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# The pursuit of a business model framework for the sharing economy

- A multiple case study of car sharing firms in Europe -

**Authors:**

Leonard Bergström  
Sara Hellström  
Ida Nilros

**Supervisor:**

Thomas Kalling

## ABSTRACT

*Title:* The pursuit of a business model framework for the sharing economy

*Key words:* Car sharing, Sharing economy, Business models, Sustainability

*Purpose:* The aim of this study is to improve the understanding of what characterizes the business model of a car sharing company. This by empirically analyzing six car sharing firms operating in four different countries and the characteristics of their business models. The study will attempt to understand a plurality of factors and will therefore apply concepts from strategy theory and business model literature in order to obtain a comprehensive perspective adequate to grasp the complexity of the phenomenon.

*Methodology:* The study was initiated with help from a theoretical review of existing theory under following domains: *business model theory*, *sharing economy* and *car sharing*. With help from previous research, a preliminary business model framework was conducted. This work was followed by a multiple case study, in order to refine, reject and add to already existing research. The last step was to analyze the gathered data in in order to create the final framework using pattern matching. The research process in this study has been following an abductive approach, due to the characteristics of both deductive and inductive elements throughout the research process.

*Theoretical perspectives:* The theoretical perspectives concern car sharing, sharing economy, strategy theory, and business model literature.

*Empirical foundation:* The empirical data was conducted through a multiple case study. Six car sharing companies, operating in four different countries participated in the study, and the data has been gathered through semi-structured interviews. The different companies are a mix between well-established and newly established firms, in order to grasp a holistic view of the industry.

*Conclusion:* Our findings are summarized in the final business model framework, which constitutes as the answer to the purpose of our study. The framework is descriptive and detailed, and gives a holistic description of the most vital parts of a business model in order to become successful in the car sharing industry.

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# 1. INTRODUCTION

## 1.1. EMPIRICAL AND THEORETICAL BACKGROUND AND PROBLEMATIZATION

### 1.1.1. Sustainable business and the emergence of the sharing economy

In recent years, attitudes towards consumption have shifted and led to a greater concern regarding ecological, developmental, and societal impact (Hamari, Sjöklint & Ukkonen, 2015). In today's society there is a growing concern about climate change, making sustainability an increasingly important issue (The World Bank, 2014). This, in conjunction with recent technological advances, has enabled the emergence of the so-called sharing economy (Hamari et al., 2015). The phenomenon, also called collaborative consumption, refers to peer-to-peer based sharing of access to services or goods. The sharing is coordinated through community-based online services where participants share access to services or products, rather than having individual ownership (Hamari et al., 2015). As connected consumption is founded on peer-to-peer relationships to mediate change, instead of existing market players, sharing economy is capable to reallocate wealth across the value chain (Schor & Fitzmaurice, 2015). One of the premises of sharing economy is that when information is shared, the value of such services or products may increase for individuals, for business, and for the society at large. The phenomenon is expected to grow significantly over the next decade due to its composition of economic rationality, technological infrastructure, and cultural appeal (Schor & Fitzmaurice, 2015).

The transportation<sup>1</sup> industry constitutes as one of the most prominent areas of sharing economy. Recent innovations in information technology have brought forth new modes of transportation and ownership models, spawning new businesses and changing how travelers access transportation. With the use of the Internet and smartphones, travelers nowadays have a wide range of transportation options. For instance, travelers can rent a bicycle or car for a shorter trip (e.g. Motivate and Zipcar), or hail a private driver and vehicle (e.g. Lyft and Uber). These options represent shared mobility, which is defined as the shared use of a vehicle or other low-speed modes that enable users of short-term access to different modes of transportation on an "as-needed" basis. Vehicle sharing, commonly referred to as car sharing, is frequently divided into peer-to-peer car-rental services where the user pays to borrow someone else's car, and peer-to-peer taxi services where people use their cars to transport paying passengers (Shaheen, Chan, Bansal & Cohen, 2015).

The transport system of today faces significant challenges due to continuous growth in urban population, private vehicle ownership, and congestion (The World Bank, 2014). As transport is one of the fastest growing sectors for carbon dioxide emission, it is crucial to lower its carbon footprint in order to tackle the climate change (The World Bank, 2014; Ebinger & Vandycke, 2015). Consequently, growing populations and urbanization bring along increasing demands for sustainable and efficient transport solutions. In response to this, novel operational and technological solutions have emerged as well as new business models and

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<sup>1</sup> Transport and transportation describe the same phenomenon and will consequently be used interchangeably throughout this report, (<http://grammarist.com/usage/transport-transportation/>).

partnerships. Innovations such as car sharing can be leveraged to address transportation problems in new ways, and provide new opportunities for individual mobility whilst reducing costs and environmental impact (U.S. Department of Transportation, 2015). Several studies indicate that shared mobility reduces private ownership and vehicle use, thus having a positive impact on the environment, society, and transportation (Shaheen et al., 2015).

Today, traditional operating practices are challenged and put to test by novel business models. By offering travelers vehicles on an as-needed basis, emerging car sharing platforms have come to be a substitute to car ownership as well as car rentals. Consequently, peer-to-peer car sharing and non-traditional car rental operators are disrupting the typical car rental experience. As of now, it is unknown how much these alternatives are replacing rental cars and private vehicle ownership. However, it is apparent that shared mobility services are changing the transportation industry, creating a shift towards a greater efficiency through the use of technology, which pressure car rental companies to diversify their line of business. Thus, the phenomenon of sharing economy constitutes as a challenge as well as an opportunity for companies (Euromonitor International, 2015).

According to Hamel and Välikangas (2003), success is not a permanent state and continued success no longer hinges on momentum. Rather, it relies on resilience, which is the ability to dynamically reinvent business models and strategies as circumstances change (Hamel & Välikangas, 2003). Osterwalder and Pigneur (2010) define business models as the rationale of how organizations create, deliver, and capture value. Business model innovation is of great importance, as an idea taken to market through different business models will generate different economic outcomes (Chesbrough, 2010). Moreover, Chesbrough (2010) argues that if a company is unable to find a suitable model, or if other companies uncover a business model more suited for a certain technology, these companies may gain far more value than the firm that originally discovered the technology.

Christensen (1997) argues that successful companies put too much importance on customers' current needs, thus failing to adopt new technologies or business models that can satisfy their customers' future needs. The author defines the anticipation of future needs as disruptive innovation. Pisano (2015) also discusses the implications of new innovations and how companies must adapt their business strategies accordingly. The author argues that a disruptive innovation does not only require a new business model, it also challenges the business models of other firms. As car sharing lies within the emerging class of mobility services that is drawn on modern technology to enable access to car-based mobility, it differs from the traditional format of selling cars to end users. Taxis and traditional car rental are alternative, older, modes of mobility that do not require modern communication and information technology in order to be commercially viable. Thus, car sharing requires new value propositions, new organizational structures, and new ways of interacting with the public sector (Le Vine, Polak & Zolfaghari, 2014).

Thus, it is evident that shared mobility services are changing the transportation industry, generating novel businesses and providing new opportunities for individual mobility. Car

sharing constitutes as an opportunity for actors in the transport industry as peer-to-peer services are able to redistribute value, providing more value to consumers and generating new income-earning opportunities for producers. However, sharing services can also be highly disruptive of established businesses. Car sharing challenges traditional operational practices and bring along a need for existing actors to adapt their business strategies. Consequently, car sharing is likely to have significant impact on the transportation industry onwards.

### **1.1.2. Problematization**

It is apparent that strategic management and business model innovation are vital in order to stay relevant in today's highly competitive and rapidly changing business environment. New operators with novel technologies and operational models challenge established actors. For companies within the transport industry, this calls for dynamic capabilities and the ability to redefine and adapt the business model to new opportunities and requirements in terms of demand and competition. However, the question remains at what characterizes the business model of a car sharing company and how actors can adapt their business models in order to capture value of new operational and technological solutions.

From a theoretical perspective, the primary challenge in our understanding of car sharing is the lack of theory discussing how such firms create, deliver, and capture value in a digitally instrumented economy. Within the field of strategy theory, scholars have contributed with a great deal of research regarding how to conduct business and make revenues (e.g. Normann, 1975; Barney, 1991; Osterwalder, 2004; Zott & Amit, 2006; Johnson, Christensen & Kagermann, 2008; Porter, 2008; Casadeus-Mansell & Ricart, 2010; Teece, 2010; Sommer, 2012). Although several theories regarding business models exist, no general theory prevails (Sommer, 2012). Furthermore, the phenomenon of shared mobility, in particular car sharing, has been examined to a great extent over the last two decades (e.g. Loose, 2010; Firnkorn & Müller, 2011; Bardhi & Echardt, 2012; Shaheen & Cohen, 2013; Le Vine et al., 2014; Schulte & Voß, 2015). Previous research on car sharing has frequently studied the shift from private ownership to service use, the implication of different service systems, the effect on travel behavior, and the impact on environment. Despite there being extensive research concerning car sharing as well as business model theory, only few scholars have examined the two research fields in conjunction. For instance, Ferrero, Perboli, Vesco, Musso and Pacifici (2015) conducted a study that explored the business models of five car sharing operators in Europe. The study intended to link together the business models of car sharing companies, their business development, and the operational modes. Furthermore, some scholars have explored success factors and challenges for car sharing companies (e.g. Shaheen, Meyn & Wiprywski, 2003; Millard-Ball, 2005; Hampshire & Gaites, 2011; Shaheen, Mallory & Kingsley, 2012).

Despite these research contributions, the linkage between car sharing services and business models is currently relatively uncharted in the research field. Existing theory is thus inadequate to portray a holistic perspective of how car sharing operators conduct business and make revenue. A possibility to why such studies have not been conducted to a larger extent, may be because there has not been as great a need for such research before. However,

as sharing services are becoming more commercially viable and more operators are entering the market, there is a greater need for companies to conduct strategic plans in order to stay competitive. Consequently, business model theory becomes a suitable unit of analysis as it adopts a holistic perspective with a high practical relevance and compatibility with other concepts within strategic management. Moreover, as our study aims to include all aspects of a firm's components and functions, including its revenues and costs, we believe the business model concept is the most suitable means of analysis. Furthermore, we argue that it would not be sufficient to solely combine findings and draw conclusions from existing theory regarding sharing economy and strategic management. This because current research does not provide an extensive depiction of how to successfully provide car sharing services. Accordingly, it is essential to conduct an empirical study in order to achieve a comprehensive and robust framework of how to deliver car sharing in a way that creates value for the firm.

## **1.2. PURPOSE**

The aim of this study is to improve the understanding of what characterizes the business model of a car sharing company. This by empirically analyzing six car sharing firms operating in four different countries and the characteristics of their business models. The study will attempt to understand a plurality of factors and will therefore apply concepts from strategy theory and business model literature in order to obtain a comprehensive perspective adequate to grasp the complexity of the phenomenon.

## **1.3. DISPOSITION OF THE ESSAY**

The first chapter of the study comprises an introduction and background to the subject aimed to be studied. The second chapter covers existent theories and literature on business models, sharing economy, and car sharing, resulting in a preliminary theoretical framework. The third chapter provides a description of the study's methodology, research approach, research design, data collection, method for presentation of empirical findings, method for analysis, and a discussion concerning trustworthiness and authenticity. The fourth chapter presents the outcome of the empirical study. The fifth chapter analyzes the empirical findings in relation to theories and literature presented in the second chapter, resulting in a revised framework. The sixth and final chapter concludes the study's empirical findings and the presents the final framework, which constitutes as the answer to the purpose of the study.

## **2. THEORY**

The study and its findings will be analyzed together with current research and theory regarding business models, strategic management, as well as the phenomenon of sharing economy. The theoretical framework will include formal theory regarding business models. In addition, the theoretical framework will include substantial theory regarding sharing economy, shared mobility, and car sharing.

### **2.1. BUSINESS MODEL CONCEPT**

Gaining an understanding of the broad spectra of the theories behind the business model concept is arguably fundamental for the purpose of this study, in particular to establish a preliminary business model framework. The section will be initiated with a review of the business model as a tool of analysis, as well as a discussion regarding the emergence of the business model concept. This will be followed by a review of established theories and definitions, as well as a review of the business model components. Finally, the framework used for this study will be defined.

#### **2.1.1. Business models as a tool of analysis**

Business strategy plans are fundamental in order for a business to succeed in a dynamic, competitive environment (Porter, 2008). Several authors have made significant contributions in the field of business strategy and the strategic position of a firm. One of them is Porter (2008), whose contribution relates to how a company reaches long-term success in an industry. According to Porter (2008), there are five industry related forces that can drain value from a company; rivalry, threat of substitutes, buyer power, supplier power, and barriers to entry. The strategy contribution of Porter (2008) can be interpreted as a framework defining how a firm can use the five forces in order to acquire competitive advantage, by either low cost or differentiation. It could also be explained as a way of creating defenses against these five forces to stay competitive in the market. Furthermore, the framework helps firms to explore and analyze industries to utilize the markets where these forces are weaker. In conclusion, the five forces analysis identifies the forces that shape the industry, and helps firms target favorable industries and maximize their profitability.

Another contribution within the field of strategic management is the resource-based view, RBV (Barney, 1991). RBV defines resources that display VRIN (valuable, rare, inimitable, and non-substitutable) characteristics to qualify as resources that provide a firm sustainable competitive advantage (Barney, 1991). In conclusion, RBV considers resources as the key element to achieve high performance (Barney, 1991). Another significant contribution within strategic management is the SWOT framework. The SWOT analysis, an abbreviation for strengths, weaknesses, opportunities and threats (Duarte, Etkin, Helms, & Anderson, 2006), is a method that evaluates the same four elements in order to analyze the firm's position, achieve desired results and overcome obstacles. The tool can help firms achieve objectives by identifying internal and external factors, as well as if these factors are favorable or not (Duarte et al., 2006).

The business model is another strategic management tool, which is widely used to analyze the strategic positioning of a firm. According to Osterwalder (2004), the business model can be seen as business strategy translated into a framework to create economic value. Therefore, there is an interlinkage between business strategy and business model (Zott & Amit, 2006). Sommer (2012) argues that a business model can be defined as “a blueprint of the value proposition offered to the customer, the way the business creates and delivers that value and extracts profits from it” (pp. 4). The business model concept enables an ability to detect big picture issues, whilst it is also detailed enough to narrate problems of the more specific characteristics. Moreover, the business model concept is a suitable unit of analysis, due to its high practical relevance combined with the fact that it is compatible with concepts within strategic management, as well as for analytical reasons (Sommer, 2012).

The business model concept is highly relevant for this study due to its ability to include all aspects of a firm's components and functions, as well as its revenues and costs. In addition to being an including concept, it is also tolerant due to the fact that it allows an abundance of explanations and descriptions. These arguments, together with our intent to draw conclusions from observations, indicate that the business model concept is a suitable theoretical tool for the purpose of this study.

### **2.1.2. The emergence of the business model concept**

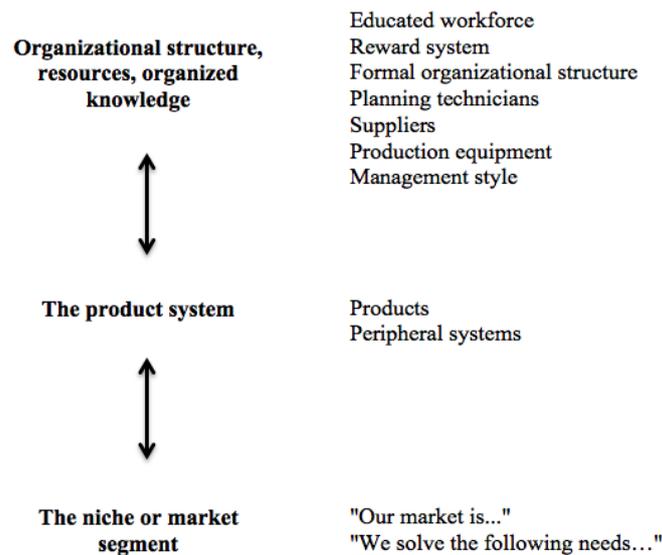
The popularity of the business model concept emerged during the dot-com boom among managers, academia and media (Osterwalder, 2004), but now the concept exceed beyond the field of e-commerce and is applied widely in other contexts (Hedman & Kalling, 2003; Osterwalder & Pigneur, 2010). The majority of established business models are built on a logic that reunites two fundamental theories within strategic management; the resource-based view of the firm (Penrose, 1959; Wernerfelt, 1984; Barney, 1991) and the positioning perspective of the industrial organization (Porter, 1980; 1985).

Several authors have made significant contributions in the field of business models, but due to its early emergence, these contributions are not normally defined as business model concepts. Nevertheless, these contributions are important to take into consideration in order to get a full understanding of the business model concept. One author that stood for such a contribution is Normann (1975), whose business idea concept covers the key factors of a company's performance. These key factors have come to be included in more recent business model concepts. The fit between a company and its environment is fundamental in the business model concept provided by Normann (1975), which is divided into three parts:

- *External Environment*
  - Focuses on the needs of customers and the competition from companies that tries to meet these needs.
- *Offering of the company*
  - Focuses on the product and/or service that a company provides to the market in order to meet the needs of customers.

- *Internal factors*
  - Focuses on what is needed from the company in order to bring the offering to the market, meet the needs of customers and handle competition.

**Figure 1.** The main components of a business idea (adapted from Normann, 1975).



### 2.1.3. Business model definitions

Osterwalder (Osterwalder 2004; Osterwalder, Pigneur & Tucci 2005; Osterwalder & Pigneur 2010) is an author that has provided wide-ranging research in the subject of business models. Osterwalder together with Johnson et al. (2008) constitute as the most recognized scholars within business model research (Sommer, 2012). Osterwalder (2004), who constructed his model in relation to e-commerce, defines his business model as following:

*“A business model is a conceptual tool that contains a set of elements and their relationships 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, marketing, and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.”*

The definition emphasizes the different elements of a business model including the revenue generating aspect, as well as the firm's position in relation to its external environment. Johnson et al. (2008) outlines a definition that in a similar manner highlights the different elements of a business model:

*"Business models consist of four interlocking elements, that, taken together, create and deliver value. These are: customer value proposition, profit formula, key resources, and key processes."*

Amit and Zott (2001) underline the disposal of opportunities and transactions as an integral part of the business model definition:

*"The business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities."*

The authors underline interdependencies outside firm boundaries. Similarly, highlighting the relationship between the firm and its environment, is the proposal by Hedman and Kalling (2003):

*"The model integrates firm internal aspects that transform factors to resources, through activities, in a structure, to products and offerings, to market."*

Casadesus-Masanell and Ricart (2010) refer to the logic of the firm and its operations in order to generate value to the stakeholders in their business model proposal:

*"A business model is (...) a reflection of the firm's realized strategy."*

The authors define strategy as the selection of business model that enables the firm to compete in the market. Teece (2010) relatedly proposes a definition focusing on the conversion from value created to payments received in the market:

*"A business model defines how the enterprise creates and delivers value to customers, and then converts payments received to profits"*

In terms of business models, there is no theory available that is generally accepted, but there are still numerous frameworks of virtue (Lambert, 2006). The concept of business models is well-suited to, within strategic management, numerous theoretical frameworks that are applicable to the creation of economical value (Amit & Zott, 2001), this despite business models retain no long-recognized roots, theoretically, in economics or business research (Teece, 2010).

#### **2.1.4. Business model components**

Recent literature has seen a gradual shift away from the definitions of business models, and more focus has instead been directed on "decomposing business models into their "atomic" elements, also referred as "components", "functions", "attributes", or "pillars" of business models" (Pateli & Giaglis, 2003). However, this multitude of terms that differentiate from each other, leads to a diverse set of approaches regarding the identification of components in a business model, thus preventing a general advancement of knowledge within the area (Pateli & Giaglis, 2003). Pateli and Giaglis (2003) present prevalent approaches for defining

business model components. Hamel (2000), Johnson et al. (2008), and Osterwalder and Pigneur (2010) identify major issues or fundamental components of a business model and decompose these into sub-components. A similar approach of defining business model components is done by Linder and Cantrell (2000) and Petrovic, Kittl and Teksten (2001). However, instead of decomposing the actual components, the authors decompose the business model into sub-models in order to link these together to create a business model. The approach outlined by Alt and Zimmermann (2001) focuses on the vertical and horizontal dimensions of the business model, and propose a construction of six generic elements of business models. Another contribution is the one of Ross, Vitale and Weill (2001) that proposed a decomposition of an initiative into different level of analysis, ranging from the concrete to the more general, and further identifying main components on these different levels. The same authors also propose an approach of defining business models components by finding ways to represent a business, and further identifying the main information necessary for every way of representation.

Despite the various definitions of the business model concept, it is possible to argue that it is merely different descriptions of the same phenomenon, rather than completely different approaches. For instance, Pateli and Giaglis (2003) detect standard components that are identified by the majority of researcher in this area. One example is Osterwalder (2004) who presents a business model consisting of building blocks grouped into four pillars. In addition, Johnson et al. (2008) propose a business model framework consisting of four main elements, which has several similarities to Osterwalder's framework due to its comparable use of elements. Even though the components and elements are explained, combined and heightened differently, a vast majority of the components used in Osterwalder's framework (2004) can be found in the one of Johnson et al. (2008) (Sommer, 2012). However, the differences between the frameworks become apparent when looking at a detailed level of the components, mainly due to the frameworks' different background and purpose. For instance, Osterwalder emphasizes on business model literature of e-commerce, whilst Johnson et al. focus on explaining the change within companies' existing business models.

#### **2.1.5. The business model framework used in this study**

The framework used for this study will be based on the business model concept provided by Normann (1975). After reviewing existing definitions and frameworks, Normann's (1975) concept of a business model is appropriate for the purpose of this study due to its sound division of internal and external environment as well as the offering and the value that it provides. The limited use of overarching components is suitable for this study as it is favorable when it comes to the inductive nature of the business model. The concept, due to its broadness, allows for sub-elements to be created under the all-embracing components, as the reviewed business model and literature leads to notions and components that need to be included and sorted.

**Figure 2.** The business model framework used in this study

Normann's components (1975)	Explanation	Example	Refined components, for the purpose of this study
Organizational structure, resources, organized knowledge	The resources or the internal conditions in the firm by which dominance is achieved	Educated workforce Reward system Formal organizational structure Planning technicians Suppliers Production equipment Management style	The internal factors
The product system	The products or the "system" that is offered to the territory	Products Peripheral systems	The offering
The niche or market segment	The niche in the environment that the firm is dominating, the firm's territory	"Our market is..." "We solve the following needs..."	The external environment

In order to further clarify the different levels of the business model framework used in this study, a somewhat processed version of Normann's (1975) components will be used (Figure 2). This because it makes the components more distinctive and suitable for our study. The main elements will therefore be described as *the internal factors*, *the offering* and *the external environment*.

## 2.2. SHARING ECONOMY

### 2.2.1. The concept of sharing economy

Sharing is long-standing in our society, however, new forms of sharing have emerged in recent years (Schor & Fitzmaurice, 2015). Sharing economy, also called collaborative or connected consumption, is a term for an emerging set of business models, platforms and exchanges (Allen & Berg, 2014). The phenomenon is also described as an economic model based on sharing underutilized assets, ranging from spaces, to skills, to things, to monetary or non-monetary benefits (Lessig 2008; Sacks, 2011; Botsman, 2013). The emergence of sharing economy has led to a shift from "owning" to "renting", thus changing consumer behavior and how firms conduct business (Cusumano, 2015). Although the definitions of sharing economy may vary, the unambiguous is the implication that it is constructed by balancing the needs of consumers and resources available (Bardhi & Eckhardt, 2012).

The sharing of services and goods amongst customers and organizations have become to play a vital part in the economic environment of today (Daunorienė, Drakšaitė, Snieška & Valodkienė, 2015). What makes the contemporary sharing innovative is that it is a market in which strangers, rather than communities, exchange goods and services (Schor & Fitzmaurice, 2015). Sharing economy represents the beneficial side of value capturing through a temporary right to access a product or a service. Today's sharing economy is predicated on peer-to-peer relationships instead of existing market actors to mediate exchange. Consequently, sharing economy represents an innovation able to reallocate wealth

across the value chain, in particular away from middlemen and towards consumers (Schor & Fitzmaurice, 2015).

The growth of the sharing economy stems partly from technological advancements (Cusumano, 2011). Sundararajan (2013) explains how value that previously was unrealized, is now found in surplus and redundancy due to technology advancements, which has led to an enormous increase in the efficiency of a single asset. Consumers within the sharing economy have the opportunity to only pay for what they use, and access resources at times when they need them (Schor & Fitzmaurice, 2015). Press (2015) argues that a common feature among all companies offering sharing services, is the use of applications. Companies provide different digital platforms, but with the same principle; a customer needs a ride, a place to stay, a delivery, or something else (Press, 2015). Thus, companies need to provide digital platforms that enable transactions and co-creation of value for consumers (Cova, Dalli & Zwick, 2011; Cusumano, 2015). Consequently, the digital network of a sharing economy company is composed of the platform that enables users to interact and make exchanges. Amit and Zott (2001) claim, “In the context of e-business, network externalities are present when the value created increases with the size of the customer base” (pp. 507). Moreover, Amit and Zott (2001) argue that the total value generated depends on the size of the network. This implies that the larger the network, the greater the value for the users participating in the network (Arthur, 1989).

## **2.3. CAR SHARING**

### **2.3.1. The concept of car sharing**

In recent years, numerous shared mobility services have arisen to address the gap in supply and demand for sustainable mobility in cities (Firnborn & Müller, 2011). Shared mobility business models have existed for decades, however, the recent development in information and communication technologies have made them possible on a large scale (Orsatto & Clegg, 1999). Today, the worldwide car sharing market comprises several million customers and the fleet consists of several thousands of vehicles (Le Vine et al., 2014). Car sharing is mainly found in urban areas with easily accessible transportation alternatives, and provides subscribers with access to a large fleet of vehicles for short-term rental (Bardhi & Eckhardt, 2012; Shaheen & Cohen, 2013). Car sharing is a global and flexible way of addressing the diverse transportation needs, whilst simultaneously reducing the negative impacts related to private ownership of vehicles (Shaheen & Cohen, 2013).

There is no standardized definition of car sharing which causes confusion among both industry professionals and end users. The term car sharing often refers to accessing a car owned by another person or entity in exchange for an agreed monetary payment. Although there is no uniquely-correct terminology, car sharing generally refers to mobility services with the following general characteristics (Le Vine et al., 2014):

- The users must undergo a pre-qualification process for verification of driving-record and identity to be able to access the service's cars without having to interact with staff each time. Keyless access is predominant, however, manual exchange of car keys also exists as not all car sharing operators have the in-vehicle telematics required for keyless access.
- The vehicle is driven by the end user and not by e.g. a paid chauffeur as in a taxi.
- The usage is billed based on the time the vehicle is used, time increments of minutes or hours, and sometimes also on the mileage. In addition, one-time sign-up fees or annual subscription fees may occur.
- In contrast to traditional car hire, where vehicles are accessed from a limited number of storefront or airport locations, the car sharing vehicles are typically available from distributed locations across a service area.

### **2.3.2. Car sharing service models**

In recent years, new car sharing service models have emerged and today several variations of car sharing can be found (Le Vine et al., 2014). The following section describes some of the most common service models.

#### *Round-trip car sharing*

The round-trip car sharing model is the earliest and the most commercially well-established car sharing service model. Users generally make use of smartphone applications or a dedicated website to reserve a car ahead of when they want to use one. In most cases, the users must also specify the time and duration of their reservation. The round-trip service model allows users hourly access to a fleet of shared vehicles. In general, a user must return the vehicle to the same location from where it was accessed, and pay for the entire time between when they pick up the car and when they return it. A professional car sharing entity centrally owns the fleet of cars and the vehicles are allocated on dedicated parking spaces, both on street and off-street (Le Vine et al., 2014). Multiple studies have documented that round-trip systems reduce the number of vehicles on the road, greenhouse gas emissions, as well as transportation costs for individuals. Members usually pay a combination of annual and monthly fees together with time and distance costs (Shaheen et al., 2015).

#### *Peer-to-peer car sharing*

In the peer-to-peer systems the car sharing fleet is decentralized and owned by private individuals instead of a central operator. Individuals make their private car available for use by others and receive payments when it is rented out. The peer-to-peer service model has typically a more diverse selection of vehicles available, as the fleet is not centrally managed. The prime role of the peer-to-peer car sharing operator is to provide an online marketplace where vehicle-owners and vehicle-renters can be connected. In most cases, the operator provides a bespoke insurance product that protects the vehicle-owner, and receives a percentage of all rentals transacted through their online marketplace. (Le Vine et al., 2014)

### *Point-to-point free-floating car sharing*

The point-to-point free-floating car sharing, also known both as one-way and flexible car sharing, allows users to pick up a vehicle at one location and drop it off at another (Le Vine et al., 2014; Shaheen et al., 2015). The service model enables increased flexibility and availability, and it also has the potential to further enhance first- and last-mile connectivity. In most cases, users can track cars through smartphone applications (Firnkorner & Müller, 2011). The usage of this model is typically more spontaneous compared to the other service models, i.e. users rarely reserve vehicles, and if they do it is only a few minutes in advance. On-street parking is common and often requires a contractual arrangement between the system operator and the entity that manages on-street parking space (Le Vine et al., 2014).

### *Point-to-point station-based car sharing*

In some cases, the point-to-point car sharing services are station-based which means that the user picks up a car from one parking station and returns it to another. At the parking stations, there are often different types of fixed infrastructure such as charging point for electric vehicles and customer service kiosks. The logistics of point-to-point station-based system is less challenging to manage compared to a point-to-point free-floating system. However, the drawback is that users are provided a lower degree of flexibility and the stations require allocation of dedicated space. A similarity between the point-to-point car sharing system is that they are subject to tidal flows. Clustering of vehicles is undesirable from the perspective of both users and the service provider (Le Vine et al., 2014).

### **2.3.3. The impact of car sharing**

Scholars often categorize car sharing impacts as environmental, land use, social effects, and transportation (Shaheen & Cohen, 2013). Several studies indicate that shared mobility reduces private ownership and vehicle use, thus having a positive impact on above elements (Shaheen et al., 2015). When introducing car sharing in the mobility sector, one car sharing car has the potential to replace up to eight conventional cars, resulting in substantial impacts on land use, congestion, and emission (Loose, 2010). All car sharing systems are considered to have such impacts, though particularly the traditional station-based car sharing concept has shown to lower carbon dioxide emissions (Steininger, Vogl, & Zettl, 1996; Meijkamp, 1998; Munheim, 1998; Katzev, 2003; Firnkorn & Müller, 2011; Rabbitt & Ghosh, 2013; Shaheen & Cohen, 2013). However, some recent studies have shown that there is a risk of an adverse effect in free-floating service systems. The system is considered to be far more convenient in relation to alternatives such as walking, bicycling, or public transport, making individuals choose car sharing as their mode of transportation in more situations than previously. Consequently, free-floating service systems may result in increased driving, rather than reducing vehicle use (Loose, 2010).

Cities continue to grow in population and land use, which increase the pressure on the reliability of urban transportation systems (Noland & Polak, 2002). As car sharing reduces private vehicle ownership and vehicle use, the demand for local parking space decreases, which creates opportunities to reallocate land for community needs such as additional green space (Cohen, Shaheen, & McKenzie, 2008). Additionally, Cohen et al. (2008) argue that the

vehicles car sharing members sell or avoid purchasing tend to be the most polluting and least reliable on the road. Since these cars are replaced by a fewer number of low-emission and high-efficiency vehicles, even greater improvements in emission and local air quality are created (Cohen et al., 2008).

Moreover, car sharing can have significant societal benefits. According to Martin, Shaheen and Lidicker (2010), car sharing can facilitate substantial reductions in household vehicle holdings as the service in large measure eliminates the need for a private vehicle to carry through trips. As car sharing members are granted access to vehicles on an as-needed basis, users are provided short-term vehicle use without having to bear the costs of owning a private vehicle, which can result in significant monetary savings (Martin et al., 2010; Shaheen & Cohen, 2013). Car sharing companies are equipped with advanced technology in order to connect the nodes, consumers, and provide a system that can be tracked with smartphones, at any time during the day and at any length. By shifting the structure from car rental into a car sharing fleet, a company can improve its profitability through a more efficient utilization of its capital and cars (Euromonitor, 2015).

## **2.4. THE BUSINESS MODEL COMPONENTS OF A CAR SHARING COMPANY**

In this section, literature regarding car sharing will be reviewed. What characterizes a business model of a car sharing company will be examined together with the preliminary theoretical framework. Firstly, the implication of internal factors will be discussed, before reviewing the offering of the company in terms of value proposition and profit formula. Lastly, the significance of external factors will be outlined. The purpose of this section is to present aspects of a business model, which the literature regarding car sharing proposes to be of interest.

### **2.4.1. The internal factors**

According to Normann (1975), internal factors and the way they relate to the external environment and the offering, will decide how efficiently a firm can bring the offering to the market. In this section the internal factors will be outlined in form of key resources and key processes, followed by the internal conditions of the firm in terms of organizational structure and company culture.

#### **2.4.3.1. Key Resources**

The key resources of a firm are assets needed in order to compose the offering and deliver value to the customer (Osterwalder, 2004; Johnson et al., 2008). Resources include aspects such as employees, technology, distribution channels, brand identity, equipment and facilities (Johnson et al., 2008). Hedman and Kalling (2003) claim that resources need to be managed in a manner that improves the cost and quality of the offering with reference to customer preferences and competitors. Johnson et al. (2008) argue that the resources included in a business model should only concern the most vital inputs that the firm cannot be without.

As resources comprise several aspects, Grant (1991) has made a classification consisting of three main categories; human, intangibles, and tangibles. Scholars describe the categories as following; human resources refer to the people and knowledge required to create customer

and company value. Tangible resources refer to assets that are mainly physical and are commonly included in a firm's balance sheet, such as equipment, cash, inventory, and facilities owned by the firm. In contrast to tangible assets, intangible resources refer to assets that are non-physical, thus making it more difficult to assess the value of them and include them in a balance sheet. Intangible resources can for instance include; brands, copyrights, patents, and reputation.

According to Ferrero et al. (2015), key resources of a car sharing company commonly relate to the fleet of vehicles, the designated parking spots, the service team handling the maintenance (including cleaning and fueling). A car sharing operator with electric vehicles is also in need of electric charging facilities. Other essential resources are related to customer interfaces and ensuring that the service is delivered properly, including customer service, website and smartphone applications, as well as information and communications (ICT) devices installed in each vehicle. In order to manage the operations, there is a need for an integrated information system containing information regarding aspects, such as car availability and positioning, reservations, customer profiles, and revenue streams, essential to deliver value to the customer (Ferrero et al., 2015).

The expanding usage of social networking and technology are fundamental drivers of the sharing economy (Botsman & Rogers, 2010). Technology is a central component within car sharing and essential to deliver the service in the right time and location (Gansky, 2010). In order to provide a well-functioning car sharing service it is important to form a trustworthy infrastructure enabling services such as tracking of vehicles, as well as information and communication technology (Abdelkafi, Makhotin & Posselt, 2013).

Key elements of shared-use vehicle technology include access, reservations and billings, and vehicle control and security (Shaheen, Cohen & Roberts, 2006; Shaheen et al., 2012). The emergence of information and communication technology has allowed reservations and payment through multiple platforms such as smartphone applications, automated phone systems, and web-based user interfaces (Shaheen et al., 2012). Reservations, billing and access mechanisms are common to all shared-use vehicles and the current systems of shared-use vehicle technology include manual processes, partially automated systems, and advanced technologies (Shaheen, Cohen, & Chung, 2009). In manual processes, reservations and billing occur in-person or by telephone, whilst in partially-automated systems and advanced technologies reservations and billing are managed via automated telephone systems, the Internet, smart card, or smart phone. In manual processes and partially automated systems, access to vehicles occurs via attended key exchange or unattended access with using a lockbox. Advanced technologies grant unattended vehicle access through the use of key fobs, smart cards, or smartphone applications (Shaheen et al., 2012). According to Porter and Heppelmann (2014), smart and connected products bring along new requirements and challenges related to human resources. A company might be in need of recruiting new skills sets, for instance adding talents in areas related to software development, systems engineering, and big data analytics (Porter & Heppelmann, 2014).

#### 2.4.3.2. Processes

The sub-component processes involve the configuration of key activities that enables value creation and delivery of the offering (Osterwalder, 2004). Processes can include both managerial and operational activities, as well as the rules, metrics and norms of a company (Johnson et al., 2008).

Porter (1985) founded the value chain theory and argues that a value chain consists of sequential activities that a company needs to perform in order to deliver its offering. Firms need to consider how to configure, structure, manage, and control steps in the internal chain of activities and processes (Porter, 1985). The main activities include inbound and outbound logistics, operations, marketing, sales, and service (Porter, 1985). According to Johnson et al. (2004), only the most essential processes should be included in a company's business model. Eisenhardt and Sull (2001) believe that key strategic processes should place a company where the flow of opportunities is greatest. Which processes a company chooses are often influenced by a company's particular combination of opportunities and constraints (Eisenhardt & Sull, 2001). The processes might include partnering, product innovation, new-market entry, or customer care (Eisenhardt & Sull, 2001).

The core process for car sharing operators is related to the offering of short-term car rentals (Ferrero et al., 2015). Other essential activities for the business operation includes user registration, billing operations, fleet management, vehicle maintenance, and customer services (Ferrero, et al., 2015). Other key processes relate to marketing activities and efforts to establish new partnerships (Ferrero et al., 2015). In order to offer accessibility to users, car sharing operators occasionally need to relocate vehicles. Boyacı, Zografos, and Geroliminis (2015) argue that the relocation process of vehicles is one of the biggest challenges when offering car sharing services. In particular, free-floating car sharing (FFCS) systems are subject to significant regional demand fluctuations, making vehicle relocations a vital process for FFCS operators (Schulte & Voß, 2015).

#### 2.4.3.3. Internal conditions

A few scholars include softer aspects such as organizational structure or culture in their business model frameworks. As we believe such aspects are important in delivering the value of a firm, as well as determining which resources to acquire and which processes to conduct, we will include internal conditions as a sub-component in our business model framework.

Normann (1975) discusses internal elements such as organizational structure, knowledge and capabilities, systems, and values. Furthermore, Hedman and Kalling (2003) describe how an effective value creation process demands an organizational structure that supports efficient communication as well as division of labor and authority. Child (1972) defines organizational structure as “the formal allocation of work roles and the administrative mechanisms to control and integrate work activities including those which cross formal organizational boundaries” (pp. 2). Alvesson and Sveningsson (2012) argue that the organizational structure of a company has an effect on the realization of the company's goals, indicating that the organizational structure will be different depending on the objectives of the firm.

In the research on organizational effectiveness, organizational culture is a variable many scholars believe can make a difference in performance (Marcoulides & Heck, 1993). Company culture can be defined as the beliefs, perceptions, and values that are shared by the employees of a company, which guide them in their interaction in the working environment (Alvesson & Sveningsson, 2012). Umbeck (2009) includes company culture as a component in his business model framework, believing it has a significant impact on business success. The aspect of culture is also discussed by Hedman and Kalling (2003) and Sommer (2012), who argue that company culture can affect other business model components. Moreover, scholars argue that company culture could affect the engagement among employees, priorities within work, the company's strategy at large, as well as its ability to reach its objectives (Hedman & Kalling, 2003; Alvesson & Sveningsson, 2012).

#### **2.4.2. The offering**

The offering a company brings to a market is essential in order to be successful. The basis of a successful offering is that it creates value for the customers, both in comparison to rival offers as well as costs associated with the offer. This section will be initiated with a discussion around the offering involved in providing car sharing services, primarily by looking at three factors; low cost transport, transport convenience and sustainable transport. Secondly, a discussion about how the profit formula within car sharing can be constructed in order to be financially viable will be outlined.

##### **2.4.2.1. Value proposition**

Johnson et al. (2008) argue that in order to either invent or reinvent the business model, a company is in need of a well-defined customer value proposition. What a company's value proposition should entail differs among scholars, however, the offering needs to precise how and what kind of value will be provided. For instance, Osterwalder (2004) emphasizes the offering when discussing the value proposition, and believes that it should comprise an overview of the company's products and/or services that the customer finds valuable. In contrast, Johnson et al. (2008) divide the value proposition into three separate sub-components; the target customer, the job-to-be-done, and the offering. However, we believe that it is possible to obtain sufficient knowledge about the customer value creation without dividing the business model component into three parts, and will thus focus on the offering at large.

As car sharing provides members access to a fleet of shared vehicles on an as-needed basis, it largely reduces the need for a private vehicle to finalize trips (Shaheen et al., 2009; Martin et al., 2010). Consequently, car sharing can reduce household vehicle ownership and eliminate the need for fixed ownerships costs (Martin et al., 2010). As energy costs are rising and the pressure to reduce carbon dioxide emissions is increasing, more drivers are encouraged to consider alternatives to private vehicles (Shaheen et al., 2009). Car sharing offers individuals the benefits of private vehicle use but without the costs and responsibilities associated with private ownership (Katzev, 2004; Shaheen et al., 2009; Martin et al., 2010). As a result, car sharing membership decrease average monthly transportation costs, as well as lowers yearly

(fixed) costs for the user (Steininger et al., 1996; Katzev, 2004; Shaheen et al., 2009; Martin et al., 2010).

Car sharing also provides several beneficial environmental impacts, such as a reduction of vehicles from the transportation network and a reduction in carbon dioxide emission (Shaheen et al., 2009; Martin et al., 2010; Glotz-Richter, 2012). Additionally, the reduction in car ownership brings along transportation modal shifts, such as more biking, walking, and public transit, which results in a reduction of the carbon footprint of transport (Shaheen et al., 2009; Glotz-Richter, 2012). Many car sharing users become more aware of their travel expenses that makes them take fewer spontaneous driving trips (Shaheen et al., 2009; Glotz-Richter, 2012), which also entail several positive environmental effects.

An additional aspect of vehicle sharing is presented by Press (2015), who argues that the biggest selling point of car sharing is the on-demand convenience where technological advances enable customers to access a car by only tapping a button on the phone. Convenience and accessibility can be considered as two key elements in the offering of car sharing and are related to aspects such as the number of vehicle stations, the number of vehicles and models available, and the distance between a user's pick-up and drop-off location (Boyacı, Zografos & Geroliminis, 2015; Ferrero et al., 2015). The importance of convenience is highlighted in current research which shows that individuals who need to walk a distance longer than 500 meters to find a vehicle or wait more than 15 minutes to access a vehicle, will switch to an alternative transportation mode (Schulte and Voß, 2015).

#### 2.4.2.2. Profit formula

The profit formula concerns bringing the offering to the market in a financially viable way, i.e. how the company can make money from the value it creates for its customers (Osterwalder, 2004; Johnson et al., 2008; Sommer, 2012). Osterwalder (2004) discusses the financial aspects of a firm in terms of its revenue model and cost structure, which is a definition that will be applied in this study as well.

##### *Revenue model*

The revenue model can consist of different revenue streams and it explains and measures income gained from the value offering provided to customers (Osterwalder, 2004). The different revenue streams that constitute the revenue model can all have different pricing instruments, and they are fundamental to the long-term gain and even survival for a company. A firm's revenue streams may also differ in which economic activity that is linked to the offer, including activities such as selling, licensing, or lending (Osterwalder, 2008). Johnson et al. (2008) explains how the amount of money to be made are determined by "price x volume", where volume is related to aspects such as frequency of purchase, subsidiary sales, and market size (Johnson et al., 2008).

In addition, Osterwalder (2004) argues that a company's pricing strategy should show consideration for customers' willingness to pay as it will determine the actual sales. For car sharing operators, it is important to compare price and tariffs with direct competitors as well

as with similar types of services, such as traditional car rental firms and taxi services (Lightfoot, 2011). The two main revenue streams for car sharing companies are subscription fees and rental fees. Several car sharing companies charge a subscription fee in conjunction with the registration of new customers, whilst the charging fees for using the car service includes costs related to refueling or recharging, insurance, parking, and vehicle maintenance (Ferrero et al., 2015). The price structure varies among car sharing operators, for instance, some operators charge the service in a per-minute basis, some offer annual fees, whereas other operators charges a fee per kilometer in addition to an hourly fixed fee. In addition, it is common to offer discounted hourly and daily rates as well as fees depending on the vehicle chosen and user characteristics (private or corporate clients) (Ferrero et al., 2015).

Different price structures and service models are important as they accommodate different customer needs. Therefore, pricing strategies become important when addressing different customer segments. Many car sharing operators offer plans with multiple subscriptions and discounted rates to meet the demand of different customers. Additionally, some companies offer minute packages with promotional prices (Ferrero et al., 2015).

#### *Costs structure*

The cost structure includes all costs associated with the company's creation, marketing and delivering of value to the customers. The company sets a price on all its activities as well as assets and resources, and estimates the cost of exchanges and relationships with its partners within its network (Osterwalder, 2004). Within the element of cost structure is also the allocation of costs, including economies of scale and key assets, as well as direct and indirect costs (Johnson et al., 2008).

The cost structure of a car sharing company is related to the activities and resources necessary for its operations (Ferrero et al., 2015). The fleet acquisition and the development of information systems entail high fixed costs, even if partnerships with car manufacturers exist. Companies with station-based point-to-point service models, relatively free-floating car sharing systems, often have higher infrastructure costs due to the installations of the parking stations or service kiosks. However, free-floating operators may install proprietary parking spots in geographical areas with less access to public parking spaces. The primary costs for car sharing operators include the fleet acquisition and management, vehicle maintenance (including cleaning and refueling or recharging), system development, municipal taxes for the service authorization and the use of public facilities, and personnel costs (Ferrero et al., 2015).

### **2.4.3. The external environment**

A business model is embedded in its external environment, which consists of general economic, political, and societal factors, as well as competition and activities by stakeholders (Sommer, 2012). A disadvantageous external business environment can disrupt an otherwise functional business model (Normann, 1975; Osterwalder & Pigneur, 2010; Sommer, 2012). The external environment will be discussed in three dimensions, customers, competition, and business interaction.

#### **2.4.3.1. Customers**

##### *Target customer*

Defining the target customer is a part of a company's segmentation strategy and refers to the individuals the company wants to address (Osterwalder, 2004). Through successful segmentation, a company has the opportunity to identify its most suitable customers, i.e. the individuals that the value proposition is the most appealing to. By doing so, a company can allocate its resources properly to its target customers and thus gain the most value (Osterwalder, 2004). Hence, a company's target customer comprises the individuals who will be the most attracted by the company's offering (Osterwalder, 2004).

Researchers have identified a distinctive socio-economic profile among car sharing users (Martin et al., 2010; Le Vine et al., 2014). For instance, car sharing users tend to be well-educated, predominantly males, young adults (primarily between ages 25 and 45), live in a single-person or childless-couple household, live in a single-car or carless household, live in urban neighborhoods, and be major users of transportation modes such as public transport, walking, or bicycling (Le Vine et al., 2014). As car sharing users incur hourly and sometimes also mileage charges, car sharing vehicles are rarely used for commuting as a full day's auto-commute could quickly become too expensive (Martin et al., 2010). Consequently, as vehicle ownership costs are mainly fixed versus variable, individuals who are in need of a vehicle for work or non-work trips, are more likely to own a vehicle rather than use a car sharing vehicle (Martin et al., 2010).

##### *Customer demand*

The technology, Internet and social media of today make it possible to instantly connect with almost everyone, anywhere, at any time. The fact that products nowadays can be shipped or transported to the location where people are at, has led to a decreased need for private vehicle ownership (McElroy, 2012). According to Bardhi and Eckhardt (2012), private ownership is no longer the definitive preference for consumers. Instead, the temporary accessibility of things that used to be the things consumers wanted to own, is now what the customers prefer to pay for. The willingness to join the sharing community instead of buying a new private owned car is increasing (Firnkorner & Müller, 2011).

In terms of the demand between different car sharing service models, Schmöller and Bogenberger (2014) discovered that free-floating systems is frequently used for shorter trips whilst hybrid car sharing is more frequently used for longer trips and during weekends when people have more time on their hands. The choice between travelling via a free-floating

system or a hybrid car sharing system is also determined by the price settings in comparison with the planned usage. For longer journeys hybrid car sharing is generally the preferred service model, as it becomes the cheapest option (Schmöller & Bogenberger, 2014).

Usage predictions are difficult to assess and the demand amongst car sharing users depend on a variety of factors (Katzev, 2003; Schmöller & Bogenberger, 2014). For instance, the time of day has a significant impact on the demand. Between 8 am and 11 am, and 4 pm and 8 pm car bookings increase due to travel to and from work (Schmöller & Bogenberger, 2014). Sociodemographic factors also have a large influence on demand; for instance, younger people studying at universities have shown to be frequent users of car sharing services (Schmöller & Bogenberger, 2014). Weather has an impact on demand on free-floating car sharing booking. When temperatures shift from cold to hot, the demand for car sharing tend to decrease as people become more willing to travel by bike or walk, and vice versa (Schmöller & Bogenberger, 2014).

#### *Customer relation*

The sub-element customer relationships signify the manner in which a firm approach the market, and how it advances and reach customers in order to initiate contact (Osterwalder, 2004). Osterwalder (2004) argues that all kinds of contact and information affects the relationship, and that new communication and distribution channels, as well as new mechanism of relationships like trustworthiness and personalization, are required in order to better serve customers and reach unexplored markets. As customer interactions are associated with costs, companies need to be careful and strategic in their selection and definition of what kind of relationships that they want to have with their customers (Osterwalder, 2004). The car rental industry is traditionally associated with low-margins, and for car sharing operators to avoid such an outcome, leveraging customer relationships becomes an important element of their business strategy (Le Vine et al., 2014). Schrage (2012) argues that in order to create more value, investments in customers are necessary. Moreover, Stubbs and Cocklin (2008) discuss the aspect communication and education in sustainable business models and suggest it can influence the behavior of customers.

Regarding the customer interaction, car sharing operators' main channels to reach customers often include the company website, a smartphone application, and a 24-hour available call-center (Ferrero et al., 2015). Through the website, companies provide a well-detailed description of its services and the opportunity for new customers to register to the service. Reservations usually take place via the website, the smartphone application, or the call-center. Consequently, car sharing operators' customer relationships are ordinarily automated, and the customer interface is designed to provide sufficient means for customers to help themselves through self-service (Ferrero et al., 2015). It is common for car sharing operators to interact with their customers through online platforms and many operators have expanded their customer base using word-of-mouth and online social networks (Shaheen et al., 2012).

#### 2.4.3.2. Competition

New types of products reshape industry boundaries and alter the nature of competition, introducing new competitive opportunities and threats (Porter & Heppelmann, 2014). For instance, Sommer (2012) discusses how sustainability leads to fundamental changes in the business world and that more companies are beginning to view sustainability as an opportunity to create a competitive edge and create value. In addition, Porter and Heppelmann (2014) discuss how smart, connected products are disrupting value chains and forcing companies to rethink their operations. Consequently, companies need to consider new strategic choices in how to create and capture value, as well as how to gain competitive advantage (Sommer, 2012; Porter & Heppelmann, 2014). Porter (2008) argues that competition is driven by five competitive forces: the bargaining power of buyers, the bargaining power of suppliers, the rivalry among existing competitors, the threats of new entrants, and the threat of substitute products or services. Furthermore, the combined strength of these forces determine the degree of industry competition and the average profitability for existing competitors (Porter & Heppelmann, 2014).

##### *Competitive elements*

Umbeck (2009) considers competitive elements, such as competitive barriers, inimitability, and uniqueness, as a dimension to be taken into consideration in business models. Although these aspects may be important to a company's success, it is also possible to view them as strategic outputs of business model dimensions, thus not as a business model dimension itself (Sommer, 2012). However, as the competitive elements of an industry are an aspect companies need to consider in order to do business, we will include the dimension as a sub-component in our business model framework.

Porter and Heppelmann (2014) discuss how smart, connected products can enable new business models that can create a substitute for product ownership. Car sharing can be classified as a shared-usage model and provides access to vehicles when and where customers need them (Porter & Heppelmann, 2014). As this innovation constitutes as a substitute for traditional car ownership, automakers have entered the car sharing market (Porter & Heppelmann, 2014). In terms of competition, Glotz-Richter (2012) argues that car sharing operators do not only face rivalry from other car sharing companies, but also from other transport modes such as public transport, trains, and taxi firms.

##### *Economic and political environment*

Competition among car sharing firms may also be affected by conditions in the external environment. Porter (1991) claims that governments have an essential role in shaping the business climate of a country. For instance, governmental regulations, policies, or support functions of the industry, may either promote or hinder companies' possibilities to value creation. The vast increase climate change and its potential impact has had in politics and in society at large, has made the topic of sustainability become a top priority (Sommer, 2012). Moreover, the level of business activity in a country is influenced by the economic situation at large, such as a boom or a recession in the economy, which in turn also affect the business of individual firms (Mokhova & Zinecker, 2014). Generally, economic sustainability

comprises adequate and stable economic growth requirements, for instance financial stability, preservation, low and stable inflation rates, innovation investments, and a harmonization of economic activities (Čiegis & Zeieniute, 2008; Daunorienė et al., 2015).

#### 2.4.3.3. Business interaction

Management literature has underlined the significance of partnerships and alliances for decades. Many companies view partnerships and alliances as vital elements in the implementation of strategies (e.g. Osterwalder, 2004; Johnson et al., 2008). The partner network of a company describes how activities and resources are allocated among the company's different partners (Osterwalder, 2004).

As the world becomes more complex, the analytical task of managers becomes more intricate. It is no longer sufficient to solely examine the major competitor, instead, the network of firms that relate to that competitor need to be addressed (Kothandaraman & Wilson, 2001). In order to create and deliver value, a firm might need to collaborate with other participants in the industry or society (Osterwalder, 2004; Sommer, 2012). A great deal of authors discusses how value creation in business ecosystems is fostered and increased in collaboration with other participants (Kandiah & Gossain, 1998; Iansiti & Levien, 2004; Chesbrough & Appleyard, 2007; Johnson & Suskewicz, 2009). Inter-firm relationships can take form in various ways, including alliances, joint ventures, marketing agreements, licensing, partnerships, supply and manufacturing agreements (Podolny, 1998; Zaheer, Gulati & Nohria, 2000). There are a several motives behind joining such relationships, including the reduction of external risk, access to new markets, technology and knowledge, and regulatory requirements (Pfeffer & Nowak, 1976; Oliver, 1990; Ahuja, 2000). A company needs to decide whether resources should be produced in-house or by an external party. This relationship is often described as transaction cost economics (Coase, 1937; Williamson, 1979). The theory outlines how a company cannot only consider the cost for producing the product or the service themselves, but also need to compare it to the transaction cost if deciding to buy the product or service on the market. Thereby, the theory indicates that partnerships with actors outside the focal firm will result in an increased focus on the firm's core competences (Coase, 1937; Williamson, 1979).

Stakeholder theory can help to provide understanding in how firms act in relation to other participants in its business ecosystem and stakeholders can have sufficient impact on a firm's ability to succeed (Mitchell, Agle & Wood, 1997; Osterwalder, 2004). According to Freeman (1984), stakeholders are "any group or individual who can affect or is affected by the achievement of the organization's objectives" (pp. 46). The stakeholders of a company can include interest groups such as investors, employees, customers, suppliers, governments, trade associations, and political groups (Donaldson & Preston, 1995). Stakeholders can put pressure on firms to work in a particular manner in order to gain positive recognition (Mitchell et al., 1997).

Car sharing businesses can take advantage of strategic partnerships to leverage their operations, reducing costs and complementing internal capacities. Such partnerships can

manifest in several forms, for instance, through buyer-supplier partnerships car sharing companies can assure a reliable source of assets that are central for their operations. Moreover, it is common that car sharing companies utilize partnerships with vehicle suppliers for the acquisition of their fleets (Ferrero et al., 2015). Vertical integration between car sharing operators and vehicle manufacturers also enable telematics equipment to be efficiently designed and installed into a car sharing service's vehicles directly in the factory, instead of after-market add-ons (Le Vine et al., 2014). Through such partnerships, car manufacturers are able to leverage existing organizational strengths, such as brand recognition, back-end IT systems, and optimal vehicle management (Le Vine et al., 2014). However, engaging in partnerships with car sharing operators involves both opportunities and risks for car manufacturers. Serving younger customers through car sharing services may encourage brand loyalty in connection with possible future car purchases, however this is not a given outcome. In order to positively influence brand loyalty, it will be important to deliver the level of service customers expect (Le Vine et al., 2014). Other important collaborations include the development of integrated information systems for the fleet management, as well as vehicle tracking and tracing, user registration, billing process, and other complex internal activities (Ferrero et al., 2015).

Marketing and consumer research suggest that effective management of the institutional environment is necessary in order to reach success in the business of sharing economy (Lamberton & Rose, 2012; Cannon & Summers, 2014). It is essential for car sharing companies to interact with local authorities in ways that are unfamiliar for the automotive industry. Several car sharing operators require privileged access to on-street parking space, a resource that is typically managed by municipalities (Le Vine et al., 2014). Gaining access to on-street parking space can be a critical vulnerability as the inability to acquire the required access to parking space can potentially prevent the operations of a car sharing service (Le Vine et al., 2014). Partnerships with local authorities enable an alignment between the services offered by the car sharing company and city regulations as well as provide important resources (Cohen & Kietzmann, 2014; Ferrero et al., 2015). Accordingly, privately held companies need to negotiate with public authorities regarding the use of standard public parking spots (which is particularly important for companies with free-floating service models), the right to utilize public spaces for the construction and establishment of fixed stations, toll benefits, and other benefits such as obtaining access to limited traffic areas (Cohen & Kietzmann, 2014). Car sharing operators can contribute to a reduction of vehicles on the roads which is attractive for cities trying to address problems associated with a high presence of cars on the roads, such parking needs, high congestion, and air contamination (Martin et al., 2010; Glotz-Richter, 2012; Cohen & Kietzmann, 2014).

#### **2.4.4. Summary - preliminary theoretical framework**

Our business model framework is composed of three interrelated head-components; the internal factors, the offering of the company, and the external environment, which in turn comprise a division of eight sub-components that form the core of the framework. This will constitute as the foundation for our empirical study, and by testing the framework empirically we aim to identify which business model components characterize a car sharing firm. A vital aspect of the model is the mutuality of the components. Significant changes of the components affect each other and the value creation of the business model. Furthermore, depending on contextual and situational aspects, emphasis may be put on different components. Accordingly, the preliminary theoretical framework will be used inductively with the possibility of certain components having greater impact in some instances.

Head-components	Sub-components	Description	Characteristics of a car sharing firm
<p><b>Internal factors</b></p>	<p><b>Resources</b></p>	<p>Key means in terms of; tangible, intangible, technological, human and financial assets, in order to deliver the offer.</p>	<ul style="list-style-type: none"> <li>• Technology is a central component within car sharing and essential to deliver the service in the right time and at the right location. For instance, website and smartphone applications, and information and communications devices installed in vehicles.</li> <li>• Other key resources of a car sharing company commonly relate to the fleet of vehicles, the designated parking spots, and the service team handling the maintenance.</li> </ul>
	<p><b>Processes</b></p>	<p>The structure of processes that enables value creation and the offer to be delivered.</p>	<ul style="list-style-type: none"> <li>• The core process for car sharing operators is related to the offering of short-term car rentals.</li> <li>• Other essential processes include user registration, billing operations, fleet management, vehicle maintenance, vehicle relocations, customer services, marketing activities, and efforts to establish new partnerships.</li> </ul>
	<p><b>Internal conditions</b></p>	<p>The conditions that define how work is conducted, such as organizational structure and culture.</p>	<ul style="list-style-type: none"> <li>• The organizational structure of a company impacts the realization of the company's goals, indicating that the organizational structure will be different depending on the objectives of the firm.</li> <li>• In the research on organizational effectiveness, organizational culture is a variable many scholars believe can make a difference in performance</li> <li>• Company culture can have a significant impact on business success.</li> </ul>

<p><b>The offering</b></p>	<p><b>Value proposition</b></p>	<p>The product or service that aim to satisfy the customer need or problem.</p>	<ul style="list-style-type: none"> <li>• Car sharing provides the benefits of private vehicle ownership but eliminates the costs and responsibilities associated with owning a car.</li> <li>• Car sharing membership lowers users' average monthly transportation costs.</li> <li>• The biggest selling point of car sharing is the on-demand convenience and accessibility.</li> <li>• Car sharing result in societal and environmental benefits.</li> </ul>
	<p><b>Profit formula</b></p>	<p>How the company earn money from the value it creates for customers.</p>	<ul style="list-style-type: none"> <li>• The two main revenue streams for car sharing companies consist of subscription fees and rental fees.</li> <li>• The price structure varies among car sharing operators. Usage is billed on the time the vehicle is used, time increments of minutes or hours, and sometimes also on the mileage.</li> <li>• The primary costs are related to fleet acquisition and management, vehicle maintenance, personnel costs, system development, municipal taxes for the service authorization and the use of public facilities.</li> </ul>

<p><b>External environment</b></p>	<p><b>Customers</b></p>	<p>The target customer and the problem or need the company tries to satisfy.</p>	<ul style="list-style-type: none"> <li>• The target customer lives in urban neighborhoods, is well educated, in the age of 25 and 45, lives in a single-car or carless household, and is a frequent user of transportation modes such as public transport, walking, or bicycling.</li> <li>• Customers express an increased will to join the sharing community instead of having private vehicle ownership.</li> <li>• Usage predictions are difficult to assess and the demand amongst car sharing users depend on a variety of factors.</li> <li>• The main channels to reach customers are ordinarily automated and based on online platforms.</li> </ul>
	<p><b>Competition</b></p>	<p>The competing elements within the industry.</p>	<ul style="list-style-type: none"> <li>• Car sharing operators do not only face rivalry from other car sharing companies, but also from transport modes such as public transport, trains, and taxi firms.</li> <li>• Governmental regulations, policies, and support functions of the industry, may either promote or hinder companies' possibilities to value creation.</li> <li>• The level of business activity in a country is influenced by the economic situation at large. Economic sustainability comprises adequate and stable economic growth requirements.</li> </ul>
	<p><b>Business interaction</b></p>	<p>How the company is affected by stakeholder relationships.</p>	<ul style="list-style-type: none"> <li>• Car sharing companies often engage in partnerships with vehicle suppliers for the acquisition of their fleets.</li> <li>• Important collaborations include the development of integrated information systems for the fleet management, as well as vehicle tracking and tracing, user registration, billing, and other complex internal activities.</li> <li>• It is essential for car sharing companies to interact with local authorities regarding the use of standard public parking spots, the right to utilize public spaces for stations, toll rates, and other benefits such as obtaining access to limited traffic areas.</li> </ul>

### **3. METHODOLOGY**

The following chapter describes the methodological choices we have done as well as motivates and discusses advantages and shortcomings. Following sections present the approach for selection of theory, the collection of empirical data, and the implementation of the multiple case study which forms the basis of our study. Furthermore, a discussion regarding the presentation and analysis of data will be provided. The chapter concludes in a scientific assessment discussing the quality of the study.

#### **3.1. RESEARCH APPROACH**

The purpose of the study is to increase the understanding of what characterizes the business model of a car sharing company. This by empirically identifying business model components of car sharing operators. Predominantly, the study applies an inductive approach, although the study also has some deductive characteristics. Consequently, an abductive approach has been applied in the study (Bryman & Bell, 2013). Dubois and Gadde (2002) claim that the abductive approach is useful when a study aims to discover new things, such as relationships and variables, thus making the research approach appropriate when studying business models. When applying an abductive approach, the original framework is continuously modified as new combinations are generated through a mixture of established theoretical models and new concepts gathered from empirical findings (Dubois & Gadde, 2002).

In order to provide a fundamental understanding of the subject and to establish a theoretical framework, the starting point of the study consisted of a review of existing theory within the domains of sharing economy, car sharing, and business models. Subsequently, a multiple case study was conducted in order to gather data to develop the preliminary theoretical framework. Although the preliminary theoretical framework to a larger extent than in truly inductive studies influenced the empirical findings, such as in grounded theory (Glaser & Strauss, 1967), these phases of the working process were primarily inductive. Lastly, we concluded our findings in a final framework by analyzing data with the use of a pattern matching approach (Yin, 2014). Throughout the research process we have continuously applied sensitizing categories as it enables flexibility and reflection (Alvesson & Skölberg, 2007). By applying sensitizing categories, rather than static categories, we could use the preliminary framework as a starting-point without being limited to specific categories when conducting the final framework. Consequently, the final framework is structured on other themes than the preliminary theoretical framework. As the linkage between car sharing and business models is relatively uncharted, we found it suitable to explore adjacent fields of research and then complement existing research gaps with conclusions from our empirical findings. Thus, the study can be argued of having both deductive and inductive characteristics (Stein, 1993). The research approach is in accordance with Yin's (2014) claim that to develop the understanding and knowledge of a subject, which is the purpose of this study, an in-depth understanding of existing theory is essential.

## **3.2. RESEARCH DESIGN**

### **3.2.1. Theoretical study**

In order to develop knowledge of the subject aimed to be studied as well as interpret data and potential patterns, it is essential to obtain a comprehensive understanding of existing literature (Yin, 2014). The reason to inquire into the theoretical domains of sharing economy, car sharing, and business model theory, was closely related to the purpose of the study (see chapter 1.2.). The theory was used to establish the preliminary theoretical framework, which has assisted us to identify what characterizes the business model of a car sharing company. Moreover, we have actively chosen which theories to include in the study in order to match the purpose of the study. Although we have consciously biased the content of the study, the delimitation of theoretical domains has enabled a more in-depth study. The theoretical framework in the study consists of formal and substantial theories. Substantial theories refer to theories that are developed for a specific subject, whilst formal theories concern theories based on abstract concepts that can be generalized to several subject areas (Glaser & Strauss, 1967). In this study, the formal theory consists of business model theory, which provides a holistic perspective on how to conduct business and make revenue, whilst the substantial theories in the study consist of sharing economy and car sharing.

### **3.2.2. Case study**

When selecting the research approach, emphasis should be put on finding the method that is the most suitable for investigating the purpose of the study. Thus, the research approach should function as a means tailored to the specific purpose of the study (Smith, 2015). The aim of this study is to increase the understanding of what characterizes the business model of a car sharing firm. Consequently, the purpose of the empirical study was to gather data related to the theoretical framework.

Despite previous research contributions, the linkage between car sharing services and business models is currently relatively uncharted. In order to increase the understanding of the research field, the theoretical study needed to be complemented with a thorough and detailed analysis of car sharing companies. Given the complexity and ambiguity of the subject, a multiple case study design was applied as the research method. This is in line with Bryman and Bell (2011) who argue that the case study design is particularly suited for studies that require more in-depth data, or when investigating multiple aspects of a bounded area. According to Yin (2009), case studies are suitable when the purpose is to investigate contemporary rather than historical areas, and the questions to be asked are “why?” and/or “how?” as the study investigates a contemporary and relatively new phenomenon, and how a business model is configured, the case study design is a preferable research approach. In this study we will conduct an intrinsic case study since we want to look into a specific subject and gather special knowledge about a particular business (Stake, 1994). By conducting a multiple case study, it is possible to make a comparison between the companies participating in the study and detect patterns in the responses from the respondents (Bryman & Bell, 2011; Yin, 2014). Consequently, the case study design is suitable as it enables an interpretative

approach, which involves considering the experiences of people working within organizations (Dubois & Gadde, 2002).

Criticism has been directed towards the case study approach and its ability to generalize findings, arguing that a single case is not representative for all similar cases (Bryman & Bell, 2013). This critique is taken into consideration, however, as our study consists of multiple cases and the findings are based on a number of cases instead of one, we believe this critique can be partially circumvented. Furthermore, the study aims to reach analytical generalizability towards existing theory through emphasis on multiple aspects, rather than statistic generalizability, which focuses on frequency of observations (Yin, 2014).

### **3.2.3. Case selection**

When selecting which cases to include in the study, the main criteria were to incorporate cases, which could contribute with data supporting the purpose of the study. In order to obtain empirical depth and width, as well as establish a comprehensive and robust framework, we wanted to examine car sharing companies with different characteristics. We found it important to include companies with different service system models, such as station-based and free-floating systems, in order to examine whether service models impact the business model. Moreover, car sharing companies operating in different countries were chosen as we wanted to investigate the impact of contextual circumstances such as political and economic environment, competitive elements, and customer demand. We also wanted to include companies in various stages of maturity, such as well-established operators and companies in start-up phases, as it may provide important insights. Although the study aims to include cases with different traits, it is possible that the case sample is too similar, thus making it difficult to identify similarities and differences sufficiently. However, we believe including cases that differ in multiple aspects mitigates this risk.

In accordance with Bryman & Bell (2013), the study adopts a multiple case study design in order to assist development in theory through comparisons between the companies. Moreover, adopting a single case study may not have provided sufficient width and idiosyncrasy to increase the understanding of what characterizes the business model of a car sharing company. The multiple case study is also suitable as it also allows for a greater understanding of which characteristics that are specific to the individual firm and which are common to all firms, which often has a positive impact on the end result and development of theory (Bryman & Bell, 2013). Regarding how many cases to include in the study, Larsson (1993) argues that a trade-off prevails concerning to either have a few variables examined in a great number of cases, or to have a great number of variables examined in few cases. It would have been ideal to neither limit the number of cases nor the aspect richness in the study. However, as limitations in time and resources exist, a trade-off is inevitable. Due to the high aspect richness of our purpose, a limitation in number of cases was necessary. Given these circumstances and the scope of the preliminary theoretical framework, we concluded that we wanted to include at least five companies in the study to be able to obtain adequate data. Through the use of Internet and online professional networks, we reached out to several European car sharing companies. This resulted in a case selection consisting of six companies

operating in four different countries, comprising of; Audi Unite, Car2Go, DriveNow, Greenwheels, LetsGo, and Sunfleet. Information about the companies participating in the study can be found in Appendix 2.

### **3.3. DATA COLLECTION**

#### **3.3.1. Qualitative data**

As the study aims to increase the understanding of a complex topic, in-depth data is required. The scope of our preliminary framework made it difficult to make use of a questionnaire with predetermined answers, as it would not provide a sufficient depth of information (Bryman & Bell, 2011). Consequently, we conducted an interview guide based on various business model components in order to operationalize our preliminary theoretical framework (see *chapter 2.4.4.*). The data collection was conducted through semi-structured interviews and qualitative data, rather than quantitative data, was thus gathered. Some of the main characteristics of qualitative research is that the data consists of words, interpretations, and reasoning (Bryman & Bell, 2013), making it a suitable approach for the purpose of this study.

The qualitative research method has been criticized on issues related to subjectivity as the researcher makes use of his or her own judgments and interpretations. As we wanted to give the respondents the opportunity to speak freely and not limit their responses to predefined answers, a quantitative data approach would have been disadvantageous, as it often needs predefined answers in order to collect the data (Bryman & Bell, 2011). Moreover, as the study intends to understand underlying reasoning and motives, a quantitative research approach might not have been able to capture sufficiently deep answers, thus resulting in a less nuanced picture of reality. In addition, as the study aims to develop existing theories, the qualitative approach was more suitable due to its ability to include meaning, context and process (Backman, 2008).

#### **3.3.2. Semi-structured interviews**

In order to collect empirical data, we used semi-structured interviews as we believed it was the most suitable method given the purpose of our study. The semi-structured interview approach is a flexible approach, which enables a relatively open dialogue with room for discussions. Furthermore, it is an approach that allows circumstantial answers and follow-up questions (Bryman & Bell, 2013). The semi-structured interview format enables us to adapt to the situation and direct the interview depending on the context and the respondent. This enriches the data collection and provides a deeper understanding of how the company is operating, and the opinions and perspectives from employees and management team. The purpose was to let the respondent speak freely but at the same time direct the interview to ensure all questions needed to be asked were asked. Furthermore, semi-structured interviews increase comparability, which increases the validity and reliability of the study (Bryman & Bell, 2011).

The interview guide was based on our preliminary framework, and the questions cover all parts of the framework (see *Appendix 1*). The interviews lasted for 30 to 45 minutes and were

mainly conducted by using Skype, which is an efficient and less time consuming way of collecting data in comparison to meeting in person. During each interview, at least two people participated in order to ensure that all areas of the framework and interview guide were covered. This was important as it affects the ability to compare the answers from different interviews. Moreover, all interviews were recorded in order to go back and listen to important details and reasoning. All respondents participating in the study approved this. During the interviews at least one of the participating persons took notes in order to remember important comments and aspects, these comments were also complemented with information as we listened to the recorded interviews. Critique against recording during interviews is that the respondent may be uncomfortable, which could lead to misleading data, even if he or she has given approval to conduct the recording (Dubois & Gadde, 2002). However, these outcomes are relatively rare (Bryman & Bell, 2011), and we minimized the risk of this occurring by clarifying to the person being interviewed to not answer anything that they were unsure of, or that made them uncomfortable. Another risk during interviews is that misinterpretations can arise, and that the respondent is partial (Dubois & Gadde, 2002). We mitigated this by making sure that the interviewer was present and alert, and that he or she were able to explain the subject and straighten out potential misconceptions.

### **3.3.3. Selection of respondents**

When selecting respondents, it is important that the individuals participating in the study can contribute with different perspectives (Yin, 2014). The selection of the respondents was carefully done after certain criteria. Firstly, gathering information from different parts and entities of the organization was vital in order to obtain an overall picture of the company, and in extension to create a comprehensive business model framework. The respondents' positions within the firms were broadly mixed, ranging from CEOs, to fleet managers, to communication managers, and operations managers. The reason for this was to get a wider perspective of the company and its different departments within the operational activities, and thereby also information about different business model components. Secondly, respondents should be involved in strategic planning and have a significant role in decision-making processes regarding strategic decisions within the firm. This because it can provide valuable answers about the operational activities within the firm. We interviewed 15 individuals from six companies, operating in four different countries to obtain a representative and reliable selection (see *Appendix 2*). From each company we interviewed between one and four employees (see *Appendix 2*). An important consideration when collecting data is when to stop collecting (Glaser, 1967). According to Glaser (1967), the data collection shall cease when the point of theoretical saturation is reached. Meaning that the marginal knowledge of doing one additional interview is low, or even approached zero. When we reached the number of ten interviews, a feeling of saturation emerged. The data collection continued during five more interviews in order to be sure we had understood the market and all the important aspects of the operations within a car sharing company.

The wide range of professional roles and having respondents from multiple companies enabled a broader spectrum of perspectives and room for comparison (Yin, 2014). In addition, alternative perspectives were also of value as it reduced the risk of the study being

partial. Consequently, we believe that the wide range of respondents increases the credibility of the study, and we believe that the detailed information enables us to present a comprehensive data collection.

### **3.4. METHOD FOR PRESENTATION OF EMPIRICAL FINDINGS**

When conducting the interviews, the preliminary framework functioned as an effective tool to ensure that important aspects were captured as well as to obtain a holistic perspective. However, when collecting the data, we discovered that the framework was more suitable for gathering data than for structuring the empirical findings. In order to present our findings in a well-structured and distinct way, we chose to restructure the framework. This because we realized that the preliminary theoretical framework did not facilitate for analysis of our findings in an optimal manner. When we reviewed our findings, we discovered that the interaction between different sub-components were closer than anticipated, making it difficult to distinguish them from each other. The application of sensitizing categories enabled us to structure our findings and analysis in a way that provides depth and relevance (Alvesson & Sköldbberg, 2008). By restructuring the framework, we were able to avoid repetition and inconsistencies. Given our empirical findings, we decided to structure the framework into four different levels of analysis, which describe the linkage between the findings and the companies. As a result, the framework consists of the following levels; *organization level*, *customer level*, *industry level*, and *society level*. Although a restructuring has been implemented, the framework still contains all findings gathered with the use of the preliminary theoretical framework. Thus, no findings have been excluded in the framework, only structured differently.

### **3.5. METHOD FOR ANALYSIS**

While presenting the empirical findings of our study, we have worked with pattern matching (Yin, 2014). Matching is important in the sense of continuously trying to connect existing theory with reality in order to find patterns and describe different phenomena (Dubois & Gadde, 2002). This is a well-established method, which we applied in order to find patterns between the collected data and the business model framework established in Chapter 2, helping us to fulfill the purpose of the study (Yin, 2014). Pattern matching was carried out throughout the entire study as an iterative process in conjunction with the presentation of the empirical findings (Bryman & Bell, 2011). This enabled us to match the preliminary theoretical framework with empirical data and we were able to confirm, develop, and reject proposals suggested by the preliminary framework, which resulted in a final framework.

As components were set in our preliminary theoretical framework, we may have been influenced to have a certain theoretical outlook. However, the categories in the framework enabled us to find relevant and valuable information, and to not include aspects irrelevant for the purpose of the study. Moreover, the components of the preliminary theoretical framework have also facilitated a similar analysis for the cases, which has increased the ability to discover complex theoretical patterns.

### 3.6. RELIABILITY AND VALIDITY

To be able to contribute to credible theoretical findings, it is important to address the concerns regarding the reliability and validity of the study.

The question of the trustworthiness of the qualitative research is referred to as *reliability* (Eneroth, 1997). To ensure reliability of the study, and within the data collection, all interviews have been recorded and conducted after the same pre-defined interview guide with primarily open questions. All interviews have been handled the same and notes from the interviews and other observations will be summarized and added to the empirical findings. A risk during this process is connected to the influence of researcher bias, but can be mitigated by continuously and repeatedly use multiple sources and cases, as we have done in the study. What also impacts the reliability of the study is the fact that we are operating within a research group called *Sustainable Society*, at Lund University School of Economics and Management. This has given us opportunities to together with the research group and supervisors discuss our findings and receive feedback and knowledge, in order to improve the quality and accuracy of the study.

The analysis and theory preparation opens up for questions about *validity*. Different definitions and meanings of the concept of validity have been discussed. Validity refers to that other considerations are made, part from the degree of reliability, to ensure the accuracy of the study. Validity can be divided into internal and external validity and has the purpose to focus on the integrity of the conclusions made from the study. The external validity is based on the generalizability, and is measured towards the existing theory and not in terms of a population or how many cases. What is measured is the *analytical generalizability* instead of *statistical generalizability* (Yin, 1994). To conclude, the analytical generalizability describes to what extent a study can give an explanation of a theoretic phenomenon (Yin, 1994). Internal validity is described as the measurements of the causal linkages between the interrelated variables. The choice of research approach has an impact on the validity of the study. The choice of conducting a multiple case study, investigating different cases in different countries with different prerequisites, affects the external validity positively. In this study we used pattern matching when analyzing the data. This, to be able to test if the empirical observation made is in line with the theoretical relationships within the preliminary framework. What also affects the validity of the study is the iterative process connected to pattern matching. The iterative process opens up for increased validity of the study, but also opportunities for refinements and extensions of the preliminary theoretical framework (Yin, 2014).

Glaser and Strauss (1967) divide reliability and validity into three different factors to be measured: relevance, explanatory power and integration (Glaser, 1978). The relevance is affected positively as the empirical findings consist of observations from different European countries. Moreover, as the companies operate today, the cases represent car sharing business in real time. What also affect the validity is the thorough review of existing literature and research within the field. The review of business model theory and existing theory connected to business model creation explains a new way of how to construct business models within

car sharing. Integration of the business model framework is further discussed in Chapter 2 and 5.

The business model framework we have constructed is based on interrelated components and subcomponents. The different parts make the framework into a flexible model, which opens up for not only one description of how it should be, it enables interpretations and new ways of looking on business models. The concept of business model frameworks is flexible and sensitized. It enables us to find new concepts and relations among these sensitized categories (Alvesson & Sköldbberg, 1994). This increases the relevance and usefulness for further studies.

## **4. EMPIRICAL STUDY**

### **4.1. STRUCTURE OF EMPIRICAL FINDINGS**

The following presentation of empirical findings is structured into four levels of analysis; *organization level, customer level, industry level, and society level*. A restructuring of the framework has been implemented to increase the depth and relevance of the findings (see *chapter 3.4.*). The levels include all findings gathered by means of the preliminary theoretical framework only structured differently. The levels illustrate the interlinkages between the findings and the companies, whilst still having their own functions and characteristics. The organization level and the customer level constitute a larger part of the findings as these levels include a greater portion of aspects included in a business model. The society level embodies a contextual dimension, which encompasses the other levels making it an important aspect to consider.

### **4.2. ORGANIZATIONAL LEVEL**

The organization level refers to all aspects related to the conditions, processes, and resources present within the company.

#### **4.2.1. Technology enables car sharing**

Respondents argue that numerous assets are needed in order to deliver the service of car sharing. One respondent claims that if any of the assets are absent, the car sharing service does not work. However, the vast majority of respondents claim that the vehicles, technology, customer service, parking spots and permits are the most critical.

*“Assets like cars are a critical piece, but the most critical is the team that you have, regardless of how big or small it is. The technological assets, and having a quality and reliable system are other key resources for the business. Also, vehicles are not cheap, so having capital is another key resource.”* William Knapp, Chief Product Officer, Car2Go (Germany)

The cars as well as parking spots and permits are naturally something that the respondents mention as vital resources. All of the respondents operate with sizable car fleets and it is of high importance that they function properly. Further, various respondents highlight the fact that parking spots is a major strength for the company, and that they have had to work hard, during many years, to obtain the amount of parking spots and permits they have today. According to several respondents, the acquiring of parking spots is getting increasingly difficult and its importance as a resource is growing. The customer service is also important because of the need for car sharing to be a smooth service, where access to help and guidance is available at all times. It is also a critical resource due to the fact that it is the operators and customers main contact point.

*“Customer service is the most vital part. It is our single point of contact with customers, and the first thing they encounter.”* Milica Blanusa, Marketing Manager, DriveNow (Sweden)

Technology plays a great deal as it is of great importance for the internal part of the company, as well as a vital resource in the service exposure towards the customer in order for the service to be convenient. The app is used from a customer perspective to find, book, open and park available cars, as well as to offer support and the opportunity report damages. One respondent explains that members of their car sharing operator get an electronic key-tag, and that a small sensor in the windscreen allows the members to lock and unlock the car. The same respondent also underlines the importance of the booking system on the website, and the advantageous aspect of developing a system in-house and having internal developers who know the system. When customers want new features or changes it is relatively easy for them to change it, or develop new features. This suggests that not being dependent on an external party when it comes to the technological part of the business is beneficial way of operating in the young, developing industry of car sharing. Another respondent accentuates the importance of technology as they rely on GPS in order to provide their service.

The importance of having and using an app to a high extent becomes clear in terms of convenience and simplifying the process both for the company and the customers, and is evidently a huge part of the car sharing operators' technological assets. Some respondents claim that the development of technology is the reason behind the increased interest and presence of car sharing services.

*“Technology is critical. We would not have a service without different forms of technology.” William Knapp, Chief Product Officer, Car2Go (Germany)*

*“We see ourselves more as an IT company. It is 100% IT except from maintenance, washing cars and so on. The content is very technical and you could say that our mobile application is Sunfleet.” Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)*

*“Technology plays a great deal. When I started we had a booking system that we bought from a company. Now we have made it ourselves with a system where the customers have access to the car through a personal id-card, which means that we can track how much they drive and so on. A huge number of benefits can be found in the technology. It has not been cheap but very important.” Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)*

As the quotes suggest the technology is also highly important for the internal factors of car sharing. This quote from one of the respondents highlights the importance of the booking system performing optimally. Other parts where respondents mention the prominence of technology is when using the on board systems in the cars, different ways to open the car, as well as the ability to measure distance and times which implicates the price for the customers.

*“There is no way car sharing could exist at this extent without technology. The hardest part is to get the technological systems to work properly around the clock, while being stable and do what it needs to do.” Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)*

*“Technology is everything. The whole company is technology.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

*“Every aspect of our business is driven by technology.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“The growth of different car sharing organizations is fueled by technology and the ability to manage fleets, and customer interactions. An example is the use of technology instead of in the early days of car sharing when you had log books and key exchanges.”* William Knapp, Chief Product Officer, Car2Go (Germany)

#### **4.2.2. Processes**

A significant number of the respondents identify key processes as the ones customers face or experience, or that is connected to the functionality and availability of the cars. These processes comprise technical development and maintenance, car maintenance, car and station relocation, analyzing customer data as well as marketing. Various respondents underline the importance of operational IT, and that systems both internally and externally towards the customer perform optimally.

*“Key processes include maintaining the fleet and making sure that the IT-system are running so that you can provide a quality experience for your members. Then obviously to have a good aftersales care.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“The booking system is really important.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

When it comes to the physical car, a majority of the respondents highlights the prominence of them being qualitative, clean, and available. Hence, the most important processes and activities within car sharing derive from the idea that these aspects are the most vital.

*“Maintenance is key; without cars you do not have anything. Keeping them available is the most important thing.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

*“Keeping our cars available is very important. You can have a lot of cars on the streets, but if they are not available, they are of no use.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

Another process that is of great significance according to our findings is measuring the utilization of cars and obtaining parking spots. The respondents claim that relocation of cars is a regular occurrence in order to have an optimal utilization of the vehicles. By measuring utilization, operators can relocate vehicles in order to match supply and demand. While demand is constant, a huge cost can be removed and added where there is a shortage in the supply of cars. However, this does not lead to customers experiencing cars to be overbooked.

*"We have to be profitable to grow. Therefore, we optimize the car pools we have. If one of them is not performing well, we try to optimize so we maintain the profitability on as many cars as possible."* Marcus Lindquist, IT Manager, Sunfleet (Sweden)

*"An important process is the fleet management. Our fleet manager spends a lot of time with excel sheets examining the numbers (...) to determine where to locate our different cars. Every time the season changes we need to get new cars. (...) There is not a lot of margin for error, so the decision is important."* Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)

*"Our IT systems help us a lot (with fleet management). We can see where the cars are picked up, and where they are left. We then create a heatmap, which helps us determine where the next "hotspot" should be located."* Peter Stahl, Fleet Manager, DriveNow (Sweden)

The acquiring of parking spots is vital for the convenience aspect of car sharing. Customers need to easily, in a close by distance be able to find an available car, as well as being able to park it at the end of the journey. One respondent explains how this process is highly important as well as time consuming. It is getting increasingly hard to partake in suitable and feasible solutions. Car sharing firms operate with small margins, making increasingly expensive parking spots troublesome. Apart from this, one respondent claims that a vital process for their firm is to attract people to become members. This includes investing in marketing and communicating with customers in order to build up reasons for using the service.

*"One of the key processes is to attract people to join as customers, make them register, communicating with them, and building up reasons for them to use the service."* William Knapp, Chief Product Officer, Car2Go (Germany)

Somewhat contradictory, other respondents argue that the marketing is not something that they invest heavily in, and one respondent even state that marketing is in fact a process that could be sacrificed.

*"It is hard to say a few key processes; we need all of them in order to deliver the service. We cannot work without any of the assets, except from marketing."* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

The importance of marketing and resources allocated to it, is something that differs largely between respondents. However, firms in the early stages of operations are the ones in greater need of marketing. What can be stated is that the most important part of attracting customers is to construct reasons for people to join instead, and that word-of-mouth is the primary channel through which individuals increase their knowledge about car sharing services.

*"Car sharing has grown constantly since the 90s based on recommendations and word-of-mouth." Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)*

*"For the car sharing service to work well, there should be well functioning public transport, nightmarish traffic conditions, and a lack of parking space. This together with rather young and curious people that are not conservative or afraid of trusting an outside party managing the ownership and services around it." Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)*

As the quote suggests, certain conditions creates the need for economical, temporary and convenient transportation where you do not need to consider parking issues, road fees, maintenance of the car, and other surrounding responsibilities not connected to the actual driving.

#### **4.2.3. Internal conditions**

According to the respondents, capabilities and competencies of human resources typically differ depending on the size of the company. The larger the company, the greater is the need for specialized knowledge.

*"In small local car sharing (companies) you need someone with general skills in a lot of areas because you do not have a large team. But if you grow in a wider reach, you need more specialties in lots of different areas." William Knapp, Chief Product Officer, Car2Go (Germany)*

A majority of the respondents mention the IT department as a crucial part of a company's human resources. This is in line with the high technological aspect of providing car sharing services, and having a reliable, convenient and accessible service.

*"The key resource is human capital. We have an IT department, and people to build and manage the booking site and the website. Some parts are outsourced and some parts are done here. We also have an internal system where we register all the car locations and parking permits. Furthermore, we use a system to send out all booking information to the cars, and a system that receives all information from the cars and translates it to invoices. So IT is a big part of our company." Alicia Hobbel, Location Manager, Greenwheels (Netherlands)*

*"We have developed the booking system ourselves. We have a number of programmers that work on it, and they are vital to our organizations." Villads Hansen, Administration Manager, LetsGo (Denmark)*

Numerous respondents underlines that there is no need for specialized expertise or a well-structured organization in order to work with car sharing. Some of the respondents have only recently started to divide the organization into departments. Instead, they claim that car sharing operators are mainly run on engagement. Except for engagement, willpower is

considered a more important ability than specific skills, and most people stay in the firm for a considerable time. When in need for special skills, car sharing operators mainly use consulting firms.

*“I do not think you need any special skills to work with car sharing. (...) We do not give our developers any education before they join us. Another example is that you do not need expert knowledge about cars. I was with the organization for four years before I got my driving license, and our last CEO did not even have one.”* Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)

### **4.3. CUSTOMER LEVEL**

The customer level refers to all aspects related to the contact between the company and its customers.

#### **4.3.1. Target audience**

A majority of the interviewed companies divide their customers in three main groups: private customers, corporate customers and the public sector. However, one of the respondents divide their customer segments in four groups, the difference being that they divide the private customer segment in two groups; urban users and everyday drivers.

*“We have worked with four groups (of customers), including the public sector, the urban customer driving less frequent, the everyday drivers, and companies.”* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

Many of the respondents have in the past mainly targeted private customers, consequently the value proposition is most in line with value adding to this segment. The respondents claim that the expectations, needs and usage of the service are different for the corporate customers compared to private customers. This in turn leads to a higher utilization of the vehicles, and thus increased revenues. This is something that many of the respondents refer to as the key of profitability, which makes growth in the corporate segment important.

*“The whole idea is to have high utilization of the cars. The business works best when the public sector drives during the days, and private individuals drive the same cars in the evenings and during weekends. The whole idea is to have an even distribution to start with.”* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

*“Utilization is what drives the profit formula of the business. If you have assets that are not utilized, you are not going to have as a successful business.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“We have made a great effort the last four years to have more business members, simply because they use the cars when they would otherwise just be parked. That way the economy of each car is better, and we can keep our costs down.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

*“We are working to change our relationship and to work better with corporate customers. This segment is growing, and it is a national trend.”*  
Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

The private customer mainly uses the car for leisure, during weekends and in the evenings. The customers value the fact that they save money when using car sharing, while having the same access to a vehicle as they would have if they owned the car. Contrary to the private segment, the corporate segment uses the service in daytime and during the week. Among the private customers the majority of the respondents refer to the typical customer being 25 to 45 years old, living in the urban areas, and an early adopter to the latest trends and developments within technology. On the corporate side, we see mostly midsize and small companies, often within the creative sector; photographers, designers, artists etc.

*“Of course we have a core target audience, it is the pioneers that are younger people in the city, often without children. They are fast moving and have the need for quick transportation, but not the need of owning a car. We have not excluded families with children, but they have a greater need for a car to be ready whenever they need it. Our service is still a complement though.”* Fredrik Ellsäter, Chief Executive Officer, DriveNow (Sweden)

Today, the largest customer group is the private segment. They are generally in need of a car every week, but maybe not everyday. However, the corporate segment is the fastest growing of the two.

*“The main customers are the ones who do not own a private vehicle, but are seriously considering buying a car.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

*“We have two kinds of customers, we have private users and we have business users. It is important to have both kinds of customers because of the way car sharing works, the private users want to have access during the evenings and the weekends, (...) and the business users drive the cars during daytime.”* Christian Rohman, Marketing Manager & Business Development, LetsGo (Denmark)

*“It is a lot more difficult to get people to sell their cars, than to convince them not to buy one in the first place.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

As the quotes suggest, several respondents consider individuals who does not own a car to be the target customers. These respondents are looking for ways to frame the value proposition in order to attract an even younger segment. However, the respondents differ somewhat in their view on target customers, as other respondents claim that it is easier to attract the ones owning a car. These respondents claim that older individuals and car owners have a better understanding of what it actually costs to own a car, and can therefore understand the advantageous financial implications that come with using car sharing.

Furthermore, some respondents explain that a considerable part of the customers is during their time as users of car sharing services going through some sort of change in their life. The customers still have the necessity of access to proper transportation, but due to uncertainty it is not preferable to invest in the ownership of a private vehicle. Among the respondents there are three things that motivate people to become car sharing users; a demand for low cost transportation, a demand for a convenient way of transportation, and a demand for a sustainable way of transportation. According to the respondents the low cost aspect stands out, as the main reason for using car sharing, followed by convenience.

*“When we started out 11-12 years ago, that (sustainability) was definitely the top priority for most of our members, but it is not as important anymore. To most of our members it is good that it is part of the deal.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

*“The top reason for car sharing is t that it is cheaper than owning a car. Convenience is another priority for many people. Sustainability is still important but not as much as is used to be.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

As the quotes suggest sustainability is not the primary motivation for the customers anymore, at least not among the private customers. It suggests that car sharing might be the convenient choice for the convenient human, that does not want to sacrifice too much for the environment, but still wants to feel like she is contributing.

*“The customers want all ingredients. They do not want to sacrifice too much for the environmental cause, but would join something that is cheap, high tech, convenient, and green.”* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

However, the sustainability aspect is something that the customers expect to be a part of the car sharing offering. It functions as add on value, the augmented product, which increases the value of the product, and also increases the willingness to stay within the community. The corporate segment has a clearer need of sustainable transport when it comes to building up an image of being sustainably conscious. The public sector is also concerned about the need of more environmentally friendly choices of transportation, due to their aim, and sometimes rules, of lowering emissions and traveling overall.

*“For the vast majority of the customers, sustainability is not a major consideration.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“There are others that are motivated of the environmental aspect, but in the end it boils down to economical decisions. The fact that people can have more income to spend on other aspects of their life then they get from the real value of owning their own car.”* William Knapp, Chief Product Officer, Car2Go (Germany)

The car sharing business, and especially the convenience aspect of it, is living on existing difficulties and obstacles of using different transport modes. When using a privately owned car, there are many things that possibly hinder a smooth ride, such as available parking spots, expensive fees, services, repairs and the initial investment in combination of the devaluation of the vehicle. Opportunities of affordable and available parking spots are a critical factor in many cities. One respondent highlights the fact that affordable and above all available parking spots is a crucial factor in order to provide the convenience aspect of car sharing.

*“People do not want cars in front of their houses. Car sharing is an attractive solution compared to buying a car.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

We find that car sharing has changed over the years since it started to grow around 1998-1999. Different macro trends have affected the needs and priorities for the customers.

*“During 1998-1999 environmental consciousness was important and sustainability overall started to influence parts of the society. Around 2000 the financial crisis took place and the collaborative consumption movement grew strong in Europe and influenced us to start saving our resources due to financial reasons. The climate crisis followed and boosted the sustainable mindset even more. Later during the 2000s, internet, applications, and other tools improved the conditions for a well-functioning sharing economy.”* Peter Algrén, Chief Executive Officer, Sunfleet (Sweden)

#### **4.3.2. The offering**

All respondents believe that their offering is in line with what the customers request. More precisely, the respondents pinpoint the offering to be divided into three parts; the value of low cost transportation, the value of a sustainable transportation mode and the value of convenient transport. The respondents claim that these three aspects are all important in the offering of car sharing. However, even if these three value-adding factors are a part of car sharing, there has been a shift in what motivates customers to use the service. According to the respondents, users previously valued the sustainable benefits of car sharing as the most important. Today, the economical aspect is the most important one, followed by the convenience aspect. Numerous respondents pinpoint having accessible cars and ensuring that the service is reliable throughout the whole process, as two of the biggest challenges. Above all, according to the respondents, this needs to be provided at an attractive price. However, there are still operators that are not in it for the money and solely focuses on the environmental aspects of car sharing.

*“(We want to provide) vehicles that are available at a price that is attractive to the customer. (...) We need to continue to enhance those key levels of quality and availability to a perceived attractive price.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“We are never in it for the money, we are not here to produce surplus. We are only here to do something for the environment and the congestion. I think that it is very attractive for a lot of people. (...) For some customers it is the reasons to why they choose us instead of our main competitors in Copenhagen.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Several respondents claim that the ordinary customer has not yet realized the benefits of car sharing. There is a need to educate the customer about the service itself and when it is usable. The industry is still in an education phase to create a need as well as an understanding of the service easiness and financial advantages. When it comes to the question of educating the customers about the sustainability aspect of car sharing, respondents all agree that this is not necessary and that customers are generally aware about the environmental benefits of car sharing.

Many respondents emphasize the importance of providing customers with suitable membership compositions in order to meet needs and make the offering more attractive for customers. Companies regularly evaluate and experiment with new memberships in order to meet the demand from different types of customers. Numerous respondents comment the urge to satisfy the needs of customers who want to use the vehicles for the longer trips. The introduction of new membership offerings among respondents is a reaction to this, and aims to correspond to the need of customers that want to use the car for longer trips but not necessarily to compete against car rental firms.

*“What we have seen is that if you are a customer of car sharing you also want to be able to use the vehicles for longer trips. If you want to have a car for two weeks, then maybe you should still use a rental car. We are not there and will not cover that need, there are many other good companies doing that. Customers should however be able to use our service when going to the summerhouse a few times each month, and have the car all weekend.”* Marcus Lindquist, IT Manager, Sunfleet (Sweden)

Several respondents mention the size of the cars provided as an important part of the offering due to the fact that many of the customers using car sharing already own a car. These cars are all of different sizes with a special focus on the bigger cars. This implies that the cars that individuals own, or use as company cars, are of the smaller size.

*“We have a lot of big cars due to the fact that customers have a demand for it. Many of our customers have their own car, but these are often small and therefor they use the service when they are in need of a bigger car.”* Peter Algrén, Chief Executive Officer, Sunfleet (Sweden)

*“Both big and small cars are provided. The customers have a demand for it, and we want to cover everyone’s needs.”* Olof Holmgren, Business Development & Construction Projects, Sunfleet (Sweden)

*”Regarding the availability of different types of cars, we always try to expand. This is in accordance with the needs of the members.”* Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)

### **4.3.3. Digitized relationship**

Many of the respondents refer to their customers as members, which suggests that the car sharing operators rather refer to the customer and the firm as a community.

*“We prefer the term members instead of customers.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

The communication with the customer is according to the respondents done extensively through digital means. The website, booking site, and mobile application are vital when interacting with customers. Most respondents rely on smartphone applications and highlight it as a critical part of their relationship with the customers and the offering as a whole. Social media, email and telephone are also important channels of the customer interface, and several respondents underline the necessity of having customer service 24 hours a day. Customers need quick access to information and an effective way of booking vehicles.

*“Our customer interaction has mainly been word-of-mouth in the past, and that was the strategy of the previous owner. We changed owners two years ago and with that a new communications strategy, new logo, and website. We are still working with a lot of functionalities to make it easier to use and register.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

Very few physical meetings occur in the car sharing industry today. Although, in order to create a physical contact to increase the feeling of a community, many of the respondents provide possibilities for customer to meet them at their office.

*“We try to be fully digital. You as a customer should not have to meet us, or go anywhere in order to register or get the keys and so on. (...) You are welcome to visit us, but it should not be necessary. It should be as easy as possible for the customer. However, it is a challenge for us to not always being able to interact physically, especially if problems occur.”* Fredrik Ellsäter, Chief Executive Officer, DriveNow (Sweden)

When it comes to customer interaction, we can see a difference between the corporate and the private segment. The corporate customer has often obtained the initial contact through a salesperson and continues the relation through him or her. Digital interaction through email, social media, and applications is also used to maintain a relation to the corporate segment, but overall a more customized interaction can be identified. Several respondents argue that during economic downturns, less interaction with customers is necessary. The reason being that during these times individuals find information themselves on how to be more economical, hence the increased demand for car sharing services.

*“During tighter economies people need to do research and understand more about how they can live more economically. Obviously if they do research they can see that they save money by using car sharing, and that is something that drives our business.”* William Knapp, Chief Product Officer, Car2Go (Germany)

#### **4.3.4. How to gain profit**

Although the companies’ price models all differ to some extent, it is possible to identify three main types of pricing strategies. The most common model consists of a fixed monthly cost and fees dependent on the utilization of the vehicle, as well as car model and time of day. Additionally, some operators charge a one-time registration fee. In contrast to this structure, the second pricing model has no fixed costs and charge only customers per minute. The third pricing model is the most distinguished one, and consists only of a fixed monthly fee. Customers are assigned to a specific car, which they jointly share with others. The fee is then divided between the customers, depending on the usage of each person.

None of the respondents had different pricing strategies for private and corporate customers. However, several respondents emphasize the importance of having different levels of subscription fees. Among the companies that had a pricing model with a fixed cost, many offered different membership types and subscriptions plans to better match different customer’s driving habits. For instance, many companies offer a subscription plan with a lower fixed cost and higher variable costs for customers who use the service less frequently, and vice versa for customers who use the service more frequently. Numerous respondents underline the importance of having a simple price structure towards the customers.

*“We are working without hidden cost and make it simple for our users.”*  
Rune Jacobsen Project Leader Development & IT, LetsGo (Denmark)

*“The only time action is needed from the members is when they renew their card to submit new information.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Some respondents are experimenting with a subscription model without any monthly fee. The motive behind this is twofold, the first part is to make it easier for customers to join, and the second part to retain customers and not having them end their subscriptions due to the monthly fee.

*“We are introducing new subscription types next month. One will be without a monthly fee which is very new for us, and it will hopefully make it easier for customers to join.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

Many respondents shared the fact that an initial entrance fee was earlier a part of the car sharing offering, but that it constituted as a major barrier for people to use the service, hence the fee has been dropped.

*“We used to have an initial fee, but we dropped that recently because our surveys indicated that it was a major obstacle for many people.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Generally what is included in the price when using car sharing is access to the car, maintenance of the car, fuel and sometimes insurance. Most respondents have a insurance system where a customer that damages the car has to pay a deductible, while some include this in the price. When the first alternative applies, a customer that does not want to be held responsible have to inspect the car before driving and inform about any damages.

*“If the customer causes any damage, he or she has to pay the deductible, and it is high in this particular sector.”* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

*“You pay a monthly fee of 220 DKK plus 50 DKK for self-insurance. The insurance is a little bit special for us compared to other car sharing operators. We are not present each time a member access a car, and we cannot guarantee that the car is in perfect condition. We do not want the member to waste time proving that the car was in perfect condition each time. (...) In case of accidents or scratches, we pay for the car to be repaired.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Many respondents identify that personnel, fuel, insurance and IT related costs are major cost drivers when providing car sharing services. However, the main cost for a firm providing car sharing services is expectedly the vehicles, regardless if they are owned by the company or leased from a partner. For the firms that use leasing contracts it leads to lower monthly cost and an avoidance of the risk of fluctuating prices on the car market. The middleman instead handles the risk. However, some respondents have vehicle fleets that are partly leased and partly owned. This is a result of a desire to keep the costs low by buying the cars once their value has decreased.

*“Some cars are leased and some are owned. It is more economical to lease, and the plan is to keep it in a certain ratio. (...) We lease, and then buy them when they get older. It is all about the financial aspect.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

*“The cost of leasing the cars stands for half of our costs.”* Peter Algurén, Chief Executive Officer, Sunfleet (Sweden)

This suggests that a large initial investment is required for a car sharing company due to the cost of the vehicle fleet. Obtaining a big fleet of vehicles is a prerequisite in order to have cars available and accessible at multiple locations. According to one respondent, the process of relocating vehicles, which is conducted in order to match supply and demand, as well the obtaining of parking spots and maintenance of vehicles are critical costs.

#### 4.4. INDUSTRY LEVEL

The industry level refers to all aspects related to the contact between the company and actors in the transportation industry.

##### 4.4.1. Competition within the transport industry

The respondents are of the opinion that the biggest competitor for a car sharing firm, and maybe their only real competitor, is the privately owned car. Respondents are hasty to mention that other car sharing operators, that would naturally be seen as competitors, contribute in a positive manner. Public transport, taxi and bicycle are seen as complements, and together with car sharing companies they make people use their services instead of a privately owned vehicle. In fact, respondents explain that they have seen an increase in membership rates when new operators have entered the market.

*"I do not see Car2Go as a competitor, because when they arrived in Amsterdam our business increased. This because our biggest challenge is not each other, instead it is the market not being well educated about car sharing."* Andrew Berkhout, Chief Executive Officer, Greenwheels (Netherlands)

According to the respondents the same people who are using public transportation, are also the ones that have a demand for car sharing. In many cases respondents have partnered with companies monitoring trains, busses and underground services. The public transportation takes you from point A to B and is accessible from almost everywhere. But to get to a very specific point or when you need to go on a longer trip, car sharing is the better fit. It is seen as a complement because the services serve different purpose, and can thereby together cover the customer's transportation needs, which they cannot do by themselves. According to a majority of the respondents, the station-based car sharing firms and the free-floating car sharing firms serve different needs, and are therefore not in competition with each other. Many customers use both systems, including taxi services like for example Uber, in order to cover their transportation needs. An example of this is that the free-floating systems, with its lack of specific parking spots serves its purpose best for the shorter, spontaneous trips. On the opposite side, the station-based firms are attractive for longer trips or routine based trips.

*"Uber and Car2Go, which are currently operating in Stockholm, Göteborg and Malmö, are complements. I am a customer of them and I use their services as often as I use Sunfleet. It is a complement, and does not replace the other services. It is about what kind of trip I need to do in that particular moment."* Simon Bergman, Fleet Coordinator, Sunfleet (Sweden)

*"The private vehicle is the main competitor. By far, most customers use bicycle or public transportation for their daily needs, and car sharing for leisure or weekends. We are not competing with public transport or biking. The more people use these services, the better."* Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)

*“Everybody has their own mix of mobility modes. You can take the bike or the train, but if you really need a car we are there for you in a sustainable way. In that sense I do not really look at it as a competition, because I think we need to collaborate to give the customer what it needs and to choose suitable mobility.”* Andrew Berkhout, Chief Executive Officer, Greenwheels (Netherlands)

#### **4.4.2. Collaboration to make the industry grow**

Numerous respondents argue that they do not have any competitors at the moment, due to the market being too small. Focus is on expanding the market for car sharing services by cooperating, as they argue that the more individuals using car sharing the better. Car sharing is not at the expense of public transport; instead more individuals dare to leave the use of private vehicles. Several respondents express a willingness to work with the public transport. The respondents working with public transport argue that it becomes increasingly easy as the benefits of car sharing become apparent. However, there is according to the respondent a huge inertia, and much more to be done. The willingness to collaborate with public transport further strengthens the view on public transport as a complement to car sharing services. The more people using public transport, the more people will use car sharing services and vice versa. Thus, decreasing the need for private vehicle ownership.

*“We want to cooperate as much as possible. Our business does not work without well-functioning public transport.”* Olof Holmgren, Business Development & Construction Projects, Sunfleet (Sweden)

*“We made a campaign with them (public train transport system) to gain more members. So we had commercials inside the busses. (...) They paid the commercial as they consider it as beneficial for both parties. They do not want to lose their travellers to private car ownership, and they see car sharing as a way to maintain their customer base.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Multiple respondents explain how they interact with stakeholders in order to enhance their operations and grow the market of car sharing. For instance, several respondents are members of organizations where various car sharing operators meet and exchange experiences and discuss common interests. Moreover, public organizations are also regularly invited to these events, in order to further spread the mutual benefits of car sharing services.

*“We participate in an organization called Danske delebiler and discuss things of mutual benefit and interest. We have very good knowledge of what is going on in other car sharing organizations in Denmark, and we regularly invite other public organizations. Last meeting we had a speaker from DSB. He was very interested in making some sort of collaboration with car sharing companies in Denmark, and to offer car sharing in combination with train tickets.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

One respondent discusses a smartphone application that is provided by a third-party and argues that such solutions can foster the growth of shared mobility. The application brings together different transportation modes, such as shared mobility services and public transport, and provides the user with a means to easily combine different transportation options. Another example of collaborations within the transportation industry is car sharing operators cooperating with the transport administration of the country as well as traffic schools. Such collaborations facilitate car sharing operators to offer an individual a discounted membership when receiving their driving license, instead of him or her choosing private vehicle ownership.

#### **4.5. SOCIETY LEVEL**

The society level refers to all aspects related to the contact between the company and actors in the society.

##### **4.5.1. The dependence on local authorities**

All respondents underline different types of business interactions such as relationships, partnerships and collaborations as key when providing car sharing services. Relationships with the local government stand out as the most vital business interaction, due to the fact that they are handling parking spaces and permits that are necessary in order to provide car sharing services.

*“(The relation with the government) is obviously very important. We rely on them and we are dependent on them. If they are not willing to support us, we have nothing.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

*“Cities are a key partner when we look at Car2Go. We need to have flexible parking arrangements, and we need to have access to on-street parking.”* William Knapp, Chief Product Officer, Car2Go (Germany)

The respondents claim that cities differ greatly when it comes their willingness to work with car sharing operators. Some cities value what car sharing stands for, and the benefits of having a presence of the service in the city. These cities are for example willing to work with attractive prices towards car sharing operators, as well as experimenting with different signs on the street in order to attract more customers, or to prevent other people from parking in the base of the car sharing operator. While these advantageous cities exist, there are also cities that are not willing to work with car sharing operators. From the cities point of view, car sharing is all about contributing to a greener society. This is the reason for cities that are willing to work together with car sharing operators.

*“It is a good message from cities if they have services like car sharing available.”* William Knapp, Chief Product Officer, Car2Go (Germany)

*“Local authorities do not really care about price. They understand very well that it has environmental benefits in the city line landscape, due to less*

*congestion and so on.*” Rune Jacobsen, Project Leader Development & IT, LetsGo (Denmark)

One respondent states that advantageous relationships with cities and local governments is vital due to the small financial marginal within the car sharing industry. This implies that disadvantageous relationships lead to higher costs for companies, which in turn leads to higher costs for the customers. This is directly damaging one of the value pillars of car sharing as a low-cost service.

*“It is really important for us because everything we have to pay for needs to be paid by the customer in the end. Expensive parking makes car sharing more expensive, and therefore less attractive.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

Better conditions and infrastructure in cities means that better deals can be provided to customers. An example of an obstacle related to this is one respondent’s claim that their electric cars are dependent on electric chargers in the city. The problem for this respondent is that the existing charger stations are either in garages where the cars lose their signal, or in the city outskirts where they do not serve their purpose. Another respondent explains how relationships with municipalities and construction projects can be beneficial to the firm, the developer and the city. According to the Planning and Building Act, is a construction developer obligated to satisfy the need of parking in the facility. If an operator enters into a contract with a developer, with the promise of providing car sharing services to a facility, a lower amount of parking places per residence at the facility is approved by the municipalities. This enables the developer to lower the total cost of the facility by not having to build as many parking spots. This makes favorable parking for the car sharing operators possible, at the same time as it enables a smarter urban planning. The respondent claims that this is the greenest part of their business as of today.

#### **4.5.2. Lobbying, laws, and regulations**

The political environment, and more specifically cooperation is something that the respondents bring up as an important factor for a car sharing firm. Governments have generally a common ground with car sharing operators when it comes to reducing the congestions and help operations of the service. However, there are still differences between the countries.

*“They want to do something to fight congestion and other environmental problems with cars. They actually gave us free parking spaces so that members have places to pick up the car and drop it of. This, so customers do not have to look or pay for parking. Parking is thereby free for car sharing members.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

*“They (politicians) are interested in our statistics to see how many members and cars we have, and how much the cars are used. (...) The area where the cars are used is restricted, so they want to make the best use of it. One of our cars replaces six private cars, and they are happy to hear that, because it eases up congestion.”* Villads Hansen, Administration Manager, LetsGo (Denmark)

Operators experience difficulties to get access to public parking space in some countries, due to the fact that it is regarded as public properties. In some countries there is also a lack of proper legal definition of carpooling, which makes it difficult for car sharing operators and could lead to obstacles like a high value added tax. The car sharing operators experiencing this are lobbying for a lower value added tax that is in line with other types of transportation modes.

*“Policies are pretty good for us at the moment because politicians are more and more aware of the environmental issues. (...) Car sharing is part of the solution for them, therefore politicians are very willing to cooperate with us.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

*“Policies are more supporting than contradicting car sharing.”* Alicia Hobbel, Location Manager, Greenwheels (Netherlands)

## **5. ANALYSIS**

### **5.1. STRUCTURE OF ANALYSIS**

The structure of the analysis is equivalent to the structure of our empirical findings, in order to facilitate understanding and clarify the link between empirical findings and analysis. The material is arranged in four levels of analysis providing a holistic perspective of car sharing business. The levels are; *organization level*, *customer level*, *industry level*, and *society level*. Since the study aims to increase the understanding of what characterizes the business model of a car sharing company, the levels represent aspects related to this. The levels are interconnected and will affect one another in different ways, whilst still having their own functions and characteristics. The society level embodies a contextual dimension, which encompasses the other levels. The relationship between the society level and the other levels is characterized by a mutual interchange, explicitly affecting each other, making it an important aspect to consider. The analysis will be concluded in a final framework. The conclusions presented in the framework are summarized in a last paragraph under each subheading.

### **5.2. ORGANIZATIONAL LEVEL**

#### **5.2.1. Technology enables car sharing**

Our empirical findings strengthen existing theory and support the findings of Ferrero et al. (2015). The primary resources of a car sharing company consist of the vehicle fleet, the service team handling customer support and car maintenance, technology, as well as parking spaces and permits. In addition to this, access to capital or financing is considered to be a vital resource as the acquisition of vehicles stand as a major cost for the operators. We have not encountered the aspect of financial assets in our theoretical review, thus we believe it contributes to existing theory.

Numerous scholars discuss the role of technology in car sharing (e.g. Shaheen et al., 2006; Shaheen et al., 2009; Botsman & Rogers, 2010; Gansky, 2010; Shaheen et al., 2012; Abdelkafi et al., 2013), and our empirical findings show strong evidence for its importance. Our findings discern that technology is a crucial resource in essentially every aspect of car sharing business. Shaheen et al. (2012) discuss different types of shared-use vehicle technologies ranging from manual systems to advanced technologies. Given our empirical findings, it is possible to categorize all respondents in the latter category. The operators make use of advanced technologies to provide services such as vehicle access through smart cards and smartphone applications, reservations and payments through multiple platforms such as web-based user interfaces, and providing vehicles at the right place in the right time. Furthermore, technology is often the solely means for customer interaction which generally take place through web-based user interface, smartphone applications, or social networks. Thus, our empirical findings strongly support existing theory.

Moreover, our study shows that the concept of transaction cost economics (Coase, 1937; Williamson, 1979) is applicable regarding the decisions on whether to produce certain

technological resources in-house or on buy them from the market. Several respondents mention that at the start of operations they bought large parts of their internal systems from external suppliers, but that as they grow, the technology is gradually produced in-house. Thus, our empirical findings indicate that as a company mature, it becomes more profitable to possess technological resources within the firm rather than obtaining resources from the market.

Grant (1991) classifies resources into three categories; human, intangibles, and tangibles. The majority of above-mentioned resources fall into the category of tangibles, whilst the service and customer support team is considered as a human resource. Although our empirical findings indicate that these are the most essential resources, some operators also mention a number of intangible resources as important for their business operations, such as software licenses, brand, and collaborations with other actors in the transport industry.

Based on this analysis of key resources, we conclude that the most significant resources of a car sharing operator consist of 1) vehicle fleet, 2) technology, 3) access to capital, 4) customer support and maintenance, and 5) parking spaces and permits.

### **5.2.2. Processes**

According to Osterwalder (2004) and Johnson et al. (2008), processes involve the key activities that enable value creation and delivery of the offering. We conclude that the core processes of car sharing relate to aspects the customers face or experience, including user registration, fleet management, vehicle maintenance, customer service, and technological developments. Thus, our empirical findings strengthen existing theory and the findings of Ferrero et al. (2015). A process not included in the study of Ferrero et al. (2015), but discussed by Boyacı, Zografos and Geroliminis (2015) as well as Schulte and Voß (2015), is the relocation process of vehicles. The process of vehicle relocation, matching users and vehicles, is argued to be particularly important for free-floating operators as they are subject to regional demand fluctuations. Our findings strengthen existing theory as the respondents with free-floating service systems point out that vehicle relocation is vital in order to provide an attractive offering. However, operators with station-based models also emphasize the importance of analyzing data and driving behavior in order to ensure that vehicles are accessible when and where users want and need them. Vehicle relocation is a constantly ongoing process critical for the operations. Thus, we believe our findings complement as well as partly extend existing theory. A prerequisite to conduct vehicle relocations is data analysis, thus making the process of gathering and analyzing different sets of data a vital process. This processes is not explicitly mentioned in previous research, however, it is likely that scholars consider it to be a part of the process of matching customer needs with the resources available.

Our study strongly demonstrates that technology is a necessity to provide car sharing, moreover, the customer interaction is also largely characterized by digitization and technology. Accordingly, IT development and maintenance becomes an essential process. This is in line with Eisenhardt and Sull (2001), who argue that processes might include

customer care or product innovation. Consequently, we believe that our empirical findings strengthen existing theory. In addition to this, Porter (1985) mentions marketing as a main activity of a company and Ferrero et al. (2015) claim that marketing efforts constitute as a key process for car sharing operators. Some respondents in our study mention marketing, however, it is possible to discern that it is primarily operators who are in the early stages of their operations or new to a specific market that claims it is an important process. Therefore, we find partial support to existing theory.

Based on this analysis we can conclude the following about the processes of a car sharing operator 1) core processes consist primarily of functions customers are in contact with, such as registration, fleet management, vehicle maintenance, and customer service 2) matching customer needs through vehicle relocation is a key process, 3) analyzing data and driving behavior is essential to better customize the offering, 4) IT development and maintenance is vital, 5) marketing activities are of greater importance in the early stages of operations.

### **5.2.3. Internal conditions**

Although many scholars discuss internal conditions such as organizational structure and culture (e.g. Child, 1972; Normann, 1975; Marcoulides & Heck, 1993; Hedman & Kalling, 2003; Umbeck, 2009; Alvesson & Sveningsson, 2012; Sommer, 2012), we have not found research relating specifically to the internal conditions of car sharing companies. Therefore, we suggest further research within organizational theory in order provide a more comprehensive depiction. Based on our empirical findings, it is possible to conclude that the most important human capability is employee engagement. Car sharing operators claim that commitment towards the organizations and its objectives is far more important than any particular expertise. Thus, the findings imply that there is not a great need for specialized expertise or knowledge in car sharing companies. However, our empirical findings also highlight that the need for specialized knowledge in car sharing firms depends on firm size. We can conclude that as car sharing companies grow, the complexity of business increases, thus requiring more specialized skills. Since we have not encountered similar findings in previous research, we believe the insights regarding human capabilities and knowledge contribute to existing theory.

Furthermore, we observe that it is common for car sharing operators to hire external consultancy firms if they are in need of specific skills. This observation can be put in relation with the concept of transaction cost economics (Coase, 1937; Williamson, 1979), where in-house costs need to be compared with the transaction cost of buying it. Our empirical findings imply that it is more profitable, thus the transaction cost is lower, for car sharing operators to attain specialized knowledge through the market rather than producing it in-house. This is in line with our conclusion that car sharing operators are predominantly in need of generalists, as having employees with specialized knowledge may result in knowledge not being utilized optimally, thus indicating opportunity cost. Car sharing operators' preference to use the market to obtain specific human skills also relates to Osterwalder's (2004) claim concerning motivations to engage in partnerships. Osterwalder (2004) states that companies

engage in partnerships to access certain resources, in this case human competencies, as well as to attain optimization of operations.

Alvesson and Sveningsson (2012) define company culture as the beliefs, perceptions, and values shared in a company. As commitment towards the company and its objectives is highly valued, company culture can be perceived to be of great importance in car sharing companies. Since similar observations have not been found in previous research, we believe the finding contributes to existing theory. Regarding division of work and organizational structure, our empirical findings indicate that it is only a small occurrence of formal structures in car sharing companies. We have not found evidence for this in previous research, thus contributing to advancements of current research. However, despite the lack of formal structures, it is possible to discern two divisions consisting of IT and customer service. Although operators claim that general knowledge and engagement are essential, our empirical findings suggest that IT skills are also an important human resource. Information technology is key for car sharing operators as it is a necessity for their operations. Porter and Heppelmann (2014) discuss how smart and connected products entail new requirements in terms of human resources and that companies might need to add competencies. Our findings support their claim as car sharing companies express a strong need of having programmers and technicians employed in order to provide a reliable, convenient, and accessible service.

Based on this analysis we can conclude the following about the internal factors of a car sharing operator 1) values and corporate culture are important, 2) commitment is the most important trait among employees, 3) specialized skills or knowledge are considered to be less important, 4) the need for special knowledge is met by the market, 5) there is only a small presence of formal structures, 6) IT competence stands out as a vital human resource.

### **5.3. CUSTOMER LEVEL**

#### **5.3.1. Target audience**

Osterwalder (2004) points out the importance of an accurate segmentation process in order to target the right customer group. Scholars have identified a distinctive socio-economic profile among car sharing users, comprising of well-educated individuals, primarily between ages 25 and 45, living in urban areas, in a single-car or carless household, and being frequent users of public transport (Martin et al., 2010; Le Vine et al., 2014). Our empirical findings illustrate a similar socio-economic profile, thus strengthening existing theory. Our study also indicates that early adopters are particularly important to target to foster the growth of the business.

Moreover, our findings demonstrate that car sharing companies actively target various customer segments in order to increase the utilization of the vehicle fleet, thus the profitability. This because driving patterns and usage differs between private and corporate customers. By targeting both segments, operators reach a higher utilization of the vehicles, which in extension result in increased revenues as cars that previously were unutilized are now put to use. Schmöller and Bogenberger (2014) claim that car sharing usage differs

between segments. Accordingly, our findings support existing theory as it shows evidence for different usage in different segment. However, our findings also contribute to current research as it demonstrates that targeting both private and corporate clients is essential in order to obtain a high utilization of the vehicle fleet. In terms of customer demand, it is also possible to discern that our empirical observations are in line with the findings of Schmöller and Bogenberger (2014) concerning the demand and use of different service models. Customers tend to use free-floating service systems for short and spontaneous trips and station-based systems for longer trips.

McElroy (2012) discusses how technology, Internet, and social media have major impact on the need for ownership. Moreover, scholars claim that the definitive preference for customers is no longer private ownership, and that individuals are willing to join the sharing community instead of purchasing a vehicle (Bardhi & Eckhardt, 2012; Firnkorn & Müller, 2014). Our findings support existing theory as it indicates that more individuals have begun to switch to car sharing in order to elude the costs and responsibilities associated with owning a vehicle. Our study concludes that the three main motivations for using car sharing are low cost, convenience, and sustainability. Our findings also suggest that this has changed over the years, showing evidence that sustainability used to constitute as the main motivator. Stubbs and Cocklin (2008) discuss the aspect of educating customers about sustainable matters and suggest it can influence the behavior of customers. In contrast, our study demonstrates that customers are well aware of the sustainable effects of car sharing, hence educating customers about the environmental aspects would not impact customer behavior.

Based on this analysis of target audience, we conclude that the business model of a car sharing operator is characterized by 1) well educated early adopters, living in urban areas in the age of 25 to 45, and being frequent users of public transport, 2) a demand for low cost and convenience, while sustainability is expected to be a part of the offering, 3) three customer groups; private customers, corporate customers, and the public sector, 4) different driving patterns and usage between private and corporate clients, 5) the importance of targeting different customer segments in order to gain high utilization of the vehicle fleet.

### **5.3.2. The offering**

In accordance with Katzev (2004), Shaheen et al. (2009), and Martin et al. (2010), our findings show that one of the most vital parts of the car sharing offering is that customers get the benefit of a private vehicle but without the responsibilities and costs associated with ownership. Our study further implicates that this leads to decreased costs as a result of a lowered monthly cost, as well as a decrease in fixed yearly costs. This is in line with the findings of Steininger et al. (1996), Katzev (2004), Shaheen et al. (2009) and Martin et al. (2010). Therefore, we believe that our findings confirm current research.

Boyacı et al. (2015), Ferrero et al. (2015) and Press (2015), argue that a crucial selling point of car sharing is the on-demand convenience where technological advances enable customers to easily access vehicles. Our findings support this claim as it indicates that one of the most important elements of the offering consists of the convenience and flexibility aspect of the

service. Our study suggests that as car sharing members are provided access to a fleet of vehicles on an as-needed basis, the need for a private vehicle decreases.

Our empirical findings also support scholars' contributions regarding the beneficial sustainable aspects of car sharing services (Shaheen et al., 2009; Glotz-Richter, 2012). Our findings imply that car sharing not only leads to a reduction in vehicles, but also brings along transportation modal shifts, such as more biking, walking, and public transit, which results in a reduction of the carbon footprint of transport (Shaheen et al., 2009; Glotz-Richter, 2012). Our study also supports existing theories from Shaheen et al. (2009) and Glotz-Richter (2012) who claim that many car sharing users become more aware of their travel expenses which makes them take fewer spontaneous trips.

Furthermore, our findings suggest that customized membership plans and enhanced product offerings, such as pricing strategies and different sizes and models of cars, are vital in order to accommodate different customer needs. Hence, our empirical findings strengthen existing theory from Ferrero et al. (2015) and Boyacı et al. (2015).

Based on this analysis of the offering, we conclude that the most significant characteristics of a car sharing operator comprise of 1) the value of low cost transportation, 2) the value of convenient transportation, 3) the value of sustainable transportation, 4) customized membership plans, 5) enhanced product offerings in order to meet different customer needs.

### **5.3.3. Digitized relationship**

In accordance to Ferrero et al. (2015) and Shaheen et al. (2012), our empirical findings illustrate that the main channels to reach and interact with customers are through online platforms such as the company website and smartphone applications, as well as 24-hour available call-centers. Other means of communication includes online social networks, mail sendings, and blogs. Therefore, the customer relationships are characterized by a digitization and it is vital that operators can provide means of communication whenever the customer desires it.

Several of the respondents discuss the difficulties with having digitized customer relationships and how the lack of physical interaction constitutes as a challenge. Therefore, car sharing operators rely heavily on "word-of-mouth" as a way to strengthen the relationship with customers as well as to attract new user. This observation is consistent with the findings of Shaheen et al. (2012), who discuss how many car sharing operators have increased their customer bases through the use of word-of-mouth and online social networks.

In line with the discussion of Le Vine et al. (2014), regarding the importance of leveraging customer relationships in the car rental industry, our findings show that all respondents invest significantly in making their means of communication as easy and convenient as possible for the customers. To better serve the customers, the operators make significant investments in improving and simplify their smartphone applications, websites, and technological systems in

the vehicles. Schrage (2012) claims that in order to create more value, investments in customers are necessary, which our study confirms.

Beyond providing convenient and accessible means of communication, an important aspect of the communication with customers concerns educating them about the service. Our findings indicate that educating the customers about the benefits related to car sharing is essential in order to increase the customer base. Today's customers are well informed about the environmental benefits car sharing entails, however, they are not aware of the economic advantages. Thus, car sharing operators are potentially missing out on significant business opportunities. Consequently, framing the economic advantages in the communication with customers becomes crucial in order to increase the profitability of the business and make the market grow. Educating customers about the environmental advantages of car sharing, in relation to private ownership, is thus less important as the empirical findings indicate that this is already a well-established and well-known aspect of the offering. Stubbs and Cocklin (2008) claim that education and communication are important in order to influence customer behavior and demand. Thus, we extend existing theory by concluding that education and information is important in the car sharing customer relationship, and in particular regarding communicating the economic benefits associated with using the service.

Based on this analysis of digitized relationship, we conclude that the business model of a car sharing operator is characterized by 1) digitized relationships built on online platforms, 2) little physical interaction, 3) investments in providing accessible and well-functioning means of communication, 4) word-of-mouth as a method to strengthen the relationship as well as to attract new customers, 5) educating customers about benefits related to the service.

#### **5.3.4. How to gain profit**

Previous research, for instance Ferrero et al. (2015), have concluded that various price models are used in car sharing, which is evident in our study. The most common pricing model comprise a fixed subscription fee and variable rental fees based on usage, which is in line with current research. Ferrero et al. (2015) argue that car sharing operators commonly offer plans with multiple subscriptions and rates to meet the demand of different customers, such as private or corporate clients. Our findings demonstrate that car sharing operators do not use different pricing for private and corporate users. However, to meet diverse transport needs, several operators have begun to offer different membership plans with different pricing structures depending on the frequency of usage. Thus, partial evidence supporting existing theory is found. Furthermore, our empirical findings have found evidence that fixed subscription fees and one-time registrations fees constitute as obstacles for customers to use the service. Since we have not found similar observations in current research, we believe our finding extends existing theory. In terms of costs, our study demonstrates that the main costs are related to the fleet acquisition, maintenance and management of vehicles, personnel costs, and parking permits and local taxes, which is in line with existing theory (Ferrero et al., 2015).

Lightfoot (2011) suggests that it is important for car sharing operators to compare price and tariffs with competitors in the transportation industry. However, our empirical findings have not found evidence for such consideration. In contrast, our findings suggest that car sharing operators show relatively little consideration to the pricing of other actors. Instead, the emphasis is on providing a price setting that is easy to grasp. As no similar argument is found in previous research, we believe this observation contributes to the development of existing theory. Osterwalder (2004) claims that customers' willingness to pay should be incorporated in the pricing strategy of a firm. In order to increase the number of users, car sharing operators have a quest to provide a simple pricing to increase the transparency for the customers and illustrate that the service is economically advantageous relative private vehicle ownership. Moreover, Osterwalder (2004) discusses how revenue streams can differ with regard to which economic activity is linked to the offering, and mentions selling and licensing as two examples. In our study all but one company gain their revenue solely from offering car sharing. One firm also gains revenue from licensing its IT systems and selling it to other car sharing operators. Thus, our findings illustrate another potential source of revenue.

Based on this analysis of how to gain profit, we conclude that the business model of a car sharing operator is characterized by 1) revenue streams consisting of subscription fees and rental fees, 2) fixed subscription fees and one-time registration fees constituting as barriers for customers, 3) the same pricing model for private and corporate clients, 4) multiple membership plans with different price structures depending on frequency of usage, 5) main costs relating to the fleet acquisition, maintenance and management of vehicles, personnel costs, and parking permits and local taxes.

## **5.4. INDUSTRY LEVEL**

### **5.4.1. Competition within the transport industry**

According to Porter and Heppelmann (2014), new products and services change the nature of competition and introduce new competitive opportunities and threats. As market boundaries change, companies need to consider new strategic choices in how to create value and gain competitive advantage (Porter & Heppelmann, 2014; Sommer, 2012). In terms of competitive advantages, our empirical findings indicate that partnerships with car manufacturers, brand recognition, and being the first actor on the market, are perceived as important elements.

Regarding the competitive landscape of car sharing, our empirical findings strongly indicate that car sharing operators do not consider other car sharing companies as competition. The respondents do not even perceive the different service models, such as free-floating system or station-based system, to be competitors, as they believe different service models accommodate different customer needs. Instead, operators consider other car sharing companies as complementary, which goes against previous research. For instance, Glotz-Richter (2012) argues that car sharing operators face competition from car sharing companies as well as from other transport modes such as public transport, trains, and taxi firms. However, our study shows evidence that is not the case. In fact, respondents explain that they

experience increases in membership when new operators enter the market in which they operate. The operators claim that the greater number of car sharing firms, the easier it will be for a customer to switch from private vehicle ownership and meet its transportation need with car sharing.

This can be connected to network externalities discussed by Arthur (1989) and Amit and Zott (2001). Our findings indicate that the larger the network of car sharing, the greater the value for the individuals using the service. This is due to an increasing marginal utility. When a large number of consumers use the services of car sharing, their demand is better met which increase the value of their use of the service. A high demand for car sharing leads to many suppliers of the service, which subsequently expand coverage and possibly demand. Our empirical findings demonstrate that it is important to encourage the entrance of new actors in order to grow the market of shared mobility. The increasing marginal utility is apparent in our study as companies claim that the greater number of operators providing car sharing, the greater is the demand for service. The fact that car sharing is a case of network externalities makes it interesting to investigate if it is also a question of whether a de facto standard can be developed. However, it seems like this is not the case as it appears to be room for many actors in the market of car sharing. The reason being that the service is not expensive, technological, unique or non-substitutable enough to be provided by a single actor.

Although multiple respondents claim that they lack competitors, the majority of the companies still perceive private vehicle ownership as the main competitor. Moreover, car sharing companies consider transportation modes such as public transport, taxi services, and bicycling, as complementary rather than rivalry. The same logic applies, the greater the number of transportation options available, the less need of private vehicle ownership. Car sharing companies argue that a transportation mode itself cannot accommodate all needs of travelers. However, if a customer is given the opportunity to choose between several modes and combining these alternatives, the convenience of each transportation mode increases. In extension, this increases the attractiveness of car sharing. As we have not encountered the foregoing findings in previous research, we consider the observation of competitiveness to be an addition to existing theory.

It may be possible that car sharing operators' perception of competitiveness in the industry is contingent on the prevailing market conditions. Porter (2008) claims that competition is driven by five forces; the bargaining power of buyers, the bargaining power of suppliers, the rivalry among existing competitors, the threats of new entrants, and the threat of substitute products or services. According to Porter and Heppelmann (2014), it is the combined strength of these forces that determine the degree of industry competition and the average profitability for existing competitors. Car sharing can be considered as a phenomenon that relatively recently has begun to gain a foothold and that markets generally are characterized by a low number of companies. Given these conditions and the fact that car sharing operators welcome the entrance of new actors and view other transportation modes as complementary, today's degree of industry competition for car sharing operators could be considered as relatively low.

Based on this analysis of the competition within the transport industry, we conclude that the most significant characteristics of a car sharing operator consist of 1) private vehicle ownership being the main competitor, 2) car sharing operators not being considered as competitors, but as complement, 3) transportation modes such as public transport, taxi services, and bicycling, are perceived as complementary rather than rivalry, 4) entry of new actors leads to an increase in membership, 5) the fact that it is essential to provide a service that users perceive as convenient and easy to use in order to stay competitive.

#### **5.4.2. Collaboration to make the industry grow**

Many scholars discuss how value creation can be increased in collaboration with other participants in the business ecosystem (e.g. Kandiah & Gossain, 1998; Iansiti & Levien, 2004; Osterwalder, 2004; Chesbrough & Appleyard, 2007; Johnson & Suskewicz, 2009; Sommer, 2012). Our empirical findings show that instead of perceiving other players in the market as competitors, car sharing companies try to find ways to collaborate in order to make the car sharing market larger. Car sharing operators collaborate with multiple actors across the supply chain, thus the empirical findings also comply with the value chain theory created by Porter (1985). Hence, our findings points to the potential for co-creation of value. For instance, a vast majority of the respondents consider a mature and available public transport system to be a necessity and a driver of car sharing as the services are complementary. Accordingly, many car sharing operators participate in collaborations with actors in local traffic systems and claim that such collaborations are advantageous for both parties as they are unable to accommodate travelers' entire transportation need single-handedly. As our study demonstrates that car sharing companies perceive collaborations with other parties in the industry as vital in order to make the market grow and to attain more customers, we find further indications that network externalities prevail. Moreover, our findings are also in line with stakeholder theory, which argues that stakeholders can have sufficient impact on a firm's ability to succeed (Mitchell et al., 1997; Osterwalder, 2004).

Inter-firm relationships can take form in various ways, one of them being marketing agreements (Podolny, 1998; Zaheer et al., 2000). Our findings show evidence that the collaborations occurring between car sharing operators and public transport often includes marketing agreements, thus supporting existing theory. Furthermore, Ferrero et al. (2015) discuss how car sharing companies can leverage their operations through strategic partnerships and that it is common for operators to utilize partnerships with vehicle manufacturers for the acquisition of their fleets. Our study support their claim as it indicates that a vast majority partake in such partnerships and consider them to be of great value for their business. Hence, our empirical findings strengthen existing theory regarding collaboration and value creation. Moreover, we can also identify occurrence of networks externalities.

Based on this analysis of collaboration to make the industry grow, we conclude that a car sharing operator is characterized by 1) a necessity of a mature and available public transport

system, 2) opportunities for co-creation of value, 3) collaborations with other parties in the industry being vital.

## **5.5. SOCIETY LEVEL**

### **5.5.1. The dependence on local authorities**

Research argues that it is essential for car sharing operators to interact with local authorities. For instance, many operators require privileged access to on-street parking space, which is typically managed by municipalities (Le Vine et al., 2014). The matter of gaining access to on-street parking space often account for a critical vulnerability as the inability to acquire the required parking space can potentially prevent the operations of a car sharing operator (Le Vine et al., 2014). Our empirical findings demonstrate that car sharing companies negotiate and collaborate with local authorities to a large extent, thus strengthening current research. Cohen and Kietzmann (2014) discuss how car sharing operators often negotiate with public authorities regarding matters such as the use of public parking spots (which is of particular importance for operators with free-floating service models), the right to utilize public spaces for the construction and establishment of fixed stations, toll benefits, and obtaining access to limited traffic areas. Our study strengthen the findings of Cohen and Kietzmann (2014) as it is apparent that car sharing operators consistently engage in relations with local authorities to obtain access to public spaces as well as other preferential conditions, such as tax reliefs. Furthermore, our findings illustrate that although there is a dialogue and collaboration with local authorities, car sharing operators share the belief that more can be done. Our study indicates that car sharing companies experience that local authorities generally express a curiosity for their operations and the advantages vehicle sharing entail in terms of less congestion, emissions, and traffic. However, the operators point out that local authorities tend to be characterized by inertia, which constitutes as an obstacle in developing favorable conditions for car sharing.

Our empirical findings highlight the importance of local authorities, to the extent that governmental support is considered to be fundamental in order to conduct car sharing business. Relationships with governmental entities stand out as the most vital business interaction as local governments provide key resources and set the basic business conditions for conducting car sharing. Our findings indicate that it is far more difficult for an operator without such governmental relationships to provide users a convenient and low cost offering, thus having adverse impact on the two most vital parts of the offering. Given the observations regarding the importance of local authorities, we believe our findings confirm and extend existing theory. Our observations also support stakeholder theory as it discusses how stakeholders, in this case government, can have significant impact on a firm's ability to succeed (Donaldson & Preston, 1995; Mitchell et al., 1997; Osterwalder, 2004).

Based on this analysis of the dependence on local authorities, we conclude that the business model of a car sharing operator is characterized by 1) relationships with local authorities being vital, 2) local governments providing key resources and setting the basic business conditions for car sharing operators, 3) government support being a driver of car sharing, 4)

local authorities being motivated to collaborate with car sharing operators, however, inertia prevail.

### **5.5.2. Lobbying, laws, and regulations**

Porter (1991) claims that governments have an essential role in shaping the business climate of a country. For instance, governmental regulations or policies may either promote or hinder companies' possibilities to value creation. Research suggests that effective management of the institutional environment is necessary in the business of sharing economy (Lamberton & Rose, 2012; Cannon & Summers 2014).

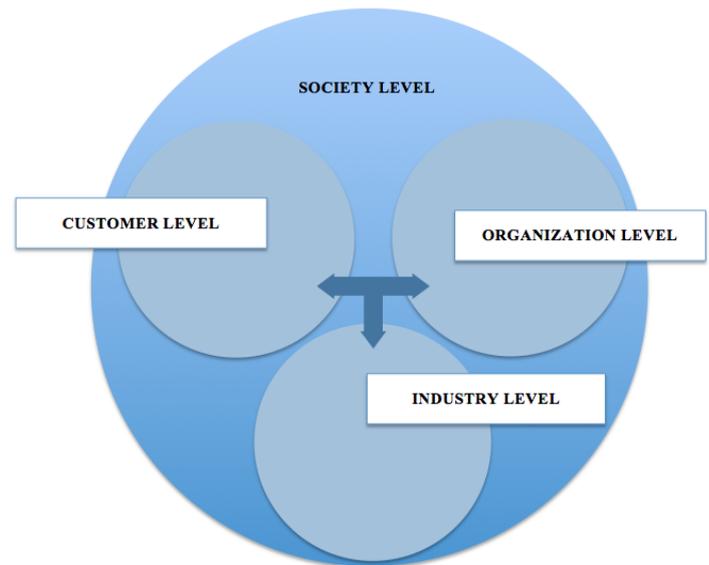
The empirical findings of our study show strong evidence that governments and their actions are vital to the operations of car sharing firms, thus supporting above theory. Our findings suggest that it is common for car sharing companies to engage in relations with local authorities, as well as different organizations and associations with political agendas. The underlying motivation to partake in such relations is to improve the conditions for conducting car sharing business. Firms express that they interact with organizations and lobbying groups to improve regulations regarding aspects such as value-added tax, customs duty, and parking. Car sharing companies claim that governmental support and subsidies would result in an entry of new market players, which in extent will increase customer awareness. However, our findings illustrate that the political environment of the countries in which the respondents operate in, promotes rather than hinders car sharing. Although it is indicated that much more could be done in order to ease the business of car sharing, the operators identify a common interest in making societies more sustainable. One method mentioned to obtain better conditions to conduct business in a specific geographical area is to provide local authorities and municipalities with data regarding societal and environmental benefits associated with car sharing. As environmental issues are becoming of greater importance in the world, operators try to present car sharing as part of the solution. When politicians are able to see how car sharing can benefit them and their cities, for instance reducing congestion, they tend to listen and show compliance. However, our empirical findings also indicate that politicians' co-cooperativeness varies greatly among cities. We believe that the aspect of providing data to politicians in order to improve the conditions of doing business is an aspect that extends existing theory.

Based on this analysis of lobbying, laws, and regulations, we conclude that the business model of a car sharing operator is characterized by 1) involvement in relations in order to improve business conditions, 2) the contemporary political environment promoting rather than hindering car sharing, 3) actors obtaining better business conditions by providing local authorities and municipalities with data, 4) a varying cooperativeness of politicians among cities.

## 5.6. FINAL FRAMEWORK

The following chapter presents the final framework of the study, which describes what characterizes the business model of a car sharing company. The framework provides valuable insights regarding important business model components when conducting car sharing services. Thus, the final framework constitutes as the answer to the purpose of our study.

**Figure 3.** The society level embodies a contextual dimension, which encompasses the other levels. The relationship between the society level and the other levels is characterized by a mutual interchange, explicitly affecting each other, making it an important aspect to consider.



Analysis level	Characteristics of a car sharing firm
<p><b>Organization level</b></p>	<p>Internal conditions:</p> <ul style="list-style-type: none"> <li>● Engagement and commitment are more important than particular knowledge or skills.</li> <li>● Consulting firms often provides the need for specific skills.</li> <li>● The need for specialized knowledge increases as the business grows.</li> <li>● There is only a small occurrence of formal structures.</li> <li>● IT skills are a vital human resource.</li> </ul> <p>Processes:</p> <ul style="list-style-type: none"> <li>● Core processes consist of the functions customers are in contact with, including registration, fleet management, vehicle maintenance, customer service, and billing operations.</li> <li>● Relocation of vehicles is essential, particularly in free-floating systems, in order to provide a convenient service.</li> <li>● Analyzing data and driving behavior is critical in order to ensure that vehicles are accessible at attractive locations when users want and need them.</li> <li>● IT development and maintenance are essential to enable efficient internal operations and a convenient offering.</li> <li>● Marketing is a more important in the early stages of operations, or when the firm is new to a specific market.</li> </ul> <p>Technology enables car sharing:</p> <ul style="list-style-type: none"> <li>● Primary resources of a car sharing company consist of the vehicle fleet, customer service, car maintenance, technology, parking spaces and permits, and access to capital or financing.</li> <li>● Technology is a crucial resource in virtually all aspects of car sharing.</li> <li>● Technology is often the solely means for customer interaction which generally take place through web-based user interface, smartphone applications, or social networks.</li> </ul>

<p><b>Customer level</b></p>	<p><b>Target audience:</b></p> <ul style="list-style-type: none"> <li>• The target customer is an early adopter who lives in urban areas, in a single-car or carless household, is 25 to 45 years old, is well educated, and is a frequent user of public transport.</li> <li>• Customers have a demand for low cost and convenience, while sustainability is expected to be a part of the deal.</li> <li>• The customer groups consist of private customers, corporate customers, and the public sector.</li> <li>• Driving patterns and usage differs between private and corporate clients (evenings and weekends vs. daytime). Targeting multiple segments is essential in order to obtain a high utilization of the vehicle fleet.</li> </ul> <p><b>The offering:</b></p> <ul style="list-style-type: none"> <li>• The offering is divided into three parts; the value of low cost transportation, the value of convenient transport, and the value of a sustainable transportation.</li> <li>• Customized membership plans and enhanced product offerings are essential to meet different customer needs.</li> </ul> <p><b>Digitized relationship:</b></p> <ul style="list-style-type: none"> <li>• Online platforms are the main channel to reach and interact with customers.</li> <li>• Customer relationships are digitized with little physical interaction.</li> <li>• Car sharing operators rely heavily on “word-of-mouth” to attain more users.</li> <li>• Investments are important in order to provide customers with accessible and well-functioning means of communication.</li> <li>• Educating and informing customers, in particular the economic benefits associated with car sharing.</li> <li>• Improving and simplifying smartphone applications, websites and technological systems is vital to better serve customers.</li> </ul> <p><b>How to gain profit:</b></p> <ul style="list-style-type: none"> <li>• The main revenue streams consist of subscription fees and rental fees. Usage is billed on the time the vehicle is used, time increments of minutes or hours, and sometimes also on the mileage.</li> <li>• Fixed subscription fees and one-time registration fees create barriers for customers to sign up to the service.</li> <li>• Car sharing operators use the same price setting for private and corporate clients.</li> <li>• Operators have begun to offer various memberships with different price structures depending on frequency of usage.</li> </ul>
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<p><b>Industry level</b></p>	<p>Competition within the transport industry:</p> <ul style="list-style-type: none"> <li>● Private vehicle ownership is the main competitor.</li> <li>● Other car sharing operators are not considered as direct competitors, but as complement.</li> <li>● Transportation modes such as public transport, taxi services, and bicycling, are perceived as complementary rather than rivalry.</li> <li>● Car sharing operators experience an increase in the amount of memberships when new operators enter the market in which they operate. The greater the number of car sharing operators available, the less need of private vehicle ownership.</li> <li>● To stay competitive, it is important to provide a service users perceive as more accessible, convenient, and easy to use in comparison to the competition. Technological solutions and enhanced product offerings are central.</li> </ul> <p>Collaboration to make the industry grow:</p> <ul style="list-style-type: none"> <li>● A mature and available public transport system is a necessity and a driver of car sharing. Collaborations are advantageous for both parties, as they cannot solely accommodate travelers' needs.</li> <li>● Collaborations with other parties in the industry are vital in order to make the car sharing market grow and to attain more customers.</li> <li>● Partnerships with vehicle manufacturers for the acquisition of fleets are common.</li> <li>● It is common for car sharing companies to take part of inter-firm relationships when they are in need of special skills, maintenance and cleaning of the vehicles, and relocation of vehicles in public street space.</li> </ul>
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<b>Society level</b>	<p>The dependence on local authorities:</p> <ul style="list-style-type: none"> <li>● Relationships with local authorities stand out as the most vital business interaction.</li> <li>● Car sharing operators engage in relations with local authorities to obtain access to public spaces, parking, as well as other preferential conditions such as tax reliefs.</li> <li>● Governments form the basic business conditions and government support is a driver of car sharing.</li> <li>● Local authorities are motivated to collaborate with car sharing operators due to the service's impact on congestion, emissions, traffic, and land use.</li> <li>● Local authorities tend to be characterized by inertia, which constitutes as an obstacle in developing favorable conditions for car sharing.</li> </ul> <p>Lobbying, laws, and regulations:</p> <ul style="list-style-type: none"> <li>● It is common for car sharing companies to engage in relations with local authorities, as well as different organizations and associations with political agendas, in order to improve business conditions.</li> <li>● The political environment promotes rather than hinders car sharing.</li> <li>● One method to obtain better business conditions is to provide local authorities and municipalities with data regarding societal and environmental benefits associated with car sharing.</li> <li>● Politicians' cooperativeness varies greatly among cities.</li> </ul>
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## 6. CONCLUSION

The purpose of this study was to create a deeper understanding of what characterizes the business model of a car sharing company. We intended to reduce the research gap regarding the linkage between car sharing services and business models. On the basis of existing theory, a preliminary theoretical framework was developed, which provided us with an indication of a preliminary theoretical answer to the purpose of the study (see *chapter 2.4.4.*). Furthermore, the implementation of a multiple case study enabled us to match the preliminary theoretical framework with empirical data and we were able to confirm, develop, and reject proposals suggested by the preliminary framework. By adopting an interpretive approach, the empirical findings could challenge theoretical proposals from the preliminary theoretical framework as well as contribute with additional insights. Consequently, the final framework consists of both previous theoretical findings that have been confirmed by our empirical observations, and additional empirical findings that contribute to a greater understanding of the subject.

The final framework constitutes as the answer to the purpose of our study, and we believe the framework provides a holistic, substantial, and relevant perspective of what the business model of a car sharing operator entails in order to deliver the offering and make revenue. The business model framework is composed of four different levels of analysis in order to illustrate the various types of relations and elements a car sharing firm needs to consider. The organization level illustrates the need for highly developed technological resources, supporting maintenance processes, as well as an organizational structure that facilitates employee engagement. Essential for the customer level is to define the customer and its needs in order to provide a convenient and attractive transportation solution. Furthermore, in order to maximize the utilization of vehicles and optimize profitability, it is important to customize the service to different customer segments. The industry level highlights the importance of collaborating with other actors in the transportation industry in order to expand the car sharing market, to establish more beneficial business conditions, and to attain more customers. Lastly, the society level concerns relations with societal stakeholders, in particular local governments, and their importance to facilitate favorable market circumstances and developments.

In accordance to Glaser (1978), we evaluate the validity of the framework on three attributes; integration, relative explanatory power, and relevance. As the integration between theory and empirical findings have been described above, it will not be discussed further. Several scholars have conducted research on car sharing as well as on how firms conduct business and make revenues, however, there are barely a handful studies examining the two domains jointly (e.g. Millard-Ball, 2005; Ferrero et al., 2015). Thus, the framework presented in this study is the only one of its kind and contributes by reducing gaps in a relatively uncharted research field. We believe that one of the strengths of the framework lies in its extensive integration of theoretical aspects and empirical findings, which results in a comprehensive perspective of what characterizes a business model in a car sharing firm. Moreover, our framework, in contrast to previous research, identifies the presence of network externalities. This as our findings indicate that the larger the network of car sharing, the greater the value for the individuals using the service. Consequently, we argue that the explanatory power of

the framework is high. As the car sharing market is experiencing a strong growth and disrupts the transportation industry we know today, our framework becomes highly relevant for existing as well as future market players. The framework can assist managers in decision-making and contribute with valuable insights on how to create and capture value. Additionally, as the study adopts a holistic perspective, the framework is also relevant to a larger extent. For instance, it can provide understanding to governmental authorities in how cooperation and public-private partnerships with car sharing operators can result in multiple social and environmental benefits, which in extension can result in more sustainable cities.

Due to technology being a fundamental part of car sharing business, as well as the car sharing phenomenon itself being in a relatively early stage, the validity of our framework could in time potentially be limited by technological advancements within the industry. As the empirical material is based on gatherings from companies operating in different European countries with various contextual circumstances, we believe the findings presented in the framework are robust and possess a good representation of reality. Although our empirical material is founded on a European context, we strongly believe our findings can be applicable in other industrialized countries. Noteworthy is that some of the factors highlighted in our study are linked to certain contextual conditions. For instance, the study discerns regulations and relationships with governmental authorities as important contextual dimensions affecting fundamental conditions for conducting car sharing. Therefore, differing contextual circumstances could potentially limit the validity of our findings in other countries. Though, many findings such as key processes and key resources are more generalizable and not geographically bound.

This study represents an exploratory approach of the car sharing industry and the business models of car sharing operators. As mentioned, the study examines a research field that is relatively uncharted in current research although scholars consider it to be of high relevance (e.g. Shaheen et al., 2012; Sommer, 2012; Le Vine et al., 2014; Porter & Heppelmann, 2014; Ferrero et al., 2015). As car sharing exhibits continuous growth and the transportation industry is undergoing change, our findings will need to be supplemented with further research. Therefore, we encourage other scholars to make use of our framework and proceed with continued research within this field. Moreover, as the study adopts a holistic perspective, it would be interesting to conduct more in-depth examinations of certain strategic aspects of the business models of car sharing operators. Future studies can benefit from complementing qualitative data, as applied in this study, with quantitative data concerning the performance and operations of car sharing companies. As our findings are based on an European context, it would also be interesting to explore the relation between car sharing services and business models in other contextual conditions as it can provide additional insights. Lastly, we suggest future research to further explore the linkage between car sharing and network externalities as it may have significant impact on the emergence of car sharing as well as the transportation industry of tomorrow.

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# APPENDIX

## Appendix 1: Interview Guide

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### COMPANY INFORMATION

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- Personal questions*
- Name?
  - Position within the company/responsibilities?
- Company specific questions*
- Name of the company?
  - Which service model do you operate with?

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### EXTERNAL ENVIRONMENT

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- Target market*
- Could you tell us about your customer?
  - Who are your main customers?
- Customer demand/needs*
- What need/problem does car sharing solve?
  - What motivates customers to use car sharing?
  - How important is the aspect of sustainability?
- Customer relation*
- What characterizes the customer relationship?
  - How do you interact with customers?
  - How important is it to inform customers about the sustainable aspect of car sharing?
- Competitive elements*
- How competitive is car sharing compared with other modes of transportation?
  - Who are your main competitors?
  - What do you do in order to stay competitive?
- Economic and political environment*
- How do macro-trends in the external environment affect the company? (E.g. economic and political circumstances)
  - What is the role of local governments?
  - Does regulation support or contradict work with car sharing?
- Business Interaction*
- How do you work with partnerships regarding car sharing?
  - What is the role of partnerships in delivering the offering?
  - Co-creation of value?
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## THE OFFERING

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- Value Proposition***
- Could you tell us about the value proposition, and how your offering meets customer needs?
  - How is the value proposition configured to meet the needs of different customers?
  - What is the role of technology in the offering?

- Revenue Model***
- How is the revenue model constructed?
  - What are your main sources of income?

- Cost Structure***
- How is the cost structure constructed?
  - What are your main expenses?

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## INTERNAL FACTORS

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- Internal Conditions***
- How is the organization structured? Coordination? Collaboration?
  - Which competencies and capabilities are needed?

- Key resources***
- What are the key resources in terms of; tangible, intangible, technological, and human assets, when working with car sharing?
  - Which assets are needed when working with car sharing?
  - Which assets are most important?

- Key Processes***
- Could you tell us about the key processes when working with car sharing?
  - Which processes are needed when working with car sharing?
  - Which processes are most important?

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## OTHER

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- Additional Questions***
- Is there something you would like to add?
  - Is there something we have missed?

## Appendix 2: List of Respondents

Country	Company	Name of Respondent	Profession	Date of Interview
Sweden	Sunfleet	Peter Algurén	Chief Executive Officer	05-04-2016
	Sunfleet	Olof Holmgren	Business Development & Construction Projects	08-04-2016
	Sunfleet	Marcus Lindquist	IT Manager	19-04-2016
	Sunfleet	Simon Bergman	Fleet Coordinator	28-04-2016
	DriveNow Sverige AB	Milica Blanusa	Marketing Manager	27-04-2016
	DriveNow Sverige AB	Fredrik Ellsäter	Chief Executive Officer	27-04-2016
	DriveNow Sverige AB	Peter Stahl	Fleet Manager	27-04-2016
	Audi Unite	Amanda Monadjemzadeh	Market Assistant	19-04-2016
Denmark	LetsGo	Villads Hansen	Administration Manager	04-04-2016
	LetsGo	Rune Jacobsen	Project Leader Development & IT	07-04-2016
	LetsGo	Christian Rohmann	Marketing Manager & Business Development	26-04-2016
Germany	Car2Go	William Knapp	Chief Product Officer	08-04-2016
Netherlands	Greenwheels	Alicia Hobbel	Location Manager & Public Marketing Manager	07-04-2016
	Greenwheels	Andrew Berkhout	Chief Executive Officer	25-04-2016
	Greenwheels	Paul Van Merrienboer	Head of Marketing	29-04-2016