Sharing is caring: a road towards a green, global and connected Sydney?
A case study about the roles of business models in sustainability transitions

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Sharing is Caring: A road towards a green, global and connected Sydney? - A case study about the roles of business models in sustainability transitions.

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In partial fulfilment of the requirements for the degree of

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in Innovation Sciences

Supervisors:
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Preface
During my study 'Innovation Sciences', I developed an increasing interest in frameworks and literature on sustainability transitions. For a long time already, I have been intrigued by climate change problems and the (cultural) factors that are involved with it. The subject of this thesis is therefore based on this passion and is an exploration of a term that has become very popular in the past decades; the case study about car sharing. I hope to have sparked your interest and contributed to existing knowledge about business models, niche experimentations and regime shifts. I really enjoyed diving into the literature about transitions, business models and car sharing and conducting the research (the interviews) in Sydney was an amazing experience.

I want to express my gratitude to all the people that inspired me and supported me to shape my research and my thesis to what it is now. First of all, I would like to thank my supervisors Frank Schipper and Bram Verhees, who were very supportive during my research. Without their trust, I probably would not have been able to conduct my graduation project and write my thesis in such an independent manner.

Furthermore, I would like to thank my mentor Henny Romijn, for helping me with questions about the sustainability and globalization certificates and pointing me towards the direction of Australia as the perfect location for my research. The Institute for Sustainable Futures in Sydney, and in particular dr. Chris Riedy has been very enthusiastic and welcoming from the very first day of contact. I want to express my gratitude to Suzanne Cronan, Tech-support, the receptionist, my new friends and my roommates (especially Rohit and Pankaj for making me familiar with the Indian culture and delicious foods and making me feel like home at the other side of the planet). Moreover, thanks to all the interviewees that were able to sacrifice a little bit of their time in order to provide me with interesting and relevant information about car sharing. They made me feel comfortable during the interviews and I really enjoyed spending time and drinking tea with those great souls.

If it wasn’t for my external hard drive I took with me, I would have probably needed to stay a while longer in Australia. Therefore I would like to thank my dad, Tiemen, for buying me this hard drive and fixing my computer so that I could resume my research and finish this thesis. I also want to express my gratitude towards him and the rest of my family for their involvement, unconditional support and love at all times. I want to thank my mom, Joke, for always being there for me and I would like to dedicate this thesis to my sister, Rinske, who is an amazing person capable of changing your world perspective.

Thanks to my friends and peers who were always willing to listen to my stories and Joost: thank you for being my partner in life, study and research.

Enjoy reading,

Lotte Meijer

Eindhoven, February 2016
Executive Summary

Over the past ten years, new business models were launched by start-up entrepreneurs in order to tackle issues like economic recession, the depletion of natural resources and other environmental pressures, while still caring for community feeling. An entrepreneurial movement that is called the ‘sharing economy’ is an example that is trying to redefine the nature of today’s business models (Mouazan, 2013).

Australia is interested in all sorts of new initiatives to make their immense cities more environmentally friendly. As discussed in this thesis, a big city like Sydney, with limited parking space and lots of heavy traffic, considers car sharing as a hopeful option for making the city ‘green, global and connected’ (City of Sydney, 2015). Because more and more collaborative interaction emerged in Sydney, this can be experienced as the beginning of a societal shift, leading to (a transition towards) an environment in which the sharing economy is a leading strategy. This addresses the aim of the research conducted for this thesis, which is to identify the transition towards a car sharing system in Sydney.

Theory

The Multi-level Perspective is a theory on analyzing socio-technical transitions (Geels, 2002). Unfortunately, according to Bidmon & Knab (2014), theory and research is scarce in terms of the roles of business models (BMs) in transitions. The authors identify three roles of business models that could possibly contribute to a socio-technical transition. The first is that the business model can function as a device in order to support and popularize radical innovation. It can also be rooted in the socio-technical regime and raise barriers for growing niches. Or it could be a non-technological niche by itself acting at a more stable level (due to its boundary spanning nature) than normal technological niches. This thesis investigated those three roles of business models in transitions, by applying it to the case study of car sharing in Sydney.

Methodology

A qualitative research is performed. This study builds upon a comparative case study in the city of Sydney between two different types of business models: peer-to-peer car sharing and the traditional car sharing form. The cases comprise an implemented car sharing system, already in the experimental phase. The research demanded an iterative process of study, including a desktop and literature study and interviews with main car sharing stakeholders. To enhance validity all information is triangulated. Information gained from interviews were checked in policy documents and among other interviewees. The research is conducted at Sydney’s Institute for Sustainable Futures, a reliable scientific research institute.

This thesis is an elaboration on the role of business models in (sustainability) transitions and provides knowledge on the application of the MLP framework (an evolutionary minded framework that is very important within the school of innovation sciences).

Results and conclusion

The sub questions proposed in the introduction of this thesis, provide answers to the several ways in which mobility business models contribute(d) to a car sharing transition. One can see that the business models that co-evolve in the niches raise boundaries in order to focus on slightly different (customer) segments. The companies survive by not attacking each other, but complementing each other’s work and supporting each other’s growth by alleviating barriers.
Regime barriers were raised by the current dominant business model logic in combination with the several streams comprising the regime. A strong network and close ties with partners (like the government) can assist in overcoming those barriers, under the condition that the expectations of those partners match the expectations of the company. Furthermore, in the situation that a partnership with universities or knowledge institutes is not possible, one could still benefit from their learning processes once there is an extensive knowledge and research base provided for the public.

The boundary spanning nature of the business model is a significantly important characteristic that must not be ignored when considering a transition towards for instance a car sharing system. In the case of the niche, the boundary spanning nature of the business models allow the companies to co-evolve while not constraining each other. In the regime, the boundary spanning nature is on the other hand raising obstacles for the development of the niches. A strong network and close ties with important partners (drawn up and characterized in the business model) can help conquer those imposed barriers.

With regard to both traditional and peer-to-peer car sharing business models, this thesis discusses the significant differences in value propositions (providing flexibility & reliability versus trust & security respectively), and the way of support for the (non-technological) car sharing niche through the (facilitation of networks, learning processes and expectations in the) business models. For instance, research for this thesis identified that the level of stabilization is currently higher for traditional car sharing business models, since the cooperation with the government has benefited the companies to a large extent. However, peer-to-peer car sharing has the advantage that scaling is possible in a faster pace, due to the fact that the companies do not have to purchase every car in their fleet and cooperation with media and other peer-to-peer car sharing companies can provide relevant lessons and information beneficial for its development.

Implications
The discussion chapter of this thesis emphasizes that the scientific contribution mainly imply the elaboration of the roles of business models in the mentioned frameworks (MLP and SNM). Furthermore, this thesis comprises political and managerial recommendations as well as a complementation of the research gap in (car sharing) case studies.

With regard to political recommendations, this thesis argues that the first thing the government should take care off is the lack of unanimity concerning car sharing. Once this is dealt with, the government can show their support by providing the three c’s: commercials, car sharing parking spaces and capital. In addition to this, one can argue that the target of a ‘green, global and connected’ Sydney can be achieved by supporting car sharing businesses in the area. Furthermore, this thesis argues that establishing the right network structure (including valuable partnerships and close ties) is favorable for the growth and development of new (car sharing) businesses. When zooming in on the different business models of car sharing, a focus on building trust is prioritized for peer-to-peer businesses. Traditional car sharing companies on the other hand, should focus on providing a flexible and reliable customer service. Strengths and limitations are discussed in the last chapter as well, along with implications for further research.
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List of abbreviations
MLP Multi-level Perspective 
SNM Strategic Niche Management 
BM Business Model 
CS Car Sharing 
B2C Business-to-Consumer 
B2B Business-to-Business 
TD Traditional 
P2P Peer-to-Peer 
GG GoGet 
GSC GreenShareCar 
HoD Hertz on Demand 
CND CarNextDoor 
DMC DriveMyCar 
NSW New South Wales
'Currently, the growth of our economy depends on increasingly larger inputs from finite resources. Basic arithmetic can help us determine that this is not a healthy long-term plan for humanity. However, due to the neo-classical economic thought that dominates our society, we are stuck in a system that measures physical elements (like oil), with non-physical tools (such as money), creating discrepancies between what we expect from our economy, and what is actually possible.' (Sharpe, 2011)
Economic growth is not part of a long-term plan for humanity. While this world is highly concerned with competitiveness and growth of nations, environmental damage seems far less important. However, ‘sustainable development’ is a concept that has become very crucial in the study of interactions between the economy and the biophysical environment, as well as a generally accepted goal of environmental policy. Until recently, economists have predominantly applied standard or neo-classical theory to environmental economic problems. However, post-2000 theories on sustainable development add a complementary evolutionary view to these neo-classical economic ideas. Based on these developments, studies involving a transition towards sustainable economic systems emerged in literature (Mulder & van den Bergh, 2011).

A transition of a socio-technical system (e.g. transportation) constitutes changes on a landscape, regime and niche level, involving environmental, economic and social factors. In the last decade, more and more start-up entrepreneurs have launched new business models that attempt to tackle issues like the economic recession, the depletion of natural resources and other environmental pressures, while still caring for the sense of community amongst each other. An entrepreneurial movement that is called the ‘sharing economy’ is an excellent example that is trying to redefine the nature of today’s business models (Mouazan, 2013). This indicates that business models can serve a supporting role for a transition of a socio-technical system. An example of the mobility socio-technical system is illustrated in figure 1. This figure suggests that a socio-technical system constitutes of several factors, including for example culture of the built environment (infrastructure). It is thus not only the transportation form (or the business model) that counts, its context is also important.

Figure 1 - Mobility Socio-technical System (adapted from de Vicente(2015))

However, the link between transitions and business models is not clear cut. As Wells (2013) argues, transition research ‘is in search of more detailed causal mechanisms, whereas the concept of a business model is (...) in search of a more structured contextual explanation’ (Wells P., 2013). This thesis fills the literature- and research gap between (sustainability) transitions and business models by conducting literature research and applying a case study in the field of the sharing economy.
New business models were launched by several entrepreneurs in the last couple of years (attempting to tackle sustainability issues like the depletion of resources, economic recession or other environmental problems). According to Botsman (2014), ‘sharing economy’ initiatives give the potential to reduce resource use and build social capital, while strengthening local economies. Furthermore, the concept supports CO2 reduction and creates the urge for the design of sustainable and durable products. These new distinctive business models thus aim to restructure or reorganize current systems while working towards a more sustainable or environmentally friendly economy.

Australia is interested in all sorts of new initiatives to make their immense cities more environmentally friendly. As will be discussed in the chapter four as well, a big city like Sydney, with limited parking space and lots of heavy traffic, considers car sharing as a hopeful option for making the city ‘green, global and connected’ (City of Sydney, 2015). Because more and more collaborative interaction (business models) emerged in Sydney, this can be experienced as the beginning of a societal shift, leading to a transition towards an environment in which the sharing economy has a leading strategy. The aim of this research therefore is to identify the transition towards a car sharing system in Sydney.

1.1 Relevance
The expected outcome of this research will be an insight on the development of car sharing business models in Sydney; related to the research gap in transition literature. In other words, this study will try to elaborate on the role of business models in the transition towards (a more sustainability concerned) system of car sharing. The core characteristic of a business model, the boundary spanning nature (the way that a business model defines their differences with respect to other business models in the same niche), is investigated as well as the way to create and capture value.

Moreover, the study will provide more knowledge on the application of the Multi-Level Perspective-framework, an evolutionary minded framework that is very important within the school of innovation sciences. Besides knowledge on this innovation sciences theory it is a relevant study for the local government in the adaptation of a sustainable policy in which a distinction can be made onto different car-sharing business models and its position in the contribution towards a sustainable city (Council of the City of Sydney, 2011).

Finally, this thesis will elaborate on the difference between car sharing business models that exist in Sydney. The reader will find out how the vision and expectations of relevant actors concerning car sharing come about and how the expectations of the companies may contribute to the formulation of value propositions in the business model. Thereby, the development of the car sharing business models in light of the context of Sydney is also deemed important.

One should be aware that this thesis does not assume that car sharing in itself is sustainable. However, it may contribute to a change in culture (environmental awareness and community thinking) and a reduction of cars on the streets. It is therefore considered as an option or addition for the goals of making Sydney green, global and connected. (Council of the City of Sydney, 2011)
1.2 Research Design
According to Bidmon & Knab (2014), theory and research is falling short in terms of the roles of business models (BMs) in transitions. The Multi-level Perspective theory on analyzing transitions will be used as basis for the sub questions deducted from the literature study (Geels, 2002). In order to get a better understanding of what the role of business models in (sustainability) transitions could be, an in-depth literature study is conducted with the following research question: To what extent do business models contribute to sustainability transitions? This is divided into sub questions such as ‘How do transitions relate to sustainability?’, ‘How do business models relate to sustainability?’ and ‘how do business models relate to transitions?’. Because this literature review is a first step towards filling the research gap on the role of business models in transitions, a literature review on the sharing economy (e.g. car sharing) will underpin the application onto a case study. Therefore, sub questions like ‘How does the sharing economy evolve?’, ‘How does car sharing relate to the sharing economy?’ and ‘what (sustainable) business models can be distinguished regarding car sharing?’ are also discussed, and are answered in the theory chapters. In addition, the transition literature will also be focused mainly on (sustainable) mobility, mainly highlighted in dedicated text boxes.

As one can deduce from the theory section in chapter two, Bidmon & Knab identify three roles of Business models that could possibly contribute to a socio-technical transition. The first is that the Business Model can function as a device in order to support and popularize radical innovation. It can also be rooted in the socio-technical regime and raise barriers for growing niches. Or it could be a non-technological niche by itself acting at a more stable level (due to its boundary spanning nature) than normal technological niches. Besides a literature study that is elaborated upon in the theory section, this thesis includes an extensive discussion on the case study of car sharing in Sydney (see Figure 2). This study aims to investigate the three roles of Business Models in transitions. Therefore, the research starts with the broad question based on the literature study considering the three roles of Business Models:

To what extent do business models contribute to sustainability transitions?

This implies a thorough investigation is needed of the three functions of Business Models, and its particular effects of Business Models in the case study of car sharing (e.g. peer-to-peer or traditional Business Models). The business models’ characteristics are concerned with the boundary spanning nature of the firms in the (car) sharing economy. This implies that those separate business models are able to co-evolve in the niches, exploring their independent capabilities and focusing on different value propositions or customer segments. The boundaries and the functions of the Business Models are identified based on the following sub questions:

A. How do different car sharing business models interplay?

As mentioned above, business models can compete amongst each other by co-evolution. This sub question aims to find the differences in both car sharing business models that exist in Sydney and how these business models can constrain or complement each other. The boundary spanning nature of the business model may cause a clear difference between the value proposition of the business models and the way of dealing with barriers from the market. Moreover, different value propositions may lead to different ways of network or customer interaction. Both business models can thus have separate ways of attracting funds and finding support for the development and the rise of their business model. The second questions is
focused on how the business models are able to break through the regime by increase in popularity:

B. What is the role of car sharing business models in the support of car sharing?

This second question is also based on the first role for business models that is derived from the literature review in the theory chapter of this thesis. Bidmon & Knab think of this role as the 'commercialization' of the niche. Applied to the case of car sharing, however the stimulation of the development of the niche, or the 'popularization' of car sharing fits better, because 'commercialization' may imply that the business' intentions are mainly making profit and earning money, which is not applicable for most non-profit car sharing businesses. ‘Popularization’ of car sharing can follow from the business models’ efforts to build up tied and extensive networks in order to attract funding and facilitate partnerships.

However, current dominant business models from the regime can raise barriers that may disturb the development of these networks and the popularization of car sharing business models. The next sub question is therefore based on barriers that are raised and implies:

C. What are the barriers for car sharing?

This reflects the third role of the business model, where for example the business model of the current regime (which is private car use or could be car rental) constrains the upcoming business model (of car sharing) in the niche due to its boundary spanning nature and the existent network.

Overall, this thesis aims to provide more insight in the added value of the Business Models (in the niches), its ways of popularizing car sharing (through e.g. networks) and the barriers that are formed in the regime. In this way, the case study can be related to the previously mentioned roles of business models in transitions. Therefore, an answer to the research question can be formed by conducting the case study on car sharing in Sydney.

1.3 Outline

The next chapter consist of the theory part of this thesis. Chapter two is divided into a section about transitions, business models (in transitions), the sharing economy (specifically car sharing) and ends with a reflection on the combination of the sections along with an explanation on how the case study could be executed. This chapter is followed by chapter three, the methodology part of the thesis. This explains the ways of analyzing and how this thesis has come about.

The next chapters comprises the body of this thesis, starting with a context analysis of car sharing in Sydney, followed by the elaboration on several car sharing cases with a section about the traditional business model, the peer-to-peer businesses and both of them combined in the results section. Chapter four, comprised of the context analysis of car sharing in Sydney, is very important for identifying the exogenous environment, or the 'landscape'. Furthermore, the regime business model logic is explained, followed by a chapter (chapter five, cases) where the business models are distinguished on a niche-level.

In other words: chapter four and five will give an insight on the different levels of the multi-level (and a background on car sharing in Sydney) perspective, with an extra focus on the comparison of the different business models reflected in the niche (chapter five). Chapter six, the result section, extends on this business model comparison. However, the structure of the chapter is mainly focused on the roles of business models on the transition levels. For example, the results chapter starts off with the comparison of the business models on the niche level, as hinted upon in the previous chapter. The elaboration of the network, the expectations and
learning processes of the different business models represent the level in between the niche and the regime, concerning the second sub question of this thesis. The third part of the results chapter is comprised of the last sub question, regarding the barriers for car sharing, raised by the dominant business model logic of the regime. Important to note here is that barriers for car sharing in general and for both business models in the niches originate from current regime boundaries. Therefore, the role of the regime business model is the most important here, not the comparison of the car sharing niche experiments. The niche-regime conjunction is therefore explained in the last part of this chapter.

Chapter seven is the conclusion. It summarizes the main results and provides answers to the research question and sub questions. Furthermore the discussion chapter elaborates on strengths and limitations as well as suggestions for further research, and it provides (policy) recommendations for Sydney city council and new sharing business models in Australia.

The illustration below, shows how the outline of this thesis is constructed. Chapter one to three provide an introduction of this thesis, followed by an application of the theory on a car sharing case study in Sydney (chapters four, five and six). The research is concluded by chapter seven and eight, which gives answers to the questions proposed in the introductory sections.
This chapter explains the theoretical framework that supports the case study that is conducted in order to find out to what extent business models function in a (car sharing) transition. Therefore, the concept of transitions and its multi-level framework, as well as the (car sharing) business model(s) will be explained in the following sections. The textboxes in this chapter highlight the examples applied to cases of mobility or car sharing.
2.1 Sustainability Transitions

The expansion of car-based transport has given rise to a range of persistent social problems, such as congestion, deaths and accidents, climate change, local air pollution, social exclusion, land fragmentation, noise pollution end-of-life disposal, oil dependence and energy security (Cohen, 2010).

Kemp, Geels and Dudley claim that motorized transport based on fossil fuels is not sustainable, not only environmentally, but also economically and socially speaking. According to those scientists, the transport sector needs a shift towards a more sustainable way of mobility (Kemp, Geels, & Dudley, 2012).

It has been argued that a transformation of the present economic system towards a sustainable economic system requires new policies, institutions, and mechanisms (Opschoor, 1996). A transition of a socio-technical system constitutes changes on a landscape, regime and niche level involving environmental, economic and social factors (Geels F., 2002). Major shifts in economic structure involve uncertain and irreversible changes, selection of existing alternatives, learning, errors in decision-making, and a persistent economic disequilibrium (Mulder & van den Bergh, 2011).

Text Box 1
For example, Banister (2008) states that elements of the transition towards sustainable mobility imply the reduction of the need to travel (by distance reduction as well as home working), changing the way we see transport towards the view of a valued activity, rather than derived demand and implying reasonable travel time rather than its minimization, achieving a modal shift (to walking and cycling, especially) and lower levels of pollution and noise from transport, more efficient use of infrastructures (through demand management and higher vehicle occupancy), energy efficiency in a more extensive way, and increasing the quality of all places and spaces (Banister, 2008).

Classical or mainstream environmental economists, mainly focus on relative scarcity, allocation of scarce resources and optimal welfare. For a large part, this emphasis is based on neoclassical growth or (neo-)Schumpeterian theory (Phillimore, 2002). However, scholars like Mulder and van den Bergh argue that, when trying to fully understand a transformation of the economic system towards sustainability, the standard environmental economics (with its roots in neoclassical theory) needs to be complemented by an evolutionary approach, or evolutionary economics based on Schumpeter’s student Schumacher (Phillimore, 2002) (Mulder & van den Bergh, 2011). When linking both concepts to sustainability, one can see clear differences as well as similarities.

One major distinction is that Neo-classical economists view environmental problems as negative externalities resulting from market failures. The government can help internalize external costs by changing incentives and frame conditions (e.g. taxes, emissions trading), but should then let private initiative do the real work. If the prices are right, private actors (firms and consumers) will find optimal (profit or utility maximizing or cost-effective) solutions, which are supposed to lead to socially more desirable outcome (Munda, 1997). On the contrary, the evolutionary approach focuses the attention on irreversible, path-dependent change and long-run mutual selection of environmental and economic processes and systems. This also implies learning, bounded rationality, errors in decision-making and complex system dynamics. Moreover, evolutionary economists tend to include qualitative aspects of change in the analysis. Whereas in the neoclassical approach emphasis is on quantitative (marginal) changes. In short, the main difference between the two theories is that the static neoclassical approach focuses on cause and effect (which are clearly separable) and ordered growth, whereas the evolutionary approach is one of historical circumstances, complex causal
mechanisms that change over time and turbulent growth patterns implying a disequilibrium. Thus, when considering a transition towards sustainable transportation for instance, one can reason that this long-term process start with various barriers that need to be overcome.

One can derive from this notion that a sustainability transition has special characteristics that make them different form historical transitions. First of all, the goal-oriented function of sustainability transitions addresses the persistent environmental problems. Second, because this goal is about a collective good (sustainability), private actors have limited incentives, and public authorities will be more significantly important in changing the economic and environmental conditions. Also the user’s benefits from ‘sustainable’ solutions are often not very obvious. Both of these characteristics may cause political power struggles and conflicts. The third characteristic of sustainability transitions relates to the domains where transitions are most needed, for example the transportation sector. Large firms dominate these domains, which may cause a significant barrier for pioneers that often first develop environmental innovations. Therefore, such domains are suffering from lock-in mechanisms like scale economies (causing low costs of existing technologies), sunk investment in infrastructure, machines and people, existing lifestyles and behaviors, legislation, subsidy schemes that favor existing technical systems and institution that hinder new ones, mental maps and cognitive schemes that blind incumbent actors, and resistance from powerful actors trying to protect their interests (Unruh, 2000). This implies that sustainability transitions heavily rely on interactions between technology, policy, economics, and culture/public opinion.

One way to investigate this, is to apply the Multi-level perspective, an analytical framework that divides the social world in hierarchical levels in order to explain transitions as a result of interactions between these. As Geels stated in his article published in 2004, the transport system is comprised of different mutually aligned elements, such as the technology, the industry, markets, consumer behavior, cultural meaning, infrastructure and spatial arrangements. System change is not, or rarely, driven by one element alone (such as technological change), but usually involves co-evolution of several developments (Geels F., 2004). The Multi-level perspective combines several theories and perspectives regarding sustainability, involving the co-evolution and innovation of socio-technical systems. Geels argues, that the Multi-level perspective combines concepts from evolutionary economics (trajectories, regimes, niches, speciation, path dependence, routines), science and technology studies (sense making, social networks, innovation as a social process shaped by broader societal contexts), structuration theory and neo-institutional theory (rules and institutions as ‘deep structures’ on which knowledgeable actors draw in their actions, duality of structure, i.e. structures are both context and outcome of actions, ‘rules of the game’ that structure actions)’ (Geels F., 2011). In the next section, the Multi-level perspective will be explained.
2.1.1 Multi-level perspective on socio-technical transitions

The Multi-level perspective divides the analysis into three levels of a social-technical system, including the socio-technical regime, the niches and the socio-technical landscape. The interactions between niche, regime and landscape developments are enacted by social groups (firms, policy makers, customers and car drivers, social movements, transport planners, engineers), who have their own perceptions, interests and resources but are also linked together to maintain and reproduce the regime. The structure of the processes are therefore comprised as a ‘nested hierarchy’, as stated by Geels and Schot (2007). This means, that the niche networks are embedded in the regime, and the regime relationships are in turn embedded in the landscape (Geels & Schot, 2007).

In the next sections, the different analytical levels are described and operationalized for the transport domain.

The Socio-technical Regime

According to Rip and Kemp (1998), ‘A technological regime is the rule-set or grammar embedded in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artefacts and persons, ways of defining problems; all of them embedded in institutions and infrastructures’ (Rip & Kemp, 1998). A socio-technical regime is more related to social relations, e.g. social groups like scientists, users or policy makers. Geels (2004) proposed that three types of rules exist in regimes. The first, the cognitive rules imply the belief systems, guiding principles, goals, problem definitions, search heuristics and innovation agendas. The regulatory rules are embedded in the regulations, laws and standards. The last rule, the normative rule, consists of role relationships, values and behavioral norms (Geels F., 2004). Cognitive rules make actors look into only one direction, which can create blindness and a lock-in for the whole socio-technical system. However, also ‘momentum’ can be increased when people adapt their lifestyles to technical systems (Hughes, 1994). Because socio-technical systems are dynamically stable, innovation can still occur, but is emerging in incremental steps, which leads to cumulative technical trajectories. However, technology is not the only structural element that Geels (2004) distinguishes. Such predictable trajectories do also occur for science, infrastructure, industry, policy, culture and markets; social groups that are mutually dependent (Geels & Schot, 2010). Thus, the automobility regime is for example not only sustained by the car industry, but also by politics or cultural association with freedom, modernity and individuals identity (Geels & Kemp, 2012).
The Niche
Because socio-technical regimes are dynamically stable and hard to change due to the lock-in mechanisms, transitions are crucially dependent upon niches and its activities (Smith, Voß, & Grin, 2010). Niches are defined as a ‘protective space’ for radical and path-breaking alternatives (Kemp, Schot, & Hoogma, 1998). In a normal selection environment (within the regime), these radical alternatives cannot (yet) survive. However, these could grow through experimentation within a niche and gain momentum in order to disrupt the regime.

Strategic Niche Management (SNM) is a theoretical framework that is concerned with the protection (shielding, and nurturing and empowering) activities of a niche. Practitioners of the SNM-approach state that innovation in niches benefit from the management of networks, the alignment of expectations and by first- and second order learning (Hoogma, Kemp, Schot, & Truffer, 2002). Niches are also often characterized as comprising of local (of use and experimentation in concrete projects) and global (community of niche actors who share certain rules such as problem agendas expectations or understandings) elements (Geels & Kemp, 2012). As already mentioned with the explanation of SNM, niches can gain momentum when networks become bigger (by means of adaption or expansion).

Text Box 3
An example is set by Dyerson & Pilkington (2005) for the alternatives in engine and motor technologies:

‘While fuel cells and battery electric drive were initially pioneered by outsiders and start-ups, the big car manufacturers have moved into these areas, often creating strategic alliances with these small firms or taking them over’ (Dyerson & Pilkington, 2005).

The Socio-technical Landscape
The structural context of the regime and the niches is called the socio-technical landscape. It is an exogenous environment and includes environmental and demographic change, broad economy restructuring, the emergence of scientific paradigms, cultural developments, shifts in political ideology and new social movements (Smith, Voß, & Grin, 2010). Three forces underlie the landscape metaphor, as elaborated on by van Driel and Schot (2005); factors that do not change or change only slowly (e.g. climate), long-term changes (e.g. industrialization) and rapid external shocks (Wars or oil crises) (van Driel & Schot, 2005).
Multi-level dynamics

According to Geels, a transition to another socio-technical system can take place when three conditions are met. Regarding the regime, destabilization of activities on multiple dimensions (or trajectories) may cause ‘windows of opportunity’ for a niche innovation to break through (Geels F. , 2002). However, this radical innovation should be strong enough, and therefore have gained enough ‘momentum’ in order to replace the existing routines and activities in the regime dimensions. This process is called ‘niche accumulation’. Finally, the activities on the regime level are in turn weakened or destabilized by pressures from the landscape (e.g. disasters which increase awareness for global warming) (Geels F. , 2005).

Text box 4
An example is illustrated by Geels and Kemp, who describe how the shift from Horse-drawn Carriages to Cars could be explained by assessing the multi-level perspective (Geels & Kemp, 2012). This shift (located in America) is characterized by a change from horse-drawn carriages to electric trams and bicycles, and later to automobiles from 1880 to 1930 (Geels F. , 2005). The transition was driven by multiple facets, and ought to be the outcome of a multi-layered and cumulative process in which congestion problems, horse droppings, lack of safety and high costs determined by the horse use for urban transport created room for alternatives in transport (Geels & Kemp, 2012). These problems co-evolved with several improvement and developments in technology, products and society (e.g. immigration). When horse carriages were dropped as a regime and bicycle trips and electrical trams emerged, touring and racing popped up as a new way of living and streets were now see as arteries for transport, instead of place where people could meet. Later on, cars emerged in several special niches: as taxi and luxury vehicles, gasoline for touring and racing and steam cars. A car culture developed as the result of the introduction of the T-ford car in 1908 and the development of gasoline cars. After the 1950s, cars paved the way towards a dominant form of transport, used for the majority of trips (short and long distance) (Geels & Kemp, 2012). This story exemplifies the role of niche in the accumulation process and the windows of opportunity that were created.

In short, governments, consumers and entrepreneurs are subject to cognitive imperfections (such as bounded rationality), path-dependency and lock-in phenomena. Despite the fact that we do not know where we are heading, we can learn from case studies of historical transitions. Although the MLP is not predictive, it can reveal generic patterns and mechanisms that one can apply to the current ways of living. What is interesting to find out, is how entrepreneurs can deal with dynamic changes and how their business models can help in defining a pathway towards sustainable change. Therefore, the next section of this chapter will elaborate on the concept of the business model and the roles of the business model in transition literature.

2.2 Business Models and Transitions

‘A business model describes the design or architecture of the value creation, delivery and capture mechanisms employed. The business model crystallizes customer needs and ability to pay, defines the manner by which the business enterprise responds to and delivers value to customers, entices customers to pay for value, and converts those payments to profit through the proper design and operation of the various elements of the value chain’ (Teece, 2010).

This quote emphasizes the essence of the business model in terms of value-related functions, as deduced from the published article written by Teece (2010). Later research on business models and its definitions has provided a ‘canvas’ on which the business model is based (Osterwalder, Pigneur, & Tucci, 2005). The authors of this canvas state that the business model must consist of several components, together summarized as the conceptual architecture of businesses. Fundamentally, these business models need to articulate value propositions, target customers, distribution channels, customer relationships, arrangement of
activities and resources, core competencies, partner networks, cost structures and a revenue models (see Figure 1).

<table>
<thead>
<tr>
<th>Element</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value proposition</td>
<td>What value is embedded in the product/service offered by the firm</td>
</tr>
<tr>
<td>Supply chain</td>
<td>How are upstream relationships with suppliers structured and managed</td>
</tr>
<tr>
<td>Customer interface</td>
<td>How are downstream relationships with customers structured and managed</td>
</tr>
<tr>
<td>Financial model</td>
<td>Cost and benefits from the other elements and their distribution across business model stakeholders</td>
</tr>
</tbody>
</table>

Business models for sustainability
More recently, concepts of sustainable development are integrated in the world of the business model. For example, Boons and Lüdeke-Friend (2013) updated the four elements of a business model by applying it to environmental concerns (Boons & Lüdeke-Friend, 2013). This provided useful insights about the providence of a value proposition with measurable and balanced ecological, sociological and economic value. In addition, the adoption of a more sustainable supply chain, the development of a customer interface that motivates customers to take responsibility for their consumption and a financial model that reflects the appropriate distribution of costs and benefits among actors involved, accounted for ecological and social impacts are highlighted. Resource efficiency, social relevance, localization and engagement, longevity, ethical sourcing and work enrichment are six major principles contributing to the Business Models for Sustainability (BMfS) approach, elaborated on by Wells (2013). This will add two more pillars onto the business model canvas of Osterwalder: societal costs and societal benefits (Wells P., 2013). Together, sustainable business models tend to create value for customers, businesses (profit) and for society (people and planet).
Essential is the creation and delivery of customer value, thereby becoming a source of competitive advantage by means of business model innovation.

2.2.1 Business model Innovation

According to Baden-Fuller et al. (2010) and Wirtz (2011), two roles of business models in relation to innovation can be distinguished (Wirtz, 2011) (Baden-Fuller & Morgan, 2010). First, business models can support the commercialization and strategic marketing of innovative processes, products and services (Teece, 2010) (Zott & Amit, 2007) (Zott & Amit, 2008). Secondly, Business models can be subject to innovation. Business models themselves can be changed and innovated to provide competitive advantage by changing the terms of competition (Chesbrough, 2010) (Amit & Zott, 2010).

With regard to sustainable business model innovation, three levels can be distinguished (Boons & Lüdeke-Freund, 2013). According to Wells (2013), a business model can function as a mediator between the production and consumption of a technology. Simply stated, business models are market devices, which can refer to an important relation with technological innovation (Wells P. , 2013). In the first level focuses on technological innovation, where a new business model can employ technologies, be triggered by them and vice versa and where existing business models can take up new technologies. Boons & Lüdeke - Freund argue that business models can be viewed as a market device, where business model innovation is driven by the creation of new technologies (technological innovation) or by environmental change, which causes change in business attitudes and practices in the form of organizational innovation (Björkdahl, 2009) (Calia, Guerrini, & Moura, 2007) (Timmers, 1998) (Dubossontorbay, Osterwalder, & Pigneur, 2002) (Doz & Kosonen, 2010); (Sabatier, Rouselle, & Mangematin, 2010).

As can be deduced from previous figure and table as well as from literature about the business model, the boundary spanning nature is an important feature of every business model (Zott & Amit, 2007) (Zott, Amit, & Massa, 2011). However, whereas this boundary spanning nature of a business model is very important as it indicates current dominant logic, it could also function as a barrier for emerging business models when those business models do not fit in the current system (Chesbrough, 2010) (Bouchikhi & Lakhani, 2003) (Prahalad & Bettis, 1986). Path dependency is a concept mainly used in transition literature, but is in this case interesting to apply onto business models and innovation as well, like elaborated upon in the next section. (Bohnsack, Pinkse, & Kolk, 2014) (Velu & Stiles, 2013)

2.2.2 Roles of Business Models in transitions

According to several scholars, business models can be framed as part of the complex socio-technical system. For example, Boons et al. argue that the business model moves beyond the strategic perspective of one firm as it 'links the firm with the wider production and consumption system in which it operates' (Boons, Montalvo, Quist, & Wagner, 2013). This link towards sustainability transitions is until now insufficiently explored as combining these fields has only been done recently (Boons & Lüdeke-Freund, 2013) (Boons, Montalvo, Quist, & Wagner, 2013). Bidmon & Knab have been the first to analyse the role of business models in transitions. They argue the business model is integrated into the MLP on three different levels. It plays a role as a non-technological niche innovation, as a device to commercialize radical innovations.
or is part of the current socio-technical regime as dominant business model logic (Bidmon & Knab, 2014).

The Business model as a non-technological niche innovation
As a subject to innovation, novel business models can be created in a niche. In transition literature, structuration is higher and the stability of a niche is stronger when cognitive structures are well articulated, rules have stabilized, social networks are large and stable and activities are aligned and also market structures have somewhat stabilized (Geels & Schot, 2007). Because business models are narratives that describe how a firm works (Magretta, 2002) (Perkmann & Spicer, 2010), transaction between multiple actors in value networks are defined (Amit & Zott, 2010) (Matthyssens, Vandenbempt, & Berghman, 2006) and collective sense-making, social networks/legitimacy and attraction to funding are facilitated (Doganova & Eyquem-Renault, 2009) (Massa & Tucci, 2014) (Perkmann & Spicer, 2010), business model innovation encompass a higher structuration level than technological innovation. This could also be summarized as due to the boundary spanning nature of the business model, implying a focus on slightly different factors than other businesses in the same niche.

Novel business models evolve through the co-innovation of various actors within the system. However the current regime is dynamically stable and business models can only break through when there are windows of opportunity, leading to adjustments in the socio-technical regime and eventually replacing the current business model logic, the fact that business model innovation is more structured is a leverage to challenge the existing regime and change the rules of the game’. What is also important is that the regime and landscape not only throw up barriers for the niche actors, but that developments on these levels may also drive more powerful actors to join emerging business models (Elzen, Geels, & Green, 2004).

Text Box 5
For example, car sharing services are influenced by landscape pressures and regime development concerning sustainable mobility. Increased awareness for sustainability can be viewed as a paradigm on the landscape level, creating tension within the current regime via customer needs and regulation and may lead to a change in current business model logic. Co-innovation is a key term in evolutionary economics as well as transition literature. A business models can be sited within other business models (such as the car sharing business model within the sharing economy business model) the change of such business models requires co-innovation of several elements and actors within a socio-technical system. This means that business model innovation goes along with a high coordination challenge, because often actors are likely to be interested in keeping up the current business model logic (Bidmon & Knab, 2014).

The Business model as a device to commercialize radical innovation
When the function of business models are combined with the relationship of business models and the MLP, Bidmon & Knab propose that the business model can serve as a (market) device to commercialize radical (technological) innovation, whereas the business model can support the stabilization processes of the niche (Geels & Schot, 2010). Stabilization is encouraged by the building of social networks, the fostering of learning processes in order to improve performance and the articulation of expectations and visions to guide learning processes and attract attention and funding (Geels & Schot, 2010).

Furthermore, the technology or technological innovation itself has no value, but gains it value through system interaction (Geels F., 2002) (Elzen, Geels, & Green, 2004). Business models can help to unlock the latent value of technological innovation (Chesbrough & Rosenbloom, 2002) and can also facilitate the articulation of visions and support learning processes (Baden-Fuller & Haefliger, 2013); (Massa & Tucci, 2014). This is due to the link between technological
innovation and other actors and elements of a value network, created by the business model (Berglund & Sandström, 2013) (Zott, Amit, & Massa, 2011).

According to Bidmon & Knab, the boundary spanning nature of business models in particular gives an important leverage to spread a technology in a socio-technical system. Collective sense-making, the building of social networks and legitimacy and the attraction of funding are factors that are important in creating boundaries and stabilizing processes (Doganova & Eyquem-Renault, 2009) (Massa & Tucci, 2014) (Perkmann & Spicer, 2010).

Text Box 6

When applying this notion to the example of sharing cars, one important arguments needs to be pointed out. Because car sharing might be a solution to economic, environmental and social problems of our society, the sole purpose of a car sharing business model is not necessarily the act of maximizing profits. Therefore, ‘commercializing’ the radical business model innovation (car sharing) is not necessarily needed. ‘Popularizing’, or expanding the popularity and critical mass of people adapting the car sharing system is a better explanation of the function of the business model. The goal of car sharing companies is to make people aware of the environmental, economic and social implications, without (for some companies for certain) perceiving money making as their main purpose.

The Business model as a part of the current socio-technical regime

The boundary spanning nature of a business model is also a great contribution to the second function of a business model in (sustainability) socio-technical transitions. Here, the role of a business model is to function as an industry recipe, where the dominant business model design is part of the current socio-technical regime. From transition literature, it is clear that the current regime serves as a selection and retention mechanisms for innovation (Geels F., 2002), where the regime is dynamically stable with rules that are cognitive, regulative and normative and shared in a value network and society (Geels & Schot, 2007). Path dependencies, lock-in and ‘vested interests’ are terms that are used to explain the resistance of transitions by regime actors (Geels F., 2011). Path dependencies and fear of cannibalization are also feared by Chesbrough in business model innovations (Chesbrough, 2010). Authors of several papers, like Bohnsack et al. (2014) and Velu & Stiles (2013) underline the cognitively constrained incumbents, implying the actors within a dominant business model design (Bohnsack, Pinkse, & Kolk, 2014) (Velu & Stiles, 2013). The dominant logic underlying the incumbent business model is a strong barrier to business model innovation (Chesbrough, 2010) (Prakash & Bettis, 1986) (Bouchikhi & Lakhani, 2003). A dominant business model design is shared in an industry as an industry recipe and may prevent niche innovation from breaking through (Teece, 2010) (Björkdahl & Holmén, 2013) (McNamara, Peck, & Sasson, 2013) (Spender, 1989).

As such, the business model logic can be viewed as an integral part of the current socio-technical regime being aligned to the other system elements such as user preferences or regulation, and in turn providing for their alignment (Bidmon & Knab, 2014).

The current dominant business model design is characterized by the fact that cars are privately owned. Because this is the current perception of the transport system, this value proposition is forming a barrier for business models that have the goal of sharing vehicles.

In the next chapter, the business models of car sharing will be identified and discussed and the background of car sharing and the sharing economy will be elaborated upon.
2.3. Car Sharing
As already mentioned in the introduction, the last decades are characterized by the fact that more and more start-up entrepreneurs have launched new business models. These business models attempt to tackle issues like the economic recession, the depletion of natural resources and other environmental pressures, while still caring for the sense of community amongst each other. The ‘sharing economy’ is an entrepreneurial movement that is trying to redefine the nature of today’s business models (Mouazan, 2013). According to Rachel Botsman, the sharing economy (or collaborative consumption) can be defined as: ‘an economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership. It is reinventing not just what we consume, but how we consume’ (Botsman & Rogers, 2010). This chapter will try to elaborate car sharing, a concept within the sharing economy that is increasing in popularity.

Sharing Economy and Sustainable Development
From a sustainability point of view, the potential of the sharing economy is based around environmental, economical, as well as social benefits, summarized by Botsman as three of ‘the four drivers’. The fourth driver that Botsman touches upon are the peer-to-peer (P2P) technologies. Traditional modes of exchange are re-emerging, however on a more global level, as Botsman claims, than before.

Along with these four drivers, four principles introduced by Botmans will make the Sharing Economy system work. ‘Trust between strangers’ is the first driver and indicates the online trust that is one of the main challenges of the platforms of collaborative consumption. The second principle elaborates on Hardin’s ‘Tragedy of the commons’, mainly focused on the belief in a commons-based society. Elinor Ostrom’s idea of cooperating individuals in order to act in the common good is well explained, and might even work for capitalist societies (Ostrom, 1990). Thirdly, ‘idling capacity’ refers to goods with significant goods that are sitting idle most of the time. For example, car sharing is the solution when it comes to idle capacity, for the reason that a car is only used for one hour a day (Botsman & Rogers, 2010). Lastly, reaching a ‘critical mass’ is an important factor for collaborative consumption, since nobody can find a ride when nobody offers one (van de Glind, 2013).

These drivers taken into account, Botsman defines the sharing economy as ‘an environment in which economic and social systems enable shared access of goods, services data and talent’. Furthermore, Botsman states that the sharing economy implies an economic model based on sharing of assets that are underutilized. These assets can range from skills to stuff for monetary or non-monetary benefits (Botsman & Rogers, 2010).

2.3.1 Emergence of car sharing
In this section the sharing part of the mobility system will be underlined. Car sharing is a term that is used throughout most of the world in order to refer to mobility services. Although no correct or unique definition of car sharing exist, some important general characteristics are emphasized. Car sharing generally involves accessing a car owned by another person or entity in exchange for an agreed monetary payment. When a person has access to a car sharing car, that person gains responsibility for it and its use is for their own exclusive benefit. In order to access the car, the user most go through a pre-qualification process, implicating identity and driving-record verification. Another characteristic of car sharing comprises the payment in minutes or hours, and sometimes also based on travel distance, in order to finance the use of a car sharing car. Also, there may be a one-time sign-up fee or an annual subscription fee added by the provider of the car sharing system. Moreover, new car sharing platforms enable the distribution of vehicles throughout the city, whereas classical models often are centered at accessible points such as airport locations. Servicing or cleaning is done on an occasional basis, mostly by the operator’s staff (Le Vine, Zolfaghari, & Polak, 2014).
Sustainability and car sharing

Because car sharing is often associated with sustainability, this thesis discusses the perspectives on car sharing concerning sustainability as well. In order to make passenger transport sustainable, four conditions need to be satisfied, according to the main dimensions of the Brundtland Report (Holden et al., 2013). The first dimension regards the safeguarding of long-term ecological sustainability focuses on the impacts of transport activities and whether it threatens this long term sustainability or not. An indicator for this dimension is the daily per capita energy consumption for passenger transport and it maximum threshold by 2030 is 5.6 kW h per capita per day.

The second dimension implies the satisfaction of the basic transport needs, regarding a minimum of 9.2 km per capita per day travel distance by motorized transport. The last two dimensions include promoting intragenerational and intergenerational transport equity, expressed in a public transport accessibility level or the amount of renewable to total energy used for transport.

One can deduct from the paper of Holden et al. that countries like Australia must reduce their energy consumption for passenger transport while still satisfying basic transport needs. A solution for this is highlighted by the words ‘efficiency’, ‘alteration’ and ‘reduction’. This means that travel needs to be more efficient, in a different way and, in particular, travelling less is recommended (Banister 2011). Car sharing does not meet all the requirements, but can be a potential sustainability benefit, according to Banister (2008).

And even despite that one could argue that the goal of achieving substantial sustainability objectives may be too far away, the fact that we change our way of thinking about ownership, our wallet and the environment may cause such a shift in cultural meaning, that a transition of the mobility regime could be realized (Sheller, 2004). Therefore, the ‘sharing’ part is the key word in this part of the theory section, since this is a first substantial step towards a (sustainable) transportation system.

2.3.2 Business models of car sharing

Based on sustainable business model frameworks mentioned earlier in this thesis, Boons and Lüdeke-Freund (2013), established four important business model building blocks. The normative requirements of the constituting elements are the ecological, social and economic value provided by the value proposition through offering products and services, the infrastructure or supply chain that has to be rooted in principles of sustainable supply chain management, the customer interface that must enable close relationships with customers and other stakeholders to be able to take responsibility for and manage broader production and consumption systems instead of selling goods or services, and the financial model which should distribute economic costs and benefits among all actors involved (Boons & Lüdeke-Freund, 2013).

The underlying mechanisms of car sharing imply turnkey-based solutions, whereby drivers are charged for the time vehicles are used or the distance covered or combined, instead of paying for insurance, gas, maintenance or parking in designated spaces (Cohen & Kietzmann, 2014). According to Cohen & Kietzman (2014), business models involving car sharing provide additional value to members and have an extensive effect on local transportation networks, due to decreasing amount of vehicles that are purchased. However, not all car sharing business models are the same. Cohen & Kietzman distinguish between three business models, on which the four elements of Boons & Lüdeke-Freund are applied. This involves Business-to-Consumer Carsharing (also further categorized by roundtrip models and point-to-point models), Peer-to-Peer car sharing (between consumers), and a mixture of the two called collective car sharing (in the form of non-profit organizations). Besides these business models,
several more categories of business models are proposed by literature. Figure 5 gives an overview of different categories, types, or functions of business models and their elements.

According to Briggs (2014), Corporative Car sharing, or Business2Business car sharing is the latest addition to the set of existing car sharing business models like Business–to-Consumer (B2C), or traditional car sharing and Peer-to-Peer (P2P) or Consumer-to-Consumer car sharing (C2C). Cohen & Kietzman (2014) already applied the four elements to the B2C (including the cooperative model, which is in terms of the elements almost the same as B2C) and C2C or P2P car sharing. In this theory section, an addition to the proposed table by Cohen & Kietzmann is made by adaption of literature on corporative (B2B) car sharing (Cohen & Kietzmann, 2014). Table 2 provides a full overview of the three categories of car sharing business models and their elements.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Value Proposition</th>
<th>Supply chain</th>
<th>Customer Interface</th>
<th>Financial model</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2C (Car2Go, Zipcar) Traditional</td>
<td>Reduces emissions and congestion A vehicle when you want/need one</td>
<td>Original Equipment Manufacturer; some programs using electric vehicles and hybrids</td>
<td>Shift from vehicle acquisition to shared use</td>
<td>More affordable access to a vehicle than owning and maintaining potential for profitability and exit</td>
</tr>
<tr>
<td>C2C (P2P) (Relay Rides, Flight Car)</td>
<td>Reduces emissions and congestion A vehicle when you want/need one Usually more variety of vehicle types For the owner a way to generate extra income from a sub utilized resource</td>
<td>P2P models are unique in that they require virtually no additional production or suppliers; firms serve as intermediaries between owners and renters; generally more environmentally sustainable than B2C</td>
<td>P2P model encourages vehicle owners to share a resource For the renter it also shifts from acquisition to shared use</td>
<td>Provides additional income to vehicle owners to offset the high cost of ownership For renters it provides more affordable access to vehicle for than owning and maintaining scalable revenue model based on a percentage of transaction without need to acquire vehicles</td>
</tr>
<tr>
<td>B2B</td>
<td>Reduces emissions and congestion A vehicle when you(r company) want(s)/need(s) one</td>
<td>Original Equipment Manufacturer; some programs using electric vehicles and hybrids</td>
<td>Shift from vehicle acquisition to shared use. Encourages vehicle owners to share resource</td>
<td>More affordable access to a vehicle than owning and maintaining potential for profitability and exit</td>
</tr>
</tbody>
</table>
Business-to-Consumer (B2C) or Traditional Car sharing.
In Business-to-Consumer car sharing business models, vehicles are acquired by the company and supplied in a city on certain key points. Firms generate B2C business models in order to maximize profits. Due to increasing awareness of climate change, business model innovation in order to support sustainable mobility objectives are increasingly important. The element of customer interface comes forward in terms of members who are using their smartphone in order to locate and access (with a membership card) the nearest available vehicle. The member can drive the vehicle only for the time needed, which ensures that the idle time of the vehicle is kept to a minimum and the economic costs and benefits of car sharing a distributed in a fair way. Car sharing companies often seek to create stakeholder relationships within the cities were they operate, in order to gain preferential parking spaces at a discount or for free, even as other privileges like reduced tolls or the use of high occupancy vehicle lanes. Roundtrip B2C models require members to return the vehicle to the same location as acquired. Point-to-point or one-way models have the advantage of leaving the vehicle parked on the street near the members’ destination. Such models work with an additional fee, in order to compensate the cost of relocating the cars throughout the city. Moreover, cooperative car sharing, as mentioned in the paper of Cohen & Kietzmann (2014), is a model for organizations, in which members collectively contribute resources without the expectation of financial gain (Cohen & Kietzmann, 2014).

Consumer-to- Consumer (C2C) or Peer-to-Peer (P2P) Car sharing.
A different form of business models within the sharing economy, including the car-share segment, is the consumer-to-consumer or peer-to-peer business model. The model relies on a form of web intermediation, relying on mobile technology to connect owners (private individuals) of cars with potential drivers. Relay Rides and Flight car (renting out private car for departing passengers to be dropped off at airports) are examples of C2C car sharing startups that have emerged in recent years.

Business-to-Business (B2B) or corporate Car sharing
As mentioned above, Business-to-Business car sharing is the latest addition to the business models. One can deduct from the table above that the process of sharing is based on a mixture of the two prior concepts, leaning heavily towards the business-to-consumer part, since the focus of a business is to make profit. Because of the relative low added value of this extra model (nothing really special was added here), a comparison of the first two business models will be preferred for further comparative studies.

In conclusion of this chapter, one is able to see how the sharing economy is related to car sharing. Its emergence is supported by arguments of sustainable, economic and social benefits for society. Even when the substantial added value to sustainability may not be enough, car sharing does change our way of thinking and our underlying cultural meanings (Sheller, 2004). Therefore, the ‘sharing’ part was a key word in this chapter, being a first step towards the transition of the transportation system. Business models can be very helpful in defining the way we think, and therefore the function of the business model related to transition literature can be determined.
2.4 Reflection on Theory

In sum, three functions for business models in transitions can be identified. The first is that the business model can function as a device in order to support and popularize radical innovation. It can also be rooted in the socio-technical regime and raise barriers for growing niches. Or it could be a non-technological niche by itself acting at a more stable level (due to its boundary spanning nature) than normal technological niches. Figure 6, on the next page, shows the different functions of business models applied to the multi-level framework. One should note that these functions are not on all three levels of the multi-level perspective. Whereas the first two functions of business models are reflected in the level of the niche and the regime, the third is on a level that is somewhat in the middle of both the niche and regime. This study aims to investigate those three roles of business models in transitions, by applying it to the case study of car sharing in a city concerned with urban mobility: Sydney.

Australia is interested in all sorts of new initiatives to make their immense cities more environmental friendly. With respect to a big city like Sydney, with limited parking space and lots of heavy traffic, sharing cars is a hopeful option for making the city ‘green, global and connected’ (City of Sydney, 2015). Because more and more collaborative interaction emerged in Sydney, this can be experienced as the beginning of a societal shift, leading to a transition towards an environment in which the sharing economy is a leading strategy. This addresses a possible transition towards a car sharing system in Sydney. However, because Sydney is the case study that aims to help identifying the three roles of business model in transition, the research starts with a broad question considering these three roles of Business models:

To what extent do business models contribute to sustainability transitions?

This implies the thorough investigation of the three functions of business models and its particular effects of business models in the case study of car sharing. Business-to-Consumer (B2C) and Consumer-to-Consumer (C2C) are the two business model niches that are reflected in figure 6. Business-to-Business car sharing is a new type of business models that is added to the collection lately. However, because this business model is in fact similar to both the prior business models in all the pillars of the business model canvas and the aim of this study is to compare two business models, B2B car sharing is left out. In order to get a clear insight in the different behaviors of the different (B2C and C2C) business models in the transitions towards sustainable mobility, the boundaries and functions of the business models are identified based on the following sub questions:

- **How do the different car sharing business models interplay?**
  Business models tend to have a higher structuration than technological innovations, due to the boundary spanning nature of the business model. Co-innovation between different car sharing business models is possible within the sharing economy as a global niche. What is interesting to find out, is how the boundaries of the different business models are articulated and how the business model canvas is reflected in the car sharing companies. Interviewing CEO’s and customers will be a main way of investigation.

- **What is the role of car sharing business models in the support of car sharing?**
  For this sub question, insights will be gained about the stabilization processes caused by social networks, learning processes and the alignment of expectations. This is the way that business models can unlock the latent value of innovation (car sharing itself) and setting boundaries in order to stabilize the activities. Benefits and values of car sharing itself will be investigated and an overview of the car sharing network will be provided. Furthermore, interviews with car sharing experts will give more insight in the way car sharing is being supported.
- What are the barriers for car sharing?
The current industry recipe need to be revealed in order to find out what the barriers for the car sharing niches are. Regulations and user preferences need to be aligned with, in order to let a niche break through. Also, finding out in which ways the current infrastructure, culture or industrial networks are hindering the car sharing business models from breaking through will contribute to this sub question. Policy documents and governmental meetings can be of important value for defining the current situation.

Thus, the aim is to retrieve more insight in the added value of the business models (in the niches), its ways of popularizing car sharing (through e.g. networks) and the barriers that are formed in the regime, in order to give an answer to the research question stated above. The literature study that was conducted for this theory chapter contributes to a large extent to the background knowledge helpful for the case study that is conducted for this thesis.

Because the aim of this thesis is to build on the papers that explored the roles of business models in transitions, it is expected that the value propositions of the business models and the strict subdivision in business model elements creates boundaries that contribute to the co-evolution and development of business models on the niche (and regime-) level of the multi-level perspective. Furthermore, hypotheses in this thesis state that the peer-to-peer car sharing business model is increasing in popularity, relatively to traditional car sharing (although traditional car sharing is ore supported by the government, because traditional car sharing is more associated with governmental action). A hypothesis is that peer-to-peer car sharing will (in the end) scale or develop in a higher tempo than traditional car sharing, since peer-to-peer car sharing can cooperate with several peer-to-peer sharing companies all over the world.

Figure 6 – Outlook on the functions of business models in the multi-level framework.
The next chapter is discusses the methodology for the literature review, as well as the case study conducted for this thesis. Followed by a chapter about the context of car sharing in Sydney, relevant knowledge for the research on the roles of the car sharing Business Models in Sydney’s transitions towards sustainable Mobility. The case study chapters (chapters four, five and six) explores and elaborates upon the abovementioned hypotheses and investigates the potential outcomes in order to answer the research question(s) of this thesis.

Furthermore, from this point onwards (especially in the case study parts), B2C car sharing will be referred to as Traditional Car sharing, whereas C2C is called Peer-to-peer car sharing. This is because the Traditional – and peer-to-peer car sharing concepts are more popular than the other titles (B2C and C2C). Business-to-Consumer car sharing is comprised of a model where businesses deliver the service and the fleet of cars to customers. This car fleet is (traditionally) distributed across the city (older models were mainly based at airports), this concept is known as Traditional Car sharing. Because the popularity of these terms, the concept of traditional car sharing as well as peer-to-peer car sharing is more understandable and therefore utilized in the remaining part of this thesis.
Three | Methodology

This chapter clarifies in which way the research for this thesis was conducted. The several sections in this part of the thesis will explain how the data is collected, analyzed and validated.
3.1 Data Collection

Besides the extensive literature study that is performed for the theory section in this thesis, a qualitative research approach is taken. This study builds upon a comparative case study in the city of Sydney between two different types of business models: peer-to-peer car sharing and the traditional car sharing form. An important condition indicated that the cases should all concern an implemented car sharing system, already in the experimental phase, in order to represent niche in which car sharing in functioning. Furthermore, an important fact is that the research was conducted in Sydney, where the researcher and a (third) supervisor were based. Data and contacts were gathered via the Institute for Sustainable Futures, a research institute located on the UTS (University of Technology, Sydney) campus.

First of all, this research complies an iterative process of study. In the beginning, the research included a desktop and literature study on the cases and the roles of business models in transitions. With respect to conducting this literature study for the theory part, multiple steps were taken. A starting point was given by two supervising experts; this led to papers in the topics of transition studies, business models and the sharing economy. Also, course literature contributed to the enlargement of the literature base. Overlapping articles that combined these areas of research were of main interest for the collection of the most important papers. To widen the scope even more, articles in related leading academic journals were searched for. These include Energy Policy, Strategic Management, Long Range Planning, Journal of management, Technological forecasting, Research Policy and Journal of Cleaner Production among others. Articles mentioning ‘business models’, ‘sustainable development’, ‘sharing economy’, ‘car sharing’, ‘transitions’, ‘niche management’ or combinations of these were selected for a first scan. Relevant papers were then read and summarized. The articles were divided based on subject such as: general business model literature, transition literature, sharing economy literature, but also combined topics such as business models of car sharing.

Furthermore, authors like Bidmon and Knab, Geels, Botmans and Frenken were followed in literature. This led to some interesting insights and papers or books added to the list. After this process snowballing was used to either find recent literature that cited these relevant papers or find literature cited by them. The selection of papers was an iterative process; as the analysis progressed more papers were still added. After this extensive search, new sub questions emerged for investigation. This resulted in the application of the research- and sub questions onto the case study of car sharing in Sydney.

A hallmark of case study research is the use of multiple data sources (Baxter & Jack, 2008). Multiple data sources enhance data credibility (Yin R. K., 2003) (Patton, 1990), which makes it a good research strategy to follow. Furthermore, a case study research also offers the unique opportunity to compare qualitative data, obtained via for instance interviews and observations, with data that is quantitative such as statistic and survey data (Baxter & Jack, 2008). The upcoming sections will describe the various data sources that were used, a complete overview can be found in the appendix.

The case study tries to find the roles of business models in transitions reflected in the car sharing case in Sydney. The selection of Sydney as a case study was a strategic and information-oriented one, regarding the fact that Sydney’s characteristics are hard to find anywhere else in the world (Flyvbjerg, 2006). For instance, Sydney is a city that is car
dependent, and the city and its suburbs are spread out across a large distance (see chapter four for further elaboration on Sydney). This implies that Sydney as a research spot for car sharing is a critical case, which means that Sydney could be an example for the rest of the world when all the barriers are overcome (Patton, 1990). Car sharing expert Jennifer Kent argues that if car sharing is able to successfully evolve in Sydney, it has to develop and expand in the rest of the world (Interview Expert JK, 2015).

The first function of the business model in a transition was that it can function as a device to ‘popularize’ radical innovations. One can find out about a business model’s stabilization processes (social networks, learning processes, managing expectations), where it tries to unlock the latent value of innovation and spans boundaries for the business. Therefore, an insight on networks, learning processes, expectations and the value propositions of both business models was requested. For the second function of business models in transition, it is important to gain knowledge about the current regime and its constrains for upcoming (car sharing) business models. In order to get a clear understanding of the current situation, policy document and regulations can provide more information. Additionally, experts on car sharing can show how for instance infrastructural or market barriers are present. The answers for the third function of business models in transitions are partly nestled in the information that was gather for the first function. In order to gain more insight on how both business models behave in the niche or live as co-innovations, the boundaries of the business models should be revealed.

3.1.1 Interviews
Interviews were held in order to acquire answers for the stated sub questions. Multiple CEOs of the different car sharing business models were interviewed in Sydney, for the purpose of achieving a perception on their view on current barriers for car sharing, the value proposition of the business model, the future perspective on their businesses and a comparison between the business models. Car sharing experts were asked for their knowledge on the current regime and its barriers for car sharing, their view on the value proposition of the car sharing business models and the future perspectives on car sharing. The same questions were asked to representatives of the government (or city of Sydney), but that specifically focussed on the role of the government and the city council on car sharing. Finally, expectations about the different models were revealed on the basis of interviews with the car sharing customers of each business model.

Moreover, they shared their view on the future of car sharing and their knowledge on other business models as well. In general three themes can be distinguished according to which the interviews were structured. The different segments of the business model, including an extensive elaboration of the network of the business was one theme, followed by the ‘regime’ where the different barriers and stimulators were indicated, and lastly the questions about future perspectives that were present in every interview. Because the case study is about the comparison between the different business models, a reflection towards the other business model was always asked for. The CEO’s were found after several e-mails and phone calls which eventually led to the right persons. This also worked for the government representatives, however car sharing experts were found based on the publication of articles on car sharing located in Sydney. The car sharing customers were approached via social media, because the researcher (as a foreigner) did not have an extensive network in Sydney.
After the first interviews with customers, the method of snowballing was used in order to find more interviewee’s. It was not always easy to get the right contacts or help from the main actors involved in car sharing. Therefore, not all of the interviews were held face-to-face. Some stakeholders were based somewhere else in Australia and were interviewed via phone or e-mail, because the distance between Australian cities was too large to overcome.

Furthermore, some of the interviewees preferred to be anonymous. The tables in appendix A show the data that was gathered for analysis, including the anonymous respondents. Interviews were semi-structured, so that respondents were comfortable with answering questions but it was structured enough to make sure all the information was retrieved. An example of the interview guide for CEOs is shown in Appendix C.

3.2 Data Analysis

For the analysis of the data, the interviews were transcribed. For the sake of data triangulation, not only the interviews, but also several news articles and reviews were coded. Coding was executed with excel as a tool on the basis of structuring content analysis comprising theoretical classes (Gray, 2004) (Creswell, 2009). Furthermore, discourse analysis provided context between interviews and information about visions and expectations of the interviewees. Overall, the aim of the data analysis process was to exploit the constructionist ontology, juxtaposing different business models and regime contexts (Hardy, Harley, & Philips, 2004).

Content analysis was chosen for the structuration of the interviews, because the aim was to find answers for the three roles of business models in transitions (regarding the research question of this thesis). According to the theory, the three roles can be categorized into codes in order to conduct the analysis. These codes included the regime (which could answer the research question about the dominant business model – nested in the regime - placing barriers for niche business models), the niche (implying co-evolution of business models on a niche level) and the transformation from a niche to a regime business model (or in short: ‘transformation’).

The first time part of the texts or interviews describing the niche, regime or transformation factors were coded. An example of the first categorization (Regime, Niche and Transformation) applied to a news article can be found in appendix B1. For the second part of the analysis, the text was read multiple times again, and the different functions of business models in transitions were divided into new sub categories. An overview of the subcategories is illustrated in figure 7. Where possible, some sub categories were again divided into certain topics in order to get a grip on the importance of the matter. For example, the different barriers from the regime codes (culture, technology, infrastructure & politics) had several explanations that were emphasized in one sentence in order to cross-check with other interviews as well (discourse analysis). A table of this process is shown in Appendix B2.
In order to find out how different business models are co-evolving on the niche-level, the business model canvas was used to analyze and structure the different business model elements for both traditional- and peer-to-peer car sharing. In the end, the value propositions (for instance) that are summarized in the business models of the results chapter, are aggregations of the value propositions that were already mentioned in the prior chapter (five). When a value proposition was mentioned multiple times by the separate companies, it was taken into account as combined value proposition. This also holds for the other elements of the business model that are discussed in this thesis.

All data found and analyzed is presented in a qualitative narrative providing a discussion on the data. Overall, these steps are taken from Creswell (2009), who elaborates on qualitative data analysis steps. Relevant documents and interview reports are analyzed on their content (Creswell, 2009). The process of data analysis required going back and forth in the research approach, relating theoretic insights to empirical data and the other way around. This messy process is a characteristic of qualitative research in which processes and contexts are part of the investigation.

### 3.3 Data Quality

This last section of the methodology chapter will end by showing how the on the aspect of validation and reliability are solidified.

#### 3.3.1 Validity

Two types of validity are existent within the field of researching, namely internal and external validity. Internal validity is about avoiding bias in your research, by providing rich data. This issue was tackled by following the guidelines for data triangulation summarized by Creswell (1994). First, the research results from interviews with car sharing CEO’s have been presented to experts in the field of industry. Secondly, findings about the company were discussed with participants and again checked with other sources as well. In other words, the interview results have been triangulated with other data sources such as documentation from press releases,
company records, company websites, policy documents and congress proceedings (Creswell, 1994). Furthermore, other interviews executed by other interviewers were taken into account. Moreover, during the interviews, some questions were asked about factual information that was adaptable from different sources. In this way, it could be checked whether this information was similar and thus consistent.

External validity corresponds with transferability or to what extent the results are generalizable. In order to conform to the external validity, the research process is well documented and evaluated. Moreover, the context of the comparative case study is elaborated upon in several parts of this thesis as well. Because the case study was specifically held in a big city like Sydney, results are not generalizable for more remote parts on this planet. However, since the interview guides were very clear and structured, future researches could be capable of reproducing this study elsewhere. Also, because of this strategic sampling, the aim of this study was not to be generalizable for a population, but for a theory. Therefore, the generalizability of this research is reflected in the theory about car sharing or sharing economy based-business models and their contribution to sustainability transitions.

3.3.2 Reliability
Creswell summarizes reliability as “the issue of generalizability, the uniqueness of a study within a specific context”. The methodology has been carefully described and recorded, and evaluated, as recommended by Yin (1989). Therefore, this approach can be easily reproducible for other cases (Yin R., 1989). Also, the research was conducted at Sydney’s Institute for Sustainable Futures, a reliable scientific research institute. The local supervisor was able to check the interview guides as well in order to reach similar interpretations. Furthermore, several detailed interview articles were compared with findings of the interviews held by this researcher.
In the theory section of this thesis, an explanation on car sharing was given along with a link to the rise of the sharing economy. This chapter, highlights the development of car sharing and will give an insight in the context of car sharing regarding the area of Sydney, Australia. This will show how a transition of car sharing in this city can evolve. Furthermore, important landscape and regime characteristics will be reviewed in particular for the case of mobility in Sydney.
4.1 Transportation in Sydney

This section of the thesis describes what Sydney’s underlying urban characteristics are, in its role to support (sustainable and sustainability) transportation initiatives like car sharing. Sydney is the oldest and most populous city in Australia. Australia was once occupied by various aboriginal clans, but captain James Cook and the British settlers that arrived in 1788 changed the situation (Manly Council, 2016) (City of Sydney, 2014).

Urban Development

The first people to arrive in Australia were convicts, who found punishment in the transportation rather than incarceration. Bridges, Roads, public buildings and wharves were constructed using convict labor, and this initiative of Governor Macquarie also lead to the authorization for convicts to re-enter society as free citizens when they behaved well (Dictionary of Sydney, 2008). In 1822 banks, markets and thoroughfares were established in the (small) town. The population had grown to 35,000 by the time that the convict transportation to Sydney had ended (the year 1850) (City of Sydney, 2014).

After a gold rush in 1851 and two depressions (among which the great depression in 1930) the construction of the Sydney Harbour bridge was initiated in order to decrease the overall unemployment in the city (Australian Government, 2008) (Parliament of New South Wales, 2016). The population continued to increase despite the depression and reached a total amount of one million by 1925. The Sydney urban area had spread out to Strathfield in the West and the coastline in the east. For the most part, the urban area followed the rail network (Mear, 2008). The trams in the inner city and the heavy real network towards the outer suburbs of Sydney (as what we now know as Parramatta or the North Shore) (O’Neill, 2010).

After the Second World War, and later in 1975, the private car had become widespread. The motor vehicle has determined the pattern of Sydney’s urban development and the so-called ‘urban sprawl’ (Sydney City Council, 2016). Car ownership was made necessary for many households due to the growth of ow density housing in the city’s outer suburbs. According to Davison (2004), the rapid increase in private motorized transport from 1945 to 1975 accelerated the centrifugal forces operating on Australian cities, transforming as it further entrenched suburban forms of life (Davison, 2004). The 110-kilometre Sydney Orbital network, part of the nine Metroads, were the most important roads in Sydney. The (once) largest tram network in the world (and the second largest in the British Empire – before the Second World War) made place for the internal combustion engine, offering flexibility for buses rather than trams (Troy, 1995).

Urban Mobility

Buses thus were increasing in popularity, leading to a progressive closure of the tram network in 1961. Today, bus services are operated by a mixture of private companies and the Government. In the areas that were previously service by trams, the government operates (State Transit Authority of New South Wales). In other areas, the private operators are active (albeit partly funded by the state government). The Opal card is an integrated ticket that operates on both routes. By 2014, a total of nearly 225 million boardings were recorded across the bus network (Wotherspoon, 2008).

Furthermore, a 12.8 kilometer long light rail network opened in 1997. The network links the Inner West and Darling Harbour with the Central station, carrying 4.5 million passengers per annum (Transport Sydney Trains, 2013). A second light rail line (12 km) is in the planning for 2019, serving the CBD and the south-eastern suburbs. Nowadays, trains services are operated by ‘Transport for New South Wales’, maintaining 937 kilometers of railway and 281 million journeys each years, spread over an amount of 176 stations (Transport for NSW, 2014). The first railway (so not the light rail) in Sydney was constructed in 1854 and opened for service
from central station from 1906. Prior to that year, the central railway was located further west of the current station (Transport development Sydney, 2014).

The Sydney metro Northwest, part of Sydney first rapid transit system known as the ‘Sydney Metro’ is expected to open after years of construction in 2019, involving the second underground Harbour crossing (Saulwick, 2015). In 1932, at the time the Sydney Harbour Bridge opened, the ferry service of the city was the largest in the world. The amount of passenger declined from 145 to 1963 but has recovered somewhat recently. The ferry network serves from Circular Quay to Balmain, Double Bay, Manly, Parramatta, Taronga Zoo, Darling Harbour and Cockatoo Island (The Rocks, 2016). Furthermore, Port Botany has surpassed Port Jackson as the city’s major shipping port.

The last public transportation method in Sydney is concerned with aviation. Sydney Airport (officially called Kingford-Smith) is the busiest airport in Australia, servicing 46 international and 23 domestic destinations (Laird, Bachels, Newman, & Kenworthy, 2001). From 2016, a new facility will be constructed at Badgerys Creek, named Western Sydney Airport. In 2013, Sydney airport handled 37.9 million passengers (Cox & Massola, 2014).

Environmental Issues

As announced in the introduction of this thesis, climate change, greenhouse gas emissions and pollution are major issues for Australia. Sydney has been criticized in the past for its lack of focus concerning the reduction of pollution, the maintenance of water quality and cutting back on emissions. Developments of the analysis of air pollution in the Sydney metropolitan region has led to the release of the ‘Metropolitan Air Quality Scheme, inducing a broader understanding of the causation of pollution in Sydney (Smith S., 1998). Cities in Australia belong to some of the most car dependent cities in the world, including Sydney in particular with a very high level of car dependency – by world city standards (Amphlett, 2011) (Dick, 2005). The urban sprawl (since 1945 – due to the introduction of the private car) and the low level of mass-transit services significantly increases the likelihood of car dependency (Wade, 2014).

Strategies have been focusing on the reduction of car pollution by encouraging the use of public transportation. In 2014, 84.9% of the Sydney households owned a motor vehicle and 46.5% owned two or more. When Sydney residents travel to work, 4.1% walks, 5.2% catches the bus, 9.1% catches a train, but 58.4% uses the car (Australian Bureau of Statistics, 2008). The roads are filled with up to 350,000 cars simultaneously during peak owners, leading to significant traffic congestion (Australian Bureau of Statistics, 2008). This costs residents and businesses $3.5 billion each year and this amount will rise to $8 billion by 2020 (City of Sydney, 2012).

However, in the city of Sydney, only 25.2% of the residents use a car, whilst 25.3% walks, 15.8% takes the train and 13.3% takes the bus. Cycling trips have increased by at least 113% across Sydney's inner-city (since March 2010) with an amount of 2,000 bikes during peak-hour passing through intersections on an average weekday (Australian Bureau of Statistics, 2008). An explanation for this lies in the scarcity of parking spots in the (dense) city Centre (City of Sydney, 2012).

In the last decades, more and more apartments were built in the city Centre in order to satisfy the growing demand for housing. Nowadays, parking in the streets across the city is in high demand as well. In order to balance the competing demands for parking space, most City streets have time restrictions and ticket parking. These time limits can help to ensure parking turnover in shopping areas, can encourage public transport use and limit commuter parking in residential neighborhoods. Residents, their visitors and small businesses in the local area may be eligible for parking permits. This exempts the user from most time limits and parking meter fees in specified areas, but does not guarantee parking spots during peak hours. Thus, the
Sydney council is coming up with several plans concerning (public) transportation and the reduction of congestion and pollution (City of Sydney, 2012). For instance, in 2008 in Australia, the city of Sydney became the first council to achieve formal certification as ‘carbon-neutral’ (City of Sydney, 2011). Since 2006, the city had reduced its carbon emission by up to 20%. Currently, the City of Sydney is executing the Sustainable Sydney 2030 program, concerning the re-education of the total energy consumption and pollution. One of these 2030 strategies involves the support of new ‘sustainable’ initiatives, such as car sharing (City of Sydney, 2012).

**Car Sharing**

Two authors in the field of sustainable transportation argue that ‘although car sharing traces its roots to central Europe, this once novel concept has grown into a mainstream transportation mode, operating worldwide in approximately 1,100 cities in 26 nations on five continents’ (Shaheen & Cohen, 2007). The largest two epicenters of the car sharing system are Europe and North America, however car sharing in Australia and New Zealand, Asia and South America are rapidly expanding, which forecasts growth in other areas of the world.

Shaheen & Cohen elaborated on the key forces that, in all likelihood, contributed to the car sharing’s expansion. Higher energy costs (due to e.g. oil crises), economic uncertainty (after the financial/economic crisis) are part of the explanation. Mainstreaming of car sharing, and the expansion of multinational car sharing operators are important indicators of growth of the car sharing system. Furthermore, the fact that one-way car sharing and personal vehicle sharing is increasing and the rise of traditional car rental providers and car sharing automakers are also interpreted as one of the key forces. Moreover, this expansion will be driven by positive developments in competition of shared-use vehicle services and increasing popularity of the system. Also, the geographic and demographic entry into new markets and new technologies that arise, supporting car sharing services around the world, are mentioned by Shaheen & Cohen as important factors in the rapid growth of the car sharing system. For example, experts reported Australian market diversification into college, business and planned community markets in 2010. Although insurance remained expensive, growth potential in metropolitan regions between 2010 and 2015 was estimated at 3% of individuals over the age of 21 in Australia (Shaheen & Cohen, 2007).

Referring to the upcoming chapter about car sharing business models in Sydney, it is important to mention Sydney’s plans for car sharing are part of the plans to become ‘green, global and connected’. In 2007, the city of Sydney conducted a car sharing trial, from which the results were published in 2014. This led to the decision of the city council to partner with traditional car sharing companies in order to introduce a state (car sharing) fleet. There are thus decisions made in politics induced from the characteristics and trends around car sharing that were examined.

4.2 A Car Sharing Transition in Sydney

The abovementioned trends and car sharing characteristics play an extensive part in the transition towards a system that is fully comprised of car sharing. One of the most important influences within the landscape level concerns the wish for a more sustainable environment. Several interacting processes lie at the foundation of the car sharing niche to eventually grow to become an innovation embedded in society. The trajectory of this initiated niche can be analyzed in detail using the multi-level perspective (MLP). This approach aims to open up the black box surrounding this socio-technical transition by distinguishing three different levels, namely the socio-technical landscape, the socio-technical regime and the technological niche (Geels F. W., 2002). The three levels can be depicted as a nested hierarchy, as regimes are embedded in landscapes and niches are embedded within a regime (Grin, Rotmans, & Schot, 2010). The next paragraphs will elaborate on the theory of MLP, applied to car sharing in Sydney.
Climate Change
The 'common pool problem' is a currently well-known concept implying the increasing scarcity of resources, such as oil. Furthermore, 'Peak Oil', referring to the maximum rates of conventional oil production is important for the mobility regime as well (Geels F. W., 2012). Looking at the multi-level perspective, these are landscape developments that are especially relevant concerning car sharing in Sydney. The so-called transition towards sustainability, involving the diminishment of the role of fossil fuels in current societies in favor of green technologies like solar PV and wind power, is a potential solution for this common pool or 'peak oil' problem.

The city of Sydney is riding the green wave as well, with its Sustainable Sydney 2030 plans that aim to combat climate change by implementing more decentralized, sustainable energy production and making more efficient use of the energy available (City of Sydney, 2015). The Australian Green Party adds some specific goals related to transport, including the increase of opportunities “for the community to participate in and guide transport planning” (The Greens Australia, 2015). Policies or at least the setting of policy goals like this can have a positive impact on the car sharing companies (like GoGet) in Sydney, which promote transport planning through their car search-interface and claim to address air pollution by using new, fuel-efficient and/or hybrid cars (GoGet, 2015). This positive impact may come in the form of municipal subsidies, or some form of assistance in the way of infrastructure – e.g. car share bays. What’s more, developments like this are already taking place, judging by the cost-benefit analysis report by Sydney’s City Council (SGS Economics and Planning, 2012).

On the same level, the Great recession which started in 2007 as a financial liquidity crisis, affects the entire world economy in a way that it is perceived as the worst global recession since World War II. Those two problems (climate change and financial crisis), together with the fact that half of the world lives in cities due to hyper urbanization in the 21st century, contribute to the emergence of new forms of sharing technologies. Urban transportation networks for example is subject to the new collaborative sharing economy (Harris, Fernando, Brewer, Buczynski, & McCartney, 2011).

Urbanization
As mentioned in the previous section, a landscape trend relevant for car sharing in dense urban areas like Sydney, is thus the growing urbanization. As a result of this, various internal tensions put pressure on the current mobility regime (Jeekel, Emanuel, Oldenziel, & Schipper, 2015). For car sharing, most relevant in that respect is the increasing scarcity of parking places. Sydney is known to be one of the most expensive cities in the world when it comes to parking your private car, indicating or at least hinting toward a serious lack of parking capacity (NRMA, 2014). This is illustrated by the fact that most parking facilities near train stations are utilized at full capacity before 7:00 AM, according to National Roads & Motorists’ Association President Kyle Loades (Stanton, 2015). The effect this dire need for parking places has on the opportunities for car sharing is clear. For example, GoGet claims that each of their cars is shared by approximately 23 members, and that for every GoGet car in use, 9 private ones are taken off the road (GoGet, 2015). This means that parking problems can be seriously alleviated through car sharing if GoGet’s claims are true.

ICT and the Sharing Economy
Moreover, the rise of different socio-technical systems has reshaped the way citizens interact with one another. One could perceive the invention and growth of the internet as a regime in which three main technological developments occurred. Firstly, ecommerce and electronic payment systems are trends that change the way that customers collect or buy goods and services. Also, social network platforms built social relations among people and make it easier to facilitate supply and demand matching. Mobile devices help people access those new
services anywhere and anytime they want (Castells, 2004). This is relevant for the upcoming landscape development concerning the rise of the sharing economies.

‘Sharing is the new having’ is an often-used aphorism by advocates of these types of socio-economic ecosystems. A sharing economy is basically a system in which people rent various assets from each other, e.g. beds, electrical appliances, or cars, instead of permanently acquiring them for their own private use – as is still often the case in the present day and age. Most often though, this sharing is facilitated through the use of technology for matching up owners and renters, which greatly reduces transaction costs and therefore allows for large-scale sharing (The Economist, 2013). Examples of sharing systems are Airbnb (for rooms), Uber (for cabs) and NeighborGoods (for general goods). Advocates of these systems claim that sharing economies are more sustainable than the current system of mass consumption and waste (Matofska, 2014), but critics assert that more sharing – or renting, which it actually most often is – will create a large market of freelancers with contingent part-time jobs and will come at the expense of major disruptions in existing markets (Cagle, 2014).

Following the sharing advocates’ line of thought, the rise of a culture of sharing provides car sharing companies in Sydney with the opportunity to more easily open up the market of private car transport. On the other hand, if critics gain the upper hand in this debate and sharing economies in general will be seen as job-stealing market disruptors (see also the network and the Niche vs. Regime juxtaposition in chapter six for a broader discussion), it might hamper the development of car sharing as well.

Another way of innovation that is based on the contribution of several individuals or organizations is co-innovation. The most important benefit of this is that it provides more ideas and technologies (Botsman & Rogers, 2010). Thereby, new business opportunities appear, risks are shared and complementary resources are pooled due to the close collaboration with external partners.

Summed up, there are a few major landscape developments at play that can influence the development of car sharing, in Sydney in particular. The increased call for more sustainable products and systems may very well favor the developments of car sharing, as does the growing scarcity of parking spots. It appears that the growing importance of social media and sharing economies in general can benefit car sharing as well, although the odds may be turned against them in the future if sharing somehow gains the negative connotation of market disruption.

The drivers at the landscape level and the shifts at the regime level together can provide windows of opportunity for the emergence of the sharing economy. According to Botsman, car sharing business models can be viewed as niches that could contribute to a shift into a car sharing regime (Botsman & Rogers, 2010). However, there are some landscape trends that can help stabilize the automobility regime. According to Geels (2012), these are cultural preferences (private property rather than collective ownership and also the preference for speed and time saving), cultural values (freedom, choice, progress, status and wealth, autonomy and privacy (Sachs, 1992)), the physical landscape (urban structures, as mentioned in previous paragraphs), Macro-economic growth in developing countries (where people can buy their first car) and the demand for mobility, increased by globalization and a shift towards a network society. These are the underlying assumption for the business model of private car ownership that is currently nested in the mobility regime (explained in the next section).

**The Business model of the private-car regime**

In order to make a comparison with car sharing business models that are currently nested in the niches, it is necessary to identify the regime business model of car ownership. In this section, the value proposition and other parts of the business model canvas will be discussed.
based on the current ways of car use. In the next chapters, this outcome can be compared to the different car sharing models so that one can attain a grip on how the barriers for niche business models arise.

Value propositions of car ownership
First of all, a lot of benefits can be deduced when comparing car ownership to not owning a car at all. Freedom is a common example of one of the benefits of car ownership that arose along with the development of the first cars during the 18th and 19th century (Beirão & Sarsfield Cabral, 2007) (Freudendal-Pedersen, 2009) (Sachs, 1992). Freedom can be simultaneously associated with flexibility of choice, and on-demand car use. Furthermore, freedom is linked with the feeling to be free to go anywhere you want (Sheller, 2004). However, according to Urry (2004), freedom is not perceived as an advantage by everyone that is related to the mobility regime. The author argues that freedom is a form of flexibility, enabling the car driver to travel in any direction at any time of the day. Much of ‘social life’ was not imaginable without the on demand availability and flexibility of the car. However, he states, the automobility system coerces people into an intense flexibility, constraining the car users to live their lives stretched spatially and in ways that are time-compressing, thus representing an ‘iron cage’ of modernity. The flexibility of the car makes other modes of travel inflexible and fragmented, creating inconvenience, danger and uncertainty, especially for non-car users (Urry, 2004). These are narratives that only automobility can satisfy (so according to Urry, freedom is prevented but also created by car ownership).

Convenience is thus another value proposition of car ownership, with regard to getting from A to B in a short time (shorter than walking for example) and without too much of a hassle (Ball, 2014)(Sachs, 1992). Thereby, one is able to remain dry and comfortable during winter and rain seasons. Moreover, compared to public transportation like trains or planes, one of the benefits of car ownership can be characterized as ‘certainty’, because the driver of the car is the one who makes sure that the car leaves and arrives on time (that is, especially with short distances and not being stuck in traffic jams (Sachs, 1992)). Lastly, status is a very important for car owners as well, since owning a Ferrari is preferred over getting an upgrade on your public transport card. As this value proposition concerning status is nested in the beliefs of human beings, it can be considered as part of the culture, especially in first world countries like Australia (Malcolm, 2003).

Supply Chain
The key activities of a person owning a car are the purchase of a car, acquiring insurance, maintenance, paying taxes and arranging the necessary legal affairs (e.g. when someone damages your car). In order to be able to drive a car, a car owner needs resources including the car itself, a driver’s license, a parking space (or garage) and the necessary infrastructure (traffic lights, motor ways etc.). Furthermore, with regard to achieving status, having the newest technologies in your car (GPS, Cruise control, fuel efficiency and so on) can be of added value.

Interaction with key-partners is important in order to be able to achieve those resources. Examples of actors are the car manufacturers (also for providence of car technologies), car wash and auto garages (for maintenance), the government (for taxes and infrastructure), road workers (infrastructure), license providers, police (legal affairs) and parking garages (for parking spaces). Thus, the costs for car owners are mainly comprised of taxes, maintenance costs, getting a driver’s license and the purchase of the cars and technology.

Customer Relations
Regarding the customer segment of private car use, people without a drivers’ license are obviously excluded from the target group. Therefore the customer age starts with the legal age for people to obtain a driver’s license, which is currently adjusted around 16 years. Until people are not able to drive a car anymore (loss of drivers’ license, disabled, too old), they are still
part of the customer segment. Furthermore, the customer segment could be divided in a professional driver group (racers, taxi drivers, etc.) and an amateur group as well. The purchase of a car is possible with the help of several channels, including internet, mail, phone or visiting the car dealer in person (the most common channel of this business model). Customer relations involve test driving, vehicle inspection (MOT), maintenance washing and taxation of the vehicle. The revenue stream for a car owner is mainly involved with time-saving, in comparison to other ways of transportation like biking or walking. Considering the motto that time equals money, one can argue that this benefits yields the opportunity costs of traveling (Amit, Muller, & Cockburn, 1995).

![Figure 8 - Dominant business model logic](image)

The section on landscape developments concerning car sharing already summarized the landscape factors that could stabilize regime characteristics (e.g. cultural preferences and values, economic growth and rising mobility demand). However, because of some factors the regime is also slightly changing. For example, the rise in mobility demand causes a lack or scarcity for parking spots on urban space, making it less ‘convenient’ or ‘flexible’ for car owners to grab their privately owned car. Furthermore, the perception of freedom (as mentioned earlier) is tricky. The fact that one can only drive a car with a driver’s license means that owning a car is only beneficial for ‘freedom’ and ‘on demand use’ when there is someone with a driver’s license in the neighborhood. Moreover, the ‘freedom of breathing air that is not polluted’ (by cars) is becoming rare. Increasing concerns about climate change and the environment are already causing a slight change in how car ownership is valued. Along with developments in connections with transportation and the internet, smart-cards and transport policies (Vigar & Healey, 2002), one can see the transport regime de-stabilizing due to changes in perceptions on private car use. According to Geels (2004), we now need niche experimentation to gain momentum in order to break through the current regime and cause a tipping point for a (sustainability) transformation (Geels F. W., 2012).

This summary of the business model characteristics of car ownership provides a useful insight in the way regime barriers arise and obstruct the car sharing niches. In the next chapters, two different car sharing niches will be discussed. One niche implies the business model of ‘business-to-consumer’ car sharing, for convenience described as the ‘traditional’ car sharing business model (because traditional car sharing is a more popular and easier concept in the car sharing world). These business models include companies like GoGet, GreenShareCar and Hertz on Demand. The other niche consists of peer-to-peer car sharing businesses (previously characterized as consumer-to-consumer), including CarNextDoor and DriveMyCar.
In this chapter, an extensive elaboration will follow about the several business in Sydney that were part of the car sharing case study. Those businesses concern traditional – as well as peer-to-peer car sharing models and are all part of the Sydney area. With each company that is discussed in this chapter (with a total of five companies), their individual business model, network and development over the years are explained.
5.1 Traditional Car Sharing

The main characteristic of a traditional car sharing company is that the company buys a fleet of cars and distributes it around the city. In Sydney, the traditional car sharing sector consists of companies like GoGet, GreenShareCar and Hertz (on demand).

Interest for car sharing started growing within the City of Sydney council around 2007. The city council decided, together with the three traditional car sharing companies, that it was time for a car sharing trial (City of Sydney, 2005) (City of Sydney, 2007). Research around that time already showed that car sharing is an efficient use of parking space (by allowing the use of a large number of people for a single vehicle), it reduces the competition for parking spaces and congestion, which is ultimately beneficial for all the road users (SGS Economics & Planning, 2012). Besides that, car sharing helps reducing overheads for citizens who rarely drive, with no need to own a private car. In sum, the city of Sydney argued that car sharing is sustainable, practical, but also increasing in popularity among residents and businesses.

According to the city council’s statistics, approximately 35% of the households in City Centre do not own a car, compared to the 12% of households in the rest of the Sydney area. Metropolitan Sydney thus has the lowest rate of car ownership. Furthermore, after the car sharing trial started, the number of car sharing members steadily increased. In four years, membership has grown from 6,300 to approximately 26,000 persons. Every car share vehicle parked on the city’s streets serves on average 37 members, with a total membership rate that covers an estimated 10% of households in 2016 (City of Sydney, 2014).

This public interest for car sharing was supported by the government through the imposition of strict requirements for the quality and reporting of the three car sharing companies that were involved. These requirements included the availability for membership among all residents and businesses, fuel efficiency and lowest emission category for every vehicle type, availability of 24-hour booking systems and monthly reports of data on the use of individual car sharing spaces.

The availability of car sharing spots is illustrated in figure 9. Most spots are occupied by GoGet vehicles, the darker dots represent GreenShareCar and the rest of the parking spots are dedicated to cars from Hertz on Demand.

An independent economic appraisal was commissioned for car sharing in Sydney in 2012. This ‘SGS Economics and Planning Study’ underlined the abovementioned car sharing benefits (efficient vehicle usage and reduced traffic congestion) along with newly proved advantages of car sharing. They found that car sharing in Sydney has led to reduced parking times, reduced travel times, personal health improvements, decreased greenhouse gas emissions (due to less cars on the road) and parking and congestions savings to residents of approximately $21 million a year and 18.5 million dollars in deferred car purchases by businesses and residents (SGS Economics & Planning, 2012).
Besides benefits for members, residents and the city council, the party that conducted the car sharing study found that there are some benefits for car sharing manufacturers as well. These include the potential niche market for increased sales of vehicles (especially Toyota has noticed this opportunity in Sydney), a chance of product differentiation that could benefit the company’s brand value (in particular for green car share cars) and the opportunity to test and promote novel products in a niche market. The other side to this, however (as mentioned shortly in the context chapter as well) is that car manufactures will note an overall lower demand for new cars from private businesses and individuals. This is in particular true for traditional car sharing, since these companies oftentimes buy a fleet of identical cars (from a single brand – so other car manufacturers have a disadvantage).

Moreover, this ‘independent’ source (SGS Economics and Planning Study) cooperated with GoGet in order to find cost differences (per month or per year) between car sharing and private car ownership (SGS Economics & Planning, 2012). All of the traditional car sharing business models in Sydney (and peer-to-peer car sharing as well) claim to offer cheaper prices and service than owning cars. They estimated that the costs of a privately owned Toyota Yaris (5 door automatic hatch) is about $482 per month (Including initial purchase price, depreciation, finance charges, insurance, petrol and parking costs – for medium use: driving about 1-2 times a week). So at least a hundred dollars per month are saved when a traditional car sharing scheme is utilized (please turn to page 50 for more information on calculations and a comparison with peer-to-peer costs). Also calculations of comparison - websites underline the economic benefits of car sharing, at least, if a car is used less than 10 hours a week (Castle, 2015).

In the remaining ‘traditional car sharing’ part of this chapter, the three car sharing companies that were involved in the trial of the City Council will be discussed from three different perspectives. Firstly, the value proposition of the business will be discussed, followed by the network the company employs in order to achieve those proposed goals, summarized by a section on the developments of the individual companies. This traditional car sharing section starts off with GoGet, the biggest (in terms of location rate – see figure 9) and most important (in terms of influence on regulations and customer segment) car sharing company in Sydney.

5.1.1 GoGet
The traditional business model GoGet, was first conceived in November 2002 by Nic Lowe and Bruce Jeffreys, and was officially launched half a year later, in June 2003. At that moment, GoGet had 12 members who shared a total of three cars, all of which were stationed in Sydney. Due to increasing interest around the country, GoGet expanded to Melbourne in late 2004 and to an ever increasing number of municipalities later (GoGet, 2015).

Business Model
GoGet is the first car sharing business that set ground in Sydney. Co-Founder and CEO Bruce Jeffreys reckons that a long term vision and extensive interaction and service with their customers contributed to their growth and development (GoGet, 2015).

Working hard was necessary when striving to achieve ambitious goals. The long term objective of the GoGet car sharing company is that communities and neighborhoods are car free and ‘living streets’ can be established.

Summary of the Value Propositions of GoGet:
- Safety: cars from the street and kids walking around
- Doing good for the environment
- Complement or link to public transport; people more active
- Cheaper than owning a car
- Providing insurance, cleaning and maintenance (full service)
- Convenience and certainty of booking
‘our objective is: we would like the streets to be closed and walk around there with our kids, and not worry about being run over.’ (Interview GoGet CEO, 2015)

Along with the creation of safety due to the disappearance of cars on the streets (especially less car accidents etc.), the environment is a very important goal on the list as well. Car sharing should work as a link to cycling or public transport, because for some trips it could be easier to go by bike than with a car. Investigation implied that for this reason, people that are using the car share options tend to be more healthy and active than others. On top of that, sharing your car is less expensive than owning and maintaining one.

Furthermore, GoGet’s key value proposition is their interaction with the customers. The company is offering a full service business model by providing insurance, cleaning the cars and doing maintenance. According to the CEO it is convenient for customers that there is a certainty of booking with GoGet. They provide the fleet and the cars are always in the same spot within a couple minutes distance from your house (in the city center). The customer segment is therefore really wide and spread over the CBD and various suburbs in Sydney and Melbourne where GoGet is operating (Interview GoGet CEO, 2015).

With GoGet we own a car and it is there to be used, so that is really important for people, because they just want it to be simple, they don’t want to spend too much time about the transport options. (Interview GoGet CEO, 2015)

In order to make car share use more convenient, there has to be an extensive fleet of cars distributed over various spots in Sydney. Besides a huge amount of vehicles, Bruce Jeffreys acknowledges staff, marketing, insurance, research and development and IT (technology) as their key resources. Furthermore, GoGet introduced the smartcard, a technology that allows customers to get into the cars very quickly and easy. Smart card access is integrated everywhere, and along with 24/7 customer service and annual customer surveys, GoGet interacts with the customers on a regular basis (GoGet, 2016). This makes driving with car share cars from GoGet easier and more convenient, according to Bruce Jeffreys:

Yeah we integrated the smart card access with the lift access (..) so you are able to book a car and access the lift of a third party building manager (..) (Interview GoGet CEO, 2015)

Network of GoGet
The smart card is made by the company and is one of their key resources along with other IT and research developments. In order to gather new knowledge about those technologies, GoGet has close ties with the knowledge industry and institutes like University of Sydney, Australia Technology Park, Optus and Secure Parking (GoGet, 2015).

‘We have a one million dollar research and development partnership with the local university to develop driverless cars.’ (Interview GoGet CEO, 2015)

Furthermore, parking spaces are provided by the Sydney city council (directed by the government of NSW) and Ikea. The fleet consists of cars from car manufacturers like Toyota, Audi and Hyundai. These car manufacturers, especially Hyundai and Toyota also deliver the cars for other car sharing companies, like GreenShareCar or Flexicar(/Hertz). Those two traditional car sharing companies, along with peer to peer car sharing companies, are car rental companies and ride sharing (or taxi) companies, GoGet’s main competitors. Besides the involvement of the municipality and the larger Sydney community in the car sharing project (after the pilots started in order to test car sharing in Sydney), GoGet gained several community partners. These partners include initiatives with similar goals as GoGet: to increase the liveability of Sydney and to do so in a sustainable manner (GoGet, 2015). These initiatives, such as Grow it Local, engage mostly in cross-promotion of each other’s services (GoGet, 2014). Also companies like The Big issue, Meals on Wheels and the Sharehood are consider
community partners. Other partners, like City Carshare, City Hop, City Car Club, Ithaca Carshare, I-go Car Sharing, Zazcar and Modo are categorized as so called ‘global roaming partners’ by the GoGet website. Those are other car share initiatives all over the world. The final actors involved in the GoGet network are the customers of the car sharing company. Like other car sharing companies, GoGet recently broadened its customer focus towards business users as well (GoGet, 2015).

Development of GoGet

The year 2003 was a pillar for the GoGet car sharing company. After conducting a survey on a festival about the likelihood of people sharing their cars, Bruce Jeffreys and Nic Lowe decided to take the risk and start their new business (GoGet, 2015).

‘For four years me and Nic weren't paid a cent, we worked for free. We worked 7 days a week we were on call 24 hours a day so we took one week on, one week off, so we woke up early it was really hard (...) it is building a service from the ground up with customers.’ (Interview GoGet CEO, 2015)

The first years of their start-up business were not very smooth. However, after the extension of the car sharing business in 2004, GoGet reached their ‘customer’ tipping point around 2008. In other words: they had enough customers and therefore income to make a living. By 2007, the municipality of Sydney had realised the value of car sharing for the residents of Sydney, and decided to openly express their interest for a large-scale car sharing project in the Sydney area. Three car sharing companies active in Sydney responded to the municipality’s appeal; these were GoGet, Hertz on Demand and GreenShareCar. The project led by the City of Sydney, was meant to give the fledgling car sharing industry in Sydney a boost by attracting new customers and ensuring that existing customers were increasingly satisfied with the services on offer (City of Sydney, 2014). One outcome of this collaboration has been that as of November 2014 approximately 10% of Sydney’s households are members of a car sharing service (City of Sydney, 2014). An example of what the City of Sydney has been pursuing is a reform of New South Wales parking regulations; an attempt to reduce the parking fee for shared cars (Council of the City of Sydney, 2011).

Moreover, 2012 and 2013 were also successful years for GoGet on extending the business. In 2012, GoGet joined forces with Ikea, so everyone who shops at Ikea can take their products home with them in a GoGet car. Besides the extension of the website, GoGet went global in 2013 to join the worldwide car sharing market. In addition to that, the company collaborated with Sydney and Melbourne airport for car parking spaces and with other knowledge institutes in order to keep on learning. In 2014, the minister for finance and services Dominique Perrottet announced in a media release that the state will look into the possibility of a shared fleet, a trial of car sharing across the public service (Freitas, 2015). Currently, one can find over 2000 GoGet cars distributed across Sydney. More and more suburbs are enthusiasts for car sharing facilities. GoGet's aim is to provide a reliable, affordable and convenient way of transportation for now and in the future. Furthermore, goals as the improvement of the environment, reduction of car usage and private cars on the streets and the providence of a link to public transport are high on the list at the GoGet business (Interview GoGet CEO, 2015).
In summary, GoGet facilitates cheap and convenient car sharing customer service for residents, while trying be environmentally friendly. In 2007, GoGet cooperated with an important actor in the network (the government) in order to pilot a large scale car sharing project in Sydney. Furthermore, GoGet is constantly partnering with relevant businesses like IKEA. However, GreenShareCar and Hertz (on Demand) are not really mentioned as car sharing partners. In the next section, the business model, the network and the development of GreenShareCar will be specified.

5.1.2 GreenShareCar
GreenShareCar launched its family business around 2006 in Sydney. The company was then named ‘Charter Drive’ with Paul Reichmann as CEO. Its business model is discussed below.

Business Model
GreenShareCar identifies the company’s business model as a member-based service. The company’s objective is that every member can make a reservation from their phone every day of the week. GreenShareCar’s 24/7 customer support makes it a very flexible and accountable service (Interview GreenShareCar MC, 2015).

‘Car share is a far cheaper option. (...) Others enjoy the convenience of being able to pick up a car when they need and some people enjoy the variety. (...). Businesses find using car share flexible and accountable’ (Interview GreenShareCar MC, 2015)

Furthermore, the company sells itself as a sustainable one, trying to do good for the environment by being cheaper than car rental companies or than owning a car. Through this way people can share cars instead of all owning an individual car, which results in fewer cars on the streets and fewer cars to be produced. The renter furthermore has the convenience of having their own choice in terms of which fleet to rent, which cars, what time of the day and for how long etcetera. Moreover, car sharing ought to be a complement of public transport, where people can now not only choose to take the train or the bus, but also commute by car sharing.

Besides the last goal, the business model is to a large extent similar to that of a car rental company. For example, customer relations and car maintenance are more or less the same. Also, the fleet of cars mainly consists of new cars, not older than four years (Interview GreenShareCar CEO, 2015). However, the platform (made by Metavera) and the smart card are more specific for car sharing companies like GreenShareCar (Dyck, 2013). When one becomes a member, he or she receives a smart card via the mail (GreenShareCar, 2016). This smart card can be used to unlock the car doors and retrieve the car key from the dashboard (or underneath the steering wheel). Moreover, the fact that the cars can be booked per hour through a platform on the internet is new as well. In comparison to renting cars with rental companies, car share customers can use the car with the purpose of doing grocery shopping, for example. The latest addition to GreenShareCar’s target customer segment are the business drivers. Instead of having their own business fleet, businesses (mostly creative industries like architects etc.) can rent a car in order to visit clients.

‘As a green initiative car share is very attractive to businesses but also other users. We often find that “well off” people use car share as an alternative not because they can’t afford to have
a car, but because they wish to contribute to the environment, or are early adopters.  (Interview GreenShareCar MC, 2015)

Network of GreenShareCar
Small businesses and universities are also represented as partners in GreenShareCar’s network. The company tries to collaborate with its business partners in order to retrieve new information about the market segment and with the purpose of renting out their ‘exclusive’ business fleet (with discount). Furthermore, promotion of the company is done – for a small part only – by the media (newspapers). The sustainable homes company, ‘Jetsongreen’, recently combined forces with the car sharing company in order to provide green car sharing in their newly built One9 apartment (Walsh, 2014). GreenShareCar got some marketing and several car sharing parking spaces in return. More parking spaces are received through cooperation with Melbourne Airport (Rockstrom, 2011). Members now have the possibility to share a car when returning home from the holidays or when they are having a vacation in Melbourne. Of course, car sharing parking spaces remain empty without the necessary resource: cars, provided by three different car manufacturing companies. GreenShareCar is renting out cars from Hyundai, Jeep and Toyota, all companies that seem pretty familiar with car sharing (see network of Hertz on Demand). Car sharing is made possible by the technological platform that is provided by Metavera, the company that built the platform. New rules and regulations are made in partnership with the government of New South Wales and the Sydney City council.

‘Car share is a great initiative and is trendy topic easily adopted. The only great barrier is getting councils to recognize the value gained by supporting this initiative.’ (Interview GreenShareCar MC, 2015)

GreenShareCar can benefit from the regulations that are already composed by GoGet (one of the traditional car sharing competitors of GreenShareCar - along with Hertz on Demand). As can be deduced from the business model of GreenShareCar, the other main competitor group are the car rental companies, like Avis, Europcar and Hertz again (Simpson, 2014). Lastly, ride sharing and peer-to-peer car sharing companies can be perceived as a competitor as well, because it is similar in terms of ‘reservations’ by the hour.

‘GreenShareCar competes directly with other car sharing companies (GoGet and Flexicar). Indirectly with other car rental companies, however the value proposition is different.’ (Interview GreenShareCar MC, 2015)

Development of GreenShareCar

GreenShareCar started in 2006 as a family business under the name ‘Charter Drive’. Paul Reichmann was CEO and immediately introduced the charter drive card to swipe and unlock the cars. There is not much to mention about the company except for its name change to GreenShareCar in 2010. With that change, the company also introduced a new website and a twitter and Facebook page. Moreover, the company decided to extend its business to Melbourne in that same year. The family company does not seem to be very fond of sharing their achievements, because the next news article on the websites is dated July, 2014. Here, GreenShareCar is mentioned in an article along with the announcement of the One9 apartments that were constructed with car sharing spaces for GreenShareCar vehicles. In the same year, the announcement of state fleet trials was made by Dominique Perrottet (as
mentioned earlier in GoGet’s development section) (Freitas, 2015). GreenShareCar’s successes are emphasized by the 2000 car share members and the hundred cars that the company has nowadays. Moreover, providing exclusive fleets has become a large part of the business and is aimed to extend towards universities and business customers as well.

‘Car share is the way of the future, especially within business centers. We will see government and education institutions adopt this and also a large increase in business user. Car share is also a requirement in new developments. (Interview GreenShareCar MC, 2015)

The other main future goal is characterized by the word ‘green’ in the company’s name: doing good for the environment. GreenShareCar chooses to operate with only green or electric vehicles. (Ottley, 2014)

One can conclude that GreenShareCar is a family-built company with a strong focus on green driving. The company provides special or exclusive fleets for universities or business that are concerned with sustainability and saving money. The company does not have an extensive network, since the business is initiated and sponsored by family members. Metavera is the supplier of the technology platform. GreenShareCar therefore does not focus that much on technology, but it states to be a member-based business with a reliable customer service. A company that also receives the technology platform from the company called Metavera, is Hertz on Demand (or initially Flexicar). In the next section, Hertz on Demand will be discussed in detail.

5.1.3 Hertz on Demand (24/7)
Hertz on Demand, or Hertz 24/7 started in 2004 as Flo car share, and in 2006 as Flexicar, based in Melbourne. Monique Conheady, former CEO of Flexicar thought that her car sharing company was a good opportunity for expanding the car sharing business (Flexicar, 2013).

Business Model
The main value proposition concerns the easy access of cars and its easy use, or in short: ‘convenience’. The business model of Flexicar (now Hertz on Demand), is similar to that of GreenShareCar, and Car Rental companies as well. Besides being a rental company, Hertz on Demand recently expanded its business towards car sharing. Therefore, it provides a fleet of cars which people can share among each other. Furthermore, Hertz on Demand offers hourly and daily booking with flexibility and service. The goal is, like GreenShareCar, to provide a link to public transport and cycling. Moreover, Monique Conheady admits that spreading knowledge about car sharing among Sydney residents is also a big goal for the company. People have to know that car sharing exists, that it is convenient, that it is good for the environment and that is saves money (Flexicar, 2013).

The former CEO of Flexicar is very clear about the customer segment. In includes inner-city community based citizens, with the average age of around 30s. Moreover, the customer segment can be divided into three parts. The first is the inner-city singles (or business professionals part), or sometimes couples who discover that owning a car is not cheap. Therefore, people who want to get rid of their car, or do not own a car at all, are part of the customer segment. Secondly, (mostly) couples use Flexicar/Hertz on Demand as their potential second car. If they have a child, they can install the child seat in the back of their own car and use the second car when they do not need to transport their child (couples use their
car, for instance, simultaneously for going to work or bringing the kids to school). The last customer group has recently grown bigger. Also business travelers is a new additions to the company’s customer focus. Creative industries, under which architects that need to visit the building sites, comprise the third and last part of the customer segment.

‘Obviously the constructing industry, mainly architects is really the key focus, because they have a need, they got to go out to for a quick visit of the site and so forth.’ (Interview Flexicar CEO, 2015)

In order to make sure that customer service for all parts of the segment is perfect, customer support is provided through several channels. For example, when a car breaks down one can call or mail customer support or reach out for help through the website or the mobile app. Also member referral is very important for the company, with the purpose of spreading the knowledge about car sharing. The smartcard service is important to mention as well, since the smartcard makes refueling, booking, maintenance and damage insurance a lot easier. The smartcard includes an RFID reader that is provided by the company (Hertz Corporation, 2013). It is the key to the car and the car sharing membership, for the reason that the cars are opened and locked with the smart card. Besides the latter, the key resources that are utilized for the sake of achieving the goals in the value propositions, consists of three main parts. Capital (the cars) is one of the main resources and are owned by Hertz. The second resource, parking space can be arranged with the government. Marketing, the third resource is very important for the development of the company.

‘The other resource certainly is marketing. Getting the word out there and getting the concept out there (...) to explain it’ (Interview Flexicar CEO, 2015)

Also, insurance for the cars can be arranged with insurance companies or with the government.

Network of Hertz on Demand
The Government, in this case the NSW department, the City of Sydney and the council of Melbourne is thus a very important actor concerning marketing, insurance and especially parking spaces. Hertz on Demand can request car sharing parking spaces at the City of Sydney council. The Government of New South Wales can exert its power onto the councils concerning car sharing policies. For example, when the government of NSW decides that building motorways or apartments with lots of parking space is very important it will be harder for car sharing to develop in areas with many parking spaces for private cars (because car sharing can benefit from a lack of private car parking spaces). It is then the problem of the City Council to find ways to market car sharing and provide spaces especially for sharing. The other necessary resource are the cars. Flexicar, or Hertz On Demand, makes use of Nissans, Toyota’s Hyundais, Volkswagens and BMW’s. These car manufacturers are therefore the car suppliers for Hertz.

Furthermore, the car sharing platform is set up by a company called ‘Meta-era’. ‘The big canvas website’ is the company that took care of the website’s design. Another important resource for the car sharing company is the investment. Flexicar was able to start its car sharing company through money provided by private investors. Later on, Hertz decided to acquire the company and therefore made a major investment. Since then, Car Rental companies have become a competitor in the car sharing market, along with peer-to-peer car sharing companies, other traditional car sharing companies (GreenShareCar & GoGet) and ride sharing or taxi companies like Uber. However, the company has several partnerships as well. The community partners, under which ‘Pozible (for crowdfunding), Melbourne Fringe Festival, Tram Sessions, BiCycle Network Victoria, Ride2work and stKildafestival, can be identified. On behalf of car sharing partners (councils), city of Stonnington, city of Yarra, city of Melbourne and city of Darebin are listed (Flexicar, 2013). Furthermore, ‘Monash University’, ‘Deakin University’ and Victoria University are student transportation partnerships, mentioned
Development of Hertz on Demand/Flexicar

As mentioned in the introduction of the Hertz car sharing case, the car sharing company has had several names. It started in 2004 as Flo car share, but the business changed its name to Flexicar in 2006. Since the moment the company was founded, the director Monique Conheady received several awards. In 2007, 2008, 2009 and 2010 (before the company was acquired by Hertz) de car sharing business received awards for e.g. ‘transportation, warehousing and logistics’ and many other themes. On December 2010, Hertz announced the acquisition of Flexicar. However, besides the homepage for Hertz 24/7 Australia, the Flexicar website also still exists. Hertz acquired Flexicar with the agreement to make use of cars in two suburbs located in Melbourne (Hertz Corporation, 2013). The rest is still under management of Flexicar. According to the former CEO of Flexicar this is the biggest achievement of the company so far.

‘I would say that the biggest achievement was probably the acquisition by Hertz (…) the validation of a successful profitable car share model to be acquired.. By a global corporate who was realizing that this stuff was going to become a mainstream option’ (Interview Flexicar CEO, 2015)

Another important achievement worth mentioning is the agreement of the Stonnington Council to conduct a six month car sharing trial. Since then, the website Hertz on Demand continued along with Flexicar still both with their own homepage. On September 19th of 2015, the global Hertz company sadly announce the discontinuation of the National UK car share program. On the Australian side, there is radio silence. The Hertz on Demand twitter page has not been active at all and latest news (Bruce Jeffreys) tells that the Metavera platform has announced to stop with running the platforms as well (Dyck, 2013).

In short, the most important development for the company elaborated upon in this section, is the acquisition by Hertz. Flexicar is still a brand that is used for car sharing in Melbourne, but Sydney car sharing is mainly under the name of Hertz on Demand. Flexicar started under the management of Monique Conheady, an alumni student that was just graduated from University and was eager to start up a (sustainable) business. Her initial idea behind starting up the company was that cars were sitting idle on the streets or in garages, and someone in Melbourne (she) needed to do something about it. The company’s key value propositions are the providence of a flexible and reliable service and being a sustainable link to public transportation. Flexicar has built up an extensive network of suppliers, sponsors as well as community partners, which are very beneficial for a company like Hertz that is fairly new in the sharing business. We find that most traditional car sharing companies favour a service-oriented business model, focused on efficiency and sustainability. In the next section, the goals and value propositions of peer-to-peer car sharing will be discussed.
5.1.4 Conclusion for Traditional Car sharing

Regarding traditional car sharing, most striking is that despite the differences between the companies, main focus remains on providing the best and most reliable customer service. With respect to their brand names, this finding appears to be explainable. For instance ‘GoGet’, ‘Charter Drive’ (now GreenShareCar) and Flexicar (now Hertz on Demand or Hertz 24/7) suggest that on demand or around the clock customer service and flexibility is one of their strongest selling points.

The name GreenShareCar suggest that the business is trying to sell sustainability as a focus point as well. This is true for the facts that GreenShareCar is only renting out electric or ‘green’ vehicles and ‘doing good for the environment’ is the first mentioned value proposition by the company. GoGet is striving for a better environment as well, both in terms of a ‘safe’ and car-less environment in your neighbourhood, but also reduce the amount of cars on the road by exiling car ownership.

Flexicar on the other hand, did not present those ‘green’ ambitions. However the initial idea behind starting up the company was to reduce superfluous cars on the roads and to exile car ownership. What is even more striking, is that Hertz appreciated the value propositions proposed by Flexicar, and acquired the car sharing business in order to execute product differentiation. This big company and regime actor, has started to interfere with the niche in order to offer their customer and hourly, on demand service. One could thus argue that this ‘on demand’ flexible service is one of the most important value proposition of traditional car sharing.

The next section will discuss the most important value propositions of peer-to-peer car sharing and the developments and important partners that this sector contains. Moreover, a juxtaposition of car sharing and car ownership prices are presented along with a visualisation of the car sharing locations.
5.2 Peer-to-Peer Car Sharing

Peer-to-peer car sharing is characterized by collaborating communities. Car borrowers can rent their cars from car owners, who have a spare car or a car that is sitting idle in the garage for a long period of time. The companies involved with peer-to-peer car sharing are service companies that provide the technology platform and the management between the two sides of the customer segment. The peer-to-peer car sharing companies in Sydney are CarNextDoor, a company that offers short-term rental and DriveMyCar, a company that rents out cars from people that go on a long term holiday.

On their websites, both peer-to-peer car sharing companies claim to be unique in its area of operation. Peer-to-peer car sharing has a number of similarities with traditional car sharing (e.g. in terms of technology and user experience). However, it also differs from traditional car sharing with respect to the newness of the utilized vehicle. In other words: peer-to-peer car sharing utilizes vehicles that are already in use by the local population, rather than adding new cars to the vehicle mass (like with traditional car sharing).

The emissions created in the process of manufacturing a car (embodied emissions) equate or even exceed the exhaust pipe emissions of a cars’ lifetime (Berners-Lee & Clark, 2013). The emissions per-kilometer for a car are proportionately reduced the more the vehicle is used. This implies that converting vehicles that are already in (shared) use by the community has a lower carbon footprint than adding a new (albeit fuel-efficient) vehicle to the population. Despite the claim from traditional car sharing companies that they are ‘doing good for the environment’ because the system reduces the total amount of cars (by sharing them), the utilization of existent cars is an additional advantage of peer-to-peer car sharing. However, it is also stated that traditional car sharing causes members to reconsider a car purchase, leading to a 60% rate of people deferring car purchase (SGS Economics & Planning, 2012).

Furthermore, an additional claim by peer-to-peer car sharing companies is the price of this type of sharing (CarNextDoor, 2013). CarNextDoor argues that this form of car sharing is cheaper than car ownership, and even cheaper than traditional car sharing (see table 3 for the calculation). GoGet calculation had slightly different results ($650 dollars for car ownership versus ‘around’ $200 for GoGet car sharing), but this difference is due to a higher price per kilometer for petrol, servicing and tires assigned to the car ownership category and the omission of the joining fee and additional costs for insurance for traditional car sharing). In both cases, one can deduct that the option of car ownership is far more expensive. The calculations were applied to a Toyota Yaris (5 door automatic hatch) used 1-2 times a week (medium use).

![Figure 13 - Overview of peer-to-peer car sharing locations in Sydney](image)

Table 3 - Comparison between car sharing and car ownership - Toyota Yaris

<table>
<thead>
<tr>
<th></th>
<th>Car ownership</th>
<th>Traditional sharing</th>
<th>CarNextDoor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial purchase price or joining fee</td>
<td>$20,000</td>
<td>$25-49</td>
<td>$0</td>
</tr>
<tr>
<td>Depreciation</td>
<td>$2,390</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Finance charges/interest</td>
<td>$775</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Insurance/ registration</td>
<td>$2,260</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Petrol, servicing, tires</td>
<td>16c/km</td>
<td>40c/km (after included kms)</td>
<td>33c/km</td>
</tr>
</tbody>
</table>
An overview of all the separate traditional car sharing companies, compared to the prices of CarNextDoor (provided by CarNextDoor) is shown in figure 14 (CarNextDoor, 2013). The figure illustrates differences in high- and low excess use as well. An extensive explanation of the figure and calculations are presented on the CarNextDoor website.

<table>
<thead>
<tr>
<th>Parking (permit)</th>
<th>$0-$270</th>
<th>$0</th>
<th>$0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual membership fee</td>
<td>$0</td>
<td>$108-$348</td>
<td>$0-$228</td>
</tr>
<tr>
<td>Total Monthly Costs</td>
<td>$482</td>
<td>$315</td>
<td>$190</td>
</tr>
</tbody>
</table>

Figure 14 - Price comparison based on medium use

Do not value the quantities in this comparison to much, because of the subjectivity of the publication of CarNextDoor and the uncertainties that the amount of variables and assumptions bring along. One can deduct from this figure and table 3, however, that the initial fee and membership fee for traditional car sharing is higher. For this reason, reduced excess is more expensive than high excess for traditional car sharing. Furthermore, the price per kilometer is higher for traditional car sharing as well, it is there for more expensive to share a car with traditional car sharing.

Another price comparison is made by DriveMyCar, applied to a 30 day rental of a Toyota Corolla (DriveMyCar, 2015). Because the rental conditions for DriveMyCar involve long-term hire, this scheme is easier to compare with car rental companies, rather than car ownership. When comparing the rental price\(^1\) with the price of car ownership one could think that hiring a car with DriveMyCar is more expensive. However, this rental price implies a daily (intensive) use of the car (for example using it for a 30-day road trip) and the amount that was calculated for ownership assumed a car use of one or two times a week. Thus, it is hard to compare DriveMyCar use to car ownership, but car hire can save on average 22% in comparison to other rental companies (Table 4). The sample for this calculation was taken on 23/03/2015 for the period from 1/5/2015 until 30/5/2015 (Sydney City).

<table>
<thead>
<tr>
<th>DriveMyCar</th>
<th>Avis</th>
<th>Hertz</th>
<th>Thrifty</th>
<th>Budget</th>
<th>Bayswater Car Rental</th>
<th>Europcar</th>
<th>Redspot</th>
</tr>
</thead>
<tbody>
<tr>
<td>$749</td>
<td>$962</td>
<td>$1,107</td>
<td>$920</td>
<td>$966</td>
<td>$879</td>
<td>$1,020</td>
<td>$873</td>
</tr>
<tr>
<td>Save</td>
<td>22%</td>
<td>32%</td>
<td>19%</td>
<td>22%</td>
<td>15%</td>
<td>27%</td>
<td>14%</td>
</tr>
</tbody>
</table>

All in all, the following business cases will show that one of the targeted value propositions of peer-to-peer car sharing is concerned with the price of car hire. CarNextDoor, the company that follows this paragraph of the peer-to-peer section, is discussed on categories like business model exploration, network facilitation and development of the company. DriveMyCar is also a peer-to-peer car sharing business, explained and highlighted in the section after.

\(^1\) The price of a Toyota Yaris for 30 days was at least $633 (sample taken 4/2/2016)
5.2.1 CarNextDoor

As mentioned earlier, this peer-to-peer section starts off with CarNextDoor as a business case. Will Davies and his small team launched CarNextDoor on Christmas Eve 2012. The story behind this is that Will Davies strolled around Bondi beach and saw all the idle cars lined up along the road. He thought of peer-to-peer car sharing as a solution for this waste and a way for communities to get closer to one another (CarNextDoor.com.au). They evolved from a business with only 20 cars located around Bondi to a company that claims to have taken at least 21 cars off the road in the 58 suburbs of Melbourne and Sydney (Villa, 2014).

**Business Model**

CarNextDoor is a peer-to-peer car sharing company that is concerned with creating trust and reputation between renters and owners. They also try to provide economic beneficence by being cheaper than traditional car rental companies. According to the CEO of CND the value proposition of the business can be found in that

"...you are creating value for the owner because they get to make money from something that was previously doing nothing and you create value for the borrower because they previously had to own a car or use a car share company that might have been further away or a bit more expensive..." (Interview CarNextDoor CEO, 2015)

CarNextDoor’s customer segment consists mainly of people with a ‘decent’ salary.

“They are just regular, own 80,000 – 100,000 dollars a year. So they are earning reasonable money”. (Interview CarNextDoor CEO, 2015)

The rate of males and females is equal for both groups, however the average age for borrowers is two years younger than of car owners (28-38 resp. 30-40 (Interview CarNextDoor CEO, 2015). CarNextDoor registers and approves the car borrowers and provides a feedback system as well. This feedback system is made to allow vehicle conditions and member behavior to be rated and reported by other members. Furthermore, CarNextDoor tries to increase the mutual trust and security by making (and patenting) its own ‘Lock Box’ and ‘GPS tracking technology’ (Interview CarNextDoor CEO, 2015). If there are any problems with the cars, a customer can find help via Customers Service by phone or email provided on the website. Moreover, car insurance is provided by CND and the company is handling all the payments. All that CND needs is thus: their platform, their lock box system, the cars (provided by the owners) and a good insurance policy. These things are provided by the key partners of the company, which can be found in the following section.

At last, the companies profit is reflected in the business model. CarNextDoor earns a percentage of what each car bring in. There are either monthly fees or booking fees for borrowers, depending on their own plan. Additionally, CarNextDoor is building a large database, so they have something that adds value as time goes on. All the prices are competitive and the company contributes some of its earnings to Greenfleet, a partner that offsets the carbon emissions that are produced from vehicle use. They do that by planting trees in Australia (8.5 million trees since 1997 already) (Motoring, 2015).
Network of CarNextDoor

CarNextDoor is a peer-to-peer car sharing company that keeps on growing. In order to maintain this development, partnerships are very important. For example other peer-to-peer companies can work together with CarNextDoor because they are focusing on the same market and they have the same ways of breaking rules and inventing them. Sendle, a courier or delivery service has recently partnered with CarNextDoor, so that heavy things could be (for example) delivered with cars rented at CarNextDoor. Furthermore, Greenfleet (fleet management system dedicated to promote a cleaner environment) receives some of CarNextDoor’s earnings, so that the carbon use by vehicles is compensated. Marketing is a key word that is very important for the CarNextDoor’s business:

'We collaborated with a few other companies just to sort of spread the word; marketing collaborations'. (Interview CarNextDoor CEO, 2015)

For this reason, the media is also of importance for the network. Newspapers among which The Australian, AutoRental News, BRW, ABC News24, Marketing Magazine, Channel 7 News, Money magazine, The Age, and News.com are only a selection of publishers that collaborated with CarNextDoor from the end of 2015 in order to market and explain peer-to-peer car sharing.

When a company is built from the ground up it needs a lot of resources, like start capital. Elevation Capital’s Trevor Folsom is a group of successful entrepreneurs that invested in the company. Furthermore, crowd funding or public funding made sure that CarNextDoor raised another 1.8 Million dollars in 2015 for its company. Furthermore suppliers like Caltex (oil corporation), eWay (online payment gateway), Metavera (Car share solution) and Car2go (car share company) are highlighted as ‘suppliers’ on the website of CarNextDoor. A supplier like eWay is for example necessary to create a secure online payment system in order to provide trust and security for your customers. Besides the car borrowers and the car owners, CarNextDoor welcomed a new group in its customer segment, containing the businesses. This was necessary because now competitors are focusing on this group as well.

The main competitors of CarNextDoor are classified as the “Traditional car sharing like GoGet and Flexicar, Hertz 24/7 or Hertz on Demand and then GreenShareCar. (..) And then there’s car rental companies, like Avis, Hertz and Budget Car Rentals. And there is also another peer-to-peer car sharing company called DriveMyCar rentals, but they have a quite different model to us.” (Interview CarNextDoor CEO, 2015)

Lastly, they are “competing against taxi’s as well or Über.." (Interview CarNextDoor CEO, 2015)

CarNextDoor however, can benefit from the competitive advantage because all of these companies do not own a (pending) patent for the lock box and the GPS tracking system. This is something that CarNextDoor built on their own and that gives them a competitive advantage. The Next paragraph provides an explanation of achievements, developments and the future outlook of CarNextDoor.

Development of the company – past, present and future

It is not a mystery that CarNextDoor is proud of what they achieved to this date, judging on the webpage that is dedicated to the research and development around their company. One of their key achievements is the development of the so called ‘Lockbox’ and the GPS tracking
system, which are now combined into a pending (worldwide) patent – see also the year 2013 in the timeline above (CarNextDoor, 2016). Besides this, the website states that CarNextDoor created a new online webpage or ‘dashboard’ that makes it easier for owners to manage their car and for borrowers to search and filter in order to find the car they need. Furthermore, a system is created that performs facial recognitions and credit and ID-checks, in order to improve the trust and security of the borrower across the platform. Reservations are managed more efficiently and administration does not take more than five seconds. Furthermore, it is easier to report damage due to the development of a new system for that purpose. CarNextDoor claims that these achievements are made thanks to their way of experimenting and listening to feedback.

‘First driver is just getting the product better and better and better all the time’ ‘constantly changing the product so that it works better and smoother and responding to feedback (...) the more referrals come in (...) that is driving the growth that is a big part of our marketing.’ (Interview CarNextDoor CEO, 2015)

Their learning process is characterized by continuous experimentation and working out different strategies.

‘Every quartile we do three or four or more experiments to see if anything else might work and once we found another one that works we sort of add it to the table of strategies that work and then we repeat the process. Basically, that is how we drive growth.’ (Interview CarNextDoor CEO, 2015)

A big change in the timeline of CarNextDoor is characterized by the recent achievement of raising 1.8 Million dollars through funding in 2015. This is a huge step in the realization of their future goals.

“The big challenge for us is working out how to get more cars on cheaper, quicker and easier. Number two is working out how to get more borrowers on cheaper, quicker and easier. And then number three is working out how to (...) keep owners on the platform longer. And number four is to keep borrowers on the platform longer using it more times.” (Interview CarNextDoor CEO, 2015)

With regard to creating a sustainable peer-to-peer car sharing platform, the company tries to continue research in the area of efficient and effective customer service, through experimenting with many functions, analyzing customer behavior (user feedback) and brainstorming new ways and processes. Marketing strategies, new systems and new ways to help people are tested and trialed in order to attract owners and borrowers ‘cheaper, quicker and easier’. Moreover, a driver rating system is created; driving behavior is monitored (also by the GPS device), the application details are reviewed and high risk vehicle types are analyzed for the purpose of reducing incidence and cost of damage to vehicles (CarNextDoor, 2016). Problems as ‘non-payment’ by borrowers are minimized by the use of algorithms and the GPS also functions as a device to give automatic notifications in order to notify a late member. These are the challenges that CarNextDoor would like to face and overcome in the future. One can deduce those challenges from the business models’ value propositions immediately. For example, the goal of providing trust & security for both sides of the market place. With respect to achieving these goals, the earlier mentioned partners, suppliers and investors, as well as the customers themselves, can help by taking part in the experimentations (CarNextDoor, 2016).

Like with traditional car sharing, CarNextDoor strives for the efficiency in the use of cars. In addition to that, trust and security plus the providence of a huge variety of cars is something that stands out for peer-to-peer car sharers like CarNextDoor. What is more striking, is that CarNextDoor is Daedelian in marketing their business and expanding their company. The firm
started in 2012, which is the latest start date of all the companies mentioned in this chapter, and managed to raise enough (millions of) money by crowd funding. Furthermore, the company has built an extensive network including partners from other peer-to-peer companies to share experience about peer-to-peer market development. Although the company started off with the wrong technology (similar as GoGet’s), they managed to develop their own technology and even have a pending patent for it. In the section below, one can find out how DriveMyCar has managed to develop its business.

5.2.2 DriveMyCar
DriveMyCar, initially started in 2010 as DriveMyCar Rentals, is a peer-to-peer car rental company that has managed over 4000 rentals for thousands of owners and renters over the past five years (Herbison, 2015).

Business Model
A key element in the business model of DriveMyCar is that the company is trying to create trust between the renters and the owners. Therefore, it has to build a reputation database for both sides of the market. Furthermore, car owners are registered and checked on validity via the online platform that is provided. ‘Peerpass’ is a new system designed and made by DriveMyCar especially for the purpose of verification of the car borrower.

‘Peerpass is something that we have actually created. So it is building rust (..) in those market base, because all we are heading at is just our customers having trust. ‘And they can rent out that car (..) that somebody is not going to go and steal and ride it. (..) That pass that credit checks them.’ (Interview DriveMyCar GM, 2015)

Besides trust, the platform enables money and car exchange. In this case, DriveMyCar’s key activity is to provide a secure online payment transaction, tax regulations, but also insurance for the car. The car owner can make money by renting out the car, whereas the car borrower does not need to buy a car and thus saves a lot of money. A legally binding agreement is provided for both parties by DriveMyCar rentals. Also, sharing cars is substantially cheaper than borrowing a car at a traditional car rental company (Interview DriveMyCar GM, 2015). Borrowers can choose from a huge variety of cars, due to the fact that the cars are rented from individual car owners and not bought in bulk by some rental company. Along with the variety of cars comes a very diverse customer segment:

‘The demographics .. and age is very varying. And very well spread’. There are some older people that rent out their cars.. They have a second car, for example. And you have older couples with their caravans sitting around.’ (Interview DriveMyCar GM, 2015)

Besides people renting out a spare or a second car, one can also rent out their car when on a long-term holiday.

‘And a great example is one who goes overseas and works for six months. You rent your car rather than you sell it.’ (Interview DriveMyCar GM, 2015)

Summary of the Value Propositions of DriveMyCar:
- Provide Trust & Security
- The car owner makes money & the car borrower saves money
- Cheaper than other car sharing Models
- Offer variety of Cars
- Make more efficient use of existing vehicles
- Make car owners more aware of the costs of driving
- Allows car sharing to reach more people rapidly (scaling)
Because some car owners are renting out their car because they are away for a long term, there is an option that DriveMyCar is managing the cars as well.

‘In terms of our own infrastructure we have a manage my car service, so we can manage a car on behalf of our customers. To store those cars in a secured warehouse.’ (Interview DriveMyCar GM, 2015)

This means that the car owner does not have to arrange anything, besides contacting the company. DriveMyCar makes sure that they have made all the arrangement. The company’s profit is based on a fee upon the weekly rate that is calculated according to the cars market value: ‘a lot of companies will take 20%, we just have an admin fee for all the cars.’ (Interview DriveMyCar GM, 2015). DriveMyCar characterizes itself as a results-driven, for-profit company (Interview DriveMyCar GM, 2015).

Network of DriveMyCar

In order to develop and grow into a sustainable company, DriveMyCar has gathered several stakeholder around them throughout the years (Noone, 2015). One of the main stakeholders in the network of DriveMyCar is its mother-company, the publicly-listed Collaborate Corporation Limited (formerly known as Qanda technology), which acquired the company in February 2014 (Qanda Technology, 2014). The acquisition caused the company to change its strategy and develop enormously over the past six months. Collaborate Corporation Limited also owns a number of other online peer-to-peer market places, like Caramavan (caravan rental network), Rentoid (Household/commercial items rental network) and Marketboomer (a Business-to-Business platform ‘aimed at improving efficiencies in procurement’), all companies that can also be viewed as partners of the DriveMyCar business. (Herbison, 2015). According to Brent Artindale from DriveMyCar, peer-to-peer and sharing companies are more and more envisioned as potential partners:

‘Since last November we kind of invested on all of our other businesses and now we are really focusing on the sharing economy. So based around peer-to-peer and sharing. So it been a new focus for the last of six months to bring together all the old companies and the new and as part of the new company we would like to look at that.’ (Interview DriveMyCar GM, 2015)

Furthermore, DriveMyCar’s key strategy is focused on achieving growth by marketing, which relates to its involvement with news agencies including The Australian, 9news, news.com.au, 2GB radio (The Entrepreneur show), Financial Review, Marketing, Time Out Sydney, smh.com.au and Checkout. Besides marketing, resources like car share spaces and the technology for ensuring the trust & security is important for DMC as well. Sydney and Brisbane Airport are registered as suppliers of car share spaces on the DMC website. In addition to that, companies that are involved with the providence of security are Green ID, Peerpass (also made by DriveMyCar) and Veda. This, together with financial securities (as tax regulations) figured out in cooperation with the government gives DriveMyCar a certain advantage towards their competition:

‘We are working close with the government so we are meeting with the government (..) in terms of actual policies for us. We have only just started bringing in tax regulations things like that’. (Interview DriveMyCar GM, 2015)

With regard to the competitors of DriveMyCar, it is clear that DMC is focusing on a different market segment than other car sharing companies. According to Brent Artindale:
‘The main competitors are the traditional rental companies’. (Interview DriveMyCar GM, 2015)

This includes companies like Europcar, Avis and Hertz, but not Hertz on Demand. This is due to the fact that most other car sharing companies are focused on short-term rentals.

‘There are a number of peer-to-peer companies... a lot of those are short term. So we are looking for 7 days to long-term, yearly rental.’ (Interview DriveMyCar GM, 2015)

DriveMyCar is often listed as a car sharing company that is in competition with companies like CarNextDoor, GoGet or even Über. However, when you compare the car share companies on the basis of a long-term car (share) rental, DriveMyCar is a lot cheaper (Interview Brent Artindale DriveMyCar).

Development of DriveMyCar

The development of DriveMyCar is characterized by its acquisition by Qanda Technology (now Collaborate Corporation Limited). Besides the company’s goals, their whole outlook including the website and way of advertising changed (Gordon Capital Research, 2015). DriveMyCar is a result driven company, mainly caused by the fact that they have answer to their inquisitors each year (Hammond, 2012). Therefore, achievements and future goals of DriveMyCar are also focused on numbers. For the future, DriveMyCar identifies their main goals as ‘maximizing the value and the number of transaction’ and building trust and security between parties of the customer segment (Interview DriveMyCar CEO, 2015).

5.2.3 Conclusion for peer-to-peer car sharing

What can be concluded from the section about peer-to-peer car sharing, is that DriveMyCar attempts to be different from the other peer-to-peer, traditional and car rental companies. The main difference between DriveMyCar and other car sharing companies, is that they offer a long-term car rental service. Car owners on a holiday can rent their cars and others will borrow it long term in order to enjoy a holiday in Sydney and surroundings. What is similar to CarNextDoor however, is that trust and security are both high on the agenda.

In addition, one can infer from the brand names that community feeling or trust is important. The name CarNextDoor for example, not only suggest that the cars are conveniently located but it is also a hint for sharing with your ‘neighbors’ and others living in your ‘neighborhood’. The name DriveMyCar on the other hand implies that the car owners clearly support others to utilize their possessions (in this case the car). Furthermore, the lockbox and the Peerpass are examples of the two businesses striving for the facilitation of trust and security among users.

A major change in the timeline of DriveMyCar, as mentioned before, is its acquisition by Qanda Technologies, which changed the way the company deals with numbers and performance. For instance, because DriveMyCar now needs to justify its actions towards its acquisitor, DriveMyCar has made a lot more data reports and strategic analyses in the last year than before. Therefore, the first thing that is visible on the website of DriveMyCar, is an overview of locations and a calculation of how much money you can make or save through the company. CND’s website, however, starts off with a motivation to ‘borrow cars from real people in your community’, focusing more on the distance of the car locations in relation to your own home/location.
5.3 Conclusion

Overall, one can distinguish clear differences between peer-to-peer and traditional car sharing. Although GoGet is a fairly different company than the other traditional car sharing companies (GreenShareCar and Hertz resemble hourly rental companies), they are all mainly focused on providing a reliable and flexible customer service. On the other hand, peer-to-peer car sharing is targeting trust and security among car sharing members. GoGet is building partnerships with actors like Ikea, or contractors building apartments or the government, in order to explore the possibilities for the future of traditional car sharing, whereas CarNextDoor and DriveMyCar are both aiming for other peer-to-peer companies in order to see how they behave in a peer-to-peer market and learn from their experience.

If we look at the timelines of the car sharing companies in Sydney, GoGet is obviously the first company that started its business in Australia. This brings the company a first-mover competitive advantage, however it could also be hard to develop smoothly since car sharing is such a new and misunderstood concept. GoGet was followed by Flexicar in 2004 and by GreenShareCar in 2006, so one could argue that the traditional car sharing way was first. Hence, it is called ‘traditional’ car sharing. Around 2010 and 2012, the peer-to-peer car sharing companies emerged, which is around the time that a lot of changes happened on the traditional car sharing side.

For example, Hertz acquired Flexicar in 2010, CharterDrive changed its name to GreenShareCar, GoGet joined forces with partners like Ikea around 2012 and the results of the car sharing project with the government were presented in 2014. The latter was a very important year as well, since CarNextDoor expanded to Melbourne and DriveMyCar was acquired by Qanda Technologies. Furthermore, this was the year that the state government announced to work together with the traditional car sharing companies in order to look a state car sharing fleet. These developments are important in illustrating niche development, along with the data about expectations and learning processes as well. In the next chapter, the business model differences, the niche developments (network, expectations and learning processes) and the barriers for car sharing will be discussed in order to provide an answer to the research questions of this report.

In the next chapter, the business model value propositions that were reflected in each traditional car sharing business are summarized in a traditional car sharing business model. The same procedure followed for the peer-to-peer car sharing business model (combining the value proposition of the peer-to-peer businesses). Whereas this chapter provided an overview of the different car sharing businesses and variation between the business models, the next chapter discusses how these two business models are reflected in the multi-level perspective. In this way, the chapter provides insights in how business models act in a (sustainability) transition, which helps answering the research (sub) questions of this thesis.
This chapter focuses on the roles of the different car sharing business models in two levels of the multi-level perspective: the regime and the niche. In the niche, different business models can co-evolve and survive through stressing the specific qualities that other companies might lack. A characteristic of the business model is its boundary spanning behavior, in which differences can be underlined by the value propositions of the business models. Therefore, this chapter begins with a juxtaposition of the two different car sharing business models: traditional- and peer-to-peer car sharing. Furthermore, businesses can develop and grow into a regime-standard by using the right partners and learning processes. One can find this discussion in the second part of this chapter. Thirdly, the barriers for car sharing in Sydney will be highlighted. The current dominant business model can raise barriers for business models that are still in the niche. In this case, the dominant business model will be ‘driving privately owned cars’ and ‘renting cars at a car rental company’. These two ways are fully integrated in the current technological system and the car sharing companies will need to find solution for these barriers in their own business models and by managing expectations, networks and facilitating learning processes.
6.1 The Value Proposition of Car Sharing

In order to see how both car sharing business models respond to expectations and learning processes, one needs to find out what expectations the businesses try to create through composing their value propositions. Once the business models (including the network of actors involved with realizing those value propositions) is thoroughly discussed, it becomes clear what the differences are between the companies and how learning processes are beneficial for the fulfillment of the expectations and the satisfaction of involved actors in the car sharing arena. Therefore, the next paragraph discusses the business model of both car sharing entities, followed by the characterization of the network, the expectations and the learning processes.

6.1.1 Business Model Traditional Car Sharing

The initial thought behind starting up a traditional car sharing company is concerned with the altruistic idea of doing something good for the environment. Most of the traditional car sharing companies admitted that this idea was formed through seeing so many cars parked on the sides of the streets and thinking that they had to change this assumption of obligatory car ownership. Or in other words: they would change the way people see car ownership (as something that is part of the culture, a way of freedom). They started with building up a fleet of cars and building up a customer base. Customer service is therefore very important. The value proposition of each of the traditional car sharing companies is concerned with providing a convenient, flexible and accountable customer service. The latter is underlined by the online platform that is set up in order to keep track of the customers and their actions. If there is anything wrong with the cars or other technical malfunctions, the customer can make use of a 24/7 customer helpline reached by phone or by e-mail. Also car maintenance, fuel and insurance are part of the company’s offers. Sharing a car is made easier or more convenient by the utilization of a smart card, send to each car sharing member. Customers have the flexibility of accessing a car any time they want and using a car is easy when you just have to swipe your card and unlock the doors.

The customer base is built by membership referral and mouth-to-mouth advertising. The customer segment is comprised of people (mostly inner-city singles) who want to get rid of their car or people (mostly couples) who want to get rid of their second car. Businesses and business travelers (mostly creative industries) are the latest additions to the customer segment. They hire cars with car sharing companies as a substitution of owning their own company fleet. For every customer type there is a matching type of car. The business
customers can be satisfied with sharing vans, while private members can hire a small car for grocery shopping. Besides the flexibility of having a choice between a variety of cars, traditional car sharing also gives people the opportunity to choose for public transport more often, or even living a more active lifestyle by riding a bike when possible. In that way, car sharing is not only good for the environment, but also for people’s health. On the other hand, the presence of good public transport or bike lanes is a preferable condition for the development of car sharing businesses. If there are no bike lanes or if public transport does not suffice, sharing cars is inconvenient and owning a car will be one of the less attractive options to fulfill the needs of the customer. For that reason, help from the government is required and welcome. Not only should the government make sure that the provision of public transport and bike lanes are satisfactory, the government can also help arranging parking spaces especially for sharing. Moreover, marketing is desirable for all the traditional car sharing businesses. It is important that more and more people find out what car sharing is and what the social, environmental or economic benefits could be.

6.1.2 Business Model of Peer-to-Peer Car Sharing

![Figure 19 - Business Model of Peer-to-Peer Car Sharing](image)

Just like with traditional car sharing, a lot of similarities between both the peer-to-peer business models can be identified. In order to get a clear idea of what peer-to-peer business models represent, the business models of both companies are combined in one figure. One can deduct from figure 19, that trust and security are important for the value proposition in business models. According to Rachel Botsman, trust is the main barrier and enabler in peer-to-peer businesses (Botsman, 2015). Therefore, both car sharing companies made their own verification or lock system that allows member behavior to be reported and verified by the company or other members.

Furthermore, peer-to-peer car sharing is a way to make use of underutilized assets and simultaneously be an effective money maker (or money saver). An additional advantage is that with peer-to-peer car sharing, a huge variety of cars is provided, due to the fact that you are renting the car from somebody else (e.g. your neighbor), not from a fleet manager. It does not only provide a couple of different types of cars (like vans or cars that are rented out by traditional car sharing companies), but every single car is different. Thereby, sharing a car is cheaper than renting a car at a traditional rental company. Another nice bonus for peer to peer car sharing according to car sharing expert Jennifer Kent, is that 'a peer-to-peer model probably has more benefits in terms of it being easier; an easier model to establish... than the
traditional model because (..) you don’t have to have this massive investment in this fleet of cars, you don’t have to negotiate with local councils to get car parking spaces.’ (Interview Expert JK, 2015)

Therefore, scaling of the business is easier in the case that the fleet is based upon people that provide cars, instead of the company buying a fleet of cars and expanding their business by buying more and more cars. However, the cars (and car parking spaces) provided by the owners is still one of the key resources for a peer-to-peer business model. Along with a good technology platform, a verification system and insurance, this is the basis for trust and security among customers. The customer segment is more or less the same as the customer segment of traditional car sharing companies, except for the fact that customers can also rent out their own car. These car owners mostly rent out their second car, or even their only car when they are hardly using it. The peer-to-peer sharing companies are hoping that when people rent out their cars or rent cars from others, it will make them more aware of the costs of driving and the money they will save by sharing the cars. The value proposition of the peer-to-peer car sharing companies in Sydney implies offering economic as well as environmental and social benefits. Environmental, because less cars are used by the same amount of people and social benefits because trust is being established between car owner and car borrower.

In conclusion, there is a clear difference between the value propositions of both business models. Where traditional car sharing is more concerned with easiness, convenience and flexibility, while being a (cheap) link to public transport, peer-to-peer car sharing is characterized by the providence of security and trust between people, enabling a community feeling amongst customers. Furthermore, a peer-to-peer car sharing company does not need to make a huge investment in a fleet of cars, so scaling and therefore reaching more people in a faster pace becomes easier. In that way, more people will become aware of the costs of driving and will consider car sharing as an economic, social and environmental-friendly option. However, ‘doing good for the environment’ is not mentioned in any of the interviews with peer-to-peer car sharing company’s leaders. They all did, on the other hand with the traditional car sharing companies. By promoting green fleets for businesses and private customer, one of the value propositions of traditional car sharing is emphasized as being environmentally friendly.
6.2 The Network, Expectations & Learning Processes of Car sharing

After discussing the business models of car sharing, and especially the value propositions, several key partners and actors are gathered and combined in one figure for traditional and peer-to-peer car sharing individually. In the next section of this chapter, one can find an elaboration on those partners and the links in the car sharing network.

6.2.1 Network Traditional Car Sharing

In the figure above, the network of the three traditional car sharing companies are displayed schematically. When the value propositions of each business are nearly similar, it is obvious that the customer segment and the competitor base match as well. What one can also deduce from this figure, is that the media is an important, shared actor. Because car sharing is still a fairly unknown theme, newspapers introduction movies and other media channels can help in spreading knowledge about car sharing. This marketing, is a very useful resource that can also be attained from partnering with the government. When GoGet started its business in 2003, it already had close ties within the government, made possible through the previous job position of their CEO. Since then, the company is busy realizing regulations concerning car sharing pursuits. Besides regulations and marketing, car sharing spots can be provided by the government as well. Each of the traditional car sharing companies in Sydney is responsible for the delivery of data about customers, so that they can apply for a number of parking spaces every year. However, not only the shared actors are interesting for this report. Also the missing or dissimilar actors tell a great story about the different car sharing companies as well. As can be deduced from previous chapter each traditional sharing company has their own supplier(s).

The resource ‘capital’ for Flexicar is nested in the acquisition of the company by Hertz. Hertz appreciated the idea behind Flexicar and offered multiple millions in order to acquire the company and make use of its characteristics. GoGet is a company that is built from the ground up and GreenShareCar started as a family business. Because those traditional sharing
business have more or less the same value propositions and they are positioned in the same competitor group, the companies try to distinguish themselves by partnering with different actors and suppliers. GreenShareCar for example, only utilizes ‘green’ electric cars whereas Hertz has a fleet of cars that they were already renting out. All of the companies in Sydney extended their focus towards business customer, however, what is striking here is that only GoGet partners with knowledge institutions or universities in order to keep on learning. Furthermore, GoGet was the only traditional car sharing company that designed the website/technology platform themselves. Both GreenShareCar and Flexicar/Hertz on Demand partnered with the company Metavera in order to get the platform that was needed. GoGet is, in terms of cars (capital) distributed across the city the biggest. Nevertheless, Flexicar is acquired by a big global rental company and is thus significant.

In sum, one can conclude that the government is a very important actor in the traditional car sharing network. Valuable resources that those companies are requiring can be emphasized as: marketing, capital and car (parking space)s. A striking fact is the lack of university and knowledge institution-partnership with GreenShareCar and Hertz on Demand. The next section about learning processes will explain how the network is used and how learning process (if at all) are established.

6.2.2 Network of Peer-to-Peer Car Sharing

The presence of an extensive network is beneficial when starting up a business from the beginning. Also when the business gets older and develops, a network can help with growing in a faster pace. What is striking here, is that the media is a very important shared actor with both the peer-to-peer car sharing companies. A source like the media is very important in providence of marketing in order to achieve a large customer base. Although the customer segment seems to be alike, DriveMyCar is focusing more on long term rentals whereas CarNextDoor is focusing on the short term. One can still note that DriveMyCar and CarNextDoor have the same competitors, however car rental companies are stronger competition to DriveMyCar than for example peer-to-peer car sharing companies or traditional car sharing companies. Moreover, one can deduct from this network that even while CarNextDoor and DriveMyCar are in the same sort of branch (peer-to-peer car sharing) they have their own way of networking and their own partners and suppliers to get help from.
However, both companies tend to partner with other peer-to-peer start-ups, for example Peerby or others that are just starting to grow. This is a strategic move, since the peer-to-peer companies can combine forces in the network and market their strengths together. In the case of the peer-to-peer car sharing companies, other peer-to-peer rental companies (for example for garages or parking spots) are very helpful. Delivery companies or other businesses could be useful partners as well, because of their need for transporting vehicles. What is missing in this network is the government. Just like with the traditional car sharing companies, the government could help by providing parking spots, marketing or capital to start up and develop the business. However, CarNextDoor and DriveMyCar are not even mentioned on the governments’ webpage. Thereby, the peer-to-peer car sharing companies are not very fond of sharing their data with the government in exchange for parking spots. They retrieve car spots from their own customers anyway (the car-owners). What could be helpful for both companies is financial capital. The way the companies are financing its resources is based on a different system. For example DriveMyCar gets its money from Collaborate Corporation ltd. and is therefore more focused on the numbers and the results, in contrast to CarNextDoor, who is even more concerned with marketing and name branding because they are supported by public funding.

In short, the media is an important actor part in the network of both companies in order to achieve growth through marketing. Especially since the government is missing as useful source concerning marketing, parking spaces or capital. However, CarNextDoor and DriveMyCar have found their own ways of developing their business, by partnering with suppliers, partners and investors of their interest.

To summarize the network section of this chapter, one can find that it is important to meet expectations of valuable partners. For example in the case of traditional car sharing, the government is important for the providence of dedicated parking spaces, some marketing, and applying certain regulations to the car sharing market. In the peer-to-peer car sharing world, it is important to partner up with the media, in order to benefit from marketing and grow steadily towards a sustainable business. Furthermore, the customers are very important for both business models. Traditional car sharing is mainly focused on achieving a good customer service, whereas even the fleet of cars for peer-to-peer car sharing is depending on the presence of the customers. There are also a few missing links found in both scheduled networks. For traditional car sharing, this is the link between knowledge institutions and Hertz on Demand and GreenShareCar. GoGet is working together with universities and other knowledge institutions in order to keep developing new ideas such as driverless cars. Hertz on Demand and GreenShareCar are more focussed on working together with bigger companies (such as Metavera) where they can make use of their services. These universities and knowledge institutions are also missing in the network. This means that they are not necessarily working together in finding new ways of dealing with the sharing economy. However, because peer-to-peer car sharing is such a new topic, a lot of researchers are concerned with investigating the matter. In that way, CarNextDoor and DriveMyCar do not need to work together with those institutions, but they can use the outcomes of the research.
Identification of expectations is crucial for niche development. According to Schot and Geels (2008) ‘they provide a guide to the learning process; attract attention and legitimate (continuing) protection and nurturing’. Moreover, in order to underline the difference between the value propositions of the traditional as well as the peer-to-peer car sharing companies, customer expectations are important to recognize and acknowledge. In this section, the customer expectations of traditional car sharing will be discussed first, after which the expectations of peer-to-peer car sharing are given. Later on in the expectations section, shared and conflicting expectations between different stakeholders are highlighted.

Traditional Car sharing

Several expectations can be deduced from interviews and reviews of car sharing customers (Simpson, 2014) (Product Review, 2016). Benefits of traditional car sharing instead of owning a car are specifically asked for and noted. It turned out that most expectations were about the costs (traditional car sharing is cheaper than owning a car) and the convenience (flexibility and easiness of booking a car whenever you want).

I have a car and a bike. Both are impractical for chores and sort of getting around to do sort of lunch or shopping or if we are going to another environment where I don’t want to take the bike or I don’t feel safe taking the car I will order a GoGet and use it. It is cheaper than using a taxi and it is quicker than jumping on the train. So it is mainly the convenience and the costs. (Interview TD User1, 2015)

Another example of an expectation concerning convenience was that hassles of owning a car (e.g. cleaning, paying for fuel, paying for insurance) can be avoided. According to an anonymous customer the expectation of traditional car sharing compared to car ownership was ‘having access to a car in multiple cities’ and ‘not having to service/clean vehicle’. Furthermore, people tend to use car sharing in order to avoid buying a car or having a car sitting idle in the garage or parking space for almost 24 hours a day.

‘I don’t need to commute by car and I can use a train to get into the city but there are times when I need to do it quicker or I need carrying space and therefore having an option of a car sharing system is really beneficial for me. And I think there are a lot of people like me who don’t want to have a second car or they don’t want to have a car in general because they live in an apartment in an inner-city or in a township and they just need a car for maybe one or two hours a week.’ (Interview TD User1, 2015)

Then, questions were asked concerning the emphasis on expectations about the traditional car sharing companies themselves. It was striking that about half of the reviews of the traditional car sharing companies were not positive about the customer service. According to them, customer service didn’t meet expectations in terms of tempo, availability of cars and fairness of payments and costs of hiring the cars. As one could have read in previous chapters, especially the case of GoGet, a good customer service is one of the main value propositions of the company. However, there are also people claiming that the customer service is perfect and the maximum waiting time for a response is not more than ten minutes. However, it is doubtful whether the service is reliable yet.

Summary of Customer Expectations for Traditional car sharing

- Saving money
- Quick way of transportation
- Avoiding the hassles of ownership
- Having a choice, flexibility
- Having a dedicated parking space

- Slow Customer service
- Availability of cars is lacking sometimes
- Refunds slow, additional fees,
Customers see the future of car sharing change to a large extent. Some mention the development of autonomous cars as a technology that will certainly be there in the future. Others mention a change in the car sharing business model: from point-to-return towards point-to-point. They agree with the supposition that the government should be more unanimous in decisions in favor of car sharing companies. Traditional car sharing is threatened by Uber and other start-up companies who can drive the car sharing companies out of the market if they are supported by the government.

The government on the other hand, or the representative from the city council that was interviewed for this research, sees that car sharing is beneficial to the environment (to some extent), and the economy. The environment could be spared a bit by the reduction of car usage and more efficiency in street space. This will also decrease the amount of (fatal) road accidents in Sydney per year. It is true however, that there is dissension within the government caused by fear for the disappearance of private parking spots. To underline the advantages of car sharing, Anthony Mifsud (the representative of the city council) argues that there are also health benefits related to car sharing, due to the fact that car sharing can serve as a link to public transport and cycling.

According to the network that was discussed earlier this chapter, knowledge institutes and universities play an important role in the development towards driverless cars in Sydney. GoGet is the only firm in the traditional car sharing networks that collaborates with the universities in order to build a customer base of early adopters for future autonomous car members. With regard to partnerships with traditional car sharing companies, some business can be viewed as customers as well, for the reason that creative industries can borrow a fleet of cars or vans with GreenShareCar (Simpson, 2014b), Hertz on Demand and GoGet (Simpson, 2014c).

**Peer-to-peer car sharing**

When asked about the benefits of peer-to-peer car sharing in comparison to having a car for your own, one of the interviewees replied the question with: doing good for the environment and socializing with other people, in other words creating a 'warm, fuzzy feel'.

According to him, ‘it was not really about making money. It was more about the warm fuzzy feel. And doing good for the environment. Yes, there were still small expectations that sharing my car may help with paying the sale of my burning fees’.  
*(Interview P2P User1, 2015)*

Moreover, a compensation for the money spent on the car, but also saving money by not owning a car, are expectations that were mentioned often. For the borrower side of car sharing, expectations about the flexibility of choice were present. Also, again the hassles of car ownership could be avoided by borrowing a car from a peer.

‘Avoiding the hassles of car ownership: not needing to take care of maintenance, and registration. Having choice: you can hire a car to meet your needs for the day. When you don’t need a car, you don’t pay. Also, we have a dedicated parking space which we use for when visitors arrive at our house. Parking can be difficult so having a space is useful. *(Interview P2P User2, 2015)*
In addition to the latter and the argument of flexibility of choice, one could argue that those expectations implied that car sharing could be more convenient (Product Review, 2016b). However, focusing on the expectations about the peer-to-peer car sharing companies (the business model), a convenience-related problem is emphasized as the amount of kilometers that one needs to walk in general in order to collect the right car. Moreover, instantly booking a car is still hard to do via mobile application or smartphone. Most problems arise in the area of the smartphone technology, service and trust (especially keeping cars clean, paying the amount of money that was agreed upon, and so on).

Trustworthiness of borrower and owners is maintained by building up a reputation through a platform where both parties can be reviewed. If an accident happens, this is bad for your reputation. However, if you try to do your best to fix the damage, this may save your reputation again.

‘One of my borrowers damaged the left side of the car and the bloke was really bad about it you know he was really engaged and helped in every way. When there is a potential to lose your reputation and you have a forum space and I think people just upgrade a way and to save the reputation as much as possible’ (Interview P2P User1, 2015)

If these companies keep on growing, they can build a big social network of people trusting each other. However, according to the interviewees, government involvement is desirable, especially concerning dedicating parking spaces.

Government can help car share by providing more incentives by way of taxation, or space with car parking spaces. (Interview P2P User2, 2015)

The government, however, does not share this point of view with regard to the peer-to-peer car sharing companies. They assume that the peer-to-peer companies can manage themselves and they think that CarNextDoor and DriveMyCar are not eager to give away their data (and thus they cannot apply for parking spaces).

‘We found this really interesting tension going on between local council thinking they need to regulate this car sharing organization and then local councils thinking no this is a community good.’ (Interview Expert AM, 2015)

In Sydney there is a lot of community opposition to the provision of parking spaces (...) because the car parking spaces were consistently occupied by non-car-sharing cars, so regulation needs to be an enforcer as well.’ (Interview Expert JK, 2015)

Scaling is an advantage of peer-to-peer car sharing that is underlined by the representative from the government (Anthony Mifsud) as well as the car sharing expert (Jennifer Kent). If a company scales up, it expands its customer base. Therefore, car sharing can reach more people when scaling is easier and that brings the advantage of making more people aware of the costs of driving and the benefits of car sharing. Furthermore, health benefits can also be attributed to peer-to-peer car sharing plus social benefits of having more interaction among people, within a community.

This community feeling is also promoted by other peer-to-peer firms that are trying to collaborate with companies like CarNextDoor or DriveMyCar. They have the expectation to learn lessons from these collaborations and get to know more about the development of a peer-to-peer system in society. Another actor that spreads knowledge is the media. News agencies, research institutes and other media channels contribute to a shared knowledge base about the new trend called car sharing.
Shared and conflicting expectations

The discussion in the previous paragraphs can lead to the conclusion that customers of traditional car sharing business are concerned with the flexibility and easiness of the customer service. Peer-to-peer customers, on the other hand, expect to receive trust and community feeling and contribute to the environment while sharing the cars. What is striking, is that this environmental contributions from peer-to-peer car sharing are expected by the government and the customers, but not by the car sharing companies themselves. Moreover, the huge variety of cars is not viewed as a possible benefit from peer-to-peer car sharing by the government and customers. Traditional car sharing is contemplated as a possible link to public transport facilities, whereas peer-to-peer car sharing does not fit this picture. In table 5, all the expectations (shared, neutral or conflicting) are emphasized in one model. The shared expectations for traditional car sharing are concerned with flexibility and choice for business members and customers and government representatives see the possibility of a link to public transport. With regard to peer-to-peer car sharing, trust and security and the community feeling are important, but environmental benefits are clearly a contradicting expectation between actors.

Table 5 - Shared or conflicting Expectations of actors

<table>
<thead>
<tr>
<th>Actors</th>
<th>Traditional Car Sharing</th>
<th>Peer-to-Peer car sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Sharing Companies</td>
<td>- Doing good for the environment</td>
<td>- Provide Trust &amp; Security</td>
</tr>
<tr>
<td></td>
<td>- Easy access to cars and easy use</td>
<td>- Making/Saving Money</td>
</tr>
<tr>
<td></td>
<td>- Flexibility and choice</td>
<td>- Cheaper than owning a car/ traditional rental companies</td>
</tr>
<tr>
<td></td>
<td>- Link to public transport</td>
<td>- Provide huge variety of cars</td>
</tr>
<tr>
<td></td>
<td>- No ownership of assets</td>
<td>- Make more efficient use of existing vehicles</td>
</tr>
<tr>
<td></td>
<td>- Customer service</td>
<td>- Scaling of car sharing concept</td>
</tr>
<tr>
<td></td>
<td>- Cheaper than owning a car</td>
<td>- Make people more aware of costs of driving</td>
</tr>
<tr>
<td></td>
<td>- Offer variety of cars for different purposes</td>
<td></td>
</tr>
<tr>
<td>Government &amp; Municipality</td>
<td>- Doing good for the Environment</td>
<td>- Doing good for the Environment</td>
</tr>
<tr>
<td></td>
<td>- Reduced car usage; efficiency in street space</td>
<td>- Make people more aware of costs of driving</td>
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<tr>
<td></td>
<td>- Reduction in road accidents</td>
<td>- Scaling (because easier model to establish)</td>
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<tr>
<td></td>
<td>- Stimulate Economy</td>
<td>- More interaction with the community (social benefits)</td>
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<tr>
<td></td>
<td>- Disappearance of private parking spots</td>
<td>- Having a parking space</td>
</tr>
<tr>
<td></td>
<td>- Link to public transport</td>
<td>- Health benefits</td>
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<td></td>
<td>- Health benefits</td>
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<tr>
<td></td>
<td>- Cultural change to non-ownership</td>
<td></td>
</tr>
<tr>
<td>Car Sharing Customers (Private &amp; Commercial)</td>
<td>- Saving money</td>
<td>- Doing good for the Environment</td>
</tr>
<tr>
<td></td>
<td>- Quick way of transportation</td>
<td>- Making/Saving Money</td>
</tr>
<tr>
<td></td>
<td>- Avoiding hassles of ownership</td>
<td>- Warm Fuzzy Feel</td>
</tr>
<tr>
<td></td>
<td>- Flexibility and choice</td>
<td>- Avoiding hassles of ownership</td>
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<tr>
<td></td>
<td>- Having a dedicated parking space</td>
<td>- Flexibility and choice</td>
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<tr>
<td></td>
<td>- Customer service</td>
<td>- Having a parking space</td>
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<tr>
<td></td>
<td>- Availability of cars</td>
<td>- Access to cars</td>
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<tr>
<td></td>
<td>- Cheaper than owning a car</td>
<td>- Trustworthiness</td>
</tr>
<tr>
<td></td>
<td>- Having a parking space</td>
<td>- Instantly booking (via app or platform)</td>
</tr>
<tr>
<td></td>
<td>- Instantly booking (via app or platform)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td><strong>Knowledge Institutions</strong>: building up a customer base of early adopters for autonomous cars</td>
<td><strong>Partners</strong>: teaching each other how to develop in a peer-to-peer sharing economy</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Media</strong>: expectations are that car sharing will be part of the future</td>
</tr>
</tbody>
</table>
6.2.4. Learning Processes

Learning involves the acquisition of new knowledge and its transfer between the actors that are part of the innovation process, which in the context of this analysis refers to the actors identified in the network section of this chapter. Following the example of Kamp et al. (2004), this paper investigates four distinct types of learning, which includes learning by searching (also known as R&D, involving the acquisition of ‘know-why’), learning by doing (concerned with the acquisition of ‘know how’ during manufacturing practices), learning by using (acquiring ‘know how’ during (prolonged) use) and learning by interacting, which requires close cooperation between actors.

Traditional Car sharing

Traditional car sharing companies and the peer-to-peer business models function as the main actors in the learning process that is facilitated. However, firstly it is important to underline in the case of traditional car sharing, that the government recently (2007) started trials in order to learn more about car sharing and its development (City of Sydney, 2007). In 2014, the government even announced that they (together with the traditional car sharing companies) are going to look into the concept of a state fleet, using car sharing (Freitas, 2015). Learning by searching is therefore emphasized by the government with the aim to quantify car sharing effects through the commissioning of in-depth studies. Furthermore, learning by doing is executed by the improving visibility of car share bays through clear signage. Latest news about the announcement of the state fleet suggest the process of learning by using, where the NSW government is currently considering using car sharing for its own employees (Freitas, 2015). Lastly, learning by interacting is facilitated by the cooperation between the government and traditional car sharing firms, consulting with residents near parking bays about the benefits of car sharing (Gordon Capital Research, 2015).

Knowledge institutions and universities are also involved in traditional car sharing, especially by partnering with GoGet for the development of self-driving cars. This type of learning is called learning by interacting. Learning by searching is also a small part of this process, however no evidence is found about the development of current technologies such as user-friendly IT concerning car sharing, so learning by searching will not play a big role in this process.

Car sharing members are important actors in the learning process, since customer service is high targeted as a focus point of the traditional car sharing companies. GoGet, for example is involved with customers through monthly surveys, and feedback (together with the municipality) about car sharing bays and parking locations (Interview GoGet CEO, 2015). Learning by interacting is therefore present with the users. Furthermore, learning by using is an obvious learning process for customers, since they are using the cars frequently and can provide feedback and learn from the benefits through experience. At last, learning by searching is also done by customers, for example by looking up the benefits of car sharing on the internet.

Learning processes of partners in the field of traditional car sharing are mainly concerned with learning by interaction, in other words, they learn from collaborating and interacting with the traditional car sharing firms.

The traditional car sharing companies mainly focus on learning by using and learning by interacting. Only GoGet is involved with learning by searching by teaming up with universities to look into self-driving technologies. Also learning by doing is more applicable to GoGet rather than the other traditional car sharing companies, since those car sharing companies make use of Metavera and did not build their own technological platform (Dyck, 2013).
Peer-to-Peer Car sharing

Both peer-to-peer car sharing companies have built their own technological platform, and are therefore also 'learning by doing' through frequent development and testing of the platform. The other learning processes are more or less the same as the processes of traditional car sharing companies, in particular because the business are interacting with other peer-to-peer firms as well.

The media is an actor that functions similar to the universities and knowledge institutions through learning by searching. Moreover, learning by using is also involved, since several new articles are reviews of the cars of car sharing companies.

Table 6 provides an overview of the extent to which each abovementioned learning process took or is taking place per actor, with 0 indicating a lack of learning, and ++ referring to excellent learning processes occurring. Only the actors about which some data was available regarding the learning processes are included, and a blank field indicates a lack of available data for the particular actor.

Table 6 - Learning processes of actors of the car sharing network

<table>
<thead>
<tr>
<th>Actors</th>
<th>Types of learning processes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning by searching</td>
</tr>
<tr>
<td>Traditional Car Sharing companies</td>
<td>(+) Teaming up with the University of New South Wales for self-driving technologies, though no research on the implementation of current technologies concerning e.g. urban planning.</td>
</tr>
<tr>
<td>Peer-to-Peer Car sharing companies</td>
<td>(+) The peer-to-peer companies own less cars, but CND and DMC have shown capabilities by building own technology.</td>
</tr>
<tr>
<td>Municipality of Sydney</td>
<td>(+) Aim to quantify car sharing effects through the commissioning of in-depth studies.</td>
</tr>
<tr>
<td>Knowledge centres &amp; Media</td>
<td>(+) Developing self-driving technologies. Media is searching or car sharing effects (p2p)</td>
</tr>
<tr>
<td>Car sharing members</td>
<td>(+) Members might look up the benefits of car sharing via the Internet, or ask people in their social vicinity for information.</td>
</tr>
<tr>
<td>Partners</td>
<td>(0) Metavera developed the technology for GSC and HOD.</td>
</tr>
</tbody>
</table>
6.3. Barriers for Car Sharing

In order to get a grip on the barriers that car sharing is facing in Sydney, several CEOs of car sharing companies, experts and people from the government are asked for their knowledge. The main barriers for car sharing are classified in four subcategories. These categories are explained and discussed in the following paragraphs.

Cultural & Symbolic meanings

Especially in the startup period of car sharing companies, knowledge and marketing about car sharing is crucial. The biggest barrier for companies like GoGet, who started their business around 2003, is the lack of knowledge about car sharing. Most people had not even heard of car sharing before or knew enough about the implications in order to try out the new system. Moreover, the value of ownership and the feeling of freedom when driving a car, is deeply rooted in the Australian culture.

There are a lot of cultural things in our society around valuing of ownership and that idea of having that right to own a car. We have very strong sense of that it is our right to be mobile, by a private car in Australia. That is like having a right to breath or something. (Interview Expert JK, 2015)

This value of ownership grows along with a lack of responsibility feeling for others’ properties. We tend to keep our possessions for ourselves and if we borrow or use tools from other peers, we tend to forget that it needs maintenance or cleaning. This is especially the case for traditional car sharing companies, where a fleet of cars are owned by the company. If there are no clear rules and regulations about maintenance and cleaning like with rental cars of car rental companies, some people will leave the cars filthy and damaged (particularly in the startup period of the company, when rules and regulations are not clear yet). This fact is related to trust issues that are found as a barrier for peer-to-peer car sharing companies.

‘Certainly some people are very suspicious (..) So what we are trying to do is to build up lots of users on both sides that it creates the network effect for us.’ (Interview CarNextDoor CEO, 2015)

Peer-to-peer car sharing companies are therefore concerned with trust and security issues, in order to keep up the market side of the borrower and the market side of the car-owner. Experience showed that it is a struggle to make sure that both market sides find a growing balance. There are times that the owner-side is growing really fast while the borrower-side is lacking expansion. The peer-to-peer sharing companies introduced a verification system that increases the trust between members and the company, and among members.

In short, the cultural- or market barriers are concerned with trust (between both market sides of peer-to-peer car sharing), the feeling of freedom (and therefore the lack of responsibility feeling) and the absence or lack of knowledge about the car sharing system as a whole.

Technology

Since the start of the car sharing companies in Australia, the technology has changed to a large extent. Many of the interviewees state that the technology has become cheaper and faster, and is more an enabler than a barrier for those car sharing companies. The verification system mentioned in the previous paragraph, is a great example of a technology that has become an enabler for car sharing, because it enables trust between people.

Technology is enabling all sorts of things... it is enabling the trusting to be established, it is enabling the communication, it is enabling the diversification of business models to therefore respond to the context of different cities. (Interview Expert JK, 2015)
For traditional car sharing however, where the customer service is an important part of the value proposition of the business model, the expectations of this system increase with the fast development of the technology. In other words, if there are complaints concerning the car sharing companies, it is mostly because the developments regarding customer service (for example an app for instant bookings) are lacking behind the technological developments. Furthermore, some companies mentioned that they started off with the wrong technology in the first place. A smart card for the cars did not work very well for peer-to-peer car sharing because it was too expensive to put the technology in the cars, and they found out that the technology should fit to customer needs.

‘The technology wasn’t going to work for peer-to-peer car sharing because it is too expensive to put in. (..) we designed a whole new method of sharing (..) The lock box.’ (Interview CarNextDoor CEO, 2015)

At last, they found that, nowadays building your own technological platform is cheaper, so they figured out how to match with customer expectations themselves. In short, technology was a limitation in the early 2000s with respect to quick customer service as part of the traditional business model. Also for peer-to-peer car sharing, dealing with the right technology was a struggle in the beginning. However, the technology has now become an enabler for trust and even develops faster than the customer service is developing.

Infrastructure
With regard to infrastructure, a barrier for car sharing is public transportation and the presence of bike lanes throughout the city area. Because land in Australia after WWII was cheap and plentiful, Sydney is comprised of different suburbs that are thinner and spread out across a bigger area, compared to older cities, in which there were more building constraints. Combined with substandard qualities of the public transportation system and a government that prefers motorways over bike lanes, this city is hardly livable without owning a car. Secondly, the car sharing system does not need a lot of extra requirements. It is using the old private car infrastructure and is therefore also using the spaces provided for parking (Kent & Dowling, 1,000 cars and no garage – why car-sharing works, 2014). Car sharing kind of highjacks the infrastructure of the private car and sort of uses it from a moral of a public good. (Interview Expert JK, 2015)

However, there is a struggle to find the right balance of parking spaces. If there are, for some reason, fewer parking spaces provided than cars on the street, sharing a car would be overall more beneficial. On the other hand, car sharing companies need car sharing spaces as well so there should be a certain amount of parking spaces present that are dedicated to car sharing. For example, agreements could be made with the government or architects or building cooperations in order to provide car sharing spaces particularly dedicate to apartment buildings. Some car sharing companies are already trying to figure this out.

‘We designed a system, that other people within your building can use your car spot within the apartment complex’ (Interview CarNextDoor CEO, 2015). The other company is trying ‘to store those cars in a secured warehouse. And that is something what we would like to push out’ (Interview DriveMyCar GM, 2015)

In short, the main infrastructural barriers for car sharing are concerned with the providence of good public transportations and bike lanes in order to make a connection with car sharing possible. Furthermore, the lack of dedicated parking space is, for traditional car sharing companies in particular, still a barrier that needs to be taken into consideration.
Policies and Regulations

The need for dedicated parking spaces is a topic of this paragraph, since there is a tension between and within local councils and the government. Politics can be a barrier for car sharing when there is a lot of opposition and regulations or policies are not univocal.

In Sydney there is a lot of community opposition to the provision of car parking spaces (..) it is important that we have regulation that stipulate how spaces are allocated and, you know, a minimum number of spaces need to be allocated. (Interview Expert JK, 2015)

Especially peer-to-peer car sharing suffers from political disagreement. The city council can provide dedicated parking spaces, but the companies would have to meet all the necessary requirements. They have to share data about who is booking the cars, how many times a month they are used, and so on. Moreover, the companies have to pay a fee for installing the space and then they have to give an update every month about how everything is running. Traditional car sharing companies are more likely to agree with these requirements, since their need for dedicated car sharing spaces is bigger. However, this causes (among other reasons) the political polarization of people deciding about the policies. Due to the fact that peer-to-peer car sharing companies are not eager to send their data to the government, the companies remain under the radar of the state government and the city council (Kent & Dowling, 2014).

‘They don’t even consider peer to peer car rental and peer to peer car sharing. It is up to us to work with the road and traffic authorities to become recognized for peer to peer car sharing… We are kind of just under the radar a bit’ (Interview CarNextDoor CEO, 2015)

Fortunately for the traditional car sharing company ‘GoGet’, their CEOs’ previous function was based at the transportation department in the government. The company can thus use this network as a way of arranging new agreements. However, the state government and the city council have different ways of executing policies and regulations. According to Transport minister Anthony Mifsud,

‘Australian cities are so messed up. Our local council is not very powerful. We can encourage car sharing and provide car sharing for on the street. We can build cycle ways, but the state government essentially is much more powerful and they can stop us doing anything.’ (Interview Expert AM, 2015)

This is a barrier for car sharing, regarding the governments unfamiliarity with for example the peer-to-peer sector. The state government sees the car sharing concept as a threat for car manufacturing companies and privately owned cars on the motorways, and can use its power in order to ban car sharing from Sydney. It is thus necessary that car sharing becomes well-known under the citizens and regulators of the city. The City council can make this happen by supporting the marketing of car sharing. Even until this day, peer-to-peer car sharing is unnoticed by the council, considering the fact that they are not even mentioned on the special section about car sharing on the website of the council.

‘We don’t really need anything from the government, we don’t need any rules and regulations with peer to peer car sharing we don’t really need the car spots, because our owners already have the cars and the car spots. We don’t really need their approval so really the only thing we need from the government is (..) marketing.’ (Interview CarNextDoor CEO, 2015)

Another barrier is the lack of capital support by the government or city council. This barrier is in particular problematic during the start-up phase of car sharing companies. Traditional car sharing companies need to buy a large fleet of cars and need to invest a great amount of money right away. The government could help by providing a subsidy for newly operating car sharing businesses or could even arrange a loan for those companies. Peer-to-peer car sharing companies are in need of other sorts of help, with regard to money. Here, governments
can provide support in making tax regulations and other necessary payments clearer for car sharing members. Because peer-to-peer car sharing is fairly new, the government can start in building up evident and explicit peer-to-peer policy documents. In sum, political barriers can be emphasized in three main topics. This concerns governmental help in marketing, parking spaces and capital. Capital and parking spaces are beneficial for traditional car sharing and marketing could be a solution for the development of peer-to-peer car sharing companies.

6.3.1 Juxtaposition of the Niche and Regime Dimensions of Car Sharing
Reverting on the regime dimension elaborated upon in the theory section, the classification of socio-technical regime dimensions as mentioned in Smith (2007) are utilized. These dimensions include guiding principles, technologies and infrastructures, industrial structure, user relations and markets, policy and regulations, knowledge base and cultural and symbolic meanings. By juxtaposing the situation in the regime (private car use) with that of the car sharing-niche for each dimension, the most prominent differences between the two become visible. Also, it becomes clear how barriers arise from the regime characteristics. The table below provides an overview of the main arguments suggested in the section above, after which the other niche-regime interactions are highlighted.

<table>
<thead>
<tr>
<th>Socio-technical dimension</th>
<th>Regime: Business-as-usual in Sydney</th>
<th>Niche: Car sharing in Sydney</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Guiding principles</td>
<td>Aesthetic principles of a car heavily influence its success. Users enjoy the ease and comfort of unrestricted car-use, but are also confronted with infrastructural problems of congestion and a shortage of parking spots.</td>
<td>Largely based upon ICT, in which the user-interface is essential for user-friendliness to gain momentum. Furthermore, this niche strives to achieve a more sustainable environment, as well as partly solving the problem concerning the current infrastructure, i.e. congestion and parking problems.</td>
</tr>
<tr>
<td>2. Technologies and infrastructures</td>
<td>Parking follows the first-come, first-served principle, with prices on top of purchase and use costs of the car. The main use for ICT in the private mobility regime is navigation during travel.</td>
<td>Parking spots are provided by the government as well as the car owners (P2P). Reserved up front, and part of the rental price. The bulk of the regime infrastructure is conserved and even relieved, although more dedicated parking spaces are required. ICT is used through web applications or mobile apps, not only for navigation but also for locating and reserving and verifying cars.</td>
</tr>
<tr>
<td>3. Industrial structure</td>
<td>Car manufacturers adapt to the wishes of individual consumers. Dealers are needed to match individuals’ demands with car manufacturing capabilities.</td>
<td>Car manufacturers focus on relatively large batches of identical cars. Manufacturers are more closely tied to the consumers, i.e. the car sharing firms. With peer-to-peer car sharing, variety of cars is still maintained, however the amount of cars purchased is decreasing.</td>
</tr>
<tr>
<td>4. User relations and markets</td>
<td>Try to sell as many cars per household as possible. Car dealers focus on individual consumers for their sales. Active consumers regarding maintaining the car.</td>
<td>A decline in the number of cars due to sharing in larger groups. Car dealers will focus on car sharing firms for their sales, or only individuals for p2p car sharing. Passive consumers since maintenance and service are facilitated by the car sharing company.</td>
</tr>
<tr>
<td>5. Policy and regulations</td>
<td>Taxes are paid for directly by individual consumers. Parking permits or at least tickets are required in certain areas of Sydney.</td>
<td>Taxes are paid for by car sharing firms, who pass it on to individuals through the increase of the rental price. Parking spot locations for traditional car sharing are negotiated</td>
</tr>
</tbody>
</table>
between the municipality of Sydney and car sharing firms.

<table>
<thead>
<tr>
<th>6. Knowledge base</th>
<th>Understanding what the diverse target audience (variety of individuals) values. Technological knowledge, focusing on characteristics of the car.</th>
<th>Understanding what the concentrated target audience (dominant car sharing firms) values. Behavioral knowledge, focusing on use and user-friendliness of the car. Knowledge about the existence of car sharing as well.</th>
</tr>
</thead>
</table>

| 7. Cultural and symbolic meanings | Personal freedom is important in private car transport. Individuals value being completely in control of when they can use their car. At least part of the consumer group values the aesthetics of the car greatly, because it is part of their own identity. | ‘Grabbing a car’ becomes the norm, similar to catching the train or bus. A car always needs to be returned to its initial parking spot. Aesthetics of the car matter less, as large groups of people share the same cars. Community feeling and sharing your ‘possessions’ becomes more common. |

As can be derived from the table above, there are a lot of significant differences between the current regime and the upcoming niche. Although the developments regarding the niche to a large extent only become important if the niche gains enough momentum to grow into the new dominant regime, it does show that actors in this field need to be aware of possible future consequences.

An example of such a consequence is the shift in industry structures one can anticipate. In the current business-as-usual case, car dealers play a mediating role between individual customers and the manufacturers of the vehicle. Individual customers inform the dealers how exactly they want the characteristics of their cars tweaked, who then pass it on to the manufacturers. If the car sharing niche becomes dominant, this will likely take on a different form. No longer are individuals the dealers' customers, but the car sharing firms take on this role. As these firms will likely not order the cars one-by-one, the manufacturers will increasingly be working with batches of identical cars. In that sense, the emergence of the car sharing niche might be an opportunity for manufacturers to exploit economies of scale in the production of cars – due to these large fleets of identical cars. At the same time, the dealers will have to adapt to this new situation as well, in which the number of unique car sales is expected to decline. This might prove to be a barrier toward the rise to power of car sharing.

When turning to user relations and markets, a big shift is seen from regime to niche. Whereas in the current regime car dealers focus on individuals and try to sell as many cars to a household as possible, this will shift to a situation in which car sharing firms will become the centre of attention from a car dealers' point of view. The user relation will shift from occasional contact with a car dealer to more frequent contact with a car sharing company. The level of activeness of a user will remain the same to a large extent, regarding taking decisions. Whereas first decisions were made based on aspects including the comfort and trustworthiness of a car, these will become aspects considering among others the availability of parking spots nearby and the monthly costs of car sharing. However, more passive behaviour of users is likely to occur since they do not longer have the obligation to maintain their private vehicle (SGS Economics and Planning, 2012).

Regarding the knowledge base, there will be a change in the core knowledge between the niche-level and the regime. As mentioned earlier in this report, the target audience will shift from individuals to car sharing companies. Whereas the technological aspects of the car were emphasized first, a shift towards behavioural knowledge will be observed. Users will no longer be solely and primarily focused on technological characteristics of the car, but the usability of a user-interface will become an important subject. Furthermore, car sharing companies should get a clear view on the demands of users, regarding among others the availability of cars, in order to start a flourishing company.
In sum, a lot of regime dimensions will change once the niches gain enough momentum to break through. The most important and most challenging type of change is hidden in the cultural and symbolic meaning of the car. From a historical point of view, the car has always represented a sense of freedom. We can travel wherever we want to go, whenever we want to (the first however depends on access and the second on congestion phenomena. (Bleijenberg, 2003)). However, this will be subject to change if people will become dependent on each other in a car-sharing economy. The ease with which users have access to a car in the current regime, will disappear to some extent if there is no car available nearby and you are restricted in your freedom of movement. Next to this, a car always has to be returned to its initial parking spot, leaving even less room for the cultural meaning of freedom that is attached to driving. An author claims, however, that the car is increasingly viewed as an expense and a burden by users (Ball, 2014). This might just be the window of opportunity that stimulates the principle of car-sharing, in which access surpasses ownership.

With respect to the infrastructure, a number of important changes are to be expected as well. Parking is a good example of this, which in the current regime involves paying high fees in urban areas like Sydney and functions on a first come, first serve basis. What is the case with traditional car sharing companies now, is that they negotiate with the municipality of Sydney to arrange a number of designated parking bays (SGS Economics and Planning, 2012). This means that the parking spots for picking up and returning are paid through the rental price of the car, and customers can be certain that they will be able to park their car. Although this might sound as a major opportunity for car sharing, it also means that there still need to be unreserved parking spots that need to be paid for separately and for which a renewed scarcity of parking capacity may arise at times. A cost-benefit study on behalf of Sydney’s city council identified that in the 2012 situation, the benefits to the reduction in parking time ($2.82 million) do not outweigh the costs of the foregone parking revenues ($9.85 million) (SGS Economics and Planning, 2012).

Another infrastructural change is the new role assigned to technology in the car sharing niche, and especially with respect to ICT. Instead of using ICT mainly in-car for e.g. navigation, it can be expected that its role will become more prominent for users before and after they enter their cars. As web applications and mobile apps are used for the location and reservation of a shared car, car sharing-ICT will be important outside the car itself as well. Furthermore, new technologies arise in order to deal with the trust and security problems for peer-to-peer car sharing. For example a verification pass or system, that checks the car borrowers and the owners as well.

In all of this, policies and regulations might provide a framework to eliminate barriers that may be present. By implementing tax exemptions, car sharing could become an attractive alternative to the current regime. Sydney is already working on a car-free street, by redirecting traffic to create a more pedestrian-friendly environment (Simmonds, 2010). Stimulating car sharing could contribute to their vision, namely lowering the total amount of cars. However, a barrier may be present in the fact that users will use their cars during the same periods of time, i.e. leaving for work in the morning and returning in the late afternoon. This could still bring along problems such as congestion and a shortage of parking places, especially since the council is already implementing a new parking policy in which the number of parking permit areas are halved (Council of the City of Sydney, 2011). As already mentioned above, peer-to-peer car sharing is not stimulated by the government at all. The government can provide parking spots for traditional car sharing and advertise for peer-to-peer car sharing in order to support both business models of car sharing simultaneously. This marketing can help ignorant citizens to gain trust in the car sharing market by their increasing knowledge about it.
In the next chapter, the results of this chapter will be summarized after which the main question and sub questions of this thesis can be answered. Furthermore, the next chapter focuses on implications for entrepreneurs, government(s) and researchers.
This conclusion chapter summarizes the previous chapters in this thesis, followed by the answers to the research questions and implications for managers, researchers and the government.
7.1 Conclusion

In this chapter, a summary of the results found through research and analysis will be provided. Chapter four gave an insight in the current landscape developments concerning car sharing in Sydney, speaking of higher energy costs (due to e.g. oil crises), economic uncertainty and the expansion of multinational car sharing operators all over the world. Also the common pool problem (caused by e.g. oil – and financial crisis) and the invention and growth of the internet (and therefore ecommerce and electronic payment systems or platforms that can build social relations) are factors that took part in the support of the emergence of car sharing. With regard to Sydney in particular, new developments called the ‘green wave’ are focused on sustainability transitions and includes the option for car sharing as well. Other relevant landscape factors are the dense urban areas in Sydney and the growing urbanization which put pressure on the current mobility regime. Moreover, the development of sharing is the new having, reflected in several emerging business models (e.g. Airbnb, Uber, NeigborGoods) may contribute to the rise of car sharing in Sydney as well. Further on in that chapter, the private car business model is evaluated as part of the current mobility regime in Sydney. Value propositions of the business model concern for example freedom, convenience and status. The main actors involved in this regime are the car owners, the manufacturers, tank stations, garages (for maintenance), car wash facilitators, the government, parking garages, road workers, license providers and the police. The technology, the parking spaces and the car infrastructure are the most important resources that were highlighted.

In chapter five, the different niches are discussed, focused on peer-to-peer and traditional car sharing in Sydney. For each business (GoGet, GreenShareCar and Hertz On Demand for traditional car sharing & DriveMyCar and CarNextDoor for peer-to-peer car sharing) the individual business model, network and developments are explained. GoGet was the first company to start in Sydney in 2004, followed by the other traditional car sharing companies; ‘GreenShareCar’ and ‘Hertz On Demand’. The peer-to-peer companies started almost a decade later, with DriveMyCar starting in 2010. Further important events are the announcement of the car sharing pilot executed with support from the government in 2007 and the state fleet trial heralded in 2014. DriveMyCar and CarNextDoor were not involved in these trials being peer-to-peer car sharing companies. However, their achievements are based around the establishment of the verification systems, the Lockbox and the Peer Pass, accomplished in 2013 and 2015 respectively.

The difference between both the car sharing business models in Sydney is extracted from the analysis in the results chapter (six). It was found that the core value propositions of traditional car sharing imply the easiness, convenience, flexibility, cheapness, being a link to public transport, and doing good for the environment. Peer-to-peer car sharing, on the other hand, focuses mainly on facilitating trust, security and a community feeling. Both sides of the market (car borrowers and car owners) have economic benefits through making or saving money. Furthermore, because scaling is relatively easy for peer-to-peer car sharing (they don’t need to have investment capital in order to buy a large fleet of cars), awareness about the costs of driving cars and the existence of car sharing is spread in a higher tempo. Despite the fact that the customer segment of the car sharing business modes look alike, each company tries to focus on a slightly different target group. For example, DriveMyCar focuses on long-term sharing whereas CarNextDoor’s target group consists mainly of short-term car sharing customers.

Another business model component that was discussed in the results chapter was the network of partners of both business models. The network is, along with the alignment of expectations and the facilitation of learning, one of the areas of interest of the Strategic Niche Management Framework, applied in order to facilitate the development and breakthrough of niches. Most striking in the network of traditional car sharing was the influence of the government and the knowledge institutions, mainly surrounding GoGet as biggest car sharing company in Sydney.
so far. In comparison to the other two traditional car sharing companies, GoGet achieved a lot with respect to governmental regulations, research on autonomous cars, but also on partnering with an extensive amount of actors relevant to the field of car sharing (e.g. IKEA or Sydney Airport). Furthermore, since customer service is one of the main objectives of the traditional sharing companies, ties with the customers are attempted to grow stronger by means of feedback, surveys and research. With respect to peer-to-peer car sharing, it is the trust between customers that is the most important proposition in the business model. Therefore, customer relations are venerable as key network objective as well as media cooperation by advertisement of the firms. In this way, the media can provide knowledge about car sharing and distrust through uncertainty is terminated. Therewithal, peer-to-peer sharing partners can provide assistance in marketing and advertising as well.

A strong and dense network can help the car sharing niche in developing and gaining momentum in order to break through the regime. Regarding the fact that the customers are very important actors for both the business models, the shared and conflicting expectations of customers versus the companies are discussed in the next section of chapter six. The expectations of traditional car sharing customers yield themes as convenience, flexibility, easiness and access to a cheap way of transportation (compared to car rental or owning a car). What is missing in this evaluation of traditional car sharing is the conception of being environmentally friendly. Thus, it is indeed a good intuition of the traditional car sharing companies to focus mainly on customer service. The expectations of peer-to-peer car sharing are, in contrast to the expectations of traditional car sharing, pointed towards being environmentally friendly. Furthermore, car sharing users foresee social and economic benefits as well, with respect to themes including cheapness, trust, security and community feeling. The best option for CarNextDoor and DriveMyCar is thus building and maintaining those social benefits by facilitating trust to the providence of verification systems.

The learning processes of traditional and peer-to-peer car sharing are relevant as well. In order to provide a reliable and flexible customer service, traditional car sharing is involved with learning by using in order to learn from customer feedback and surveys. Furthermore, learning by interacting is facilitated through cooperation with the municipality (for parking spaces), car sharing partners (e.g. IKEA), and car sharing customers (by means of surveys and feedback systems). Learning by searching in this case is utilized by the government and the knowledge institutes, in order to quantify the effect of car sharing and conducting in-depth studies on self-driving technologies. The Peer-to-peer car sharing companies are involved with, among other learning processes, learning by doing, since both the companies have shown capabilities of building their own platform or verification technology. Thereby, learning by using and learning by interacting are both mainly focused on interaction with customers (feedback), media (searching for benefits of peer-to-peer car sharing and providing knowledge about the market) and the peer-to-peer partners (e.g. peer-to-peer parking space-rental companies) in order to benefits from each other’s learning processes and capabilities. All in all, a lot of actors in the network of both business models are involved in supporting the development of the car sharing market. However, some barriers and challenges in the current mobility regime are possibly obstructing the car sharing niche from breaking through.

The last section of chapter six discusses those regime barriers. Most significant were the culture, technology, the infrastructure and policies and regulations that are highlighted in the section. With respect to culture, the most common argument regarding regime barriers is trust between people and the value of ownership. People are still reticent when it comes to renting out their possessions and a private car is still associated with a symbol of freedom and status. The current technologies can help in facilitating more trust between people for example by means of verification systems. However technologies nowadays are complex and expectations about quality and speed of the service is high. It is beneficial for car sharing that the necessary infrastructure is already in place, however more and better bike lanes/public transport would be a helpful addition for car sharing in the Sydney CBD area. Furthermore, because of the
dense structure of the city, car parking spots are scarce and hard to find. It is necessary that the government provides more car parking spaces, however only dedicated to car sharing. Because if more private parking spaces are provided, the need for car sharing will decrease. Moreover, if the government helps with marketing, capital support or diminishing uncertainties around tax payments, this would be a solution for a lot of policy challenges car sharing is facing. However, before it comes to this, the government should be more unanimous about their future aims concerning car sharing. The remaining section compares the different streams nested in the regime with the niche dimensions, leading to an insight in how those barriers can evolve. Besides the four dimensions of the regime that were already mentioned in this conclusion (Culture, Technology, Infrastructure and Policy), streams as industrial structure, guiding principles, user relations and markets and the knowledge base are also elaborated. One can conclude from that section that when the niche finally breaks through the regime, society can expect huge changes in values about ownership, how parking spaces and taxes are regulated and how car manufacturers will survive in the shrinking car market.

7.2 Answering the Research Questions
If the findings from the results section of this thesis are interpreted, an answer to the different sub questions, and finally the main question of the thesis, can be formulated. The first sub question aimed to provide an insight in the differences in the traditional car sharing and peer-to-peer car sharing business models and see how they can co-evolve in the niche. Furthermore, research attempted to find out how those business models can constrain each other. The boundary spanning nature of both business models may cause a clear difference in the value proposition of the business models and their way of facing challenges in the market. Therefore, the sub question applicable to this research was:

How do the different car sharing models interplay?

First of all, the most obvious differences between the car sharing business models are the dissimilarities in objectives on the side of the value propositions in the business model. Traditional car sharing businesses are characterized by their car rental procedures. The companies’ tactics deviate from that of rental companies, however, on the basis of hourly rental and the fact that cars are placed in popular locations throughout the city. Convenience and flexibility are therefore keywords that can be associated with this form of car sharing. It is thereby cheaper than renting cars as well. These conditions require a reliable and well established customer service, where close ties with car sharing users are built and maintained.

Peer-to-peer car sharing on the other hand is a different way of sharing, since the way of sharing is in general not identical to or derived from car rentals. Since several peer-to-peer market experts argued that creating trust is the key aim (Botsman & Rogers, 2010) when it comes to expanding the business, peer-to-peer car sharing executives are very eager to anticipate on that. Furthermore, customer feedback implies that trust and security is an important condition for initiating sharing. Newly created technologies, like a verification system or a feedback platform, are capable of dealing with that matter.

Furthermore, the aim of this research was to find out how those businesses are potentially constraining each other. However, no evidence was found of fierce competition between the business models. Moreover, each company focuses on a slightly different target group, even though the customer segment seems to be alike. For instance, traditional companies aim for customers who like the flexibility and reliability of the customer service. Users of traditional car sharing companies like to avoid the hassles of car ownership, while still being able to exploit the convenience of driving a car. Peer-to-peer car sharers on the other hand, think more about the social, economic and environmental benefits as well. In other words, they would like to experience the ‘warm fuzzy feel’, by meeting new people and growing relationships built on trust. Thereby, if you own a car already this platform offers the opportunity to earn some money and compensate for yearly expenses on the car. Also according to car sharing expert Jennifer
Kent, both business models cannot be constraining each other. They should build on each other’s lesson and complement each other in every possible way, for instance regulations or the customer segment (Interview Expert JK, 2015). Figure 22 illustrates the relation between the different car sharing business models in the niche, and how boundaries are set by formulating value propositions.

![Figure 22 - Car sharing business models in Sydney](image)

The next sub question will answer how (potentially) momentum is gained within the niche and what and which actors support car sharing in order to break through the regime. Therefore, the next is composed of the following:

What is the role of car sharing business models in the support of car sharing?

As discussed in the theory section of this thesis, the business model comprises several elements; the supply chain, the value proposition, the customer interface and the financial model. These are divided into different business model elements, including the value proposition; customer relations, channels and the customer segment (the customer interface); key activities, key resources and key partners (supply chain, or the network of the business model) and the (environmental) costs and revenues, summarized as the financial model. These elements induce the clear boundaries of a company, which are helpful in order to differentiate from competitors in the market.

Furthermore, the key partners of a company are known as important factors in the development and stabilization of companies nested in the niches. Strategic Niche Management suggests that the construction of the network along with the alignment of actors’ expectations and the facilitation of learning processes are crucial for niche development. This thesis aimed to find out how these processes elapse for the two proposed car sharing business models in Sydney. Starting off with the network, the government is claimed to be a very important actor in the support of traditional car sharing. The announcement of the car sharing project in 2007 and the consideration of a state car fleet from 2014 has contributed to an increasing awareness and development of traditional car sharing throughout New South Wales. The government has shown several ways of facilitating learning, for example learning by searching (for effects and benefits of car sharing in Sydney), learning by using (the state fleet that was announced a while ago) and learning by interacting with the traditional car sharing companies (especially GoGet). Without the support of the government, (i.e. the appointment and distribution of several car sharing parking spaces in Sydney) the traditional car sharing companies would not be as far as they are today.
However, peer-to-peer car sharing did not receive that support from the government. But media attention and partnerships with other peer-to-peer companies can assist CarNextDoor and DriveMyCar in attaining a strong base of peers with the same characteristics. This could lead to for example combined initiatives (Peer-to-peer car- and garage sharing) in order to distribute knowledge about the benefits of sharing and build up a user segment of like-minded customers. Since scaling is relatively easy for peer-to-peer companies, this will contribute to the increase in customers as well.

As highlighted in chapter six, GoGet has ties with knowledge institutes in order to conduct research on the benefits of car sharing and the development of autonomous driving. Universities are looking into the benefits of peer-to-peer car sharing too, however the media (news and journal articles) are the ones that contribute to the increase in peer-to-peer sharing awareness. Besides partners in the network, the business model facilitates the growth of car sharing by means of the formulation of the value propositions as well. For example, the objective of providing trust and security has made both peer-to-peer companies build their own verification technology, a system that facilitates trust between both sides of the market. Customers’ expectations of peer-to-peer car sharing are about the economic, environmental and social benefits (warm fuzzy feel) and as these expectations are fulfilled by the value propositions of the company, the customer segment keeps on growing. The acquisition of DriveMyCar by Qanda technologies has made sure that this goal was achieved by building the verification system. Therefore, acquisitions or sponsorships by partners in the business model network turned out to be very helpful for developing technologies in order to provide good customer service (also with traditional car sharing).

Thus, network partners have been proved to be essential for the development of the car sharing companies nested in co-evolving niches. Although both business models have not yet broken through the regime barriers, car sharing is increasing in popularity. Also, the results in this thesis show that the scaling of peer-to-peer companies can occur on a faster pace than with traditional car sharing companies, since peer-to-peer car sharing companies do not need to buy their own cars (or car fleet). Therefore, more people could be reached in a shorter time span, which contributes to a fast spread of knowledge about the existence of car sharing. This means that, if there is a window of opportunity for car sharing in the regime, peer-to-peer car sharing companies are more likely to gain momentum in a quicker tempo than traditional car sharing companies. However, the traditional car sharing companies (e.g. GoGet) are already on the market since 2004, so they have a higher change to be more stabilized by now. Figure 23 (and also figure 22) illustrates how both business models are resembled in the niche level of the MLP-framework.

In the next section the third sub question will be answered, concerning the regime barriers that are deduced from the current private car ownership logic.
What are the barriers for car sharing?
This is the third and last sub question of this thesis, necessary to answer the main research question concerning the roles of business models in transitions. The barriers could be deducted from the last section of chapter six of this thesis. Culture and symbolic meanings is the barrier that is most striking as derived from the dominant regime of private car ownership. The value proposition of the car-ownership business model is dominated by the value of freedom and status acquisition. Those two characteristics are still reflected in Australian beliefs and habits. Having a car increases your status, and owning a sports car is even more considered with being 'cool'. Withal, even though Sydney citizens (especially suburb residents) are dependent on driving cars (according to their own reflections), the car also brings a sense of freedom or convenience along with it.

Moreover ‘owning’ something gives rise to your status as well, so getting behind the idea of sharing is a threshold that needs to be overcome. In short, culture is a huge barrier for the development of car sharing. Besides that, infrastructure can be viewed as an obstacle for car sharing either. This is partly caused by the way Sydney is built and structured: wide-spread and with lack of parking spaces in the city Centre. Car sharing can built on the infrastructure of the dominant business model, that of the privately owned car. However, even in this dominant business model logic the amount of parking spaces is insufficient. Through the existence of private car use, the magnitude of motorways overcompensates the lack of bike lanes and good public transportation in the area. This fact also withholds car sharing from breaking through the niche.

The politics stream is mainly constraining for peer-to-peer car sharing companies, since they do not get any assistance in either marketing or providence of parking spaces. Capital is raised through crowdfunding or acquisition, but governmental help (as mentioned in the conclusion as well) on this level would be appreciated. However, political discourse is not leading to any change on this perspective at all.

The technology stream in the regime is even enabling the rise of car sharing. For example, trust is facilitated by the development of the verification systems with peer-to-peer car sharing. The speed of the internet and the convenience of building a technological platform has also contributed to the reliability of the customer service. Technology is also of value in the dominant business model, however these technologies are mainly focused on driver experience and convenience (for example cruise control).

There is still one stream that could be a hindrance for car sharing as well. This is the stream of industrial networks. The industry network of the privately owned business model consists of manufacturers, car dealers, garages and so on. Car sharing would be beneficial for some car manufacturers and car dealers, since the traditional car sharing companies would obtain a large batch of a certain car brand (that means profit for that certain brand), but other companies will suffer from this competition. Therefore, those other companies in the industrial network of car mobility could compose obstacles for newly developing car sharing companies.

In short, one could relate the car sharing barriers to the current regime that consists of the business model that facilitates the ownership of private cars.
The explanation above about the obstacles for car sharing gives an answer to the sub question for this thesis, which finally contributes to the reciprocation of the main research question. This research question emphasized the following:

**To what extent do business models contribute to socio-technical transitions?**

The sub questions gave answers to the several ways in which mobility business models contributed to a (possible) car sharing transition. One can see that the business models that co-evolve in the niches set boundaries in order to focus on a slightly different cluster. The companies survive by not attacking each other, but complementing each other's work and supporting each other's growth by alleviating barriers. Regime barriers were raised by the current dominant business model logic in combination with the several streams comprising the regime. A strong network and close ties with partners (like the government) can assist in overcoming those barriers, under the condition that the expectations of those partners match the expectations of the company. Furthermore, in the situation that a partnership with universities or knowledge institutes is not possible, one could still benefit from their learning processes once there is an extensive knowledge and research base provided for the public.

In sum, the boundary spanning nature of the business model is a significantly important characteristic that must not be ignored when considering a transition towards for instance a car sharing system. In the case of the niche, the boundary spanning nature of the business models allow the companies to co-evolve while not constraining each other. In the regime, the boundary spanning nature is on the other hand raising obstacles for the development of the niches. A strong network as well as close ties with important partners (drawn up and characterized in the business model) can help conquer those imposed barriers. Figures 22, 23 and 24 elucidate on how and to what extent these business models play a role in the multi-level perspective.
7.3 Implications
This section summarizes the implications for governmental or managerial actions concerning car sharing in Sydney. The conclusion of this thesis implies recommendations for governmental authorities (like the Government of New South Wales or the Sydney City Council) as well as suggestions for car sharing start-ups and developing business in Sydney or anywhere across the world. First of all, the policy implications will be discussed, followed by recommendations for car sharing businesses.

7.3.1 Policy implications
In this thesis, it was found (Chapter 5 and 6) that governmental support is not sufficient for both car sharing business models. Although it might seem that a laissez-faire strategy could benefit peer-to-peer car sharing by means of fair market competition, this thesis claims that governmental help in terms of marketing is beneficial and necessary. Car sharing commercials initiated by the government can raise awareness about the existence of car sharing among Sydney residents. Furthermore, governmental support can show citizens that politics is involved with trying to ‘do good for the environment’. Above all, however, the disunity within the governmental bodies can be minimized if there is progress in the acquisition of knowledge about the potential benefits (environmental, social and economic) of car sharing. In other words, unanimity within the government is beneficial for the development of car sharing, whereas more knowledge about the benefits of car sharing (e.g. through marketing) is again advantageous for reaching political consensus.

Besides the commercials that can be broadcasted for the sake of distributing car sharing knowledge, the government can be helpful in providing capital for growth and development of car sharing companies as well. This is also an option for showing support for car sharing towards residents or in the media. Extra capital can be utilized by car sharing companies in order to improve their network and links with valuable partners, as well as conducting research on further growth of car sharing.

Moreover, the providence of dedicated parking spaces is important for traditional car sharing companies. Nevertheless, peer-to-peer car sharing companies could benefit from this allocation as well. In that way, peer-to-peer car sharing companies can expend their management-car businesses, and attract customers (car owners) that want to keep their parking space free in case of friends or family would like to visit on a regular basis.

In sum, the first thing the government should take care off is the lack of unanimity concerning car sharing. Once this is dealt with, the government can show their support by providing the three c’s: commercials, car sharing parking spaces and capital.

7.3.2. Managerial implications
When someone is aiming to start up a new business, it is important to aim for a gap in the market concerning the customer segment and value proposition of (for example) car sharing. For instance, DriveMyCar has made a clever move by only focusing on long-term peer-to-peer car sharing. However, a company should not only focus on product differentiation. Gaining momentum and upscaling are important factors that determine the success of a company. Scaling can be realized by building up a large customer base through the alignment of expectations and the facilitation of feedback through learning processes. Furthermore, the construction of an extensive, dense network is beneficial for the growth of a company.

Furthermore, other implications of the Strategic Niche Management Framework can support the development of the car sharing niche. For instance, nurturing and empowering are concepts that are familiar in the field of SNM (Geels F., 2005). In practice, this means that an experimental context (for nurturing) can be created where customers are carefully
monitored and learning processes are intentionally constructed (empowering). Protection, a third well-known concept concerning the management of niches, is facilitated through cooperation and partnership with the government as well as law-enforcers. In example, peer-to-peer car sharing company CarNextDoor has a pending patent for its own-designed technology for customer verification.

With regard to this verification system, managerial recommendations solely aimed at peer-to-peer car sharing imply the facilitation of technologies that provides trust amongst peers. Facilitating trust is the highest goal of peer-to-peer car sharing and thus the focus of companies that are concerned with this market segment. In other words: when generating a peer-to-peer car sharing business, one must comply with trust issues that unavoidably arise in the peer-to-peer sector. Key focus of peer-to-peer car sharing start up is thus the creation of a technologies that support the construction of a trust-relationship.

With respect to traditional car sharing, customers play an important role. Customer service is the most user-elastic value proposition of the business model, meaning that the amount of users will grow fast when customer service is optimal. When customer service is lacking speed and user satisfaction, however, the customer base can drop instantly. Therefore, besides dealing with value propositions as ‘health- social- economic or environmental benefits’, customer service should be number one focus of a traditional car sharing business.

In sum, this thesis argues that establishing the right network structure (including valuable partnerships and close ties) is favorable for the growth and development of new (car sharing) businesses. When zooming in on the different business models of car sharing, a focus on building trust is prioritized for peer-to-peer businesses. Traditional car sharing companies on the other hand, should focus on the providence of a flexible and reliable customer service.

7.3.3 Scientific Implications

The thesis is within the field of Innovation Sciences studies, since it studies technology in a socio-economic context, by taking a transdisciplinary perspective and by using the multi-level perspective. Furthermore, the aim of this thesis was to provide more insight in the development of car sharing in Sydney and the difference between the existing business models. Thereby, the business models that were discussed in the theory chapter, are of additional value for future business model research. Finally, this study aimed to answer the research questions stated in the introduction of the thesis. The next chapter elaborates on the strengths and weaknesses regarding the research approach and the methodology that was used. The chapter concludes with recommendations for potential future research, based on the strengths and limitations that were mentioned.
This chapter comprises the discussion of the findings, the strengths and limitations of the research and recommendations for further research. This chapter is followed by the references and appendices.
8.1 Discussion of findings

The findings of this research, emphasized in the conclusion (chapter seven) of this thesis, complement the research gap that was present in the area of case studies about the roles of business models in sustainability transitions. Besides this, this thesis aimed to meet the literature gap on this issue as well. Furthermore, the roles of business models in a multi-level perspective as well as combined with Strategic Niche Management is explored.

It was found that politics play a major role in the development of niche businesses, and that the government of New South Wales did not yet sufficiently support both car sharing business models in Sydney.

However, after the enouncement of these policy implications, a news article about governmental support of peer-to-peer sharing surfaced (Nicholls, 2016). This news article states that the NSW state government announced to develop a framework for potential regulation of the ‘collaborative economy’. Journalists argued that the government welcomes the positive impact of collaborative economy businesses (it was estimated that this economy contributed 500 million dollars to the NSW economy last year). However, although it seems that the government is aware of the implications that the sharing economy carries, the details of this implications are yet to be discovered. For example, the news articles concerning this theme are mainly focused on ride-sharing companies like Uber, or global companies as Airbnb. The question is whether new start-ups or car sharing companies like CarNextDoor and DriveMyCar are taken into consideration as well.

Though, the focus on customers is highlighted in various articles about this news. This might imply that the car sharing businesses and the government work on several factors this thesis suggested. For instance, the flexible and reliable service for traditional car sharing and the trust and security technologies for peer-to-peer car sharing, as referred to in the previous chapters.

In addition to the announcement made by the government, findings in this thesis suggest that car sharing contributes to the conditions that the city of Sydney has set for the year 2020. Namely, their aim is to be a ‘green, global and connected’ city by then. Car sharing can support this through the social, environmental and economic benefits it induces. The environmental benefits of car sharing imply the reduction of car use and car production (since more cars are shared). Furthermore, if less cars are needed, there is less dependence on parking spaces, which creates space for ‘greener’ projects like playing areas or parks. Car sharing can also fulfill the target of being ‘global’ by means of an expanding car sharing market (e.g. global roaming partners of GoGet, or overseas market for DriveMyCar). Finally, ‘connectedness’ can be stimulated by the peer-to-peer car sharing companies, who facilitates the link between car owners and car borrowers (social benefits).

However not all academics agree on these perceived economic, environmental and social benefits of car sharing. For instance, Frenken (2016) argues that external effects for third parties, rebound effects and the economization of private lives results in general in fewer positive benefits caused by car sharing than often perceived (Frenken, 2016).

In sum, one can conclude that the scientific contribution of this thesis mainly imply the elaboration of the roles of business models in the mentioned frameworks (MLP and SNM). Furthermore, this thesis comprises political and managerial recommendations as well as a complementation of the research gap in (car sharing) case studies. In addition to this, one can argue that the target of a ‘green, global and connected’ Sydney can be (partly - by all means) achieved by supporting car sharing businesses in the area.
8.2 Strengths and limitations

The research for this thesis yields several strengths and weaknesses that will be discussed in this section. For instance, the fact that this research was conducted during an internship at the Institute for Sustainable Futures in Sydney (at the University of Technology) contributes to the validity of the thesis, in the sense that the interview questions could be checked and monitored by the supervisor there as well. However, when approaching interviewees, the aim was to highlight the university affiliation along with the aim of the interview in order to avoid a bias towards the researcher, like being a genuine member of the institute. In that way, the provision of ‘acceptable’ answers for the sake of status preservation is avoided.

Secondly, confidentiality of answers is assured by the option for interviewees to comment ‘off the record’. In addition to that, the interviewees could choose to be fully anonymous as well. When potential ‘acceptable’ answers were brought forward, a critical reflection by the researcher was necessary in order to provoke more descriptive answers of the matter. The interview questions were well-prepared and constructed with a lot of prior knowledge. For instance, the literature study was finished before the start of the research project in Australia, the research proposal was already accepted and the interview questions were checked by two supervisors before the start of the interview. Furthermore, the first interview was held with an extra person, so that there was a chance to discuss the questions first and assist each other during the interview.

Thirdly, a potential limitation for this study was the distance between interviewer and interviewees. In other words: the researcher was not familiar with Australian habits, the Australian car sharing network and the users of the car sharing businesses. Thus, it is was quite hard to find car sharing users as potential interviewees, so snowballing was the only possible option left. Thereby, the only way to reach a large group of customers was via social media. Standing guard in front of a car sharing car for owners to find a customer who was not in a hurry and would like to talk about their expectations was considered as a more difficult approach. Because of this lack of customer interviewees, the results of this research were supported by the analysis of car sharing company reviews on the internet. These reviews were quite extensive and often a representative elaboration of the pros and cons of the car sharing company, implying the customers’ expectations behind the argument.

Also, physical distance was sometimes a limitation as well. Some CEOs were so busy that they were not able to talk in person, or they were based in Melbourne (almost 900 kilometers away). Therefore, phone interviews were the next-best solution (as the internet connection was to slow for Skype, unfortunately). This unfortunate barrier could have caused an interpretation bias by the researcher. For example, sarcasm is hard to understand through a telephone. If there was anything unclear, however, interviewees were given the opportunity to clarify this later on via e-mail.

Another limitation worth mentioning comprises the time versus the rapid developments that were made around car sharing in Sydney in that period. The decision for the subject of car sharing in Australia was made more than nine months prior to the actual execution of the project. The year 2015 was quite an eventful year for car sharing. A lot of new trends or development occurred during the research and it was sometimes hard to keep up with that. Therefore, parts of the results section could be different when re-evaluated next year or about five years later. An example of this is the news article that came out (about the governments’ interest in peer-to-peer car sharing) around the time that the conclusion chapter was finished. Increasing interest in research about car sharing in Sydney could have caused the sudden decision within the government. Thereby, a sudden development arose as soon as the researcher was finished with the thesis. After checking and re-evaluating each car sharing company one more time, GreenShareCar disappeared without reason.
Furthermore, ride-sharing developments (in particular around Uber) may have influenced governmental decisions about car sharing as well, for the reason that ride-sharing is also part of the peer-to-peer economy. Moreover, it was hard to summarize CarNextDoor and DriveMyCar as one peer-to-peer business model, since the car sharing companies are different at several fronts. One is comprised of, for example, long-term car sharing, whereas the other company is concerned with short-term car sharing. Because there are only two peer-to-peer car sharing companies in Sydney (probably because of competition), it was hard to draw conclusions from shared benefits of peer-to-peer car sharing.

A strength of this research however, is that the same context (Sydney) was used for this comparative study. For both car sharing business models in Sydney, an equal amount of data was collected. Along with an extensive description of the coding process and the methodology behind the interviews, the possibility is created for other researchers to redo this process (but maybe applied to the case of car sharing).

8.3 Further Research

The following directions for further research could be interesting to exploit. Firstly, further research could conceal the investigation of other kinds of sharing. For example, ride sharing companies (like Uber) or other sharing companies (AirBnB) are very interesting to investigate in Sydney (with the context or focus on the role of business models in sustainability transitions). During the research project, a survey was held for different business in the Sydney sharing economy (by Dr. Chris Riedy). A suggestion for further research would imply the use of those results and a comparison of different sharing possibilities.

Another interesting research focus could be a comparative study between different cities or countries. One could investigate the difference in barriers and development of different business models in places with similar infrastructure or city planning, or one could also especially focus on what dissimilarities in those factors imply for (car) sharing.

A third implication for further research concerns the approach of a case study for investigating the roles of business models in transitions. Car sharing for instance, is a service-based business model that is mainly concerned with customer-related value propositions. Possible interesting insights could be gained when a case study is instead applied to technology or innovation-focused business models (for example the development of drones).

Furthermore, another framework applied to the case study of car sharing in Sydney would be an interesting angle for research as well. For example ‘Transition Management’ or ‘Actor-Network Theory’ could be juxtaposed against the different car sharing business models. The roles of business models positioned in the Transition Management framework is a link that is, until now, not exploited in any research or scientific paper.

Finally, a recommendation for further research comprises an enlargement on the research that was conducted for this thesis. For instance, one could conduct the same research again in 2020, and see how much of the Sydney 2020 plans are actually realized and how far the development of car sharing has reached. Furthermore, one could deepen focus on for example one of the barriers for car sharing (e.g. support from the government) that were mentioned in this thesis. In that way, one could find out how the support for car sharing or the infrastructure in the CBD is developing over the years.

In sum, this research provides a basis for further exploration of the development of car sharing in Sydney as a case study, or the investigation on roles of business models in (sustainability) transitions. Sydney as a city is interesting to analyze, but also the trend of car sharing as a whole is worth investigating.
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Noone, C. (2015, April 30). Interview DriveMyCar CEO. (T. Entrepreneurshow, Interviewer)


## Appendix A – Data

### Table 8 - Interviews used as Data

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<td>City of Sydney</td>
<td>Transport Policy Manager</td>
<td>04/09/2015</td>
<td>In Person</td>
<td>75 min</td>
</tr>
<tr>
<td>TD User1</td>
<td>Stephen Wells</td>
<td>GoGet</td>
<td>User</td>
<td>10/09/2015</td>
<td>Telephone</td>
<td>20 min</td>
</tr>
<tr>
<td>TD User2</td>
<td>Anonymous</td>
<td>GoGet</td>
<td>User</td>
<td>15/09/2015</td>
<td>Mail</td>
<td>4 Pages</td>
</tr>
<tr>
<td>P2P User1</td>
<td>Michael Roxborough</td>
<td>CarNextDoor</td>
<td>User</td>
<td>10/09/2015</td>
<td>Telephone</td>
<td>15 min</td>
</tr>
<tr>
<td>P2P User2</td>
<td>Ted</td>
<td>CarNextDoor</td>
<td>User</td>
<td>07/09/2015</td>
<td>Mail</td>
<td>4 Pages</td>
</tr>
</tbody>
</table>

### Table 9 - Public Sources used as Data

<table>
<thead>
<tr>
<th>Reference</th>
<th>Person</th>
<th>Organization</th>
<th>Position</th>
<th>Date</th>
<th>Medium</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>GG CEO2</td>
<td>Bruce Jeffreys</td>
<td>GoGet</td>
<td>CEO</td>
<td>01/08/2013</td>
<td>Recording</td>
<td>22 min</td>
</tr>
<tr>
<td>GreenShareCar CEO</td>
<td>Paul Cummaudo</td>
<td>GreenShareCar</td>
<td>CEO</td>
<td>26/08/2015</td>
<td>Recording RedTentRadio</td>
<td>61 min</td>
</tr>
<tr>
<td>CND CEO2</td>
<td>Will Davies</td>
<td>CarNextDoor</td>
<td>CEO</td>
<td>12/12/2015</td>
<td>Recording Entrepreneurs how</td>
<td>15 min</td>
</tr>
<tr>
<td>CarNextDoor CEO3</td>
<td>Will Davies</td>
<td>CarNextDoor</td>
<td>CEO</td>
<td>6/12/2015</td>
<td>Ideas Hoist</td>
<td>38 min</td>
</tr>
<tr>
<td>EXP RB</td>
<td>Rachel Botsman</td>
<td>Collaborative Consumption</td>
<td>Expert</td>
<td>13/08/2015</td>
<td>Video Conference</td>
<td>73 min</td>
</tr>
<tr>
<td>Product Review</td>
<td>Reviews of car sharing businesses</td>
<td>Both Traditional/p2p</td>
<td>User</td>
<td>Retrieved January 2015</td>
<td>Product review website</td>
<td>10 + &amp; 10 - reviews</td>
</tr>
<tr>
<td>Gizmodo</td>
<td>Campbell Simpson</td>
<td>Gizmodo car Review</td>
<td>User</td>
<td>April/May 2015</td>
<td>Product review website</td>
<td>1 per firm</td>
</tr>
</tbody>
</table>
### Table 10 - Coding process

<table>
<thead>
<tr>
<th>Regime</th>
<th>Niche</th>
<th>Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Owning a car has been a symbol of achievement for generations. It</td>
<td>‘These new companies offer the convenience of a car when you want it, without the cost and related hassles (parking, insurance, maintenance, etc.) of actually owning a car yourself.’</td>
<td>‘That has opened the door for car sharing schemes to infiltrate Australian roads’</td>
</tr>
<tr>
<td>gave Aussies, especially young ones, the freedom to explore the world</td>
<td></td>
<td></td>
</tr>
<tr>
<td>without being tied to public transport (or mum’s taxi service)’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Cars are now seen by many as an inconvenience, an unnecessary expense</td>
<td>‘Car sharing, for those unfamiliar, is effectively short-term car rental, in most instances with hourly rates. And instead of being located at a central location the cars are spread across the city allowing users (who have registered with the relevant company) to simply walk up and drive away.’</td>
<td>‘For inner-city dwellers, often faced with increasingly limited and expensive parking and insurance costs, these car sharing companies have been well received in Australia, with more than 50,000 members signed up across the country.’</td>
</tr>
<tr>
<td>or both. At the very least, owning your car is seen as a luxury some</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of us can no longer afford. Either financially or conveniently within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>our lifestyle.’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Parking is expensive, insurance is expensive in the inner-city, fuel</td>
<td>‘The biggest player by far is GoGet, which... ‘Green Share Car is newer ... Hertz 24/7 (and Flexicar) is part of the traditional rental company’s expansion ..’</td>
<td>‘Although the numbers in Europe and America are significantly higher there is no questioning car sharing is on the rise in Australia.’</td>
</tr>
<tr>
<td>is a pain to get in the inner-city too’, he explains’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘But doesn’t it feel strange seeing someone you don’t know drive off</td>
<td>‘He says there are several GoGet cars within walking distance of his</td>
<td>‘DriveNow is a partnership between BMW and German car rental company Sixt that has a fleet of BMWs and Minis available for hire.’</td>
</tr>
<tr>
<td>in your car?’</td>
<td>apartment so the burden of owning and maintaining his own car stopped</td>
<td></td>
</tr>
<tr>
<td>stopped making sense to him.’</td>
<td>making sense to him.’</td>
<td></td>
</tr>
<tr>
<td>“You’ve got residents that need cars on the weekend but business need</td>
<td>‘As well as using the cars for trips to the beach or work within Sydney being a GoGet member also grants him easy access to cars whenever he travels.’</td>
<td>‘According to GoGet co-founder Bruce Jeffreys one of the biggest breakthroughs for car sharing in Australia has been its integration into new residential developments, and he sees that as playing a big part in any future growth.’</td>
</tr>
<tr>
<td>cars during the week, “Jeffreys says.’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘..the rest of the world selects a car to suit their need from the</td>
<td>‘Basically, owners can register their car with Car Next Door and user can find their nearest free car and rent it by the hour, similar to GoGet. But the difference is the owners of the cars are able to pocket a percentage of the profits and Car Next Door doesn’t have to invest capital in buying his own cars.’</td>
<td>‘And he hopes that Central Park is just the beginning with more residential developments, as well as public infrastructure – such as train stations and universities across Australia – creating dedicated super pods for car sharing companies.’</td>
</tr>
<tr>
<td>smorgasbord of wheels in their apartment basement’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘If we are to seriously address Sydney’s choked roads and the frankly</td>
<td>Car Next Door CEO Will Davis says the company does have a strict vetting process for potential users including an assessment of their driving history and credit check.</td>
<td>‘But it’s not just the private car sharing companies looking to get involved in corporate action. BMW Australia is in the process of establishing its own program down under with plans underway to create a hub of BMWs in a centralised business park that would allow multiple companies to utilise the same fleet of cars.’</td>
</tr>
<tr>
<td>archaic belief that everyone needs a car,’ ..’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

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### Table 11 - Codes in Excel

<table>
<thead>
<tr>
<th>Regime Characteristic</th>
<th>Description</th>
<th>Car Sharing Company</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Culture</strong></td>
<td><strong>Markets &amp; User Preferences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>CND</td>
<td>DMC</td>
<td>GG</td>
</tr>
<tr>
<td>Lack of knowledge about car sharing</td>
<td>CND</td>
<td></td>
<td>GG</td>
</tr>
<tr>
<td>Cars are only needed for the weekend</td>
<td>CND</td>
<td>Flex</td>
<td>GG</td>
</tr>
<tr>
<td>Lack of responsibility feeling for the car</td>
<td></td>
<td></td>
<td>GSC</td>
</tr>
<tr>
<td>Car is your ’pride &amp; joy’/ Freedom</td>
<td>DMC</td>
<td></td>
<td>AM</td>
</tr>
<tr>
<td>Struggle to find balance between two sides</td>
<td>CND</td>
<td>DMC</td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Really improved, so not a barrier anymore</td>
<td>CND</td>
<td>Flex</td>
</tr>
<tr>
<td>Building own platform is cheaper</td>
<td>CND</td>
<td>Flex</td>
<td>GG</td>
</tr>
<tr>
<td>Started with wrong technology</td>
<td>CND</td>
<td></td>
<td>GSC</td>
</tr>
<tr>
<td>Technology can help building trust</td>
<td>DMC</td>
<td></td>
<td>AM</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Using the old car infrastructure</td>
<td>DMC</td>
<td>Flex</td>
</tr>
<tr>
<td>Lack of dedicated parking spaces</td>
<td>CND</td>
<td>DMC</td>
<td>Flex</td>
</tr>
<tr>
<td>Lack of public transport</td>
<td>Flex</td>
<td>GG</td>
<td>AM</td>
</tr>
<tr>
<td>Lack of bicycle lanes</td>
<td>Flex</td>
<td>GG</td>
<td>AM</td>
</tr>
<tr>
<td>Sydney’s older geography (less dense)</td>
<td></td>
<td>Flex</td>
<td>AM</td>
</tr>
<tr>
<td><strong>Politics &amp; Industrial Networks</strong></td>
<td>Need for dedicated parking spaces</td>
<td>CND</td>
<td>Flex</td>
</tr>
<tr>
<td>Uncertainties with tax payment</td>
<td>DMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>CND</td>
<td>Flex</td>
<td></td>
</tr>
<tr>
<td>Had to break rules and regulations</td>
<td>Flex</td>
<td>GG</td>
<td></td>
</tr>
<tr>
<td>Lack of capital support</td>
<td>Flex</td>
<td>GG</td>
<td></td>
</tr>
<tr>
<td>A lot of tension between parties</td>
<td></td>
<td>GG</td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>JK</td>
</tr>
</tbody>
</table>


Appendix C – Example Interview Guide

Interview guide CEO car-sharing company
Interview 5 CEO’s of different car sharing businesses and ask for:
- Their view on current barriers for car sharing
- The value proposition of car sharing
- A comparison between their business and other car sharing business models
- Future perspective on their business

Introduction: - 5 min.
- Introduce myself: Who am I? What study? Where is this interview for?
- Explain the goal of the research project and interview: with this interview I hope to find out what the added value is and the business model is of the car sharing company, the outlook for the future and the comparison with other car sharing business models.
- Thank the interviewee for his/her time.
- Explain how data will be handled and published. Indicate option for ‘off the record’ answering (not taped or transcribed) and checking of transcripts and final report by the interviewee. Ask for permission to publish their name in the final report.

General Questions: - 5 min.
What is your role and function within the company?
How long have you been working for the company?
Did you try car sharing yourself? (ice-breaker)

The Core:
What comprises the business model exactly? How does the regime look like (what is already established/ what are the barriers)? What is the company trying to do in order to get car sharing developing (attracting funds, partnerships, strategies, focus groups, competition)?
How do they see the future of car sharing?

A: The Business Model – 10 min.

![Business model canvas](image)

Figure 25 - Business model canvas for interview guide

*Try to fill in the business model canvas on forehand.*
- Question 1: describe the core of the business model; how do you create and capture value? What extra services do you offer?
- Question 2: customer segment; what problems are you solving? How does car sharing benefit society, economy and environment?
- Question 3: What does the company do with money flows?
- Question 4: What are the key activities and key resources?

For Key Partners > go to network

B: The Network – 10 min
- Question 5: What is the role of the government? (Local and National)
- Question 6: Who are your company’s competitors? (Car sharing companies, private-owned cars)
- Question 7: Where do you get your resources from?
- Question 8: Are there any sponsors/investors involved? Which?
- Question 9: Do you partner up with knowledge institutions in order to keep on learning? Which?
- Question 10: What about the media, pressure groups, environment activists, etc.?

C: The Regime – 15 min.
- How does the current way of thinking (culture/symbolic meaning) enable or constrain the development of your car sharing company?
- How are current technologies constraining or enabling the development?
- How are markets and user relations constraining or enabling?
- How is the current infrastructure ‘’?’
- How are current policies and regulations constraining or enabling?
- How is the science and the current knowledge base constraining or enabling?
- How does the other business model (B2C or C2C) constrain yours?
- What barriers are already overcome?

D: The future – 10 min
- What strategies does your company apply in order to overcome those barriers?
- In what ways are you managing expectations, attracting funds or facilitating learning?
- Where will your company be in about 10-20 years?
- How do you see the future in comparison to other business models (B2C or C2C)
- Which one of your key partners can help your company by getting to that future?

Wrapping up: what did I miss? Who should I talk to (snowballing)? – 5 min.