it for inner-city commuting by finding vacant cars with the help of their smartphones. The vehicles can be rented within the whole operation area and can be dropped off anywhere within this area without any fixed spots and costs for parking. Car2go is operating in 26 international cities and consists of 10,500 environmentally friendly Smarts including 1,200 E-Cars and serves 700,000 customers (Daimler, 2014f). The characteristics of car2go are: availability; a lot of vehicles are situated around the city, flexibility; only one-way rents are possible and simplicity; using a smartphone app and clear costs due to no monthly fees or binding contracts (The Wall Street Journal, 2014).

Another service that Daimler offers is park2gether, an intelligent parking solution concept where consumers can temporary offer their own parking space to other drivers who are looking for one. Moreover, the app outlines available charging station for E-Cars (Daimler Financial Services, 2014).

To make use of car2go, as well as park2gether, Daimler developed a smartphone app called moovel which allows customers to benchmark different mobility solutions for travelling from point A to B and highlights the fastest, most comfortable and cheapest way of commuting. Moovel not only combines the mobility concepts car2go and park2gether, it also combines the services between Daimler and their local partnerships with mobility providers such as mytaxi, flibus, nextbike or other public transportation agencies. All options can simply be booked via moovel app which stands for innovative and unrestricted movements (Daimler, 2014f).

Since 2014, Daimler provides car2go black and expanded their car2go offer by using the Mercedes-Benz B-Class for their car sharing program. “With car2go we have revolutionized urban mobility. With car2go black we are now offering car sharing with Mercedes-Benz vehicles. We will thus be addressing a wider range of customers and enabling long-distance travel” outlines Robert Henrich, Head of Daimler Mobility Services GmbH (Daimler, 2014g).

Now Daimler also expands this pilot project to the Chinese market to revolutionize urban mobility. 10,000 employees of the Tencent holding, Chinas biggest Internet Company, are allowed to use 30 Smarts for business as well as for personal purposes. “We are the first automotive company to offer a commercialized corporate car sharing program in China. It has already proven successful in many other countries” said Hubertus Troska, CEO of Daimler Greater China (China Daily, 2014c).

3. Channels

Daimler uses several distribution channels to reach their customers. Classically, Daimler sells their cars via their wholesales which supply over 8,000 dealerships. According to their growth strategy, “Mercedes-Benz 2020” the program best customer experience was launched. The focus is to attract more younger and fashionable customers by a variety of new distribution channels. Mercedes-Benz further emphasizes the inner-city retailers to stay in direct contact with their potential buyers in a relaxed atmosphere, within the heart of metropolises. The aim is to double their inner-city showrooms by 2020 to 40 dealers. Furthermore, to target the young generation new channels, such as the online Store “Mercedes-Benz connect me”, where customers can buy pre-defined Mercedes-Benz models online and mobile sales consultants, were recently established (Daimler, 2013a).

In addition to this, with their mobility services Daimler offers a new kind of distribution channel. Daimlers moovel app is an interconnected platform where all services as car2go, car2go black as well as park2gether can be booked through (Daimler Financial Services, 2014).

To meet the customers demand in China, Daimler operates with 330 dealers. Another 100 dealers are planned in 2014, as well as the expansion to 40 new cities, to develop the brand. The established joint venture with Build your Dreams (BYD) to produce and market the DENZA serves as another channel in China. Special DENZA dealers are planned in Beijing, Shanghai and Shenzhen, for the beginning (Daimler, 2013c).

4. Customer Relationships

According to J.D Power’s VOSS Germany, a survey of customer satisfaction, Mercedes-Benz was ranked number 1 in the premium segment (Daimler, 2012).

Customer satisfaction can be seen as top priority under the CRM of Daimler. This affects the products, sales and service activities, financing, insurance and other services, positively. Special training programs with practical guidelines about how to deal with customers at the point of sale are set up to increase the relationship.

The aim of the integrated customer relationship is to win new customers and build-up brand awareness, as well as brand loyalty. To achieve this, Daimler launched a program called CSI

(Customer Satisfaction Index) Number 1 to further develop customer satisfaction (Daimler, 2011a).

Besides the typical interaction between the customer and the dealer, Daimler introduced the Mercedes-Benz driving experience, where potential customers can get in touch with the products (Mercedes-Benz, 2014). Especially in China, special driving training is offered for first-time users (China Daily, 2014c). Moreover, with the growth strategy “Mercedes-Benz 2020” the company’s focus is set to deliver best customer experiences.

With the new car sharing concept, Daimler extended their opportunities to keep and grow customers. Potential customers of car2go can simply book a vacant car within the city without any binding contracts, monthly fees or minimal rental period (One-off sign-up). Additionally, to the car sharing concept, customers become aware of the cars and especially the E-Cars, as well as the brand as a whole (The Wall Street Journal, 2014).

5. Revenue Streams

In line with their value proposition, Daimler generates the majority of its revenues by selling cars. In 2013, Daimler sold about 1,6 Mil. cars with an EBIT of 4 Bil. Euros (Daimler, 2013a). As mentioned China is one of the most important markets for Daimler. Due to the launch of new models as well as better positioning in the Chinese market, Daimler doubled its EBIT in the first quarter of the fiscal year 2014, compared to 2013 (Reuters, 2014). Moreover, the annual production of Daimlers E-Car Smart electric drive was already sold out in the end of 2013 (Zeit, 2013).

Moreover, the car sharing platform car2go counted 700,000 customers and is market leader within this segment and develops alternative revenue streams (Daimler, 2014f). Car2go customers have to pay 0.29 € per minute, 14.90 € per hour or 59.00 € a day without any monthly fixed costs which are seen as recurring values. The rates are all-inclusive prices and cover rental, fuel, insurance, parking and maintenance costs. Customers only have to pay while driving the car. However, they have the chance to reserve the car during the parking period, settle the shopping and go back to the car for additional 0.19 € per minute. As car2go uses E-Cars, customers receive 20 free driving minutes if the battery level is below 30% and they charge the cars. The prices for car2go black are 9.90 € per hour, 49.00 € per day and 0.29 cent/km if they outnumber 51 kilometers (car2go, 2014).

In China, the car sharing program is currently only offered to the employees of Tencent. Here the customers use “Wechat Pay”, which is part of Tencent’s mobile messaging platform “Wechat”, to pay for the service. According to China Daily, the prices of the car sharing offer are more competitive than taxi prices and the customers are charged on hourly rates (China Daily, 2014c).

6. Key Resources

One of Daimler’s key resources is the company’s employees. Daimler has 275,000 employees. 21,300 of them are engineers focused on R&D projects which contribute to the future success of the organization (Daimler, 2013a). Intellectual property is another major key resource for Daimler. As Daimler is one of the pioneers of inventions for more than 125

years, the companies R&D division is focused on new innovations. Consequently, the company's technological leadership is confirmed by its 80,000 patents applications. Daimler is, with 2,000 new patent applications per year, the leader and therefore takes the first place concerning premium vehicle manufactures in Europe. Half of the new inventions are related to green technologies like fuel cells, eDrive, battery technology and exhaust gas after treatment (Daimler, 2014h). According to a study of the Center of Automotive Management and the consultancy Pricewaterhouse Coopers (PwC), Daimler is the most innovative automotive brand and received the Automotive Innovations Award 2014 (Daimler, 2014i).

Daimler has more than 62 production sites in over 19 countries to cover the demand of the consumers. In order to reduce fuel consumption as well as to save resources, Daimler focused on lightweight construction by using fiber-reinforced plastics with a high rate of carbon fibers (Daimler, 2011b). Raw materials play an essential role, especially in the E-Car business. Consequently, Daimler created a joint venture in China for the production of their pure E-Car. Daimler combined their engineering expertise with BYDs leading battery technology to exploit synergy effects.

For their mobility service platform, Daimler utilizes 200 Mercedes-Benz B-Classes for car2go black and 10,500 environmental friendly Smarts including 1,200 E-Cars for car2go. To keep the business running and take care of maintenances, a car2go Service Team is available. Moreover, a nationwide supply of charging stations for their E-Cars is set up (Daimler, 2014f).

7. Key Activities

The Daimler AG develops, manufactures, distributes and sells a huge variety of automotive products. The business activities are separated into Mercedes-Benz Cars, Daimler Trucks, Mercedes-Benz Vans, Daimler Buses and Daimler Financial Services. Mercedes-Benz vehicles are known for their innovative technology. For the future mobility, the cars are engaged with the following activities: environmental friendliness and sustainability, security, networked drive, autonomous driving, comfort, quality and design. Daimler optimizes their ICE driven cars to high-tech vehicles with the aim to lower consumption and emissions and increase the performance of the cars. The emission reduction takes place in all vehicles and is labeled under the name BlueEFFICIENCY Edition. Another key activity is the hybridization of vehicles with efficient ICEs with their modular hybrid system, where different models can be equipped. Furthermore, the local emission free driving with electric cars is in their field of research. In their strategy, all activities around the vehicle and the engine are bundled to save resources, as well as to lower emissions over the whole value creation process.

Another key activity is the supply chain management of Daimler. In order to ensure a steady supply of parts and raw materials, Daimler has a close cooperation with its first tier suppliers, selected sub-suppliers, raw material suppliers, as well as transportation carriers, which last over a long-term agreement (Daimler, 2014j).

The marketing and sales department is responsible for the promotion of the products as well as coaching for the dealers to boost sales figures (Daimler, 2013a).

With the Daimler Financial Service business unit, the key activities are set on financing, leasing, insurance, fleet management, banking services and mobility services. The mobility service contains car2go, car2go black, Mercedes-Benz rent, moovel, park2gether and public partnerships. Here the key activities are correlated to the app development, the fleet management of car2go cars as well as to maintain the interaction of the customers (Daimler Financial Services, 2014).

8. Key Partnerships

In 2010, Daimler announced Renault-Nissan as one of their key partners for the common production of the 4-cylinder ICE, to save costs. “By every objective measure, this cooperation is one of the most productive in the auto industry, enabling all partners to increase economies of scale while keeping our brands and products distinct” according to Carlos Ghosn, CEO of Renault-Nissan Alliance (Daimler, 2013d).

The joint venture with BYD in China aims to exploit similar benefits. Since 2013, Daimler owns a 12 % share of BAIC and is the first non-Chinese automobile manufacturer that has shares in a Chinese car manufacturer (Daimler, 2013a). Daimler outlines that “combining Daimler’s renowned tradition and engineering expertise as a worldwide leader in safety technology and quality excellence with BYDs leading battery technology, DENZA is styled as an honest and modern urban vehicle concept that fits both private and fleet customers” (Daimler, 2014d). To charge the new E-Car and for the roll out of the world’s largest charging network to further develop the infrastructure, BYD and Daimler choose ABB, the leading power technology company (Daimler, 2014k). Moreover, another step concerning their strategy to become the leader in green technologies, was that Daimler established a joint venture with Toray, a Japanese specialist in lightweight construction, on the basis of carbon fiber in 2011 (Daimler, 2011c).

In order to meet their electro mobility projects with the target of zero-emission vehicles, Daimler holds a 4.7 % stake in the U.S. E-Car pioneer Tesla and has a seat on the board of the company. Tesla delivers the electric powertrains for the new Mercedes-Benz B-Class electric drive and has already delivered the electric powertrain for the Smart. However, the new generation of the electric Smart uses the lithium ion accumulators from the cooperative venture between Daimler and Evonik, and the electric powertrain is engineered by Daimler and Bosch as a joint venture (Handelsblatt, 2012).

Strategic partnerships to support car2go were established with the park operator of public charging stations, for example. To keep the operations running, various app suppliers and IT companies belong to their partner base as well. Furthermore, car2go cooperates with Europcar, a rental agency, local governments and plenty of public transportation companies to deliver a unique customer experience (Daimler Financial Services, 2014). The cooperation with municipalities is essential as in most markets, car2go cars can either park in specially marketed parking spots or with the permission of the local municipalities in special designated parking areas within the city (China Daily, 2014c). To get possible subsidies and to get the necessary support regarding the establishment of the infrastructure or the offer of

parking spots, Daimler also has a well-established relationship with the local municipalities and the government.

9. Cost Structure

Daimler's growth strategy aims to strengthen its core business, expand and grow in new markets, become the leader in green technologies and establish new mobility concepts, as well as services for society (Daimler, 2014c). To reach this goal and produce new products, new technologies and modern production capacities, Daimler will invest 11 billion Euros in properties (tangible assets), as well as 11 billion Euros in new R&D projects, in 2014 and 2015. The focus on the investment in properties is set on production preparations for the new models, as well as on new marketing and sales organizations, whereas the focus on the investment in R&D projects is set on the production of new and innovative powertrain technologies to lower emissions. Moreover, Daimler undertook several financial transactions in subsidiaries and joint ventures to lower their overall cost structure of manufacturing premium vehicles. An example was the 12 % share in the Chinese partner BAIC Motors and the further investment in other Chinese joint ventures (Daimler, 2013a).

To lower the overall cost structure in engineering of new products and technologies, Daimler takes advantage of their modular manufacturing with their Renault-Nissan Alliance. "The synergies with Daimler have a present net value of at least two billion Euros for the Renault-Nissan-Alliance" according to the CEO Carlos Ghosn which was confirmed by the CEO of Daimler, Dieter Zetsche, Daimler benefits in the same dimension (FAZ; 2010). Daimler implemented the "Fit for leadership program", a cost-cutting program to improve internal processes with the aim to save around 2 billion until the end of the year 2014. Numerous measures, such as the increase of efficiency in the product engineering process or the purchasing and sales optimizations, are already under realization to increase productivity and reduce material and fixed costs (Daimler, 2013a).

For China as one of their key markets, Daimler has, according to the German daily Tagesspiegel, problems with the distribution and the profitability of the dealers and consequently invested 850 Mil. € to train their dealers and improve their market appearance (Tagesspiegel, 2012). For the establishment and the administration of car2go or other mobility services, the cost structure mainly focuses on marketing, app development, fleet management, as well as developing the required infrastructure, especially for their E-Cars. According to Annette Winkler, CEO of Smart, "In 2014, we will be profitable with car2go" (Autogazette, 2012).

5 Analysis

This chapter presents a combination of our framework of references with the findings from our empirical data. To formulate a basis for the final conclusion, we first present a theoretical quotation regarding each category, followed by information about the industry. Subsequently we analyzed our cases according to our nine categories by first conducting a within-case analysis and second a cross case-analysis.

As stated in Skarzynski and Gibson (2008) to understand the innovation of BMs, each segment must be unpacked to see the correlation between each component and how they interact in between.

1. Customer Segments

One aim of an organization is to have satisfied customers who are willing to pay for the product. In order to fulfill this and reach them, a company groups the customer into different segments with equal needs, equal behaviors or other characteristics (Osterwalder & Pigneur, 2010).

In China, based on the cultural code, consumers have a different perspective compared to the western ones: “[...] *you need to think about the culture difference and the consumer’s behavior, before you enter the market, to use the different policies upon different targets*”.

BMW

By introducing their sub-brand BMW i and therefore extending their product range by the offer of E-Cars, BMW formed a total new customer segment such as dwellers of megacities like Shanghai or Beijing for example. The same is true for BMW’s efforts in the mobility service business. With the introduction of mobility services the company is aiming at people who want to drive a car – but don’t want to own one.

Daimler

Daimler realized that their strategy “One size fits all” as well as introducing new models is not enough for entering new markets and therefore identified different target groups. With the introduction of the car sharing concept car2go and car2go black, they positioned two different models in a totally new customer segment. The focus for the E-Car is set on young urban professionals, commuting within big cities to experience the feeling of unrestricted mobility without the need of owning a car.

Cross-case

As the PESTEL-Analysis reveals, companies have to consider the cultural differences and therefore target on different customers when they want to introduce E-Cars in the Chinese market. China already comprises more than 150 cities with a population of over one million people. It can be seen that both companies changed their target from a single customer group to a multiple target groups. This change happened with the introduction of the mobility service as the car sharing concept to commercialize E-Cars to dwellers of megacities to deliver them the feeling of unrestricted mobility. Within these urban areas, low average

mileage customers as well as customers who have the demand of driving a car but do not want to own one, appear.

The following table outlines the main findings:

Customer Segments	External environment (China)
<ul style="list-style-type: none"> - From single customer group to multiple target group - Dwellers of megacities 	<ul style="list-style-type: none"> - Cultural differences - Urbanized megacities with a high car density

Table 4: Findings Customer Segments

2. Value Propositions

Basically, a value proposition solves a problem for the customer or satisfies a customer need. On the one hand, value propositions can be innovative and representing a new offer but on the other hand they can also be similar to the existing ones by adding new characteristics (Osterwalder & Pigneur, 2010).

In 2009 the Chinese government announced an increase in the investment in R&D projects of environmentally friendly vehicles as E-Cars to reduce the level of emissions and consequently protect the environment: *“China introduces pilot cities who are doing an emission trading scheme before the government applies it into a national scheme”*. Moreover, the growing number of car customers and the fast urbanization process in China leads to a lack of parking spots and as a result limits mobility.

BMW

BMW creates value for their customers by delivering individual mobility. The product as a car can therefore be seen as *pars pro toto* of a number of values like performance, innovation, luxuriousness etc. connected to mobility. With the introduction of E-Cars the company offered a new value – sustainable and environmentally friendly technologies combined with luxurious design and performance. By offering E-Cars in the innovative car rental concept DriveNow, BMW offers the customer to experience the benefits of E-Cars by driving one without purchasing one.

Daimler

Apart from the typical value proposition of selling cars, Daimler generated new value proposition for their customers with their car sharing program to attract the consumer to E-Cars. All the activities are covered with the moovel app, which controls the whole booking process of car2go, car2go black and park2gether. While car2go only offers Smarts for rent, the lower Daimler brand in their fleet, car2go black now provides actual Mercedes-Benz cars. The cars can be rented and used within the whole city and dropped off in the operating area. To revolutionize the Chinese market concerning urban mobility, employees of a known Chinese company make use of the concept in a pilot study to further commercialize E-Cars.

Cross-case

Both manufacturers propose new values to their customers with the launch of innovative car sharing concepts. BMW therefore uses DriveNow to get in contact with the consumers and to

test the acceptance of E-Cars in Chinese society. Daimler as well started to offer individual urban mobility without car ownership with their low brand, Smart. Since the offer succeeded in the concept phase, they now included Mercedes-Benz cars in their program. As the introduction of E-Cars is still in the initial phase, both companies use the car sharing concept as a test marketing tool for their E-cars. This gives them the chance to raise customer awareness, bring the technology closer to the consumer and offer comparably cheap access to E-Cars. Furthermore, this approach enables a manufacturer to react to negative feedback, adjust the proposition and deliver a more specified value. Moreover, it was found out that both companies use sub-brands to launch E-Cars, to protect their own brand. As China established pilot cities, where these concepts can be tested, we see it as a potential success strategy for car manufacturers to introduce such car sharing initiatives to target new customers and reach new markets, which were by now only be dominated by taxis or public transportation agencies.

Value Propositions	External environment (China)
<ul style="list-style-type: none"> - Car sharing concept with E-Cars - Use of other names to market E-Cars for example sub- or Chinese brands 	<ul style="list-style-type: none"> - Government introduces pilot cities to reduce emissions - Government subsidizes investments in R&D for green technologies

Table 5: Findings Value Proposition

3. Channels

Channels as a tool to reach customers have several functions. For example raising awareness among customers about a company's products and services, helping customers evaluate a company's value proposition, allowing customers to purchase specific products and services, delivering a value proposition to customers and providing post-purchase customer support (Osterwalder & Pigneur, 2010).

Due to the global megatrends in the automobile industry, different channels have to be considered. China's high rate of urbanization and its huge number of megacities will lead to changes in the consumers' purchasing behavior and will force car manufacturers to come up with new and innovative ways to attract them and to raise their awareness.

BMW

By using dealerships, webpages, smartphone apps etc. the car manufacturer utilizes several channels to serve consumer needs, raise their awareness and provide the consumers with the corresponding information. By offering the possibility to order the BMW i3 via smartphone or online BMW widely opens the field of access to E-Cars in an innovative way, brings the electric technology closer to the customer and raises customer awareness to eliminate prejudices.

Daimler

To further attract younger customers, Daimler expanded their inner-city showrooms which are located in the heart of big metropolises as well as introduced "Mercedes-Benz connect me" to order pre-defined models, online. With their moovel app which provides a connected interface

for the booking process of all Daimler mobility services, the company opened an entirely new and innovative distribution channel. Together with the Chinese manufacturer BYD, Daimler jointly produced their new E-Car – the DENZA. This will be the first E-Car from Daimler and BYD which will penetrate the Chinese market.

Cross-case

Due to the increase of urbanization, car manufacturers are forced to establish new distribution channels to reach their consumers. From our analysis, it emerges that both manufacturers use internet platforms and smartphone applications as major vehicles to deliver their value to the consumer. E-Cars, which are part of the mobility service fleet can simply be booked over smartphone apps and due to the free pick-up and pick-off regulation within the city, opens a new way to bring the product and service to the consumers. Another distribution channel, especially to market E-Cars in China was established through joint ventures with their Chinese partners, BYD (Daimler) and Brilliance (BMW), allowing them to exploit synergies by utilizing existing production plants, dealer networks and many other benefits.

Channels	External environment (China)
<ul style="list-style-type: none"> - Internet platforms and smartphone applications - Joint ventures with Chinese partners 	<ul style="list-style-type: none"> - Increasing urbanization requires innovative channels

Table 6: Findings Channels

4. Customer Relationships

An organization has to define the established relationship within the customer segment clearly (Osterwalder & Pigneur, 2010). Furthermore, organizations will gain long-term benefits if the relationship between the employees, customers and the firm is valuable and sustainable (Heskett et al., 1994).

Due to the cultural code, Chinese customers have different perspectives and opinions on products. *“When you entering the Chinese market the question for you is more talking about consumer interest...”* (Tiantian, Qi)

BMW

By always showing one face to the customer and treating every customer with the same premium quality, BMW makes significant efforts to build new and retain existing customer relationships. Doing this, BMW uses a CRM system to properly serve the individual needs of customers in the corresponding countries. Personalization helps to build a higher level of trust and also helps to develop new products such as E-Cars or car sharing services, according to data derived from existing customers. The introduction of a Driving Academy further strengthens the relationship to existing customers and raises the awareness of new customers.

Daimler

To further interact with potential customers, Daimler introduced the Mercedes-Benz driving experience, where a customer can experience the cars of Mercedes-Benz as well as Smart and therefore establish a new customer touch point. The usage of car2go and the other mobility

services are one-off sign-ups. To increase the awareness of E-Cars as well as the brand and to retain customers, the mobility services can be used without any binding contracts, monthly fees or a minimal rental period.

Cross-case

It can be seen that both companies, BMW and Daimler, set a high focus on the interaction between the customer and the organization and established new customer touch points to deliver this value. BMW uses a tailor made CRM system to discover the individual needs and therefore establish a high level of trust to market E-Cars. With the help of the CRM system, it is possible to receive constructive feedback from the customers which can be transferred into new values. Both manufacturers also use driving experience centers to keep in touch with their customers and use this platform to further attract customers with new technologies. What can be seen from both organizations is that their mobility service concept, with no binding contract, as well as all inclusive prices, is a new way to encourage customer relationships and attract them to new technologies as well as to lower the get-in-touch barriers.

Customer Relationships	External environment (China)
<ul style="list-style-type: none"> - High focus on interaction - Mobility service concept as new touch point - Use of driving experience centers 	<ul style="list-style-type: none"> - Different consumer interest - Other requirement brought to the manufacturer

Table 7: Findings Customer Relationships

5. Revenue Streams

Two different types of revenue streams can be involved in a BM: “Transaction revenues resulting from one-time customer payments and recurring revenues resulting from ongoing payments to either deliver a value proposition to customers or provide post-purchase customer support” (Osterwalder & Pigneur, 2010).

China is the biggest car market of the world and with its growing population and the flourishing purchasing power, is attractive to global car manufacturers to generate high profits. *“Chinese consumers have a public acknowledge of German cars because German cars stand for good quality. That is why they would spend double the price to buy a VW or other foreign car brand”.*

BMW

Due to conventional car sales, BMW generates transactional revenue and due to the offer of mobility services, the company generates recurring revenues. The jointly developed E-Car Zinoro 1E will not be purchasable in China in the beginning. It will step into the market as a rental car first. This strategy seems to use the rental car system as an icebreaker to get people in touch with the new technology and could be utilized to eliminate prejudices, raise consumer awareness and lead to a potential purchase of an E-Car afterwards.

Daimler

With the sales of cars from their own brand as well as cars from their joint venture, Daimler generates transactional revenues in China. However, recurring revenues are generated with the offer of the mobility services. The 700,000 worldwide customer of car2go generates steady income, due to a fixed all inclusive price of 0,29 € per minute. In China, Daimler uses the so called online platform “Wechat Pay” where the customer can pay for the rented cars on an hourly basis, which can compete against the low fees of taxis.

Cross-case

Chinese consumers appreciate German cars due to their high quality standards and are willing to pay a higher price for it. With the launch of the BMW i3 and the new Zinoro 1E in the form of a rental car service, BMW sets the focus concerning revenue streams on transactional as well as recurring revenues for their E-Car strategy. Daimler generates transactional revenues as they sell their DENZA model via BYDs retailers as well as recurring revenues with their car sharing offer, where Chinese customers can rent cars on an hourly basis. Moreover, manufacturers can also use special training in their driving experience centers to further increase the customer awareness of E-Cars.

Revenue Streams	External environment (China)
- Transactional payments	- High purchasing power of consumers
- Recurring payments	- Willingness to pay for foreign brands

Table 8: Findings Revenue Streams

6. Key Resources

To keep the BM running, key resources are the most crucial asset. “These resources allow an enterprise to create and offer a value proposition, reach markets, maintain relationships with customer segments and earn revenues” (Osterwalder & Pigneur, 2010: p.34).

With the entrance in the World Trade Organization, the Chinese market is more attractive for foreign companies and also eases the access to valuable resources which are needed in order to manufacture E-Cars.

BMW

In recent years BMW made large investments in the development of their BMW i sub-brand and the i3 and i8. However, besides financial resources, BMWs workforce, in particular the engineers and software developers as well as their production facilities and the knowledge the company holds, are all seen as their key resources. To produce E-Car’s automotive lightweight parts and components becomes more and more vital and these are inevitable resources.

Daimler

Daimler invested heavily in the development of green technologies and new mobility concepts and is the leader concerning intellectual properties and the most innovative automotive brand in 2014. To get access to valuable key resources which are needed to produce E-Cars, the joint venture with BYD was a step in a sustainable direction. BYD holds

a lot of knowledge and is one of the pioneers in battery technologies. Furthermore, the usages of lightweight construction elements as carbon fibers are vital key resources. Service teams and software developers can be considered as key resources for their mobility services.

Cross-case

Having access to resources is crucial for companies to compete in new markets, especially with the commercialization of new technologies. BMWs key resources can be seen in the investment of their new sub-brand for the i3 and i8 models. Daimler's key resources can be summarized in intellectual properties. A common strategy, which is also an obligation imposed by the government, are their joint ventures with Chinese companies. This allows the manufacturers to get better access, especially for lightweight construction elements as well as battery knowledge, which are both key elements to successfully produce E-Cars.

Key Resources	External environment (China)
- Joint ventures with Chinese companies to get access to national resources	- China joined the World Trading Organization - Government loosed barriers and eases access to the market and resources

Table 9: Findings Key Resources

7. Key Activities

As key resources, key activities are vital to create value proposition, reach markets, maintain customer relationships and finally earn revenues. Depending on the BM type, key activities differ and can be grouped by production, problem solving and platform/network (Osterwalder & Pigneur, 2010).

China's government increases the pressure to produce cleaner vehicles and tightens the emission controls. These changes require lowering the emission standards of the vehicles by introducing new technologies.

BMW

By grouping the E-Car related activities in an independent sub-brand and in a joint venture with a Chinese business partner, the company creates a bit space between the pure electricity and the brand BMW. BMW strategically combines their key activities which start from the recruitment process of new personnel and go over development and production of innovative products, right up to the sales of cars in an efficient and value creating way.

Daimler

Daimler aims to lower the consumption and emission and to increase the performance of the car. Consequently, the key activities start from the R&D progress of emission free driving which is achieved by E-Cars, the supply chain management to get access to the required resources and ends with the promotion of the end product through marketing. The interaction between the offered mobility services and the customer takes place via smartphones. The development of the corresponding app is therefore seen as a key activity for future mobility. Engaging with partners is another key activity that plays a crucial role.

Cross-case

With the pressure of the Chinese government concerning the production of clean vehicles, car manufacturers have to change their key activities to meet these policies. From the analysis, it emerged that the engagement with new partners to deliver the new values regarding the introduction of E-Cars are among the top key activities for the car manufacturers. Furthermore, the administration and the development of apps, necessary for their mobility services and the offered E-Cars changed the focus of key activities compared to the usual manufacturing process of cars.

Key Activities	External environment (China)
<ul style="list-style-type: none"> - Establish a mobility service concept - Administration and development of apps 	<ul style="list-style-type: none"> - Tighter regulations of emission controls

Table 10: Findings Key Activities

8. Key Partnerships

The main reason for companies to establish partnerships is due to the optimization and economy of scale, minimization of risk and uncertainty and sourcing of specific resources and activities (Osterwalder & Pigneur, 2010).

The market of E-Cars is very dependent on the government. Governments can create a whole new market place for E-Cars by changing legal restrictions as well as financial incentives (Wells, 2013). *“If you want to enter the Chinese market, you have to establish a joint venture. There is no solution in between”*. Due to this regulation, domestic car manufacturers have a chance to utilize the technologies of the international organizations to increase their competitiveness within that industry.

BMW

The joint venture with Brilliance helps to get better access to resources and customers in the Chinese market. The strategic corporations and the deals with battery manufacturers, lightweight construction suppliers and electric power companies give good hints about BMW's intention to increase the production of E-Cars. Based on lobbyism and its huge power of influence, we further identified the government on a country level and the municipality on a regional level, especially in China, as a very important key partner for BMW.

Daimler

Daimler established several joint ventures with organizations from different industry sectors. Concerning the commercialization of E-Cars, cooperation with Chinese car manufacturers, battery suppliers, power technology companies to set up the required infrastructure, lightweight construction specialists as well as other E-Car producers such as Tesla, to use the same electric powertrain, were set up. Moreover, the cooperation with the government and the local municipals in order to boost the mobility service concept, is seen as vital to introduce E-Cars.

Cross-case

For the commercialization of E-Cars in the Chinese market, both companies established numerous cross-industrial joint ventures to benefit from economies of scale as well as from their knowledge in each segment. Additionally, with the knowledge of the local organizations, cultural differences concerning product awareness can be considered as valuable information. With these partnerships, they are able to reduce the high R&D costs that come up with the invention of E-Cars and build-up a corresponding infrastructure which is required for the success of E-Cars. Moreover, Daimler develops their electric powertrain together with competitors, such as Tesla. To introduce E-Cars, the respective country needs to possess the corresponding infrastructure. As the government can shape totally new conditions for the market of E-Cars as well as decide on the development of the required infrastructure for the E-Cars, BMW and Daimler cooperated with municipals to boost the acceptance and sales. E-Car introduction therefore requires an adjustment of a government's BM as well and therefore the cooperation with the municipals on a regional and the government on a national level, can be seen as a crucial factor.

Key Partnerships	External environment (China)
<ul style="list-style-type: none"> - Joint ventures with strategic chosen national player (e.g. battery manufacturer, electric power companies etc.) - Collaboration with municipals and the government 	<ul style="list-style-type: none"> - Regulations to establish joint ventures with Chinese companies when entering the market - Governmental support to build up a corresponding infrastructure

Table 11: Findings Key Partnerships

9. Cost Structure

The cost structure of the BM can be differentiated between two classes: the cost-driven, focusing on reducing costs and the value-driven BM, focusing on value creation instead of low-cost offers. The characteristics of the cost structures are as follows: fixed costs, variable costs, economies of scale and economies of scope (Osterwalder & Pigneur, 2010).

"...the E-Car market in China is not so matured by now and the car manufacturers have to find the right strategy to introduce them". Consequently, the Chinese government heavily invested in the development of new technologies, the infrastructure which is required to charge the E-Cars as well as the promotion of the use of lithium batteries.

BMW

In recent years BMW heavily invested in the production of E-Cars and did not even stop doing this during the crisis which shows the company strongly backs the E-Car strategy. The reduction of costs, due to modular manufacturing, also helps to raise margins and ease production cycles. By applying high prices in China, BMW seems to strive for an extremely high profit margin among the i3. For the introduction of the Zinoro 1E as a rental car, we expect major expenses for marketing operations and software development as well as administration in the beginning.

Daimler

Daimler invested a large amount in new production facilities as well as R&D projects to produce new and innovative powertrain technologies with the aim to lower emissions. With the established partnerships and the implementation of the “Fit for leadership” program, they improved their overall cost structure. This optimization is essential to be profitable in the E-Car business and the mobility service industry, as the car2go project will reach their turnover phase not until the middle of 2014.

Cross-case

The main challenge concerning the commercialization of E-Cars is to manage the BM in the right way to generate profits with the innovations. BMW and Daimler invested a large amount in the production of E-Cars with the aim to adapt to the changes in the environment and to meet changing consumer demands. To keep the costs low and be profitable in the Chinese market, both manufacturers made use of modular manufacturing with the help of the established partnerships. It can be said that BMW and Daimler focus on the value-driven BM and are less concerned about the price but more on the personalized service as well as the premium value.

Cost Structures	External environment (China)
<ul style="list-style-type: none"> - Application of modular manufacturing - Focus on value-driven BM 	<ul style="list-style-type: none"> - Government subsidizes the development of new technologies and the corresponding infrastructure

Table 12: Findings Cost Structures

Summary of analysis:

Category	Findings	External environment (China)
Customer Segments	<ul style="list-style-type: none"> - From single customer group to multiple target group - Dwellers of megacities 	<ul style="list-style-type: none"> - Cultural differences - Urbanized Megacities with a high car density
Value Propositions	<ul style="list-style-type: none"> - Car sharing concept with E-Cars - Use of other names to market E-Cars for example sub- or Chinese brands 	<ul style="list-style-type: none"> - Government introduces pilot cities to reduce emissions - Government subsidizes investments in R&D for green technologies
Channels	<ul style="list-style-type: none"> - Internet platforms and smartphone applications - Joint ventures with Chinese partners 	<ul style="list-style-type: none"> - Increasing urbanization requires innovative channels
Customer Relationships	<ul style="list-style-type: none"> - High focus on interaction - Mobility service concept as new touch point - Use of driving experience centers 	<ul style="list-style-type: none"> - Different consumer interest - Other requirement brought to the manufacturer
Revenue Streams	<ul style="list-style-type: none"> - Transactional payments - Recurring payments 	<ul style="list-style-type: none"> - High purchasing power of consumers - Willingness to pay for foreign brands
Key Resources	<ul style="list-style-type: none"> - Joint ventures with Chinese companies to get access to national resources 	<ul style="list-style-type: none"> - China joined the World Trading Organization - Government loosened barriers and eases access to the market and resources
Key Activities	<ul style="list-style-type: none"> - Establish a mobility service concept - Administration and development of apps 	<ul style="list-style-type: none"> - Tighter regulations of emission controls
Key Partnerships	<ul style="list-style-type: none"> - Joint ventures with strategic chosen national player (e.g. battery manufacturer, electric power companies etc.) - Collaboration with municipals and the government 	<ul style="list-style-type: none"> - Regulations to establish joint ventures with Chinese companies when entering the market - Governmental support to build up a corresponding infrastructure
Cost Structures	<ul style="list-style-type: none"> - Application of modular manufacturing - Focus on value-driven BM 	<ul style="list-style-type: none"> - Government subsidizes the development of new technologies and the corresponding infrastructure

Table 13: Summary of Findings

6 Conclusion

This chapter presents the findings and final conclusion of our study. We will answer the research question given in the first chapter. Moreover, we will confirm our outcome with other findings and discuss further practical implications by outlining some valuable recommendations. Further, limitations connected to the study and proposals for further research will be shown.

The purpose of our study was to explore if and how car manufacturers from the automobile industry have to innovate their BM to introduce E-Cars to China. Bohnsack et al. (2014) presented that the evolution of BMs shows a series of incremental changes that introduce service based components. Our analyses of the evolution of BM however highlighted that previous BMs emphasized the environmental level, whereas current BMs set their focus only on the industry level, which we identified as a clear shortcoming. Due to the fact that organizations have to compete in a rapidly changing environment, we modified the Business Model Canvas of Osterwalder and Pigneur (2010) by including the missing environmental factors with the help of the PESTEL-Analysis. Since China is a complex developing market with different structures and characterizations as known from the developed western markets, the incorporation of the PESTEL-Analysis is a crucial element to derive clear and valuable statements and to make a trustworthy point.

Our analysis shows that we fulfilled the research purpose. We pointed out which aspects within each category of the BM are relevant to consider for car manufacturers to introduce E-Cars to China. The following paragraphs will present our conclusions in detail, referring to our research question:

“How do car manufacturers have to innovate their Business Model to introduce Electric Cars to China?”

PESTEL

By applying the PESTEL-Analysis to the Business Model Canvas, we found out that not all PESTEL factors have a direct influence on the introduction of E-Cars in the Chinese market, at least not a different one, which is not already known from western markets. However, our analysis yields that some of the factors are significantly more distinct than in western markets. The factors with the most different structures and patterns compared to the western markets are identified as Political, Legal and Social.

Political: To conduct business in China, manufacturers are strongly dependent on the government. By forcing foreign manufacturers to establish joint ventures with Chinese companies to enter and produce in the Chinese market the government exerts significant pressure on them and clearly makes sure to protect the national industry. However, our study also showed that the government wants E-Cars to penetrate the Chinese market. The statement that the development of cars powered by renewable energy drivetrains is a key issue to reduce the level of pollution and to protect the environment shows an increased level of attention paid to R&D for environmentally friendly and energy saving vehicles such as E-Cars and is supported by the government.

Social: From the social perspective we found that Chinese consumers have different attitudes and opinions based on the cultural code. The role of Guanxi is a crucial factor which needs to be understood by foreign manufacturers. The Chinese role of relationship needs to be understood to come towards customer needs and to not inflict damage on the brand's image. Chinese consumers value foreign products and regard them as high quality products, which makes them willing to pay more for them than for the Chinese counterpart.

Legal: From the legal perspective we found that there are a lot of confusing Chinese regulations and laws which are either difficult to understand or just poorly communicated among the corresponding parties. However, the Chinese government has recently tried to make the legal and regulatory environment less complicated and tries to ease the way to introduce environmentally friendly cars by reducing taxes or diminishing the legal barriers to register these kinds of cars. The costless access to a number plate without any lottery system and the strong future subsidies for E-Cars and green technologies underlines that statement and gives a clear sign for car manufacturers what kind of cars are required at least by the government.

To sum it up, of course car manufacturers have to understand all PESTEL categories of China if they want to introduce E-Cars successfully in China. However, our study reveals that the political, social and the legal aspects differ the most from those in western developed markets and therefore are the most crucial ones for foreign manufacturers. By innovating the BM, the car manufacturers have to put strong emphasis on the analysis of these three factors to ensure a successful introduction.

Business Model Canvas

We based our study according to Lindgren et al. (2010) who considered a BM as new, if one of the building blocks has been changed or innovated respectively. However, to derive the best results and to exploit potential synergies, the BM has to be seen and treated as one coherent construct. During our analysis we found that the main players in the introduction process of E-Cars to China are the car manufacturers, their key partners which are suppliers and in particular the government, and the customers. The study shows that local market dynamics such as cultural differences, urbanity profiles or specific peculiarities such as Guanxi play a crucial role. We therefore doubtless state that car manufacturers have to take on a different approach to introduce E-Cars in the Chinese market than in the western and developed markets.

After analyzing each category of the Business Model Canvas, we realized that the Business Model Canvas is a closed supply-chain based BM and see that as another shortcoming of the model. Additionally, there are mixed levels of abstraction. The categories customer relationships and channels, as well as key activities and resources are on a contrasting level of abstraction, compared to the other parts, which goes in line with the findings of our study, highlighting that not all categories of the Business Model Canvas are crucial to introduce E-Cars to China. In the process of our study we perceived that car manufacturers who want to conduct business in the Chinese market do not have to change or adapt their entire BM. E-Cars are still regarded as Cars which will be sold via dealers. Of course some new distribution

channels come up as our study shows. However, these will be introduced for ICE-Cars in the near future as well and will not differ much in reality. This is just one example of why we do not see a necessity to adjust every category of the BM. Our analysis yields the result that there are three categories which are the most critical ones and which require high consideration when car manufacturers want to innovate their BM to introduce E-Cars to China. Categories which need to be in the center of the focus of today's car manufacturer are the customer segments, value proposition and key partnerships.

Customer Segments: Some of the most significant changing areas from western markets appear among the consumers. As outlined in the first chapter, there are more than 150 cities of a million people in China – four in Germany by contrast. E-Cars target an entirely new customer segment which exactly suits the urbanity profile of China. Car manufacturers have to aim at areas where low mileages and short driving ranges are required by the customers. Customers of E-Cars are clearly dwellers of megacities which are significantly present in China. Companies therefore have to target two kinds of consumers in these urban areas. On the one hand individual customers with a low average mileage and on the other hand customers that want to drive and utilize a car without owning one. These two customer segments will dominate future car markets and hold significant potential for E-Cars. Since the customer segment changes significantly due to the fact of larger ranges, higher average mileages and fewer megacities in western markets, this category needs to move in every car manufacturer focus when considering introducing E-Cars to China.

Value Propositions: E-Cars will not create value by just selling them like conventional cars in the beginning. Value creation is the cornerstone of a company's BM. To create value, car manufacturers have to adopt innovative ways. Specified mobility service concepts such as car sharing, company leasing, or the cooperation with the government for the use in the public transport sector are the key. This result goes in line with the findings of Lüdeke-Freund (2013) that sustainable innovations need a change from product to service systems such as car sharing. Car sharing concepts, to break the ice, raise customer awareness and lower the barriers to get in touch with E-Cars, are needed. People should get access to drive and test E-Cars as often as they want without owning one. That also enables car manufacturers to observe customers' reactions and adjust their offer, based on customer feedback to deliver a more specified value. To not inflict damage on the special image delivered by foreign brands, manufacturers have to brand their E-Cars under a special label created through a sub-brand or a joint venture. This enables manufacturers to penetrate the market with their technology and to test customer reactions to take corresponding actions. The specified value proposition requires high attention and a sure instinct to match the company's offers with the demands imposed by the customers.

Key Partnerships: Without a cross industrial partner network there is no chance to succeed when introducing E-Cars to China. Car manufacturers have to cooperate with joint venture partners, new suppliers, and especially with municipals and the government. These partnerships enable manufacturers to lower the overall costs and to utilize existing facilities and networks. It also helps to overcome cultural barriers and to avoid administrative, political and legal misunderstandings. The Chinese government has great influence on the Chinese

customer product awareness and can shape whole new market places for E-Cars. It is further responsible to provide subsidies for the establishment of the necessary infrastructure. Based on the great power partnerships with municipalities on a regional and the government on a national level are therefore inevitable for the introduction of E-Cars and a cornerstone of a manufacturer's consideration area when innovating the existing business model.

6.1 Theoretical Contribution

Derived from our analysis, our conclusion points out that car manufacturers do not have to consider all PESTEL factors as well as not all categories from the Business Model Canvas, when innovating their existing BM to introduce E-Cars to China. As our theoretical contribution and to add value to the existing body of knowledge, we created a model derived from the Business Model Canvas and the PESTEL analysis, which outlines the areas that require high consideration. The body of our model was created in our conclusion.

As explained, it consists of six high consideration areas; three from the PESTEL analysis and three from the Business Model Canvas, which go in line with each other and strongly coincide. Due to the change of perspective from western markets to China, the Political, Social and Legal factors of the PESTEL analysis become significantly important on the environmental level.

Regarding the Business Model Canvas, most categories do not require a different approach than in western markets or when introducing conventional cars. Car manufacturers will still generate value with their existing revenue stream and cars will still be distributed via the existing channels, for example. We are well aware that minor adjustments will take place among these categories, albeit these are regarded as not crucial. However, if car manufacturers change their perspective from a developed western car market to the Chinese, they have to pay increased consideration to the customer segment, the value proposition and the key partner categories, as we elaborated in the previous sections.

As a visualization of our findings we consequently propose the following model, which needs to be considered in order to innovate the existing BM to introduce E-Cars to China.

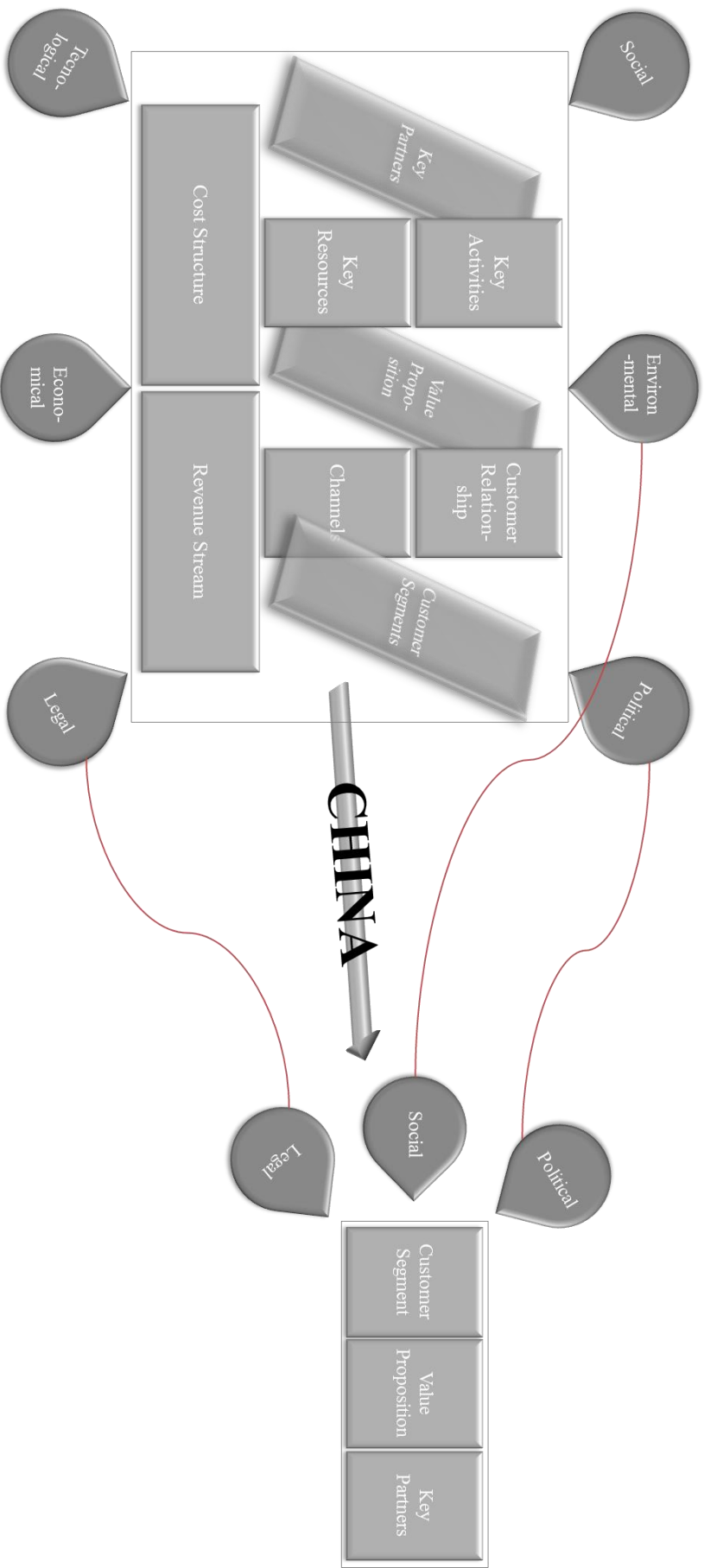


Figure 12: High Consideration Categories Derived from the Business Model Canvas (Source: Own Illustration)

6.2 Confirmation of Findings

E-Cars from BMW and Daimler – The Chinese Danger: Recent publications by the German daily - Der Spiegel

On May 19th one day before the submission of this thesis, the German daily Der Spiegel published an article which not only emphasizes but also strengthens the findings of our research. The article gives information about BMW and Daimler concerning their strategies and current business actions regarding E-Cars in China.

The author Tom Grünweg mentions the great benefits brought about by the joint ventures with Chinese business partners. He outlines that the car manufacturers work together with different business partners to introduce E-Cars only for the Chinese market. At a first glance this double investment in technology seems like economic insanity. The author explains why the car manufacturers are willing to take this double effort and argues that this is based on China's industry politic, which depends on governmental restrictions. Grünweg explains that the government wants to help E-Cars to break through and therefore heavily financially subsidizes them. Furthermore, it is also mentioned that the purchaser of an E-Car does not have to participate in the number plate registration lottery. However, these subsidies only come into effect when the vehicle comes from a Chinese production, which goes in line with our findings regarding the benefits of the joint ventures.

BMW with the Zinoro and Daimler with the Denza do not want to miss this financial support since they can sell the cars at lower prices, which comes towards the general reluctance against E-Cars. In a market with the size of the Chinese, these incentives could attract a broad customer segment. We also argued that the joint venture serves as a good information source for Chinese manufacturers. In the article it is mentioned that the general secretary of the Chinese Association of Auto Manufacturers (CAAM) recently stated that Chinese companies want to reduce their reliance on technologies by joining ventures with companies from abroad.

According to our findings joint ventures also serve to protect the own brand name. To not inflict damage on the brand's image car manufacturers should introduce E-Cars labeled with another brand. The author of the article called it: tests under foreign name. "Electric Mobility is still not as well developed as some from the industry makes it appear" says car market expert Franz-Rudolf Esch from the EBS University of Economics and Law in Wiesbaden. Accordingly, Grünweg put it that there is a playground for many manufacturers to try out and test ideas without the risk of potential damage to the brand (Grünweg, 2014).

The statement outlined in the article goes in line with some of the findings we found and therefore confirms what emerges during our investigation in how car manufacturers have to innovate their business model to introduce E-Cars to China.

6.3 Practical Implications

In addition to the information given in the conclusion, our practical implications have the aim to provide a guideline for car manufacturers of how to introduce E-Cars to China. By studying our analysis regarding our BM we are able to show possible ways which seemed to be

successful among other manufacturers. The conducted study adds value to the existing body of knowledge regarding BMI in the automobile industry in China. We tried to change the perspective to view China as an E-Car market and to understand the market which is necessary to successfully operate in it. Our study enables managers to view the market from different perspectives and to categorize the company's BM to innovate it properly for the introduction of E-Cars to China.

The most important factor to do business in China is to understand China. The prevailing cultural code plays a major role in China. Without understanding elements such as Guanxi or the role of the government, conducting business in China will become a real challenge and a success will be doubted. Car manufacturers have to be clear about the company's current BM. To increase the chances of success and to be consistent, companies have to unpack each category of their BM to understand it and to get a multi perspectival view on how to penetrate China with new E-Car technologies and concepts. It is important to view each category as isolated, as well as a coherent construct of multiple elements.

Since the government forces foreign manufacturers to found a joint venture to conduct business in the Chinese market, the selection of a strategic beneficial business partner is a key for the production and the subsequent introduction of E-Cars. Partners with knowledge in the production of E-Cars or related products such as batteries proved to be helpful. These strategic joint ventures enable manufacturers to exploit synergies in terms of utilizing existing facilities, knowledge and networks as well as creating economy of scales effects. However, it has to be mentioned that responsibilities and scopes of actions need to be clarified and agreed by contract. Otherwise misunderstandings based on cultural differences, unclear hierarchies and a reluctance to share corporate secrets with the partner could lead to a failure and jeopardize the existence of entire corporations.

To penetrate the market with new mobility service offers it is also recommended to exploit existing networks. As soon as car manufacturers consider offering a car sharing or rental service respectively, a joint venture with a local rental company should be taken into account. The collaboration with car rental companies such as Sixt or Europcar for example reduces barriers to penetrate the market. To utilize the existing infrastructure simplifies the entire process and provides the chance to utilize a well-developed BM, which reduces the level of risk.

In our analysis we outlined the great influence of the Chinese government. Furthermore, it was mentioned that the government introduced more and more subsidy programs to support E-Cars and environmentally friendly technologies which stem from a Chinese manufacturer. That shows a general opening towards E-Car technologies. At the moment however, almost every Chinese bureaucrat drives a German Audi with ICE. Convincing the government to drive E-Cars could be a decisive step to persuade the Chinese population. A positive reflection of the government is also expected to reduce the negative attitude among Chinese consumers.

Since China is expected to be the future market for E-Cars, a shift of car manufacturers E-Car competence centers would enable them to serve the market quicker and more properly. It

would also shorten process cycles. The demand for E-Cars in China is expected to exceed demands in the western world. It is therefore not efficient to run R&D centers for E-Car technology in Germany for example, when there is just a fraction amount of the volume of E-Cars which are required in China. Another step could be cooperation with local universities to establish R&D centers with local students and local knowledge. These centers seem to be beneficial in multiple ways. Together with the universities, companies can establish competence centers and develop technologies. Furthermore, after graduating from the university these students already have a broad knowledge which saves a lot of costs and time for training them as new recruits.

6.4 Further Research

The findings from our research are based on a multiple case study where it was possible to investigate in the innovation of the BM of two companies to introduce E-Cars to China. However, throughout the thesis it was hard to leave the consumer oriented perspective and view the situation from a higher level perspective, such as the lobby or the government for example. Considering their role in the industry, the question arises: who actually wants E-Cars? It is not only a costly adjustment of a car manufacturer's BM but also a costly innovation of the government's BM due to a restructuring of the national infrastructure? - To give just one example. Thus, we suggest that further investigation of cases from a governmental, lobbyist or a perspective from leaders in the industry is needed to be able to see how the infrastructure and the entire environment around E-Cars will be arranged and embedded in the current environment.

Moreover, it could be mentioned as a limitation that only the car manufacturers have been analyzed. However, the supplier industry has to adopt their BMs as well to cope with the requirements imposed by car manufacturers and to continue inventing and delivering new products. Also, the handling of raw materials will underlie big changes due to the fact of their limitation and the use of it in processes such as the production of batteries. Further research is needed to understand the cross influence and the interconnectivity of the value chains of different players involved in an E-Car's life-cycle. Additionally, our multiple case study focused only on German car manufacturers. To obtain a more global perspective and understanding, further research could be done by comparing car manufacturers from different countries.

What else could have contributed, would be the observation of E-Cars from an environmental perspective. It seems obvious that E-Cars reduce the amount of pollutants in the air. However, the question emerges: are E-Cars sustainable if the energy which is used to drive them is not produced by alternative energy systems? Further research could clarify the environmental effects of non-sustainable generated electricity driven E-Cars.

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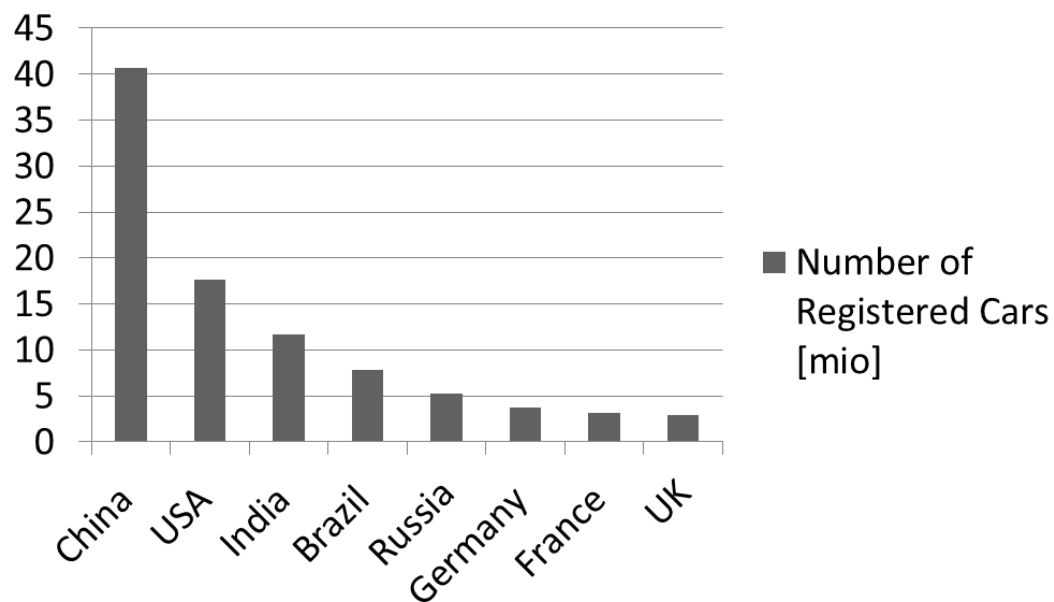
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Appendix

A: Smog in Beijing



B: Expected New Car Registrations by 2030



C: Attributes of each category

Key Partners <ul style="list-style-type: none">- Alliances between non-competitors- Partnership between competitors- Joint ventures- Buyer-supplier relationships	Key Activities <ul style="list-style-type: none">- Production- Platforms/Networks	Value Proposition <ul style="list-style-type: none">- Product/service components- Accessibility- Usability- Price	Customer Relationship <ul style="list-style-type: none">- Personal assistance- Communities- Co-creation (Have customer portal, can assist to new products)	Customer Segments <ul style="list-style-type: none">- Mass market- Niche market- Customer base (which is the largest one)
	Key Resources <ul style="list-style-type: none">- Physical- Intellectual (patents, partnerships)- Financial		Channels <ul style="list-style-type: none">- Wholesaler- Flagship Dealer- Direct sales- After sales	
Cost Structure <ul style="list-style-type: none">- Economie of scale/scope- Cost driven costs (low/high price strategy)- Value driven costs (less concerned about price, focus on premium value, personalized service)- Volumes (high/medium/low)			Revenue Streams <ul style="list-style-type: none">- Using fee (Parking etc)- Lending/Leasing/Renting- Avertising- Emissions	

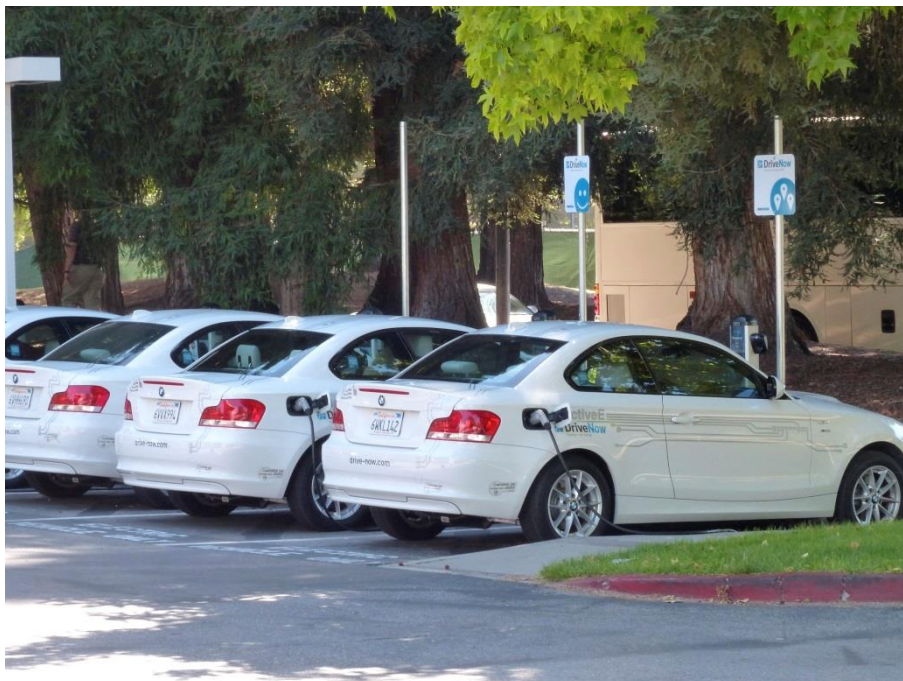
D: Questions of each category

Key Partners <ul style="list-style-type: none">- Whoa re your key partner/suppliers?- Which key resources are we acquiring from our partners?- Which key activities do partners perform	Key Activities <ul style="list-style-type: none">- What key activities do our value propositions require- Our distribution channels- Customer relationshipp- Revenue stream	Value Proposition <ul style="list-style-type: none">- What value do we deliver to the customer?- Which one of our customers problems are we helping to solve?- What bundels of products and services are we offering to each segment?- Which customer needs are we sastisfying?- What is the minimun viable product?	Customer Relationship <ul style="list-style-type: none">- How do we get keep and grow customers?- Which customer relationship have we established ?- How are they integrated with the rest of our model?	Customer Segments <ul style="list-style-type: none">- For whom are we creating value?- Who are our most important customers?- What are the customers archetypes ?
	Key Resources <ul style="list-style-type: none">- What key resources do our value proposition requiere?- Distribution channels- Customer relationship- Revenue stream		Channels <ul style="list-style-type: none">- Through which channel reach we our customers?- How are our Chanelns integrated?- Which one is most cost efficient?	
Cost Structure <ul style="list-style-type: none">- What are the most important costs inherent to our business model- Which key resources are most expensive- Which kea activities are most expensive			Revenue Streams <ul style="list-style-type: none">- For what value are our customers really willing to pay?- For what do they currently pay?- How are the currently paying?- How would they prefe to pay?- What are the pricing tactics?	

E: E-Smart - Car2Go Daimler



F: BMW Active-E - DriveNow BMW



G: Interview Guide**Date:****Company:****Contact information:**

Since China recently became the biggest car market in the world and environmental pollution caused by exhaust emissions seem to choke Chinese megacities, OEMs are forced to react. On solution is the reversal to sustainable drivetrain technologies such as Hybrid or Electrical Vehicles. The aim of this study is to figure out how OEMs have to innovate their business model to successfully introduce EVs in the Chinese passenger car market.

Political Category

Are there any positive or negative influences on car manufacturers imposed by the Chinese government?

How can OEMs adapt their offers to bear up with the China specific regulatory laws?

Economic Category

Does the Chinese government subsidize the production of EV's for OEM's from abroad?

Do OEMs face any additional matters of expense in China which they do not in other markets, for example, Europe?

Social Category

Does the Chinese culture have an influence on OEM offers and are there any changes among their products in relation to cultural differences to other markets?

Do you see an increased demand for EV's due to people's desire for a "cleaner" environment in the future?

Technological Category

Do OEMs use existing R&D knowledge or does the Chinese market require additional knowledge?

Are there any technological differences among their products required by the Chinese market than in other markets?

Environmental Category

Is there a better access to valuable resources in China and what does this mean for foreign OEMs?

Is the environmental pollution emitted by exhaust emissions influencing the introduction of EV's? If yes, how?

Legal Category

What are main the obstacles (e.g. laws, lobbies, etc.) concerning the launch of electrical vehicles in China?



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