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Master Thesis

Sharing Mobility Economy in China: A Business Model Analysis with a Focus on the Market Leader DiDi Chuxing

by

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Abstract

A new economic concept known as the sharing mobility economy has the power to make the most out of underutilized resources while addressing environmental issues that play a crucial role for China's future. When it comes to the sharing mobility economy in China, DiDi Chuxing has been the market share leader since 2012 and is holding a monopolistic position despite various scandals and fines.

The questions to be answered are as follows, whether DiDi Chuxing has a first-mover advantage and how its business model differs from other market players as well as how business model innovation influences the industry. Answering these questions gives us a deeper understanding of a relatively young but promising business model.

Within this Master Thesis, a detailed external market analysis for the Chinese sharing economy was conducted using the PESTEL framework, followed by a business model analysis using the Business Model Canvas. DiDi Chuxing's success points towards its first-mover advantage, big data analysis and a large, acquired customer base over the last decade. For further success and profitability in the industry, DiDi and other market participants need to keep up an evolving business model which focuses on innovation that can adapt to China's stricter regulatory approach in the coming years.

Keywords: Sharing mobility economy, DiDi Chuxing, Ride-Hailing

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List of Abbreviations

B2B	Business to Business
B2C	Business to Customer
B2B2C	Business to Business to Customer
IPO	Initial Public Offering
MaaS	Mobility as a Service
NEV	New electric vehicles
OEM	Original equipment manufacturer
OTC	Over-the-Counter
O2O	Online to Offline
SMAR	State Administration for Market Regulation
TAM	Total addressable market

1. Introduction

In a world where transportation from A to B must be fast, efficient, and as low-cost as possible, digitalization plays an important role. Thanks to the evolution and the ever-ongoing developments in technology, new concepts such as the one of the sharing economies are emerging and successful. Over the last decade, China has become one of the most important and biggest economic superpowers in the world and is expected to have the world's largest GDPs by the year 2027 ("The 3 pillars of China's booming start-up ecosystem," 2022). China's internet users are always growing with an amount of more than 670 million Internet users and the economy of what used to be a manufacturing economy is growing into a service economy (Zou, 2017, p. 269).

The sharing economy is a socio-economic ecosystem using different information technologies to bring together stakeholder-individuals, companies, and governments, to be profitable by proposing their excess resources which could be products as well as services (Gao & Zhang, 2016, p. 662). It is also called "gig economy" or "on demand economy" because of its characteristics regarding employment (Zou, 2017, p. 271). The concept of a sharing economy goes back to the 1980s when it was defined as a sort of "collaborative consumption" focusing on the consumer's needs rather than the product's features (Si, Chen, Liu, & Yan, 2021, p. 2674). The sharing economy in China changed not only the way companies think, but also influences consumers' consumption habits and their lifestyles. By digitizing services, third-party payment providers such as Alipay or WeChat Pay made using cash less popular (Hou, 2017, p. 1).

The shared mobility economy can solve important issues in today's growing China like inner-city congestion, traffic density, and general rush hour stress. The urban mobility system already includes services such as the well-known company Uber or smaller companies that offer city bikes in specific bigger cities.

To attain the goal of a smooth travel experience, experts think that the government needs to put in place a new high-capacity rail transit system and invest a lot of money into new infrastructure. However, this does not seem to be enough according to experts, who suggest that there should be a market as diversified as possible to meet all the different needs of Chinese travel consumers. The future should look like a comprehensive transport services system that integrates all kinds of transportation modes there are to provide a smooth travel experience (Tariq, 2018, p. 38).

The sharing economy is a part of the economy that describes the turning of unused or under-used resources into productive resources. The sharing economy has opened new possibilities for business, the most famous ones being the examples of Airbnb and Uber. Those companies generally have great benefits not only for themselves but are

also positively impacting the environment. In the case of Uber, the company's sharing economy benefits are helping to reduce carbon emissions, to save money on transportation, and to reduce traffic in the city (Gao & Zhang, 2016, pp. 661-662). Furthermore, firms applying the concept of the sharing economy can win market share while consumers benefit from lower prices using these products or services (Si et al., 2021, p. 2674). The sharing economy has a high economic impact on how new technologies are introduced and used to solve various resource allocation problems such as instantly connecting service providers which are usually workers, and customers. However, this has raised questions about the legal status of some of the stakeholders as well as regulatory issues in the industry and among labor market regulators (Zou, 2017, pp. 272-273).

The biggest sharing mobility company in China is DiDi Chuxing. By acquiring other rivals, the company has quickly expanded and gained the majority of the market share, and the company is generally based on mergers ("Chinese Ride-Sharing Giant DiDi Chuxing," 2022). The ride-hailing giant, which has currently the biggest sharing economy platform in China, does have some issues with its business models according to experts. DiDi is not the first company in the sharing mobility market facing such problems, its international competitors like Uber and Lyft are having the same issues, namely that the business model is unprofitable. The reason for that is currently explained by the intense competition in the sector, low margins, and the lack of differentiation between services. Furthermore, the company faced various regulatory issues with the government over the last few years and is also under investigation for antitrust violations (Trainer, 2021). Furthermore, taxi companies have been complaining because of the high and unregulated competition from the online economy compared to the offline market. The Chinese government reacted to that and is now balancing the sustaining of the sharing economy while diminishing possible negative social effects caused by that (Hou, 2017, p. 10).

This paper focuses on transportation and shared mobility in the Chinese sharing economy. The business models of the sharing mobility companies in China will be analyzed. The focus will be on the product-sharing economy, namely on the transportation sector in the sharing mobility economy which mainly contains bike-sharing, ridesharing, and ride-hailing. The most important companies in these 3 categories include DiDi Chuxing, Meituan, Shouqi, and Caocao in the ride-hailing and ride-sharing sector (A. Zhou, Liu, Zhou, Peng, & Wang, 2019, p.8), as well as ofo and Mobike in the bike-sharing sector (Tariq, 2018, p. 39). Business models in the sharing economy and especially in developing countries have not yet been researched in detail as the sharing economy is a rather new economic concept. For companies to be successful, business models play a crucial role and are the foundation for their success. Furthermore, business models

in the sharing economy are influenced by disruptive innovations as their technologies are stirring up the industry (Gao & Zhang, 2016, pp. 667-668). Research has connected disruptive innovation with the sharing economy and found that both concepts share a theoretical foundation (Si et al., 2021, pp. 2674-2675). Disruptive innovation is a type of innovation that is usually used by smaller companies with fewer resources than its bigger competitors and with new technological innovation and ideas is able to challenge the current market leaders (Christensen, Raynor, Rory, & McDonald, 2015, p. 9). During this thesis, the concept of disruptive innovations will be discussed and put into relation to the sharing mobility economy in China.

The goal is a detailed analysis of China's ride-hailing giant's business model, DiDi Chuxing, and to compare it with the competition in the industry. How do they differ from each other and where are the similarities and differences? Is the first-mover advantage a possible match winner? In a second step, success factors and future chances in the sharing mobility economy will be analyzed, as well as if and how business model innovation can have a positive impact on profitability in the sharing mobility market in China. For the analysis, a multi-case study approach will be conducted with the help of the Business Model Canvas to allow for comparison.

2. Literature Review

2.1. Definition

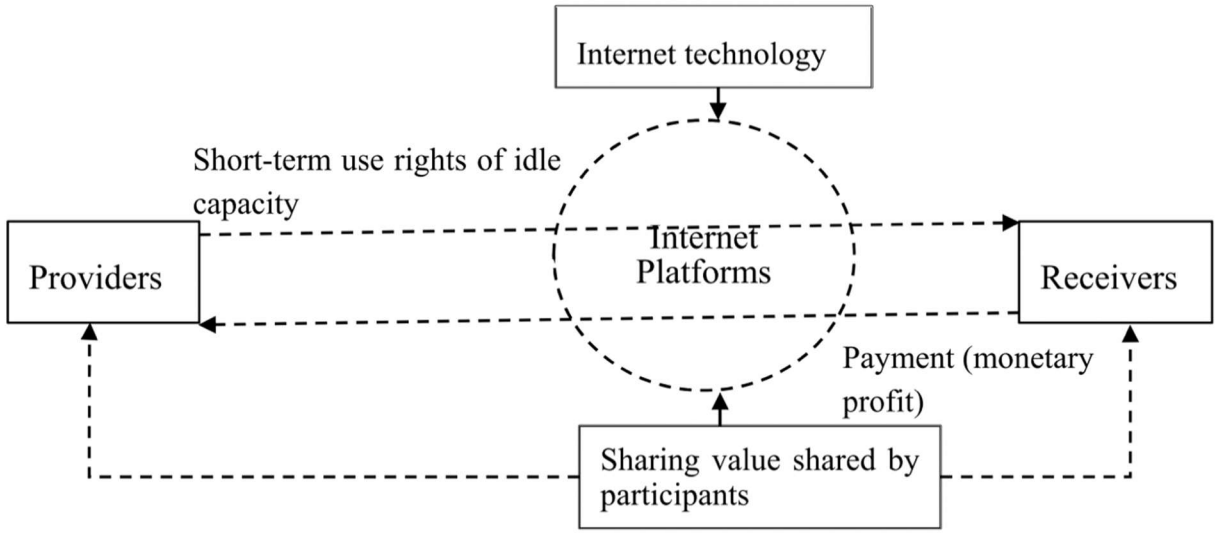
A definition of the sharing economy remains to be found as governmental authorities, sharing platforms, and scholars have not agreed on one yet. However, there are several points coinciding in different versions. Overall, the sharing economy can be a superordinate for gig economy, on-demand service, and collaborative consumption. Coming from the fourth industrial revolution, the sharing economy has its roots in the second IT revolution as well (Yun et al., 2020, p. 3). One of the first authorities to give an official definition was the US Federal Trade Commission. They defined the sharing economy as a two-sided platform involving three parties which are the platform, sellers, and buyers while the platform provides a place for sellers and buyers to directly trade between one and another. Furthermore, the sellers and buyers on the platform are usually individuals or small units and traditional distributors absent. Another definition like that of the US Federal Trade Commission comes from the European Commission, referring to the sharing economy as a "collaborative economy" but also involving a two-sided platform with service providers, users, and online platforms as the three actors who put in place an open marketplace for interim usage of goods and services mainly supplied by private individuals. The Chinese government's definition of the sharing economy slightly differs from the above mentioned. In 2017, "The Opinion" was created by eight ministries to work towards an acceleration of the development of the sharing economy. "The Opinion" refers to the sharing economy as an innovative business model which helps to optimize transactions of widely diffused resources with the help of information communication technologies. Furthermore, the sharing economy distinguishes itself by separating ownership from the right to use as well as the sharing of resources, intensive economic development, and a model of participation open for anyone to enjoy. The difference of the Chinese definition mainly lies in the fact that "The Opinion" does not emphasize the two-sided feature but more so on the temporary sharing of resources (Hou, 2017, pp. 2-3).

The sharing economy has been growing rapidly in the past decade and will also become more important in the future. Over the past few years, tens of thousands of sharing economy projects have popped up in emerging countries such as China. This has caused a lot of curiosity in the entrepreneurial world to understand the role of the sharing economy as a platform as well and the two main drivers behind it were found to be new network technology and innovative application, especially disruptive innovative application because of its similarity and connotation to the sharing economy. Disruptive innovations are important as they possess the power to identify low-end niche markets which are cheaper, simpler or more convenient (Si et al., 2021, p. 2675). The rapid growth in the Chinese sharing economy is strongly related to socio-economic conditions finding and providing a

better value distribution of the supply chain (Gransky, 2014), but also to the reduction of ecological impact, technological advancements as well as user's changed attitudes regarding product ownership and social connections (Cheng, 2016, p. 60). The sharing economy in China and especially the part of the product sharing economy that involves vehicles has become more important in the last few decades as more and more people move from the rural areas into the urban cities. The sharing economy is changing the transportation landscape and goes into the direction of a more sustainable transportation system. Internationally, there is a change in the urban transportation landscape due to disruptive technologies which leads to favoring shared transportation like car rides, electric vehicles, and bicycles. This is especially interesting because it provides a partial solution to reducing the total carbon emission worldwide and helps to achieve the United Nations SDG's (Y. Zhou, 2018, pp. 4-5).

Figure 1 provides an overview of the sharing mobility economy and its essential stakeholders. With Internet platforms as the center, it uses advanced technology to build an efficient economic cycle model. Important are the short-term use of rights as that provide optimal resource reallocation (C. Liu, Chan, Wang, & Yang, 2020).

Figure 1: The Sharing Economy Operation



Source: Liu, Chan, Wang, & Yang 2020, p. 9.

2.2. Sharing Mobility Economy

The sharing mobility economy includes car sharing, bike sharing, as well as any kind of ride-sharing. Shared mobility generates access to mobility as a service and users can enjoy a new transport mode thanks to new digital technologies. The goal is to improve the efficiency of vehicle use while balancing supply and demand. Sharing mobility aims to increase the average occupancy which is a key factor in the success of energy-efficient

transportation. Furthermore, thanks to the digital evolution and the currently high use of smartphones, shared mobility could become more popular by proposing personalized, diversified, and fast travel services. Shared mobility is the future for the efficient handling of the high travel demand (Hu & Creutzig, 2021, p. 1).

China has a disruptive sharing economy compared to the rest of the world. Since 2010, there has been an accelerated expansion due to technological advances in the transportation industry. The innovations in the automotive industry which include electric vehicles, and bicycles have emerged and fundamentally changed corporation practices, governmental practices, rules, and regulations, as well as everyday practices in the People's Republic of China. One of the consequences of the fast evolution of businesses and innovation in the Chinese sharing economy was the challenge of the already existing sources of knowledge, socio-economic ties, and physical and geographic urban infrastructures (Y. Zhou, 2018, pp. 9-10).

China has great prerequisites to extend its sharing mobility economy since the country lists the biggest base of netizens in the world. All in all, there are 1.3 billion Chinese smartphone users and 90% of them are using smartphones for internet surfing. This is one of the reasons why the Chinese digital economy is booming while the material economy is struggling. Furthermore, China has currently the biggest e-commerce market internationally as well as the fastest developing online-to-online industry. This rapid growth in the Chinese digital economy helped with the development of the first automotive sharing platform including Uber China and DiDi Chuxing's car-ride sharing services. The investments for the two start-ups were high, especially amongst venture capitalists and more than $1 billion of funds were invested. In 2016, the two companies merged. In only four years' time, the companies were able to change the Chinese citizens' travel habits. Before 2021, Chinese citizens were critical of using their smartphones to plan their daily travels, in 2016 more than 80% of urban citizens were using smartphone application-based transportation services. This drew attention to the different corporations within the transportation sector who then also started to include smartphone features into their services in order to compete against the merged Uber and DiDi Chuxing company (Y. Zhou, 2018, pp. 16-17).

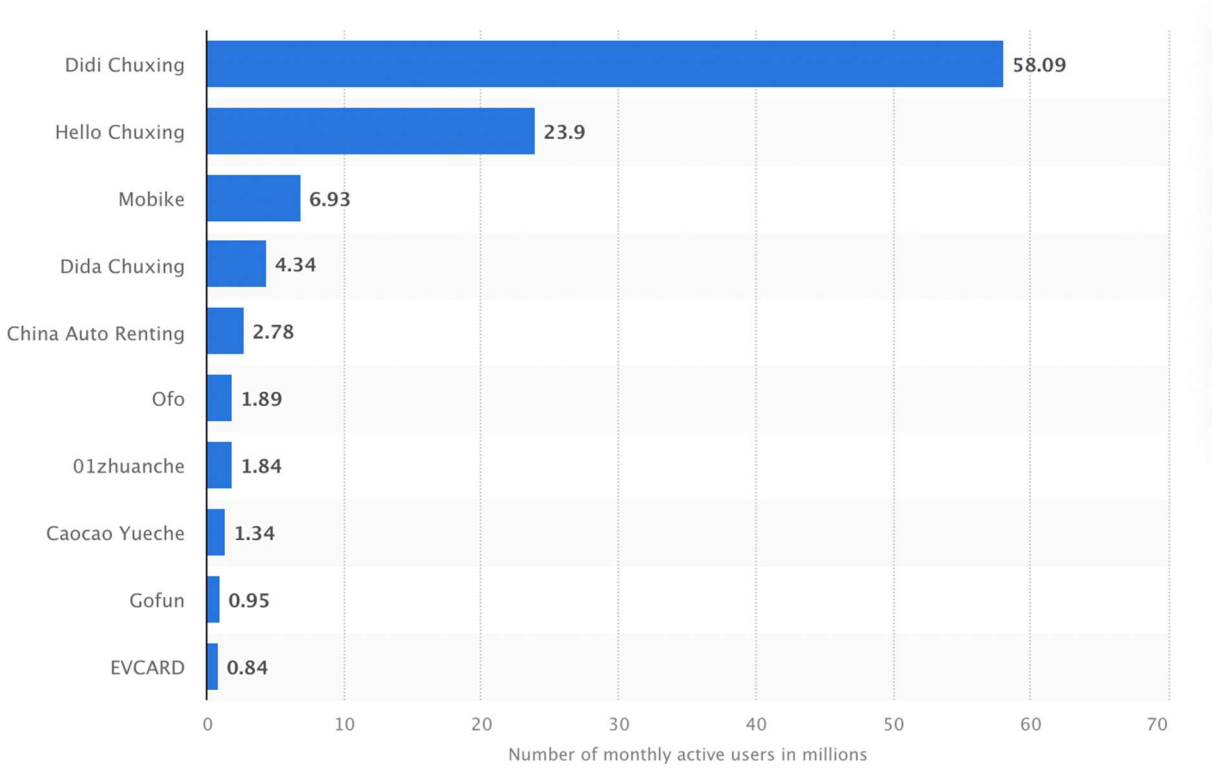
One of the main advantages of business models in the sharing mobility economy is the significant cost advantage that emerges by providing the service as a platform without having employees as a fixed cost. Instead of contracting employees, companies choose to let them sign a sort of service agreement and let them work as independent contract workers or freelancers instead of contracted employees (Zou, 2017, p. 294).

2.3. Shared Mobility Market in China

2.3.1. Beginning of Shared Mobility

The shared mobility market has attracted many investors over the past five years and accounted for investments of over 168.9 billion yuan. The biggest part of the investment, namely 80%, flooded into the ride-hailing sector and its many platforms (Tariq, 2018, p.38). In Figure 2, several Chinese sharing mobility economy participants can be observed and their monthly active users. DiDi Chuxing had 58.09 million monthly active users (“Statista,” 2022).

Figure 2: Number of Monthly Active Users of the Leading Ride-Hailing Apps in China (December 2021)



Source: Statista 2022.

The development of the Chinese shared mobility economy can be divided into 3 phases: The exploration period, the rapid expansion period, and the specification period. During the exploration period, starting in 2006, the first car rental companies were faced with rapid digitalization taking place and business processes were evolving. One of the most important Internet information companies, Dongfang Cheyun Information Technology Co. Ltd, was created and can be viewed as the first platform-like company focusing on transportation and working with car rental companies. By August 2012, DiDi Chuxing was established, and the platform service industry gathered momentum (X. Wang, 2019, pp. 3-4).

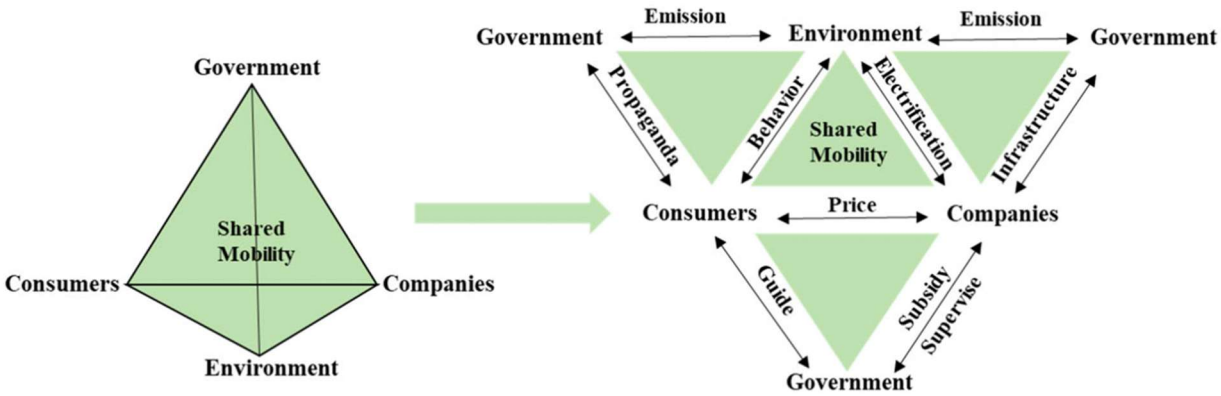
During the rapid expansion period, mobile Internet services and companies were booming, network technology gained presence and smartphones got commercialized. While platform economies became more famous, the competition in the sharing mobility market increased as well. China's Ministry of Transport started to manage the industry more closely, but uncertainty and missing information slowed the making of new industry-specific rules and regulations (X. Wang, 2019, p. 4).

During the specification period, many ride-hailing companies had already emerged next to DiDi Chuxing, and many people saw an advantage to traditional taxi services. While the price is usually lower, the service quality is equal if not higher than taxis. Furthermore, the Ministry of Transport has worked on various reforms concerning the new market and helped with the development to then become the first country to legally recognize ride-hailing (X. Wang, 2019, p. 5).

2.3.2. Current Shared Mobility Market

The shared mobility market in general can be divided into five segments: bike-sharing, ride-hailing, ride-sharing, car-sharing, and traditional car rental (Tariq, 2018), whereas the focus in this paper lies mainly on the first four types. Bike-sharing is supposed to solve the so-called "last mile" problem and is therefore rather meant for short distances. Ride-hailing and car-sharing, however, are mostly used for longer distances or urban travel (Tariq, 2018, p. 41). The shared mobility market in this paper does not focus on cross-city travels.

Figure 3: Framework of Influencing Factors in Shared Mobility in China



Source: Hu & Creutzig 2021, p. 8.

Main influencing factors in the Chinese sharing mobility economy are consumers, the company, the government, and the environmental benefit created. From those four factors, a three-dimensional framework can be created to understand the relationships between the factors, displayed in Figure 3. The relationship can be explained as follows. The connection between the consumers, the company and the environment create a

crucial connection for a well-functioning system. The companies obtain the consumer's trust by setting the pricing for instance, while the vehicles are electrified little by little to fit the environmental factors. Customers using this kind of transport help bring electric vehicles forward and therefore their mode of transport has a positive impact on the environment too. Lastly, all factors lead back to the government. It helps to support the sharing mobility economy's development since this will have another positive effect on traffic congestion and reduce carbon emissions. By putting regulatory policies in place, the government connects with the companies to supervise and help with subsidies while also investing into infrastructure like for instance electric charging stations on the roads. On the consumer side, the government promotes shared mobility through propaganda to make it more prominent to use it (Hu & Creutzig, 2021, pp. 7-8).

2.3.3. Ride-hailing

In the ride-hailing sector, DiDi is the most powerful company and holds a monopoly position. The company has a total user number of 100 million and 20 million rides every day. Uber is also active in China, however, was acquired by DiDi in 2016, other companies like Youche and Ucar barely have any market share and have declining user numbers every year. Ride-hailing companies have so far established their business in 1st tier and 2nd tier cities. As more and more competition arises from other technologies, the future of the ride-hailing market relies on innovation and improvements in efficiency as well as service refinement (Tariq, 2018, p. 39).

2.3.4. Ride-sharing

The ride-sharing market in China is still in development and has little market share so far. DiDi is also active as a monopolist in this sector and with its carpooling service attains more than 30 million users. Compared to the ride-hailing, DiDi has more competition here with smaller but growing companies entering the market. The company has increased its monthly users of almost 20% in the last year. Ride-sharing is a good alternative to ride-hailing especially because it is relatively low-cost, nevertheless it does not offer the same flexibility and the trips usually need to be planned in advance (Tariq, 2018, pp.39-40).

2.3.5. Bike-sharing

Bike sharing is easily accessible through scanning of a code on the smartphone and can be taken and left wherever there are bicycle docking stations in the city. Bike-sharing has become one of the most attractive investment opportunities for venture capitalists since 2016. In the best of times, more than 130 million users were registered. After an exponential growth, some of the smaller companies had to step out of the market due to financial problems which led to the market to be dominated by the two firms, ofo and Mobike. Together, they account for almost 90% of the market. The concept of bike-sharing has been found to be more popular in bigger, densely populated cities whereas in less

populated cities people tend to use the conventional public transportation system more. 60% of bike-sharing users use the bikes to solve the “last mile” problem as a service to connect to public transportation. Bike-sharing also has a positive impact on the reduction of unnecessary car short trips (Tariq, 2018, p. 41).

2.4. Business Model in the Sharing Mobility Economy

2.4.1. Business Model

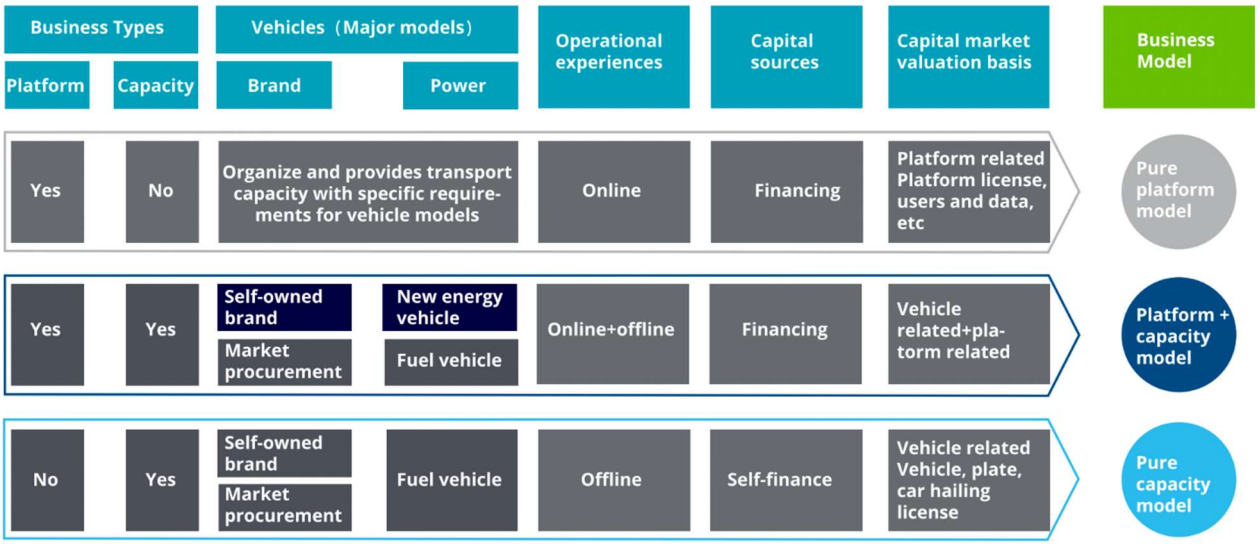
Before analyzing a business model in a sharing economy context, it is crucial to understand the term and concept of a business model as well as business model innovations. The term “business model” has existed for more than 70 years and first appeared in academic literature in the 1950s. Since then, over 1100 scientific peer-reviewed articles have been published explaining different approaches and notions of the term “business model” (Zott, Amit, & Massa, 2011, pp. 1019-1020). The terms’ roots represent a form of generalization of reality in order to advise future managers on technology (DaSilva & Trkman, 2014, p. 380). Research suggests that the term business model does not refer to one specific idea but rather to various phenomena and thus has to be defined further (Zott et al., 2011, p. 1034). While there has not yet been observed a general definition accepted by all scholars, business models can be referred to as architecture, design, pattern, plan, method, assumption, and statement. However, the terminology often causes confusion between business model, strategy, business concept, revenue model, and economic model as these terms are used interchangeably (Morris, Schindehutte, & Allen, 2005, p. 726). Furthermore, the business model is described as a tool (Baden-Fuller & Haefliger, 2013, p. 420) and also refers to managerial philosophy (DaSilva & Trkman, 2014, p. 379). A business model can also be described as a heuristic logic that has been established through a tentative hypothesis and an initial exploratory concept rather than a fully developed and specified plan of action (Chesbrough & Rosenbloom, 2002, p. 9).The business model is a new concept of analysis that differs from the product, firm, industry, or network and focuses on a focal firm but extends its boundaries to be wider than the firm’s. It helps explain in a holistic approach and on a system-level how firms “do business” and seek to describe and define value creation and value capture while keeping in mind the focal firm’s activities as well as its partners’ (Zott et al., 2011, pp. 1036-1037). Many different variations of business models have emerged over the years, such as the Business Model Canvas, which will be used later in this thesis to try to explain the sharing mobility economy in China.

2.4.1.1. Categories

In the sharing mobility economy, it can be distinguished between three different types of business models: Pure platform models, platform + capacity models, and pure capacity

models. The three types of business models and their characteristics can be observed in Figure 4 (A. Zhou, Liu, Zhou, Peng, & Wang, 2019, pp. 14-15). New models are still emerging and are not perfect models.

Figure 4: Multiple Roles of Business Model Innovation in the Context of Technology



Source: Zhou et al. 2019, p. 14.

2.4.1.1.1. Pure platform model

The main differences between the three models lay in the vehicles. The pure platform model is characterized as a “low asset” model, meaning that in this model, companies do not own their own vehicles but are rather known as the “organizer” of vehicles (A. Zhou et al., 2019, p. 14). Such pure platform models focus on the customer and are generally customer to customer (C2C) business models where the technology is in focus and connects both driver and customer (Wei, 2022).

2.4.1.1.2. Platform + capacity model

The platform + capacity model is a mix of the other two models, and it has the most room for development. In this model, companies use leasing companies and original equipment manufacturers (OEM) for their vehicles. This makes the companies’ required investments lower and tries to balance profitability and capacity guarantee. However, this form of business model has not yet proven itself to be profitable compared to the pure platform model and the entry barrier is not high which means that there is still room for other companies to enter the market (A. Zhou et al., 2019, p. 15). As the platform + capacity model is a mix between the two other models that have emerged later, it is also called a business to business to consumer (B2B2C) model, following up on the advantages of both models (Wei, 2022).

2.4.1.1.3. Pure capacity model

The pure (transport) capacity model is used by companies who work with heavy assets and large investments, they also consider high depreciation rates and negative margins. Looking at the short-term sharing mobility market, there is a huge demand for compliant capacity, however, it remains difficult to increase the supply for large quantities due to compliance policies set by the government (A. Zhou et al., 2019, p. 15). Pure capacity models do not rely on other companies for their resources and are the most like traditional taxi companies. They are generally considered as business to consumer (B2C) models (Wei, 2022).

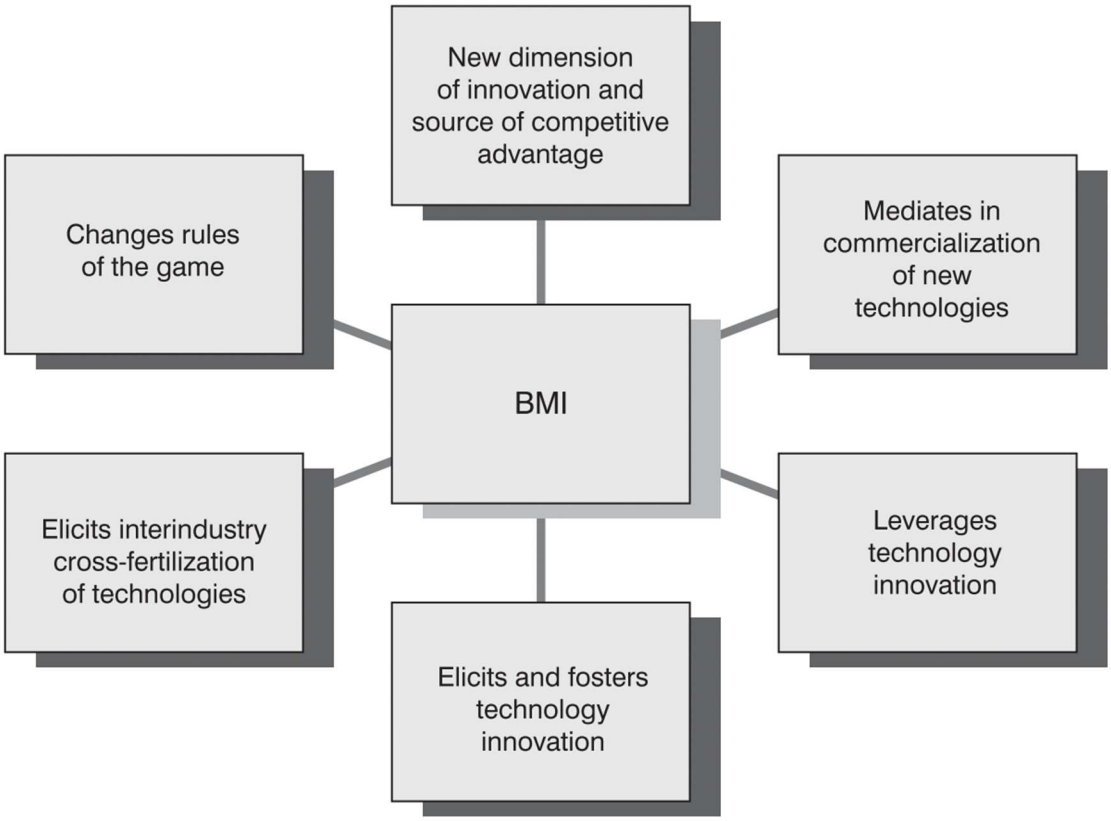
2.4.1.2. Sustainability

One of the reasons why the sharing economy gained a lot of praise and attention over the last few years was for the sustainability aspect. The sharing economy is a new concept with a possible solution to a more sustainable future. Shanghai observed a carbon emission reduction of 25’000 tons in 2016 achieved through bike-sharing (Mi & Coffman, 2019). The sharing mobility economy was said to promote sustainability in industries where there is a lot of wasted potential. To reach efficient sustainability in business models in the sharing mobility economy, various aspects need to be taken into consideration. Generally, travel needs to be reduced by conducting fewer trips that are shorter and making the transportation system more efficient (Banister, 2008, p. 75). The rapid urbanization that is happening in the world is not encouraging or prioritizing high sustainable mobility and challenges the government to a trade-off between sustainable transportation options and keeping up with the demand for urbanization (Cohen & Kietzmann, 2014, p. 280). Therefore, companies in the sharing mobility economy face the challenge to make their business models as sustainable as possible while nurturing the demand for urbanization as well as being profitable at the same time.

2.4.2. Business Model Innovation

Innovation is necessary to keep business models competitive and always adapted to the newest technologies. There are mutual relations between business model innovation and technological advancements in the literature. Business model innovation plays various roles in technological development which are summarized in Figure 5 (Pietrewicz, 2019, p. 35).

Figure 5: Multiple Roles of Business Model Innovation in the Context of Technology Innovation



Source: Pietrewicz 2019, p. 41.

Disruptive Innovation

Business model innovation and especially disruptive innovations play an important role in successful market entry for a company. Business model innovation gives companies competitive advantage and it usually goes together with technological innovations (Vorbach, Wipfler, & Schimpf, 2017, p. 383). However, disruptive innovation is often misunderstood and the meaning of “disruptive innovation” is too broadly used. An innovation is called a disruptive innovation when it can successfully challenge and even outplay the innovations of other companies in a market bringing generally younger and smaller firms into the market, therefore “disrupting” the market (Christensen et al., 2015, p. 4). Furthermore, disruptive innovation is a process, and not just an outcome, in which innovations with breakthrough potential enter new markets while breaking up the current ecosystem (Carnahan, Agarwal, & Campbell, 2010, p. 1846). However, in some cases disruptive innovations do not provide better outcomes in technology, meaning they do not necessarily provide technological advancements compared to the prior technology (Christensen, 2006, p. 9). It can be observed that authors are still unclear about the spectrum and depth when it comes to the exact definition of disruptive innovation.

Potentially disruptive technologies were observed to possess certain characteristics. First, disruptive technologies usually focus on fulfilling the basic user requirements compared to their incumbents' solutions. Disruptive innovations usually provide room for further development as they are not fully developed yet and usually present immature and underperforming features. Compared to their incumbents' solutions, the cost is generally lower which is the main point of competition. Lastly, incumbents' solutions usually present requirements in over-compliance which are related to performance characteristics (Vorbach et al., 2017, p. 383). New market entrants with disruptive business model innovation may have an advantage as they usually tend to focus on targeting segments that their incumbents do not target as they generally focus on improving the segment with their most successful and most profitable segment. Market entrants with disruptive technologies then tend to focus on the mainstream customer while providing lower-cost products and services (Christensen et al., 2015, p. 11).

After defining disruptive innovation, it remains to be seen if there are disruptive innovations in the sharing mobility economy and whether they have been proven to be successful. In the case of Uber, founded in 2009 and expanding in more than 60 countries worldwide, the technology innovation is there (Christensen et al., 2015, pp. 4-5). However, is it disrupting the taxi industry? As authors are not in consensus about the definition of a disruptive innovation in a business model, different opinions have been voiced out. Since the introduction of disruptive innovation, the word "disruptive" has been misused a lot as discussed above. Especially in Silicon Valley, it has become a trend to call any technology-related innovation a disruptive innovation (Moazed & Johnson, 2016). It can be argued that while Uber has been delivering innovation over the years, it is only an incremental innovation and not a disruptive one since Uber's financial and strategic accomplishments do not qualify enough (Christensen et al., 2015). However, other sources state that Uber did disrupt the taxi market as they were able to move upstream and attack taxis directly. Furthermore, most platform-based solutions are disruptive since they have an entirely new business model (Moazed & Johnson, 2016).

2.4.3. Case Study Uber China

The most successful company in the sharing mobility economy is DiDi Chuxing. While the business model of ride-hailing will be analyzed later, here is what has been found out about Uber China. So far, business models in the sharing economy especially in developing countries have not been well analyzed yet. Four components have been found to be important: the economy, the environment, society, and technology. Previous research on an Airbnb case in the hotel industry in Texas has provided some evidence that the sharing economy is getting successful by competing with and differentiating from already well-established firms in the industry. New sharing economy firms can acquire market share more easily by partly copying, adapting, or improving their business models. A

business model should give an overview of the principal values of the organization and how the processes forming the business model are a part of the business strategy. It contains 3 basic components: the type of goods or services that are offered, the type of business model as well as the revenue model (Gao & Zhang, 2016, p. 663).

Current research about a typical business model in the sharing economy found some components according to a study conducted on Uber. It is crucial for companies to implement and build a network by including matching and harmonizing actors. The conducted case study involved four dimensions in an analysis framework which were value network, value proposition, value architecture, and value finance. The value network describes Uber China in the following way: The company is a platform operator, consumers are individuals and organizations that use the service, it is a government-regulated service, there are third-party partners helping Uber to recruit drivers and help with the navigation service, and other important players in the value network are the drivers, investors, and competitors. In the value proposition, the goal is to provide a better riding experience. To achieve that, Uber China uses well-designed algorithms for dynamic pricing to help regulate the supply and demand in different areas, and they strive for high capital efficiency. The value architecture is about human resources, a large user network base, localization, key activities such as the recruitment of capable and qualified drivers, attracting customers, providing good customer service to both the drivers and the riders, and maintaining a good customer contact as well as avoiding potential risks. Lastly, value finance describes the platforms' commissions, taxes charged and regulated by the government regulatory agency, and the mobile service operators' charges (Gao & Zhang, 2016, pp. 664-666).

2.4.4. Case Study Bike-Sharing

A case study focusing on the bike-sharing economy found that the future development of the bike sharing economy principally relies on three key factors which are value creation, value delivery, and value capture (Si et al., 2021, p. 2686). Circling back to the Uber China case study described above, it can be observed that the factors are similar and some overlapping. Value creation refers to a cheap, convenient, and effective point-to-point commute in short distances (Si et al., 2021, p. 2686). The effectiveness for short distances is especially important since bike-sharing is mostly used to solve the last-mile problem compared to conventional sharing mobility solutions such as ride-hailing.

After value creation, the most important thing for a successful business model in the urban transportation market is its value delivery. It includes the constant quality and improvement of bikes, efficient cost leadership through new technology and process improvement, cooperation between government and the organization to reduce a possible negative impact on society's order, and constant improvement of service content and value.

The third pillar focuses on value capture and how to clearly state a value delivery mechanism (Si et al., 2021, p. 2687). Furthermore, for a business model to be successful, it needs to be as transformative as possible. Research has shown that there are six factors influencing the level of transformation, which are: Personalization, a closed loop process, asset sharing, usage-based pricing, a collaborative ecosystem, and an agile and adaptive organization (Kavadias, Ladas, & Loch, 2016, pp. 91-98). No organization will have all these six characteristics, but the more it has, the better the chances for a successful business model transformation. First, bike-sharing companies can increase their competitive advantage compared to their dominant enterprise competitors when they come up with more personalized products that are more targeted to the customer's needs. Bike-sharing companies have a unique advantage in the sharing mobility industry in the way they can reuse and recycle their resources as the consumption model is cyclical rather than linear, this pushes the overall cost of the resources down. Therefore, bike-sharing companies can reduce their cost by sharing expensive resources even throughout the supply chain. Another cost-related advantage is the continuous improvement of the pay-by-use strategy. Bike-sharing companies should continue to charge the customer based on how much they use the resources instead of paying a fixed service fee. This will benefit both the company by acquiring more customers as well as the customer by saving costs. Improving these aspects can help bike-sharing companies establish a better value capture mechanism and thus increase the efficiency of the profit model which will then result in reaching a higher maximization of value (Si et al., 2021, p. 2685).

2.4.5. Challenges in Sharing Mobility Economy Business Models

Several challenges arise when looking at the two case studies presented above as well as other sharing economy business models analyzed up until now.

First, there is a trade-off between rising costs and keeping a low and competitive price. By continuously improving their products and services as well as keeping up with the technological advancements, it can be difficult for companies to keep the price lower than their competitors and therefore enjoy the cost advantage companies had before. This applies mostly to bike-sharing companies since the accepted threshold for prices is relatively low (Si et al., 2021, p. 2688). However, this seems to be a challenge specific to the bike-sharing business models and not necessarily to the whole sharing mobility economy business models.

A second challenge identified in the literature states possible conflict with the government as well as with other transportation participants. Issues such as fighting for parking space in the cities have led to social problems and cities have stopped issuing permissions for the launch of new bikes. Violations against these new regulations by the government then caused conflict between the companies and the government as the bike-sharing

companies were not negotiating with the government but rather trying to conquer the new market. Furthermore, the fast expansion of bike-sharing companies in China has caused many participants in urban travel to switch to bikes which then again has caused governmental problems in regulating angry employees from the conventional transportation market (Si et al., 2021, pp. 2688-2689). A government-related challenge as well is how to manage sustainability and trade-offs that come with it since collaborative work between the company and government is still missing (Y. Ma, Lan, Thornton, Mangalagiu, & Zhu, 2018, p. 364).

Sharing mobility companies generally must rely heavily on capital and tend to have a very interlaced relationship with their stakeholders. This is especially important for companies such as ofo or mobike who receive a lot of financial funding. Those companies are heavily influenced by their investors which can cause problems because of different intrinsic motivation by the stakeholders. Generally, bike-sharing companies with undeveloped business models were observed not to focus enough on sustainable development (Si et al., 2021, p. 2688).

3. Theoretical Framework

For the theoretical framework, this part presents important parts of the business model analysis that will be used in the later part of this thesis. The theoretical framework includes the tools for both an internal, as well as an external market analysis for the sharing mobility economy in China. For the external market analysis, the PESTEL analysis will be used. For the internal market analysis, the business model canvas will be used. Both frameworks will be briefly explained in this section.

3.1. PESTEL

The PESTEL analysis is a tool for a country's external market analysis and its name stands for six factors best describing an external market. Those six factors are: The political environment, the economic environment, the sociocultural environment, the technological environment, the ecological environment, and the legal environment. The PESTEL analysis can be categorized as a more general approach to a market analysis because it is focused on overall market aspects and does not have a specific method. The political environment is examined by focusing on the country's governmental situation as well as taxation, trade-regulations, and other policies. The economic environment talks about the country's GDP, interest rates, inflation, or employment rates. Demographic information and general lifestyle questions can be addressed in the sociocultural environment. The technological environment considers factors such as the government's interest in technological advances, the level of technological maturity in the industry, intellectual property issues, and disruptive technologies. The ecological environment sums up environmental issues in the country which can influence the industry, environmental protection policies and laws, and other regulations concerning the energy and CO2 emissions in the country. Lastly, the legal environment's focus lies on laws and regulations in place for non-competitive behavior such as monopolistic behavior, as well as general laws concerning the industry (Grünig & Morschett, 2012, pp. 86-89).

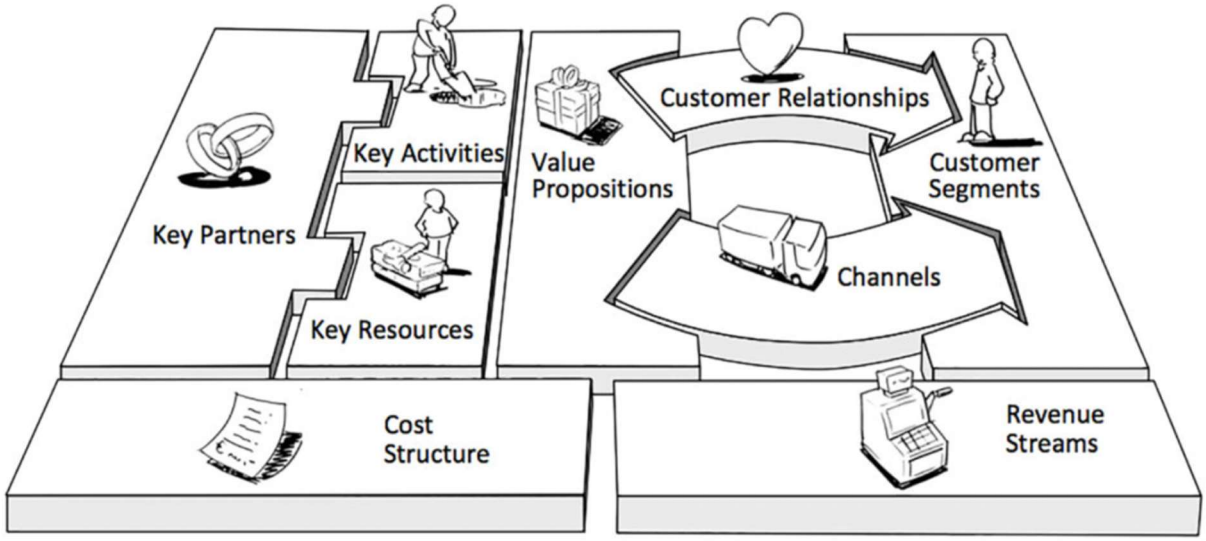
3.2. Business Model Canvas

The ride-hailing giant DiDi Chuxing has seen rapid growth over the last few years and while it started as an oligopoly player, it became almost a monopoly (Q. Ma, Yang, Zhang, Xie, & Wang, 2019, p. 4) by acquiring various companies such as Uber in 2016 and becoming a synonym for ride-hailing in the Chinese market (Zuanxu, 2020, p. 71). Initially, the company started as a taxi-hailing service but transformed rapidly into a ride-hailing platform to expand its business. DiDi Chuxing identified how to match drivers and riders in the best possible way to improve personal mobility ("Didi Business Model," 2020). Since 2018, Didi has been dominating the ride-hailing market in China and acquired a total market share of more than 90%. Up until recently competitors like Meituan and Shouqi

now account for less than 10% of the ride-hailing market. Current research suggests that competitors should invest more into differentiating their services from the ride-hailing giant DiDi Chuxing to be more successful in the next round of competition (Y. Liu & Kim, 2018, p. 7). Although DiDi is an international company, most of its business is in China where over 90% of total revenue is generated. Its international business which consists of newer segments like e-bikes, autonomous driving, and freight business account for the remaining 10% (McGregor, 2021).

There are different types of models in the sharing mobility economy as described above. DiDi Chuxing takes the monopoly position in the “pure platform” model (A. Zhou et al., 2019, p. 15). Furthermore, DiDi Chuxing is following a Consumer to Consumer (C2C) model structure. This means that the company’s focus is to provide the platform and connect customer and service providers there but the customers need to use their own cars or have to source them from car rental companies (Song, Liu, & Ma, 2022, p.35).

Figure 6: Visualization of the Business Model Canvas



Source: Monaco 2019.

DiDi Chuxing will therefore be taken as an example of a platform in the mobility sharing economy in China to analyze the market as well as a typical and up until now successful business model. In the following, the Business Model Canvas will be used to analyze in detail DiDi Chuxing’s business model and strategy in the Chinese shared mobility economy market. The Business Model Canvas with its nine building blocks (Osterwalder & Pigneur, 2010) has been created to have a common language to describe, visualize, and assess ever-changing business models. To summarize, the Business Model Canvas is implemented to help communicate and plan the company’s business strategy in different aspects such as the facilitation and understanding of all involved stakeholders (da Silva

Piñeiro, Mendes de Oliveira, Cougo da Cruz, & Zardin Patias, 2017, pp. 794-795). A visualization of the Business Model Canvas and its structure can be found in Figure 6.

3.2.1. Key partners

The building block for key partners answers four main questions; Who are the key partners, who are the key suppliers, which key resources are acquired through key partners, and which key activities are performed by the partners. It generally describes the network of different stakeholders of partners and suppliers that make the business model function and distinguishes between three different motivations of building partnerships which are optimization and economy of scale, reduction of risk and uncertainty, and acquisition of particular resources and activities (Osterwalder & Pigneur, 2010, pp. 38-39).

3.2.2. Key activities

The key activities building block refers to the most important activities a company must provide to make the business model work. It states what key activities the value proposition, the distribution channels, the customer relationships, and the revenue streams require. It can be categorized into production, problem solving, and platform or networking (Osterwalder & Pigneur, 2010, pp. 36-37).

3.2.3. Value proposition

The value proposition building block includes all the products and services that add value for a specific customer segment in the enterprise. It includes resolving what value should be delivered to the customer, what kind of problems are to be solved for the customers, which specific customer needs are being satisfied, and what bundles and products are offered to each of the customer segments (Osterwalder & Pigneur, 2010, pp. 22-23).

3.2.4. Customer relationship

The customer relationship building block focuses on the types of relationships that the enterprise builds with its specific customer segments. It describes what kind of relationship each customer expects the company to establish and maintain with them, what kind of relationships have been established so far, how costly they are, and how integrated they are with the rest of the business (Osterwalder & Pigneur, 2010, pp. 28-29).

3.2.5. Customer segment

The building block for the customer segment focuses on defining the different groups of people and organizations that a company is targeting with its business. It states for whom the enterprise is creating value for and who the most important customers are (Osterwalder & Pigneur, 2010, pp. 20-21).

3.2.6. Key resources

The key resources building block refers to the assets which are most important to make the business model work. Those key resources then help the company build value propositions, sustain relationships with the customer segment as well as obtain revenue. The focus lies on finding out what key resources the value proposition, distribution channels, customer relationships, and revenue streams require (Osterwalder & Pigneur, 2010, pp. 34-35).

3.2.7. Distribution channel

The distribution channel building block is about how the company communicates and reaches its customer segments to deliver them the value proposition. It analyzes through which channels the customer segments want to be reached, how the customer segments want to be reached, what channels are integrated and which ones achieve the best results and are the most cost-efficient, and how they are integrated into the business model (Osterwalder & Pigneur, 2010, pp. 26-27).

3.2.8. Cost structure

The cost structure building block describes all costs that may occur in a specific business model. This building block finds out which costs are the most important in the business model and what key resources and key activities are the most expensive. This helps evaluate the costs and make sure they are minimized (Osterwalder & Pigneur, 2010, pp. 40-41).

3.2.9. Revenue stream

The revenue stream building block describes for what value the customers are willing to pay, what they are currently paying for, how they are currently paying, their preferred way of paying, as well as how much each revenue stream contributes to the overall revenues (Osterwalder & Pigneur, 2010, pp. 30-31).

3.3. Four Box Business Model

The nine building blocks described in the previous section in the Business Model Canvas can be summarized into four key elements which are customer value proposition, profit formula, key resources, and key processes as summarized in Figure 7. They can be directly linked to ten types of innovation (Kühn, 2018, p. 219).

According to this model, it can be analyzed which building blocks of the Business Model Canvas are the most important for a company and what kind of innovation the company needs to be focused on to achieve a maximal level of innovation for its services (Kühn, 2018).

Figure 7: Business Model Canvas and the Four Box Business Model Component Comparison

Four Box Business Model	Business Model Canvas	Value Business Model	Triangular Business Model	Ten types of Innovation
Customer Value Proposition	Customer Segments; Value Proposition; Customer Relationships.	Value Proposition	Who; What.	Product Performance; Product System; Service; Customer Engagement.
Profit Formula	Cost Structure; Revenue Streams.	Value Capture	Why	Profit Model
Key Resources	Key Resources; Key Partnerships; Distribution Channels.	Value Creation; Value Delivery.	How	Network; Structure; Brand; Channel
Key Processes	Key Activities	Value Creation; Value Delivery.	How	Process.

Source: Kühn, 2018, p 21.

4. DiDi Chuxing 滴滴出行 Business Model Analysis

4.1. PESTEL

4.1.1. Political

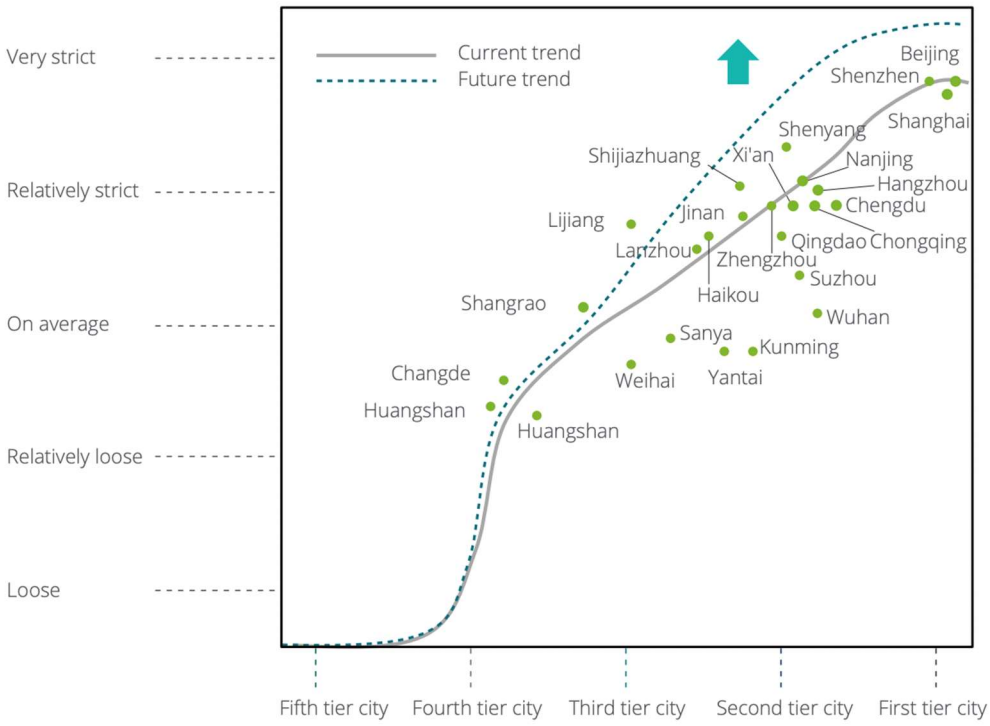
China has a lot of rules and regulations concerning the sharing economy. Furthermore, this can differ from city to city and therefore Beijing and Shanghai can have completely different regulations. In the sharing economy, both cities have similar regulations and become examples for other cities. How the sharing economy will evolve in the future is still unclear and remains to be seen since the Chinese regulatory framework is rather prudent (Hou, 2017, p. 11). Regulators should be careful when it comes to regulating the sharing economy in China; in the case of regulations being too strict, startups and companies will move to other countries. However, in case of too loose regulations, startups lose credibility and may raise concerns about safety which would also negatively impact the development of those startups as well as the Chinese economic development in general negatively (Jiang & Wang, 2020, p. 87). In 2017, the Chinese government implemented new rules and regulations to manage and control the car-hailing market. The regulations specifically target the vehicles, operating qualifications as well as drivers (A. Zhou et al., 2019, p. 12). China has revised its anti-monopoly regulatory framework and adjusted it to a stricter format. The new Anti-Monopoly Law will go into effect on August 1st, 2022, and is supposed to cover any existing loopholes in the current monopoly regulations. This will be an important milestone for the Chinese regulatory framework and support the supervision of platforms such as the one from ride-hailing giant DiDi Chuxing. Furthermore, China has put in place an anti-monopoly bureau in 2021 which will be responsible for controlling the enforcement of the policy and making sure it leads to a unified, open, competitive, and well-organized system (Li & Xiong, 2022). China has high entry barriers when it comes to the ride-hailing market. This slows down any investments in the industry and makes it hard for new companies to get specific government permits (Q. Sun, He, Wang, & Ma, 2019, p. 2). Currently, the Chinese ride-hailing market is supervised by the Ministry of Commerce and the Ministry of Transport of the People's Republic of China. However, an authority to regulate competition specifically for the ride-hailing market has not yet been established which means that there are currently no measures in place to regulate possible unfair competition except the general anti-monopoly regulations in place, (Deighton-Smith, 2018, p. 16) as it might be the case for DiDi Chuxing.

DiDi Chuxing is not the only company in China causing issues with monopolistic behavior. China has been observing monopolies for a long time and has been trying to fight them off over the last years by installing stricter rules in the booming digital economy. In 2021, there were a total of 98 cases of monopolistic behavior that have gotten an administrative

penalty from the authorities. Those cases involved the biggest internet giants such as Tencent, Alibaba, Meituan, JD.com, Baidu, and DiDi Chuxing (Li & Xiong, 2022).

China's regulatory framework for the sharing mobility economy includes government regulations, self-regulation, and market-based regulation. While self-regulation and market-based regulation were there from the beginning, government regulation was introduced last. Various safety issues have brought the government's attention to the ride-hailing sector and led to the government stepping in. So far, the approach to handle the sharing mobility was done via a neutral and multi-party regulatory approach, introduced in 2016, and by observing and comparing current regulatory policies are being tested and adjusted to find new solutions (Jiang & Wang, 2020, p. 88). Furthermore, 2016 was the year when ride-hailing platforms were officially legalized in China by issuing the "Interim Administrative Measures for the Business of Online Taxi Booking Services" (Chan & Kwok, 2022, p. 139). The neutral approach allows new market entrants with new business models without having any advantages or disadvantages as regulations are adapted little by little (Jiang & Wang, 2020, p. 88).

Figure 8: Strictness of the Car-Hailing Policy in different City Tiers



Source: Deloitte, 2019, p. 6.

As can be observed in Figure 8, car-hailing policies tend to be more strict in larger 1st tier cities such as Shanghai and Beijing. From a political and economic point of view, this is not fair as companies in the upper tier cities are under more regulatory examinations than the lower tier cities (A. Zhou et al., 2019).

Mobility as a service (MaaS) is one of China's focus points for the future. Various pilot projects are already in place to support it, most of them in the bigger cities such as Beijing, Guangzhou, or Shenzhen. Projects include initiatives to bring forward green travel in Beijing with integrated platforms and one-stop transferring systems using different forms of transport ("Report on Sustainable Transport in China," 2021, p. 30).

4.1.2. Economic

China's economy has been growing rapidly over the past few years with a slowdown due to the Covid-19 pandemic. With an annual growth forecast rate of 4.9% for 2023, China is successfully recovering from the pandemic and is returning to its pre-pandemic GDP growth levels. Large investments have been made into infrastructure projects and less into real estate. China's oil and grain reserves will help them mitigate the rise of global energy and food prices and make them economically more independent. Furthermore, there have been measures taken to create a single domestic market and administrative monopolies are planned to be eliminated (OECD, 2022).

The expansion of the sharing mobility economy creates job opportunities which leads to an increased income and stimulates overall consumption in the country. This is a good way to promote economic development and provides flexible employment conditions for workers. The biggest sharing mobility company, DiDi Chuxing, alone provided more than 17.5 million flexible jobs and 2 million of its drivers gained an income of more than 160 yuan per capita back in 2016. The sharing mobility economy has led to a positive impact on employment (Hu & Creutzig, 2021, p. 7). The sharing economy in China has helped expand employment opportunities which has, in turn helped stabilize it. It also supports the promotion of public services and leaves great room for economic growth and development for this sector in the future (Zhang, Shi, & Li, 2019, p. 2). Furthermore, there is some evidence that the sharing mobility economy in China and especially online collaborative consumption platforms have had an effect and significantly changed consumption patterns (Guo, Xin, & Li, 2020, p. 632). The sharing economy in China has a strong economic impact. It is an opportunity to create and grow business revenue and has an empowering effect on individuals and micro-entrepreneurs as well to develop themselves and help with job creation. Mostly due to the idea that the sharing economy is generally considered a disruptive innovation (C. Liu, Chan, Wang, & Yang, 2020, p. 2).

The earlier mentioned "Opinion" from the Chinese government agrees that the sharing economy is an innovative business model which can lead to increased transactional value

in the economy and help produce intensive economic development. Furthermore, it is mentioned that sharing economy business models are helping everyone, increase utility and put economic players on a higher indifference curve. In the last few years since 2011 which is referred to as “year zero” in the sharing economy, the sharing economy has had a huge impact on the Chinese economy and belongs to one of the greatest sources of growth. The sharing mobility economy comes in fourth place, after finance sharing, collaborative lifestyles, and production sharing, with a value of RMB 201 billion (Hou, 2017, p. 4).

4.1.3. Sociocultural

Over the last couple of years, China’s sociocultural situation changed. The most populous country in the world reaching 1.4 billion people in 2020 has seen its population growth rates go down to an average of 0.4% (“OECD,” 2020).

From a sociocultural point of view, the sharing mobility economy in China is a chance. In cities like Shanghai where more than 24 million people live, the demand for transportation is a key problem to solve. The socio-economic development is changing and car ownership became more expensive during the past years because of new government regulations (Y. Zhou, 2018, p. 20). The sharing economy has the potential for a great social impact in China. First, the sharing economy can help market participants build more solidarity and trust which can lead to the building of more social connections. This means that the sharing economy has the power of bringing people closer together from a social point of view and building more relationships as well as social bonding. This then has a positive impact on the creation of a participatory society and community (C. Liu et al., 2020, p. 2).

To facilitate demographics, China is usually divided into different tier cities from 1st tier to 4th tier and generally uses GDP, population, and politics to classify them into the categories (“China’s City-Tier Classification: How Does it Work?,” 2021). 1st tier cities are the largest cities with the greatest demand like Beijing and Shanghai and daily orders of more than 200’000. The main challenge to solve in 1st tier cities is compliance. 2nd tier cities include 40 cities such as Wuhan or Chongqing and cities in that tier are characterized as having the highest and fastest demand growth potential. Those cities are usually targeted for the premium and express car service sector. In the 3rd tier, there are 54 cities, and the premium and express daily volume accounts for about 9% of the total market. The focus lies only in the express car business. Lastly, 4th tier cities include 300 cities where the main transport capacities are taxis and motorbikes. Drivers in the 4th tier are not willing to take into account longer waiting times because of the small radius of the cities (A. Zhou et al., 2019, p. 9).

China's cultural heritage has always had a big influence on the individual's willingness to take risks. From Confucian values, Chinese society was known to be more risk-averse with a preference for job security and income safety. This has been changing over the past few years, especially among the younger generations, and leads to a more risk-tolerant society willing to take on new challenges and deal with failure ("The 3 pillars of China's booming start-up ecosystem," 2022).

With its new approach on sustainability, China is planning to improve its transport services and make it more accessible to the public, especially to the elderly by installing special hotlines services to call for ride-hailing services. Companies are further encouraged to make their apps as easy as possible by creating direct call buttons ("Report on Sustainable Transport in China," 2021, p. 108).

4.1.4. Technological

From a technological perspective, China has made great developments over the last few years and has gone from an imitator to an innovator. The country is focusing on becoming an innovation-oriented country by 2050 and China wants to become less dependent on foreign technologies (D. Chen & Li-Hua, 2011, p. 96). In order to keep up with technological innovations and adopt appropriate strategies, companies in the Chinese market need to take into account government policies as well as the general market environment as the government policies highly affect the level of technological innovations in China (J. Yang, Liu, Gao, & Li, 2012, p. 835). China is known for having a high level of innovation and tech-talents available. Innovation-friendly policies encourage new ideas and China is one of the leading countries in artificial intelligence, robotics, computer vision, and other technological fields. Furthermore, China has announced to put its focus on industrial internet and domestic industrial software for the next five years and has planned capital investments and subsidy policies to support this plan ("The 3 pillars of China's booming start-up ecosystem," 2022).

The sharing economy is highly dependent on technology since the sharing mobility relies on it since it mostly works through platforms and digital features. However, digitalization is not the only important technological feature in the sharing mobility economy, especially when talking about car-sharing, autonomous cars became the center of research. Self-driving technology is one of the future goals and regulators, car companies, and internet companies are working together to provide safe, convenient and economical service (Tariq, 2018, p. 45).

4.1.5. Ecological

It is well known that China has one had of the highest sources of greenhouse gas emissions in the world over the last few years and has extremely suffered from bad air pollution. In 2019, China was responsible for 27% of the world's total greenhouse gas

emissions and therefore exceeds all the developed economies together (“Report: China emissions exceed all developed nations combined,” 2021). The countries’ carbon-intensive industries have led to many ecological challenges like water scarcity or soil contamination. In 2015, they signed the Paris agreement and further implemented policies to cut carbon emissions and be carbon neutral by the year 2060 (Maizland, 2021).

The sharing economy has a positive impact on the environment. It helps to gain access to otherwise underutilized resources and is a sustainable approach to help reduce this society’s hyper-consumption and wasteful overspending (C. Liu et al., 2020, p. 8). The sharing mobility economy in China also considers the ecological point of view. So-called new electric vehicles (NEV) are highly encouraged and promoted in China. Regulations stimulate the use of electric vehicles for car sharing with subsidy policies. Furthermore, the government has accelerated the installment of electric charging stations and parking (Hu & Creutzig, 2021, p. 5). However, there is also a negative impact on the sharing economy in China, especially with regards to the bike-sharing economy. For the sharing economy to be sustainable from an ecological point of view, the sharing of resources should not lead to the mere production of new resources but rather to the sharing of idle resources. This seems to be neglected or misunderstood in the Chinese sharing mobility economy as could be observed back in 2017 when more than 20 million sharing bicycles were produced and put on the market. That alone will lead to approximately 300’000 tons of scrap metal and is not beneficial from an ecological point of view at all (C. Liu et al., 2020, p. 10). Studies have analyzed the impact on sustainability and shown that shared mobility business models are promising a more sustainable mobility system. However, the exact ecological implications are subject to further research (Cohen & Kietzmann, 2014, p. 282).

4.1.6. Legal

The legal status of sharing economy actors in China brings many questions. Since 2016, the market regulations have changed, and new ones have been installed. Before 2015, it was unclear what legal status and responsibilities ride-hailing participants had, how well they were protected and what would happen with the unfair competition to the taxi market. In 2016, market regulators reacted and regulated the sharing mobility activities. In July 2016, ride-hailing services were legalized and positioned as taxi services (Jiang & Wang, 2020, p. 92).

The legal system in China is relatively well established, even though there is no clear authority responsible for the sharing mobility economy, there is an anti-monopoly law in place, as mentioned previously. This law is responsible for the prevention of monopolistic behavior in order to sustain competition, increase economic efficiency, protect the consumer’s and the social public’s interests as well as make sure the development of a

healthy socialist market economy is secured ("National People's Congress of the People's Republic of China," 2007). Since local governments in China may have different laws and regulations in China, some of the local governments have introduced their own rules to regulate the competition in the ride-hailing market. For instance, the two cities Shanghai and Beijing have both adopted a handful of regulations such as a price floor and merger review to make sure monopolistic behavior is minimized as much as possible (D. Sun & Ding, 2019, p 237). Next to laws covering the monopoly situation, there are still issues with the driver's legal employment status and their legal definition of employment has not yet been defined (Wei, 2022). In cases of a dispute between any of the actors in the sharing mobility economy, the legal situation can cause issues and it is to be determined who can be held accountable. This leaves room for companies to handle the situation in their own ways. Some pure platform companies do not employ drivers and therefore let them register themselves as self-employed. In such a setting, drivers are legally not protected by the company. Other companies in the same sector hire drivers as their own full-time drivers and give them complete labor contracts and protection of labor regulations (Wei, 2022).

Various aspects are problematic in the current sharing mobility economy in China. This concerns mainly a lack of consumer protection and liability rules. Compared to the conventional taxi business, there are more players involved and in case of harm caused to consumers, taxi companies are required to take responsibility. However, in the case of a car sharing company, there is a platform involved that breaks this conventional pattern. The relationships between provider and user, employer, and employee, as well as owner and consumer, become unclear. This means that the liability rules are changing and cannot be applied in a traditional manner which can make consumers feel unsafe using this service (Xu, 2020, p. 20).

4.2. DiDi Chuxing 滴滴出行 Business Model Canvas

4.2.1. Key Partners

Since DiDi Chuxing was initially built on mergers and acquisitions, the company relies on various partners for its success in the industry. Since 2018, DiDi has made five acquisitions with companies that were presenting themselves as valid competitors in the market. Kuadi Dache, a rival until the merger in 2015, pushed DiDi Chuxing into a price war resulting in huge losses for both companies. After the acquisition of Uber, DiDi formed a partnership with Lyft to benefit from shared technologies and market knowledge. Furthermore, DiDi Chuxing has a list of early investors who among other things helped the company with its debt financing in 2019. The investors include Morgan Stanley, JPMorgan Chase, HSBC, Goldman Sachs, City, and Barclays. DiDi also raised money in another venture round from SoftBank, For Gold Ventures, and Toyota before going public in June

2021 (“Chinese Ride-Sharing Giant DiDi Chuxing,” 2022). SoftBank is DiDi’s largest shareholder with a share of 21.5% in the company, Uber was left with a stake of 12.8% after DiDi and Uber China merged and Tencent is holding 6.8% of the company’s shares (McGregor, 2021).

An important milestone has been set by DiDi in 2018 when it comes to partnerships. DiDi Chuxing partnered up with various OEMs to help drivers get more attractive leasing conditions and get them to become full-time drivers. The process has two sides which are when the leasing companies help drivers lease vehicles without any cost of operating the vehicles and make sure the drivers will not face any compliance issues along the way. Furthermore, the leasing companies provide the car-hailing platforms with professional training for their full-time drivers. On the other hand, DiDi helps drivers get a better source of orders by connecting with the leasing companies. DiDi’s national strategic partner for that is Wuhan Dachu Automobile Service Company (A. Zhou et al., 2019, p. 13).

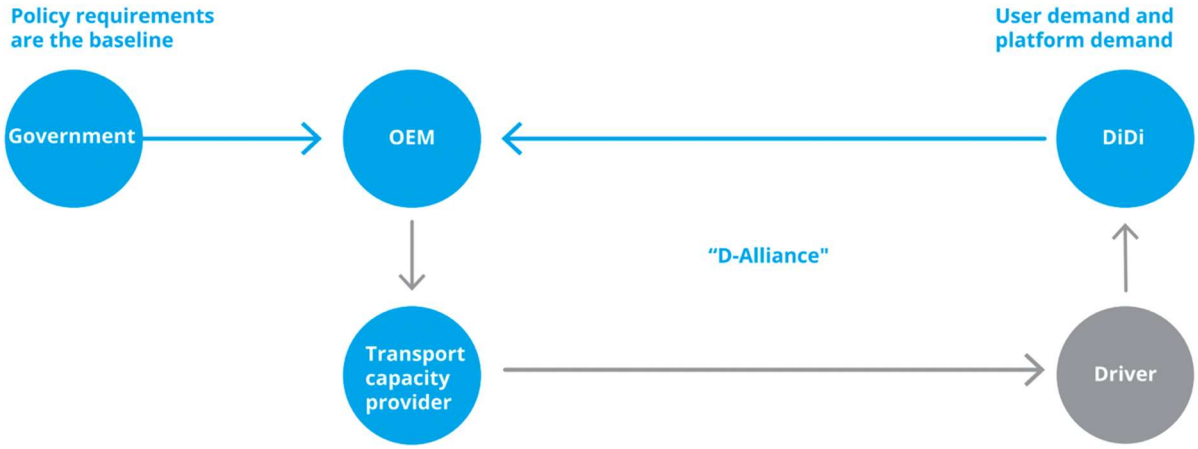
DiDi Chuxing provides a wide range of auto solutions available for their drivers which are made through partnerships with third-party service providers. Such services may include leasing, refueling, and maintenance and repair. Furthermore, there have been partnerships established with payment processing services to provide the customers with a smooth and uncomplicated payment procedure (“DiDi Global,” 2022). To keep customers loyal and make it attractive for them to use DiDi Chuxing’s services, the company is regularly partnering and cooperating with famous people such as Chinese actors. Celebrity endorsement has been an important part of DiDi in its strategy to attract the younger customer segment (Zuanxu, 2020, p. 79).

Since the environment is becoming a major factor and reducing CO2 is one of the major goals in today’s economy, DiDi also puts a focus on that and partnered with BAIC Group as a strategic corporation for new energy vehicles. A concept called “D-Alliance” was launched back in 2018 to bring together transport capacity providers, OEMs, and drivers. This alliance was created to help DiDi build a standard formulation for shared new energy vehicles specifically designed for the sharing economy and help with the promotion of large-scale operation (A. Zhou et al., 2019, pp. 13-14). A visualization of DiDi’s “D-Alliance” operational mechanism can be observed in Figure 9. In total, 31 car companies are involved in the D-Alliance, and they all need to meet the required development standards in the industry. Through the alliance, different partnerships have been able to be established such as with Ctrip, Baidu Map, and WeChat while always keeping the ecological aspect in mind (L. Wang, 2019, p. 1759).

With the “D-Alliance”, DiDi’s goal is to create an end-to-end supply chain and facilitate car ownership for individuals as neither the drivers nor DiDi would need to own cars. This

strategy allows the ride-hailing giant to design their own cars specifically for ride-hailing and therefore control the whole system.

Figure 9: The operational mechanism of DiDi's "D-Alliance"



Source: Zhou 2019, p. 13.

Ofo

In the bike-sharing sector in China, there are currently two companies that account for almost 90% of the market, one of them being Ofo. Companies are investing a lot of money into bike-sharing companies as they are supposed to be the next big new trend in the sharing mobility economy (Tariq, 2018, p. 41). Ofo is the first bike-sharing company with dockless bikes to ever be on the market. DiDi has been heavily investing into Ofo since September 2016 when Ofo received US$100 million from the ride-hailing giant. Several changes have been made to the bikes, such as improvement of the bike seats, brakes, and general safety and security. Even though Ofo has other investors, DiDi managed to form a partnership with Ofo back in 2017, which made it easier for users to directly book Ofo bikes through DiDi's ride-hailing app. This gives Ofo a wider range and exposure for its mobile transportation platform (S. Yang & Huang, 2017, p. 6). In 2018, DiDi was close to officially acquiring Ofo since competitors have diversified themselves with bike-sharing companies. The $2 billion dollar deal did not go through in the end as Ofo wanted to remain the only independently-run bike-sharing company in China and DiDi was left with a partnership agreement (Yin, 2018).

4.2.2. Key activities

The main purpose of DiDi's shared mobility services is to provide an information link between drivers and passengers (Zuanxu, 2020, p. 72). DiDi Chuxing's mobility service sector has a band of key activities, most of them are types of car-hailing and each of them has a different purpose and targets a different customer segment. DiDi proposes taxi-hailing, private car hailing, social ride-sharing, bike sharing, on-demand delivery services,

and automobile services. Further sales services related to the industry include leasing, financial maintenance, fleet operation, electric vehicle charging and co-development of vehicles by their producers (“SupChina,” 2022). The ten services are DiDi Express, DiDi Premier, DiDi Taxi, DiDi Hitch, DiDi Enterprise Solutions, DiDi Bus, DiDi Designated Driving, DiDi Luxe, DiDi Bike, DiDi Freight (“DiDi Global,” 2022).

Furthermore, DiDi Chuxing gives its platform users access to bike-sharing and has included one of the biggest bike-sharing companies in China, Ofo, into its app as well. This makes it easier for customers to have it all in one go (S. Yang & Huang, 2017, p. 7).

4.2.3. Value proposition

DiDi Chuxing’s vision statement mentioned various aspects for the future of the company, on a mission “to a better journey”, they want to “become the world’s largest one-stop transportation platform, become the world’s largest operator of vehicle networks, become a global leader in smart transportation technologies, become a global leader in the revolution in transportation and automotive technology”. Furthermore, their main values are creating customer value, data-driven thinking, win-win collaboration, integrity, growth, and diversity (“DiDi Global,” 2022).

DiDi Chuxing’s value proposition includes both customers and drivers, providing value for both stakeholders at the same time. The value proposition for customers includes a service that saves time as there are no long waiting times like for taxis, a superior and luxurious ride experience in high-end vehicles, rides for a cheaper fare than conventional taxis and therefore more affordable, allowing customers to travel in style, making public transportation more convenient, and also having fixed prices for certain routes (“DiDi Global,” 2022). DiDi’s value proposition, which is focused on targeting every customer group presents more customized travel services compared to traditional taxis and is focusing on customers’ different points of demands rather than a general approach (L. Wang, 2019, p. 329).

As can be observed, DiDi Chuxing’s strategy is to have a value proposition for each customer segment. This ranges from DiDi Bus which can serve people who usually take public transportation to move around to DiDi Luxe or DiDi Designated Driving where customers can enjoy a first-class treatment with the most luxurious features in cars or even their own drivers.

On the drivers’ side of the value proposition model there are completely flexible working hours including the possibility for full-time or part-time employment, a platform providing them with an easy-to-use payment handling, higher pay than in the conventional taxi business and giving passionate driver the option to make money while practicing their hobby (“DiDi Global,” 2022).

4.2.4. Customer relationship

DiDi Chuxing's customer interactions mainly happen over mobile applications. Furthermore, the app can be linked with the Chinese instant messaging application, WeChat. This facilitates the process for the customer as he can connect both applications without having to set up a separate account on DiDi's app. Complaints and customer service handling all go directly through the app or the customer service email provided (Team, 2021). Furthermore, word of mouth is a powerful advertising tool that can be of great advantage if customers are happy and DiDi puts effort in that. Positive word of mouth and customer trust as well as convenience, privacy risk influence and the users' intention to participate in the service are correlated. Since DiDi's application completely relies on consumer's trust towards the business while they are required to connect with complete strangers for a temporary basis to use their service, trust clearly has an effect on customer's intentions (Chuang, He, & Chiu, 2018, p. 1) and the ride-hailing giant has been able to establish that trust between the customer and the company.

Apart from maintaining active customer relationships, DiDi Chuxing can also take advantage of network effects. This means that a certain product or service can attract more customers and increase its total number of users simply by making use of existing networks. This is a cheap way for the company to engage customers with each other and grow, while they have the advantage that their dense network can outplay small network effects. DiDi's superior market position also establishes strong cross-side network effects, which shows that once a network has reached a critical number of people, new demand can rapidly be generated because of positive customer feedback in the network (Guo, Li, & Zeng, 2019, p. 6668).

Another way of maintaining customers and making sure they are happy and loyal in the long run are discounts. With the ride-hailing market generally having high price elasticity and giving discounts on a regular basis, DiDi Chuxing makes use of that tool and keeps customers loyal by applauding the consumer's bounded rationality (Zuanxu, 2020, p. 78).

4.2.5. Customer segment

The customer segment of DiDi Chuxing one the one hand consists of those, who do not own a car, do not want to drive themselves from A to B, prefer to travel in style and see it as a certain kind of luxury to be driven somewhere, want to be treated as VIP, or prefer the service compared to a taxi-service because of cost-efficiency. On the other hand, there are the drivers, who also belong to the customer segment of the platform as they are using the platform to exercise their job. By providing the in the "Key activities" mentioned services, DiDi tries to target as many different customer segments as possible by providing the maximum of diverse ride-hailing choices possible ("DiDi Global," 2022).

Different tier cities in China can be viewed as different customer segments. Based on the demographic analysis of the different tier cities in China, DiDi Chuxing has its focus on 1st and 2nd tier cities and specifically the premium car service in 1st tier and express car service in 2nd tier cities. In the 1st tier cities, the customer segment is mature and has a high demand for car-hailing services. In the 2nd tier cities, customers are slightly harder to reach as there is more price sensitivity in this tier and further growth space is therefore limited (A. Zhou et al., 2019, pp. 10-11).

4.2.6. Key resources

DiDi Chuxing is providing a lot of value to the Chinese economy with a total number of 377 million active users per year and at least 13 million drivers providing 25 million rides each day only in China ("Didi Crackdown Shakes Foundations of Chinese Ride-Share Industry," 2021). One of the company's main key resources is the platform. The platform is the main distribution channel through which all the services are performed. Furthermore, DiDi Chuxing has been relying more heavily on artificial intelligence for their services. While artificial intelligence is an important player, it is crucial for DiDi to put focus on technological advances which they are doing by heavily investing into big data and research ("DiDi Global," 2022).

4.2.7. Distribution channel

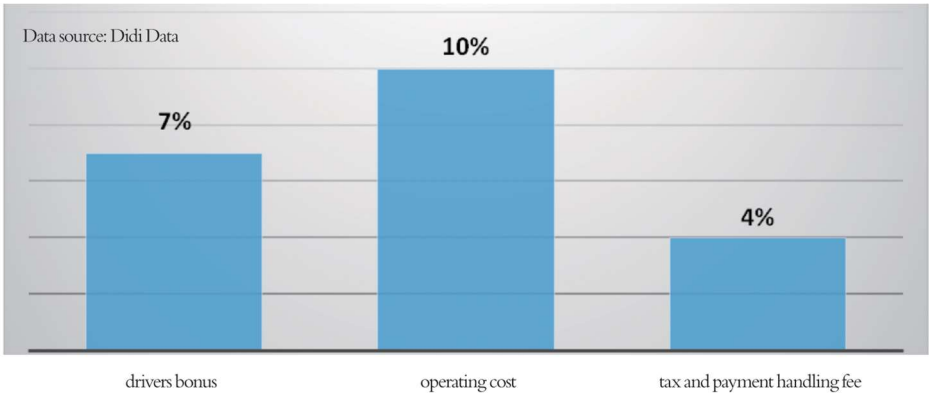
The distribution channel in DiDi Chuxing's case is the ride-hailing platform with which they reach most of their customers. The service provider in this set-up is the company DiDi Chuxing, which provides the rides through its platform. The company is currently the leading mobility platform in the world. The tech-based mobility platform reaches more than 400 million users in over 400 Chinese cities. The platform, which counts as the second largest transaction platform behind the Chinese Taobao giant, registered 20 million rides per day through its platform in October 2016. This followed the acquisition of Uber China in August 2016 ("DiDi Global," 2022; Lin, Zhang, Yan, Jiang, & Huang, 2020, p. 7).

Since DiDi has acquired a market share of about 90%, its brand gained a high level of awareness back in 2018 already. Through various subsidy wars with competitors, DiDi managed to quickly accumulate new customers and therefore increase its brand awareness. DiDi's main distribution channel, its platform, opens opportunities for other related companies to make the most out of strategic cooperation with the ride-hailing giant. This provides DiDi and its partners with an exchange of resources and a place to attract more customers. DiDi and its partners set up services to optimally accompany its customers through a closed-loop taxi service and build an advanced travel chain that meets any customers' requirements and allows DiDi to track and evaluate their services in real-time. A clear evaluation system is important to keep up the constant improvement of the distribution channels (L. Wang, 2019, p. 1759).

4.2.8. Cost structure

Since the business model in the sharing mobility economy is new and not a lot of research has been done, the cost structure needs to be closely analyzed as it does consider more factors than the conventional business models' cost structure. The main cost blocks are split in three categories as can be observed in Figure 6: the driver's bonus, the operating cost, and the tax and payment handling fee (Zuanxu, 2020, p. 73). The driver's bonus is to incentivize drivers to pick up customers during rush hours in busy areas. DiDi Chuxing motivates drivers to put in extra hours by subsidizing them during busy times and the concept is similar to a service bonus (J. Y. Chen, 2018, p. 19). The operating cost, which is the largest cost in DiDi Chuxing's cost structure with 10% is part of its fixed costs as it includes the costs that are not dependent on the business, like technical research and development, security, customer service, human resources, and any offline operations and other costs. Next to the fixed costs, there are also variable costs which are in the third pillar, tax, and payment handling fee. The ratio of cost to revenue of the variable costs accounted for approximately 4% in 2018 (Zuanxu, 2020, p. 73). Without having any product supply-related costs in the business model like purchasing cars, DiDi is left with mostly construction and operational costs of their own assets, being the platform vehicles like buses for their DiDi bus segment. The platform requires regular maintenance and data centers which are one of the cost points as well (L. Wang, 2019, p. 1760). This makes DiDi Chuxing independent from the market and is why the company can constantly work on new innovations and transformation projects to optimally respond to the market's needs (Zuanxu, 2020, p. 73). Since DiDi Chuxing's focus is on the technology side, the company needs to continuously invest into its development and has hired many people from big tech companies' data departments such as from Tencent, Ali's cloud computing team and Baidu. The constant technological improvement has become one of DiDi's major advantages in the Chinese ride-hailing market but at the same time results in major labor costs (Zuanxu, 2020).

Figure 10: Cost of DiDi Chuxing's Ride-Hailing Business as % of Revenue in 2018



Source: Zuanxu 2020, p. 73.

Compared to conventional taxi companies, DiDi has smaller costs because and is more cost-effective since the company has its platform acting as an intermediary to regulate supply and demand and is therefore a light-asset company (L. Wang, 2019, p. 74).

Another cost point for DiDi Chuxing is the money spent on advertising. DiDi does so-called “high-intensity” advertising which targets specific customers directly and adapts and customizes the ads accordingly to different preferences (Zuanxu, 2020, pp. 77-78). Until DiDi Chuxing successfully got listed and began trading on the New York Stock Exchange in 2021 (S. Lu & Yang, 2022), not a lot of financial information was public knowledge regarding the company finances. However, it could be suspected that total spending on advertising accounted for at least 10 percent of revenue, as it was the case for Uber in the same industry (Sundararajan, 2018, p. 491).

Next to the advertisement strategy, DiDi Chuxing has a subsidiary system in place to make both customers, as well as drivers, choose to use DiDi’s platform for their services instead of traditional taxis. Compared to taxis, drivers at DiDi are paid a higher salary than the market price and the difference is subsidized by the company. The same accounts for attracting customers by giving out rides for free and similar features. The total amount of subsidies is estimated to be around RMB19.45 billion (ca. USD 2.9 billion) (Fang, Huang, & Wierman, 2019, pp. 53-54).

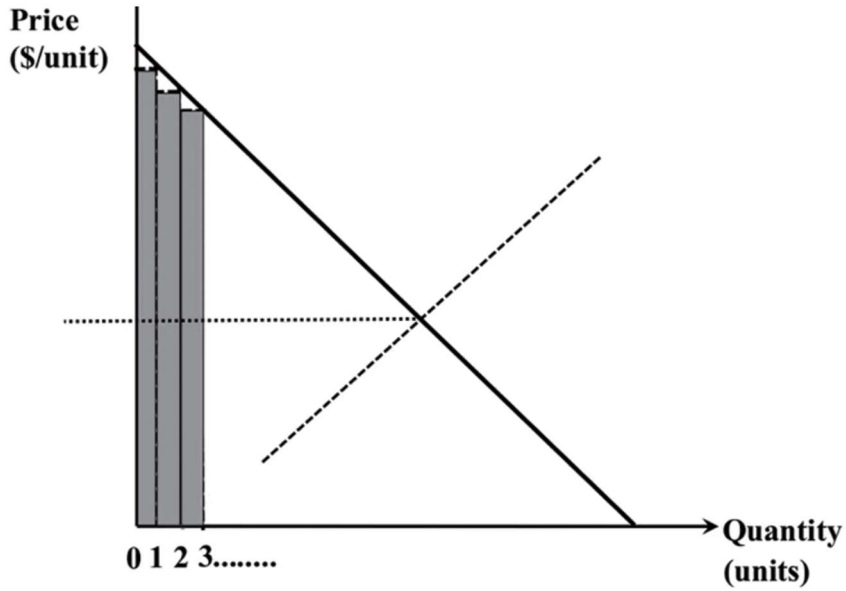
4.2.9. Revenue stream

The main stream of income from DiDi Chuxing’s ride-hailing business comes from the service fee they charge. This fee comes from DiDi as the intermediary between both parties’ customers and drivers and matching them up through its platform. While the drivers pay a fee of approximately 20%, the customers do not directly have such a fee. Another revenue stream comes from providing space for advertisement for other companies on their app. Since DiDi owns the majority of the car-hailing business in China and has a large customer base, the app is a prominent place for advertising and a great stream of revenue for DiDi (L. Wang, 2019, p. 1759).

When the ride-hailing giant merged with Uber China, it became the biggest player in the Chinese ride-hailing market and could benefit from economies of scale (Zha, Yin, & Yang, 2016, p. 254). Being the biggest player, DiDi Chuxing can follow a monopoly pricing strategy and therefore charge higher prices than other ride-hailing companies in the market. For that, DiDi needs to fulfill three basic conditions: The first condition is strong market power which is the basis for any monopolist in any market. Second, DiDi has to be able to charge different prices for different customers according to their specific needs (Gu & Huang, 2019, p. 210). Third, DiDi has to be able to avert resales through their customers, which they are doing by confirming the customer’s identity on the app (Hagiu & Wright, 2017, p. 4). Research suggests that high investments in big data and technology make it

possible for DiDi Chuxing to conduct First Degree Price Discrimination (Shiller, 2016, pp. 3-4), a graphic illustration can be found in Figure 11. This allows DiDi to charge every customer exactly what they are willing to pay and is the ideal scenario. Consumer surplus is therefore equal to zero and DiDi can make maximum profits. Customers are classified into different groups and for instance iPhone users pay more than Android (Zuanxu, 2020, p. 75).

Figure 11: First Degree (perfect) Price Discrimination



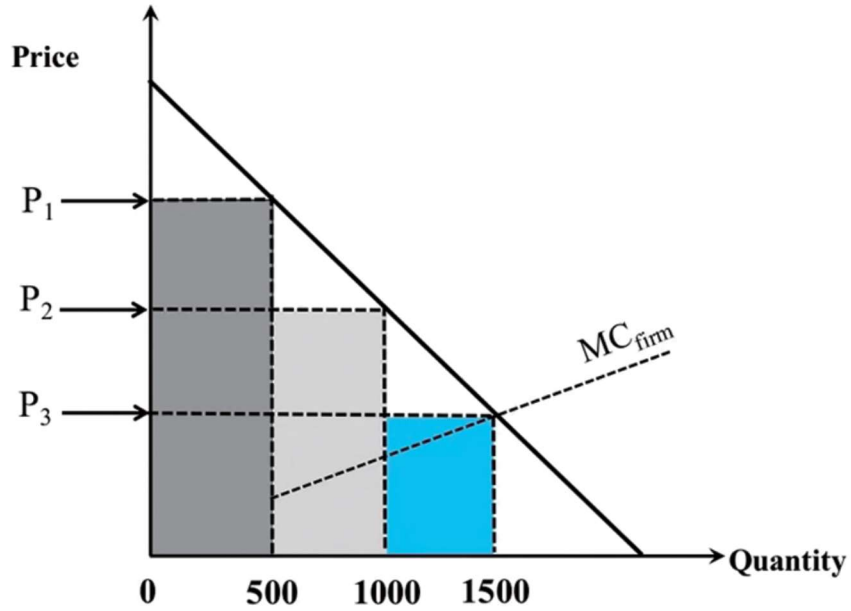
Source: Zuanxu 2020, p. 75.

Next to First Degree Price Discrimination, DiDi Chuxing is also said to be doing Second Degree Price Discrimination which is the more common version of price discrimination in a monopoly. This type of price discrimination is the more frequently used one and translates in reducing prices for certain customers on special occasions such as charging lower prices for higher amounts. This means that customers pay different prices depending on their purchased quantities (Zuanxu, 2020, p. 75-76). A visualization of Second Degree Price Discrimination can be observed in Figure 12. Compared to Figure 11, it can be observed that the consumer surplus is not equal to zero in the Second Degree Price Discrimination as could be observed in the first case.

The main trigger for this type of price differentiation is the tipping of drivers. This is how DiDi grants different fees for the same ride for different customers. The drivers receive all the customers' tipping directly which makes the service more attractive to drivers which makes tipping the tool for Second Degree Price Discrimination. Therefore, the consumers are offered different service qualities, depending on how much they are willing to pay, always keeping in mind that they are maximizing their utility. The difference to the First

Degree Price Differentiation is that in the second type of price discrimination, the consumers' valuation cannot be observed through the platform (Duan & Liu, 2019, p. 2).

Figure 12: Second Degree Price Discrimination



Source: Zuanxu 2020, p. 76.

Contrary to its international opponents Uber and Lyft, DiDi does not have a high growth rate, in the last few years it has stagnated which makes the overseas expansion difficult. DiDi's total addressable market (TAM) also includes food and grocery delivery, which increases the market and leads the estimated TAM until 2026 by the firm to be over $6.7 trillion (Trainer, 2021).

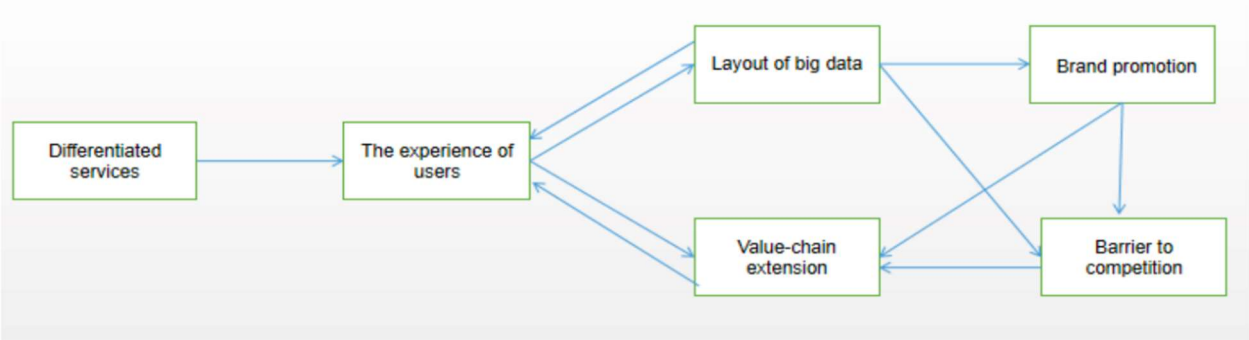
4.3. DiDi's Business Model Innovation

DiDi's business model analysis has led to findings in its business model innovation on which factors are the most important ones to consider for future development. The six core factors crucial to DiDi's business model innovation are differentiated services, user experience, the layout of big data, brand promotion, the barrier to competition, and value-chain extension (L. Wang, 2019, p. 1760). The relationship between the six factors can be observed in Figure 13.

Differentiated services describe how DiDi classifies customers into different groups depending on their consumption level to maximize the personalization of services and give the customers the best possible travel experience. The experience of users allows DiDi to track how their customers evaluate their services to improve the overall experience for passengers. On the driver side, DiDi provides them with subsidies and various training possibilities to gain the driver's trust. It serves to overall improve user experience and

gather data about traffic, build its competitive barrier for competition, and work on its value chain expansion. Continuous improvement of the user experience is crucial to keep up a high level of business model innovation (L. Wang, 2019, p. 1760).

Figure 13: The Relationship of Core Factors in DiDi Chuxing's Business Model Innovation



Source: Wang 2019, p 1760.

The third core value, the layout of big data, describes DiDi Chuxing's ability to work and analyze big data. DiDi has powerful cloud computing technology and artificial intelligence scans in place which helps them analyze big data to optimally match customers with drivers. This is an important stone for DiDi to set up a barrier for competition and also helps them to get rid of using traditional rental companies in their business model which sets them apart from competition and optimally drives business model innovation forward (L. Wang, 2019, p. 1760).

DiDi's brand promotion is the fourth core element in its business model innovation. To achieve a high level of brand promotion, DiDi worked on more targeted promotion making use of its big data technologies to analyze customers and their habits. With its open platform, DiDi has formed various strategic cooperations with relevant companies in the market to strengthen its brand promotion. A high level of brand promotion is crucial for DiDi's visibility and to gain a competitive advantage (L. Wang, 2019, p. 1760).

With the previously mentioned established brand promotion and the combination of acquired capital, DiDi has managed to build a large customer base with a high number of daily users and used their customer's big data analysis for their competitive advantage. Furthermore, the strategic partnerships formed with companies such as Alipay, WeChat, and Gaode Map have further lifted and extended the barrier for competition and therefore making it harder for competitors to enter the market (L. Wang, 2019, 1760).

The last core value of DiDi Chuxing's business model innovation is value-chain extension. It is interrelated with the experience of users, brand promotion, and barrier to competition and is relying on DiDi's integrated resources both upstream as well as downstream. This

core value helps reduce overall operating costs to achieve maximal customer conversion and further expand its value chain (L. Wang, 2019, p. 1760).

One of DiDi Chuxing's recent innovations in the car-hailing industry is a separate platform called Huaxiaozhu and is the ride-hailing giant's budget ride-hailing service. It is mainly targeting younger customers and the prices are lower than on its main DiDi platform (H. Lu, 2021). Huaxiaozhu was established in 2019 and acquired by DiDi Chuxing in 2020 ("Huaxiaozhu - Headquarter Locations, Products, Competitors, Financials, Employees," n.d.). While the app is separate from DiDi's ride-hailing app, it is targeting a different demographic group and rides start at a price as low as $0.79, and customers can gain vouchers by recommending the app (Fox, 2020). The new business, while running under a different name than its mother company, is helping diversify DiDi Chuxing's business and should help them gain access to a customer segment they had not focused on until the acquisition.

4.4. Success Factors

DiDi Chuxing's dominance in the market is coming from its aggressive strategy of acquiring its competitors. With the purchase of its two biggest competitors, Uber China and Kuaidi Dache, it became the largest platform in the sharing mobility economy ("Didi Business Model," 2020). To be able to buy its competitors, the company must have already had a successful business before. Since DiDi was the first Chinese ride-sharing company and Uber followed later into the market, DiDi had various advantages. First, they had a home advantage which is crucial in countries with a more distant culture than the Western countries.

To keep customers loyal and happy, it is important to have a high level of customer satisfaction. DiDi Chuxing keeps up five factors to maintain a high level of customer satisfaction which are emotional value, economic value, social value, service value, and functional value (H. Yang & Xia, 2022, p. 68). Next to customers, DiDi needs to make sure to adapt its business models to its drivers' needs as well. Since DiDi does not have employment contracts with its drivers compared to many other companies in the ride-hailing sector such as Wanshun or Meituan, which does have both disadvantages as well as advantages for the drivers. However, the advantages seem to outplay the disadvantages as could be found in a study focusing on driver satisfaction. DiDi's working hours are flexible as well as time allocation. Furthermore, many of DiDi's drivers have other jobs on the side and flexible working hours are optimal for their work-life balance and lead to a better life (Mukhopadhyay & Chatwin, 2021, p. 15).

DiDi Chuxing has a great technological advantage compared to other companies in the industry because of their large driver and customer base, the high volume of daily

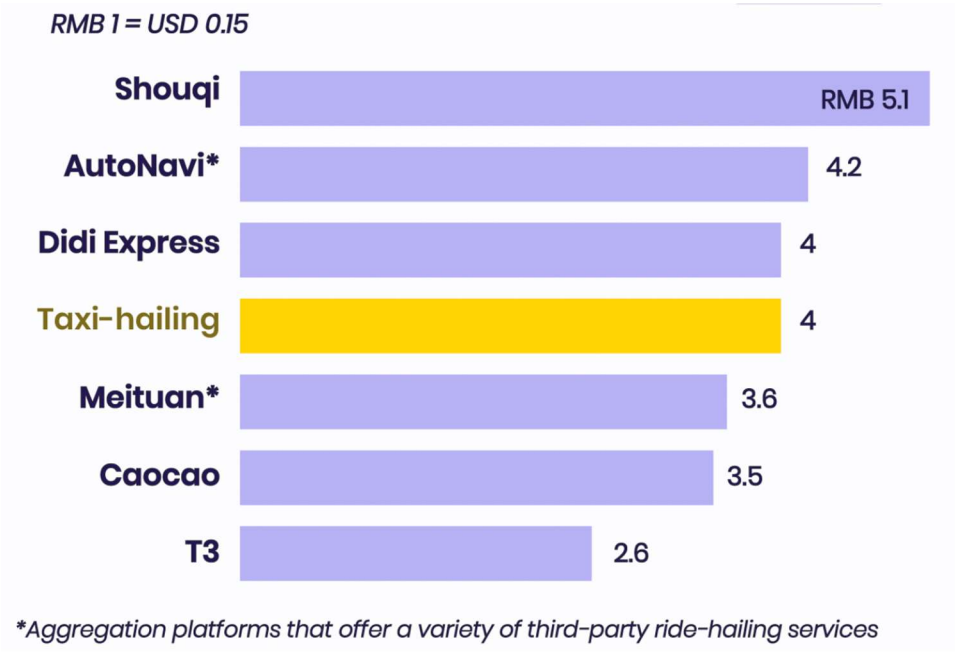
transactions and its fleet of shared mobility services. This gives DiDi Chuxing the power to analyze a large batch of data and to continuously improve their technologies. Source

Why DiDi Chuxing is as successful as it is in the Chinese market compared to its rivals is because of several factors. First, DiDi Chuxing's service offerings are among the largest in the sharing mobility economy market (Y. Liu & Kim, 2018, p. 10). This can be clearly observed when looking at the key activities described above- DiDi Chuxing tries to maximize its customer segment coverage by providing services for any segment. Furthermore, DiDi Chuxing has a broad and diverse partnership structure which helps them to present a wide range of service offerings (Y. Liu & Kim, 2018, p. 26).

4.4.1. Cost Comparison

As more ride-hailing competitors are appearing in the market, it is getting easier to compare costs. DiDi Chuxing's business model provides many services for different pricing classes and is therefore diversified. The most economic option is DiDi Express while the priciest one is DiDi Luxe offering first-class service. Looking at average costs per kilometer, conventional taxi-hailing companies are at 4 RMB. As can be observed in Figure 14, DiDi Express' average cost per kilometer is coinciding with conventional taxi-hailing services. T3 is the cheapest option with an average cost of 2.6 RMB per kilometer and Shouqi has the highest average cost per kilometer with 5.1 RMB (Wu, 2021).

Figure 14: Average Cost per Kilometer by Transportation Methods and Platforms

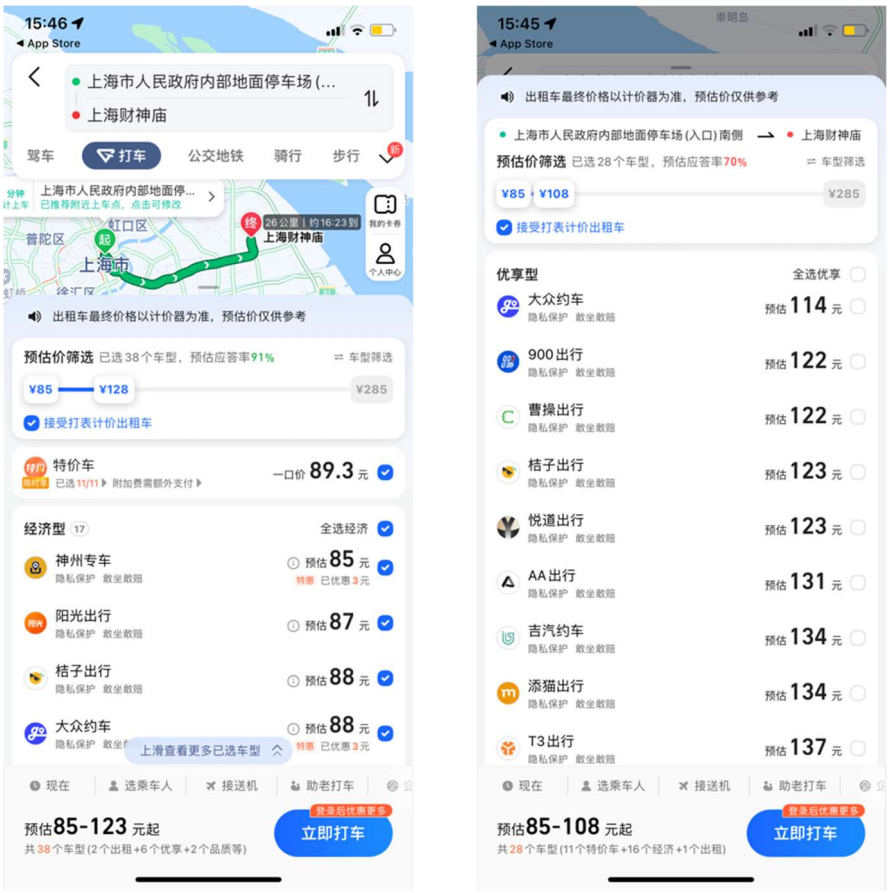


Source: KrASIA, 2021.

Price comparison can also be done via an app. AutoNavi, also called Amap (W. Wang, Miao, Liu, Deng, & Cao, 2022, p. 131), has been active in the ride-hailing market since

2018 and is acting as a platform for the other platforms. This means that customers can use AutoNavi to search for a ride. Up until 2019, AutoNavi has partnered with 9 different car-hailing companies in China, including the biggest one DiDi Chuxing. AutoNavi opened a network connecting all car services in one spot. AutoNavi is therefore a map service provider but is linked to Alibaba and part of their Online-to-Offline (O2O) system (A. Zhou et al., 2019, p.16). Figure 15 shows screenshots of AutoNavi's app when ordering a car from point A to point B. It gives customers the option of choosing between the different car-hailing service providers and shows their prices. This can increase price competition because the customer can now see all options with only one click instead of having to access all different apps.

Figure 15: AutoNavi Pricing Options for Different Service Providers



Source: AutoNavi App 2022.

4.4.2. DiDi Chuxing's Monopoly Position

After carefully analyzing the business model of the ride-hailing giant DiDi Chuxing, it could be determined that DiDi is holding a monopolistic position in the Chinese sharing mobility economy.

Back in 2016 and right after the merger of Uber and DiDi Chuxing, the spokesperson of the Chinese Ministry of Commerce, Shen Danyang, gave a statement about the investigation of the merger and mentioned that it was all in conformity with the laws and regulations about monopolies and monopolistic behavior (Hook, 2016). Competition for DiDi Chuxing in the industry is low, this is because of a set of entry barriers that formed themselves over the years. First, in order for ride-hailing companies to be successful, strong IT support is needed as they depend on big data and other tools for optimization and maintenance of the platform to maximize profits (Jia, Xu, & Liu, 2017, p. 827). Furthermore, the driver's electronic information such as real-time location has to be up to date and at all times which raises high privacy-preserving concerns and a well-functioning road-vehicle system in place (Luo, Jia, Fu, & Xu, 2019, pp. 1791-1792). Those reasons can make it difficult for new companies to successfully enter the Chinese ride-hailing market.

Research has brought up concerns about DiDi having strong monopolistic behavior and being in a clear position to be abusing its market power. After pricing wars with its previous competitors, DiDi was accused of predatory pricing, meaning undercutting the prices in a way that makes it completely under competitive. However, this is difficult to measure in a sharing economy setting and has not been researched enough to be proven (Cai, 2020, p. 166).

DiDi Chuxing is also holding a monopoly position in terms of the traffic flow. Its daily active users were around 13 million covering 400 cities in China. To compare with its smaller competitors, their daily active users reach a maximum 160'000 and cover about 52 cities only. Furthermore, DiDi being the monopoly in the "pure platform" sector formed a high entry barrier for other companies. The competition scheme in the Chinese ride-hailing market can be characterized as one big superpower and several weak players (A. Zhou et al., 2019, p. 23).

Even though DiDi Chuxing is currently holding a monopoly position in the Chinese ride-hailing market, the total penetration of the mobility market is still low. Didi's share in the mobility market only accounts for 1%. This number is expected to increase to 4% until 2030 (Tariq, 2018, p. 42). This means that there is room for improvement and development for DiDi but also for other market participants.

According to their pricing strategy as it has been described above, it can be summarized that DiDi Chuxing is indeed holding a monopolistic position in the Chinese ride-hailing market as they can charge monopoly prices and have a total market share of over 90%, making them the dominant player in China. Therefore, DiDi is a monopoly in its sector, the "pure platform" sector, and leaves little to no space for new market entrants to be successful next to DiDi Chuxing.

4.5. Challenges

DiDi Chuxing's business model brings along a couple of challenges for the future ride-hailing development. In an initial approach, the car-sharing industry was born to incentivize people to buy fewer cars and instead share miles with peers which would automatically reduce the total number of miles driven. Furthermore, it can be a short time solution until there are more integrated shared mobility platforms with different modes of transport in place. However, the biggest challenge China is facing now and will be facing in the future is the regulatory approach. For the shared mobility economy to move forward, a general regulatory framework covering the whole market is needed, as well as policies and laws to help new forms of mobility services to be regulated (Tariq, 2018, pp. 44-45). Furthermore, DiDi has faced one regulatory issue after the other since 2018 when the Hitch scandal happened. Because of the number of scandals that DiDi has been involved in over the last couple of years, Chinese policymakers will reinforce their current policies concerning sharing mobility. The government will reinforce its capital-market regulations and strengthen national security and social stability (Zhong & Eavis, 2021).

4.5.1. Anti-trust violations and various scandals

Over the last few years, DiDi Chuxing has had to deal with some public scandals that influenced the company's image as well as user data. DiDi Hitch was another ride-hailing function of DiDi Chuxing that matches carpoolers with private car owners that are not officially through DiDi registered drivers. Within 4 months, two female drivers were killed after ordering a car through DiDi Hitch in 2018. The ride-hailing giant suspended the app for almost 2 years due to insufficient safety concerns (Wan, 2019). DiDi Hitch launched an advertisement campaign in 2018 suggesting hookups between customers and drivers which did not have a good effect on the company's reputation (S. Lu & Yang, 2021). After those scandals, many customers started to question DiDi's safety measures and the ride-hailing giant had to take in some deficient market feedback which led DiDi to revise its ride-hailing safety measures (Jing, Chen, Wang, Pan, & Yuan, 2021, p. 140). To make the ride-hailing experience safer, DiDi made it mandatory for drivers to participate in the "Compulsory Online Driver Safety Training Program". Additionally, drivers are regularly going through additional identification checks, facial recognition checks on a daily basis, and additional background checks, as well as compliance checks for drivers and vehicles (Shen, 2020, p. 10). Furthermore, there was a scandal about iPhone vs. Android preferences where DiDi was accused of actively discriminating between the two brands and charging them different prices (S. Lu & Yang, 2021).

The merger & acquisition deal with Uber China had repercussions as it is unclear whether the deal was conducted in a fair way. Any merger in China will have to be approved beforehand by China's anti-monopoly authority if it is above a certain deal size. This has

not been done for the Uber China acquisition by DiDi Chuxing or Uber China and was also missing when DiDi had acquired Kuadi a few years earlier (Cai, 2020, p. 169).

Before going public in 2021 with the largest initial public offering (IPO) from a Chinese company since Alibaba back in 2014, DiDi was accused of monopolistic behavior and was therefore under investigation for antitrust violations and unfair competition practices like pushing out smaller companies out of the ride-hailing market to avoid possible competition. DiDi was investigated by the State Administration for Market Regulation (SAMR) for violations of anti-monopoly, anti-unfair competition, tax, as well as for breaking other related laws and regulations. Even though this scandal could have a huge impact on the IPO, DiDi decided to move forward with it (J. Zhu & Li, 2021). The SAMR ended up fining DiDi Chuxing for various violations in the anti-monopoly regulations in merger & acquisitions deals that the company has pushed through without prior seeking of regulatory approval beforehand (Trainer, 2021). After going through with the IPO, DiDi was further in trouble because of concerns about data collection and data storage. China's internet regulators felt the need to conduct a cybersecurity review and made the company stop registering new customers on the app and even proceeded to remove the app from the app store (Zhong & Eavis, 2021). While DiDi went through with the IPO anyway despite regulators warning the company from going public while under investigation, the company had to announce its delisting from the New York stock exchange after less than a year of going through with the IPO. DiDi has violated various laws regarding its cybersecurity, data security, and personal information. This led to a fine of $1.2billion and the temporary retirement from all DiDi apps from the app store (Zhu, Yang, & Wu, 2022).

While DiDi Chuxing was struggling with regulatory issues, the company's valuation was off to a bad start and the value of its stock was said to be overvalued. While DiDi hoped to raise $100 billion through the IPO, experts did not see this happening despite slightly higher margins in China's sharing mobility (Straight, 2021). The actual value of the stock was closed at $14 a piece, resulting in a $73 billion valuation on a fully diluted basis. However, DiDi only raised $4.4 billion in its initial IPO. The bad start on the New York Stock Exchange is a result of high volatility and insecurity about the company's general image (E. Wang, Sen, & Murdoch, 2021). Furthermore, if the company's profitability does not improve, it will need a new capital injection in a short time (Straight, 2021).

4.5.2. Profitability of DiDi Chuxing's Business Model

Even though the company is successful in terms of market share, the question about the revenue model has become more important over the last few years. DiDi Chuxing owns more than 90% of the sharing mobility market in China. However, the revenue model is said to be unprofitable which is nothing new since Uber's business model has the same problem. Some of the factors mentioned are the intense competition in the sector, low

margins, and a lack of differentiation between services. Furthermore, Didi Chuxing faces many regulatory risks from governmental regulations in China (Trainer, 2021). Another revenue loss comes from subsidies, which drivers reportedly receive and passenger discounts to compete with the competition. Back in 2018, the subsidies for drivers accounted for $1.67 billion (11.3 billion yuan). One the one hand, the subsidies are responsible for the big growth of DiDi Chuxing, on the other hand striving for market share instead of profitability got the company into big revenue losses ("China's Didi reportedly lost a staggering $1.6 billion in 2018," 2019). 84% of DiDi's total revenue is generated from the 46 1st tier and 2nd tier cities. In the 1st tier cities Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, and Chengdu, the daily transaction volume is 26 billion yuan resulting in 57% of China's total business volume in the sector. 2nd tier cities account for about half of the 1st tier volume and 3rd and 4th tier cities contribute to only 13% of DiDi's total revenue (A. Zhou et al., 2019, p. 9).

Even though DiDi Chuxing has a total of over 90% of the market share in the Chinese mobility economy, the finances do not seem to add up and the profitability of the business model was put in question. DiDi Chuxing is not the first ride-sharing company with financial problems, companies such as Uber and Lyft have experienced similar challenges in the past and the reason behind it could lie in the way business models in the sharing mobility economy are constructed. Looking at DiDi Chuxing's numbers in Figure 16, it can be observed that the operating expenses as % of revenue are exceeding 100% of total revenue in every year since 2018, even though DiDi's total market share is more than 90% (Trainer, 2021). The rise of operating expenses in 2020 and in the first quarter of 2021 are most likely also due to the Covid-19 pandemic, however, they were already at around 108% pre-pandemic in 2018. Because the margins are extremely low, the competition generally high, and a lack of differentiation between services, business models in the shared mobility economy are said to be unprofitable.

After incurring major losses of over $1.6 billion in 2020, $1.5 billion in 2019, and $2.3 billion in 2018, it becomes clear that the company struggled financially long before the pandemic. The company claims that the incurred losses have their origin in the Hitch scandal from 2018 (McGregor, 2021) mentioned earlier in this paper. However, the question remains whether those incurred costs have another influencing factor and could result from the business model itself. The ride-hailing business model is almost the same for any company in this business in the world. Critics have voiced out that there are several unaddressed problems with the business models in the ride-hailing industry. First, they are not innovative enough and there is no innovation or evolution in the models. Therefore, there is no competitive advantage, and the companies are only profitable as long as their investors keep on funding their losses. Furthermore, DiDi's strategy to give

discounts and lower fares in order to attract more customers is very costly and moves the company further away from profitability, as can be observed in Figure 16 (Trainer, 2021).

Figure 16: DiDi's Operating Expenses as % of Revenue from 2018-2021

Source: Trainer 2021.

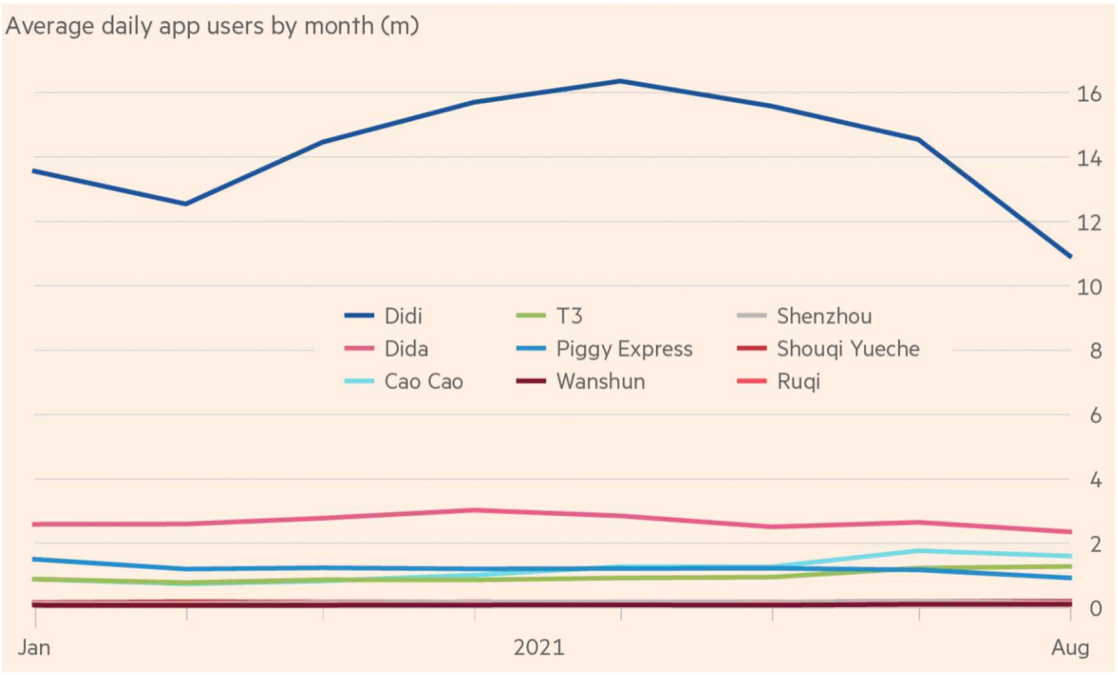
What is especially challenging in the ride-hailing business models are the narrow margins that come with it. To solve this challenge, ride-hailing platforms can increase the prices for consumers, however, the outcome of that is not predictable. While other ride-hailing companies across the world are facing the same issues, some managed to achieve profitability at last, however, this was not the case for DiDi (Banning-Lover, 2021a).

5. Competitors

In this section, other market competitors will be shortly analyzed and compared to DiDi Chuxing. To avoid repetition, the companies will be quickly introduced, followed by an analysis of the characteristics differing from DiDi's business model. After carefully analyzing DiDi Chuxing's position in the Chinese sharing mobility economy, it has become clear that DiDi controls 90% of the ride-hailing market in China (Song et al., 2022, p. 31), whereby the exact number varies depending on the article. The remaining 10% of the market share is divided by seven companies: Caocao Car (2.63%), T3 (2.51%), Wanshun (1.41%), Meituan (1.16%), Shouqi (0.92%), Xiangdao (0.70%), and Huaxiaozhu (0.51%) (Song et al., 2022, p. 31). In Figure 17, different ride-hailing companies' average daily app users are put into a graph, and it becomes clear that DiDi is the market leader. However, even in times when DiDi notes fewer daily app users, there is no direct reaction visible in the other companies' numbers.

Depending on the paper and source, the data varies, and different car-sharing companies are mentioned as the direct competitors. Below is a selection of companies that have been mentioned the most in past and current literature

Figure 17: Average daily app users in the ride-sharing industry



Source: Financial Times, 2021.

5.1. Competitor Analysis

5.1.1. Caocao

Caocao is among the leading companies in the remaining competition that is going on besides DiDi Chuxing. Caocao is part of the Zhejiang Geely Holding Group who joined the car-hailing market in 2013. In 2015, they built their own car-sharing brand called CaoCao (A. Zhou et al., 2019, p. 17) and they have been expanding their business since (Song et al., 2022, p. 31). Caocao's biggest shareholder is Geely Technology Group itself with a 77.33% stake in the company (Writer, 2021).

Cacao is following a B2C model and mainly focuses on new energy vehicles. One of the biggest differences compared to DiDi Chuxing is that they are a self-run car hailing platform which means that they have their own fleet and self-built platform (A. Zhou et al., 2019, p. 17). The advantage in customer relationships Caocao has with the B2C model is that they are usually able to provide a better customer service compared to C2C companies because the requirements for the vehicles are higher, there is a clear managing process for the drivers, as well as a regulated service process (Song et al., 2022, p. 31). In 2021, Caocao received a nine-figure amount of funding after a rough two years and less financing. It is suspected that Caocao has identified new opportunities in the sharing mobility market and is slowly attacking DiDi after the cybersecurity investigation (Writer, 2021).

Caocao, otherwise referred to as Geely Mobility Services, specifically focuses on new energy mobility services. Their key value proposition targets to become a safer, smarter, and more personalized one-stop mobility service by integrating digitalization, Internet of Vehicles, autonomous driving, and new energy technologies in the Chinese sharing mobility economy ("CAOCAO – Zhejiang Geely Holding Group," 2022). The new energy approach to car-sharing is Caocao's most important strategic move. To achieve maximal output, Caocao was closely following the national NEV subsidy policy from 2015 to 2017(A. Zhou et al., 2019). Caocao is the first low-carbon sharing mobility participant in the market using new energy vehicles while also offering carbon banking for both individual and corporate users. Caocao's vehicles focus on a zero-emission and pollution strategy to create a superior ride service for its customers ("CAOCAO – Zhejiang Geely Holding Group," 2022).

For its key activities, Caocao has three different types of ride-hailing. The government enterprise vehicle solution is specifically focusing on enterprise travel and helping them save costs while providing a better travel service for them. They enrich car usage scenarios to meet the company's travel management needs and overall make enterprise travel easier. The Caocao safe travel car-hailing is a quick selection of comfort rides at high-quality and affordable prices. Lastly, there is the Caocao car-pooling option which

makes car-sharing affordable and convenient to get off or to work (“CAOCAO – Zhejiang Geely Holding Group,” 2022).

Currently, the company has laid out its distribution channels and is active in more than 62 Chinese cities (“CAOCAO – Zhejiang Geely Holding Group,” 2022), has more than 20 million registered users, and a total of at least 23’000 operating vehicles. In contrast to most other car-sharing companies, Geely created its own platform early on instead of becoming an ally of one of the big platforms. Therefore, Caocao was able to build various commercial channels and to build its own partnership network (A. Zhou et al., 2019, p.17).

Caocao made its first strategic move by entering 2nd tier cities back in 2015 and therefore staying away from DiDi Chuxing’s territory which was mainly the 1st tier cities. That way, Caocao avoided any possible confrontation with the already well-established competitor in the market. Furthermore, the company used its local government connections in the base camp Ningbo and established a reputation and collected experiences in the market before expanding to 1st tier cities in 2017 and using the built advertisement to gradually expand. After entering 1st tier cities, Caocao further expanded to lower-tier cities in 2018 and 2019 with the same operations (A. Zhou et al., 2019, pp. 17-18).

Concerning the drivers, Caocao has specific requirements to provide high-security standards. Before a successful registration on the platform, all drivers are required to have at least 3 years of experience. Furthermore, their criminal records will be checked, and they also need to pass a health check. Lastly, there is also a high job quality assessment that all drivers must undergo and make sure to maintain their status on the platform. After successful registration, drivers will undergo a round of professional training at the Caocao college where they are taught everything around grooming, service standards, business codes, emergency medical care such as first aid, and more to make sure that the drivers are properly suited to deliver professional, high-quality, and safe mobility service to their customers (“CAOCAO – Zhejiang Geely Holding Group,” 2022). Because of high labor costs, Caocao stopped offering its new drivers full-time working contracts and let them under a commission-based scheme only (Wei, 2022).

The main differences looking at Caocao’s business model lay in the building blocks value proposition and therefore a different customer segment. Caocao distinguished itself from DiDi Chuxing by focusing on its energy technology strategy. While DiDi also has a strategy for shared new energy vehicles, Caocao has been focusing on the new energy sector from its birth and is mainly covering this sector. The specialization in new energy vehicles could be a potential advantage for Caocao in the coming years and its zero emissions and zero pollution strategy can play an important role in China’s path to reducing CO2 emissions. Having the government as one of its key partner can be a future advantage

when it comes to new regulatory approaches. A well-established partnership network will help Caocao with its future expansion plans into the 1st tier cities.

5.1.2. T3

T3 Mobile Travel Services is a ride-sharing platform ventured by three major Chinese car companies FAW Group, Dongfeng Automobile, and Chongqing Changan Automobile. The new venture's initial plan, joining the market in 2018, was to partner up with other industries to create a new service and make the most of technological advances to eventually introduce driverless cars to make the industry as safe and efficient as possible (Stanway, 2018).

The combination of private and state-owned companies is a trial to bring more money into the industry and to nurture innovation and efficiency for the future (Liao, 2019). With more than 40'000 vehicles and 150 million completed trips back in 2020 and a total of at least 18 million registered users, T3 is growing at a fast pace. Alibaba Group and Tencent Holdings are investing in T3 too and helping T3 with their expansion plans. In the beginning of 2021, T3 planned on expanding into 27 more Chinese cities including bigger cities such as Beijing and Shenzhen. Furthermore, with the goal of grasping onto at least 20% market share in each city, T3 will be targeting to give DiDi Chuxing some competition (Thomas, 2021). T3 is already present in cities like Nanjing, Wuhan and Hangzhou and plans on implementing a "smart parade" system to better regulate supply and demand on the app. Big data has become more important for T3 and by being more innovative in the future, the company is planning to invest more into NEVs ("Online Car-hailing Platform T3 Go Targets Increase in Market Share," 2022). Furthermore, T3's plan to focus on car-sharing mainly relying on renewable energy is in line with Beijing's future plans to increase the drive of the transportation sector to a completely electric mobility system (Liao, 2019).

Compared to DiDi Chuxing, T3 seems to have a similar structure with some of the same investors DiDi has. By focusing on NEV cars and using its own fleet, T3 is investing a lot into innovation to provide its customers with a better value proposition.

5.1.3. Wanshun

Wanshun is an emerging car-hailing company focusing on the Chinese working class and functions with a partnership system. Wanshun gained market share out of nowhere and its presence in the market makes it a possible competitor for the bigger ones. It counts over 100 million users with operating licenses in more than 300 cities. Wanshun puts its emphasis on legal compliance to make sure its travel is compliant with safety measures and regulations. Learning from its competitors' mistakes, Wanshun approaches gaining market share by building a reputation as a safe car-hailing company. To make it as safe as possible, Wanshun's drivers need to pass various screenings and compliance tests before they are officially registered with the company. For drivers to be accepted, they

need to have an online car-hailing transportation permit as well as an online car-hailing driver's license ("Wanshun car-hailing strictly admits and screens compliant drivers, allowing passengers to travel worry-free," 2021). However, despite Wanshun's cautious measures, it had to be removed from the app store in 2021 due to a screening by the Chinese Ministry of Transport. The reasons for the sudden removal of the app were data security violations as Wanshun was collecting personal data against regulations ("Unfinished rectification, Wanshun car-hailing APP was removed," 2021).

Its promise to customers is a response in 100 seconds once the car order is out. Furthermore, by recommending Wanshun to other passengers, current customers can get discounts, vouchers, and gifts ("Wanshun car-hailing strictly admits and screens compliant drivers, allowing passengers to travel worry-free," 2021). Wanshun is mainly active in 3rd and 4th Tier cities and is focusing on making the connection between smaller villages on the one hand and supplying high-quality travel services for both urban and rural areas on the other hand ("Wanshun car-hailing strictly admits and screens compliant drivers, allowing passengers to travel worry-free," 2021).

Wanshun's focus lies on improving its value proposition to provide customers with a safe journey when using its services as well as training and strict screening to attract good drivers.

5.1.4. Meituan Dache

Meituan Dache is not uniquely focused on car-hailing and decided to go into the car-hailing business to be able to present a full, all-around service and position the brand with the value proposition of "the connector of other daily life services". The focus of Meituan's core business is more scenario-oriented and the car-hailing business is supposed to support the main consumer business. Therefore, Meituan Dache focuses its key activities on specific mobility purposes such as commuting, pick-ups, and transport for business purposes. This makes the demand for mobility services less strong, low-frequency, and concentrated. Since Meituan's mobility economy business model relies more on subsidy business in the company, in case of the demand declines by a lot, the car-sharing business will have less business too (A. Zhou et al., 2019, pp. 15-16).

Meituan Dache's strategy is different from any of the other services in that it collaborates to a certain point with them and acts as an aggregate platform. When ordering a car through the Meituna Dache app, it is possible to access other car-sharing options such as Caocao or Shouqi (Shumin, 2021). This function is similar to the one from AutoNavi's platform mentioned earlier on.

Beginning of the year 2017, Meituan launched its express car-hailing service in trial form in Nanjing and one year later expanded into Shanghai where its market share rose to one

third of the market in one week. While other car-hailing companies were having problems with compliance, Meituan experienced the same and had to retire again from the Shanghai market and clear over 30'000 non-compliant vehicles (A. Zhou et al., 2019, pp. 15-16). While trying to expand rapidly in China, Meituan acquired the bike-sharing company Mobike in 2018 to intensify competition in the sector. This should have helped Meituan to increase its resources and face direct competiton with DiDi Chuxing and their partnership with Mobike-competitor, Ofo (Cadell, 2018). Mobike has its headquarter in Berlin and first entered the market in 2015 when it started out in Shanghai and then expanded to Bejing later that same year. Because of insufficient funding, Mobike was first forced to take production into their own hands and even had its own research and development team as well as their own factories to manufacture the bikes in place. This is how Mobike became the leader in intellectual property applications in the bike-sharing market in China (S. Yang & Huang, 2017, p. 7).

In June 2019, the app called "Meituan Dache" was removed from the app store because of cost-control measures (Banning-Lover, 2021b). Two years later, while the biggest player in the market, DiDi Chuxing, was facing compliance issues, Meituan grabbed its chance and made the reappearance in the app store. Meituan used its chance to rebrand themselves with a new logo and an expansion strategy to be present in more than 100 Chinese cities. Furthermore, Meituan pushed its return through the distribution of vouchers for new joiners and other promotional offers to attract new customers and gain market share in the absence of DiDi Chuxing.

The Meituan Dache's platform strategy of acting as an aggregate platform and collaborating with Shouqi and Caocao remained the same (Shumin, 2021). Even though Meituan had temporary success, the company had to recommence after retiring from the app store and is struggling to further expand its car-hailing business with the presence of DiDi Chuxing. The pursued pure-platform strategy has not been a success so far which is an indicator on how difficult it is to perform next to ride-hailing giant DiDi Chuxing (A. Zhou et al., 2019, pp. 15-16).

It can be observed that Meituan has been focusing more on its key activities and making the services more diversified to enter in a more direct competition with DiDi Chuxing.

5.1.5. Shouqi

Shouqi has been pursuing a platform + capacity business model strategy since it entered the car-hailing market, and the company is operating in the B2C market with its own vehicles and full-time drivers. Shouqi is headquartered in Beijing and has been intensively focusing on that market. All their drivers as well as their vehicles are registered in Beijing and are therefore pursuing a regional approach compared to DiDi Chuxing's national market strategy. Shouqi is backed by its parent company and its cars are self-owned or can

be rented out by the company. Furthermore, its drivers are professionally trained upon hiring and the B2C business model allows the company to have fewer regulatory risks compared to their fellow C2C competitors in the market (A. Zhou et al., 2019, p 16). Shouqi is a state-controlled platform and has mostly been focusing on corporate travel, business charter, as well as employee overtime car services until 2018. After that, Shouqi was able to partner up with various life service platforms and gain daily bulk orders which drove its annual growth rate up to 145% up until before the pandemic ("Shouqi Limousine & Chauffeur, the second largest ride-hailing platform in China, has made profits in multiple cities nationwide," 2020).

In terms of business sustainability, Shouqi brings both drivers and vehicles to the customers and the B2C model is generally known to serve customers better as they have more standardized procedures and better safety requirements such as the management of the drivers and a standardized service process. However, serving customers in a B2C model brings higher operational costs (Song et al., 2022, p. 35). For cost-cutting measures, Shouqi decided back in 2019 to change the contracts with its drivers who were until that time contracted through labor contracts and then transformed into service agreements. This had consequences for the drivers who no longer receive fixed wages but have to earn their salaries from commission fees (Wei, 2022).

The company, focusing on high-quality standards, has further specialized into different customer segments which is the transport of special passenger groups, for instance pregnant women, children, people with a disability, people transporting pets, or people under substance influence. With its high-end strategy, expanding to passengers with special needs, Shouqi was able to penetrate the market and gain market share in the 1st tier cities as well ("Shouqi Limousine & Chauffeur, the second largest ride-hailing platform in China, has made profits in multiple cities nationwide," 2020).

Customer segments and key activities are the main differences compared to DiDi Chuxing as Shouqi is focusing on more niche customer segments by providing high-class services.

5.1.6. U Car

U Car is a B2C car-hailing service that belongs to the car rental company CAR and was launched in 2015. The company is pursuing a platform + capacity model and can rely on its rental business as it is backed by the mother company like Shouqi as well. This was one of U Cars' advantages in the beginning as they were able to save costs on vehicles that were already part of the company (A. Zhou et al., 2019, p. 16). U Car chose a different approach by operating with an in-house fleet and its licensed drivers. Compared to companies that do not contract their drivers, U Car goes the safer way and avoids any governmental regulatory conflicts or legal issues (Lee, 2017). With full-time drivers and no

regulatory issues due to an already compliant transport capacity, U Car was focusing on business travel and mid-to-high-end customers and had a market share of 5.3% of the private market share. Since late 2017, U Car has been focusing its key activities mainly on the high-end business travel customer segment and dropped its market share (A. Zhou et al., 2019, p. 16). The company has different car service products next to its main mother company's main car rental business, which is chauffeured car service and an online car marketplace, and car loan service. U Car has been receiving a lot of funding over the last couple of years and was the first company to go public in China's over-the-counter (OTC) market (Lee, 2017).

Similar to Shouqi, U Car is focusing on a specific customer segment by providing mid to high-class services and its B2C strategy makes it a more direct competitor to Shouqi than to DiDi Chuxing.

5.2. China's Startup Ecosystem

China is known for having a booming startup ecosystem and is one of the leading countries in the world with its massive startup scene. A good startup ecosystem is the foundation of a well-functioning competitive landscape and the battle of monopolies in the market. The level of innovation in China is high and with its innovation-friendly policies startups are encouraged. China's internet technology giants Alibaba, Baidu and Tencent play a crucial role in the emergence of startups as they are investing a lot of money into new technologies, and it is impossible to imagine the Chinese startup system without those three internet giants as almost 80% of all Chinese startups receive funding through them. However, they usually tend not to focus their investments in the same startups which makes startups having to decide early on which way to go as the investor will most likely influence the startup's long-term growth ("The 3 pillars of China's booming start-up ecosystem," 2022). One of China's top startup industries is the transport sector. It is ranked third place worldwide and makes China an optimal place for transportation startups with over 1666 startups in the industry over the last few years ("Startup Ecosystem Overview of China," n.d.).

With a good foundation for startups to be successful in China, the ride-hailing industry has noticed many new startups emerging over the last few years. The amount of ride-hailing providers is growing and startups focus on the unique Chinese market and try out different niche segments (Marquis & Yang, 2014). With the Chinese domestic market being of considerable size and a population of 1.5billion people, startups have the advantage of the market being big enough to focus on a national strategy instead of having to expand internationally to be successful in the short term. This is an advantage on the one hand, on the other hand this also means a huge amount of other companies trying to

make it and therefore a high level of competition at an early stage (“The 3 pillars of China’s booming start-up ecosystem,” 2022).

On-demand platform startups like those that exist in the shared mobility market usually have disruptive characteristics and find new ways of being successful in the market. Although this is a way of pushing innovation forward, the government is challenged to make sure social harmony is still provided and traditional companies are protected to a certain extent (Joey Yu, Tang, Max Shen, & Chen, 2017, pp. 16-17). Since business models in the sharing economy are still evolving and are not yet fully established, new competitors entering the market can both be startups with no experience in the industry, as well as multinational corporations expanding their business (Cohen & Kietzmann, 2014, p. 294).

To combine the findings above, China has good prerequisites in its startup ecosystem for future companies to establish themselves in the ride-hailing market and therefore in general in the sharing mobility economy.

5.3. Chances for Competitors

With the market being almost completely controlled by ride-hailing giant DiDi Chuxing, the question arises what is left for potential competitors other than failing if they enter the market and what current market participants like some of the above-mentioned goals are. With its business model, the ride-hailing giant is diversified in terms of price segments for different customer segments. With DiDi focusing on mainly 1st Tier cities with its Premium Car service, it is difficult for other companies to enter 1st Tier cities as the market there is saturated. DiDi’s Express Car service is also active in 2nd Tier cities and still counts as DiDi’s key market to expand in the future (A. Zhou et al., 2019, p. 11). Therefore, the chances for competitors to gain market share in the DiDi-dominated ride-hailing industry are focusing on 2nd tier cities and lower. As could be seen by looking at Caocao’s strategy, the goal is to gain enough market share in the lower tier cities to further expand in 1st tier cities at some point in the future. However, with the 1st and 2nd tier cities already dominated, DiDi will most probably also put some emphasis on the lower tier cities in the future, especially the smaller cities which are well-connected with bigger cities (Tariq, 2018, p. 43). This strategy makes sense when considering China’s demographic situation. By entering the “greater metropolitan area”, China is creating a new industrial agglomeration around the bigger cities which will need to commute into the bigger 1st tier cities every day. This phenomenon is also referred to “intercity commuting” in the metropolitan area (Tariq, 2018, p. 43). With this in mind, ride-hailing companies such as Caocao or Wanshun who are focusing on lower tier cities will automatically have access to 1st tier cities and therefore be in DiDi Chuxing’s territory.

What could be observed over the past few years is that companies emerged and got bigger anytime DiDi Chuxing was having regulatory issues or fined. However, none of the companies have ever attacked DiDi Chuxing directly and succeeded. Another theory would be that the companies are focusing on the competition among them first since DiDi Chuxing is in a monopolistic position and cannot be dethroned easily.

6. Future Trends and Expectations

The future of the sharing mobility economy will depend on many factors, such as demographics, including urbanization, migration, and industrial policies (Tariq, 2018, p. 42), but also the government's new regulatory framework and their plans for the sharing mobility economy.

6.1. Covid-19 Impact on the Industry

The Covid-19 pandemic has had a huge economic impact on the whole worldwide economy. Countries went into different lockdowns with each different conditions and effects on the country's economy and China is known to be one of the strictest so far. It is clear that this will have an impact on the sharing mobility economy as well and influence the industry's revenue to a large extent.

In the beginning of 2020, when the Covid-19 pandemic was first causing lockdowns worldwide, China's sharing mobility market was undergoing a recession. Since the market penetration in the lower tier cities is still comparatively low, the companies active in the 1st and 2nd tier cities were hit the most and the daily order-volume decreased significantly (Song et al., 2022, p. 30). The Covid-19 pandemic has raised concerns about the future of the sharing economy in general and whether it will be able to recover and if the ride-hailing companies will survive this economic shock (W. Wang et al., 2022, p. 129). Because people's work schedules and their work in general was highly affected through the pandemic, online ride-hailing services were put on suspension in more than 100 Chinese cities and ride-sharing became a less prominent travel option because of the infection risk and governmental recommendations (Song et al., 2022, p. 36).

In 2020 after the first big wave of Covid-19 cases, China's economy recovered partially, and with that most cities were back to normal in the third quarter. It could be observed that competition between the ride-sharing companies increased during the pandemic (W. Wang et al., 2022, p. 129), and online ride-hailing companies have managed to recover and are now back to normal. Furthermore, prices did not see significant changes to the top and were the same as the pre-Spring Festival prices, which are slightly higher due to the holiday and the ride-hailing industry has proven itself to be resilient to impactful economic crises. The ride-hailing industry has even taken over a part of the subway travel as 40% of people returning to work switched from subway travel to using motorized vehicles where specifically the taxi and the ride-sharing industry took benefit (Song et al., 2022, p. 36).

One of the main reasons why the ride-sharing companies survived the Covid-19 pandemic well is because they diversified into other service industries. This was easier for

companies in a monopolistic position such as DiDi due to their wide reach and large customer demand base. DiDi expanded into the financial services industry (Shen, 2020, p. 22), freight delivery, food delivery, and community group buying (Straight, 2021). The expansion into the financial services industry gave its drivers more incentives to stay with them as they could benefit from better insurance policies and at lower prices than market prices. By building synergies between new industries, ride-sharing companies can work towards a bigger ecosystem with more resources and thus build better relationships with their drivers as the diversification has a positive impact on them (Shen, 2020, p. 29).

6.2. Disruptive Innovations and Business Model Innovations

One main problem right now is the profitability problem. Most of the sharing economy models are considered disruptive innovations and especially the sharing mobility economy is a good example of a disruptive innovation. Small companies with few resources were successful in entering the conventional taxi market and disrupting the economy with its platform innovation. While companies are successfully entering the market, they struggle to be profitable in the sharing mobility economy. Research has shown that this is not a phenomenon only happening in China but in general in the sharing mobility economy in the world. This is mainly due to increased competition, low margins and not services not being diversified enough. The question, if business models in the sharing mobility are not profitable, arises. Furthermore, business models in the sharing economy will have to be more innovative in the future to make profits and not depend on capital raised from the stock market or private investors.

As could be observed with the help of the Four-Box Business Model, the Business Model Canvas building blocks are directly linked to 10 types of innovation. While key resources and key activities are similar in the sharing mobility economy and especially in the ride-hailing sector, companies should focus on the customer value proposition and therefore on product innovation and customer engagement for future business model innovation.

6.3. Regulatory Framework

China's regulatory framework will be the most challenging part of the future of the ride-hailing industry in China. While it could be shown during this thesis that there are significant loopholes for Chinese ride-hailing companies, regulators have taken action and the regulatory framework for the sharing mobility economy will be undergoing drastic new measures in the foreseeable future. This was triggered by cases of monopolistic behavior, various cases of antitrust violations and generally missing regulatory policies in the emerging industry. A better regulatory framework is needed to guarantee a well-functioning sharing mobility economy in the future.

With the sharing economy continuing to evolve, the Chinese regulatory approach will most likely continue in a multi-party and neutral approach (Jiang & Wang, 2020b, p. 95). However, while keeping this multi-party regulatory approach, China wants to do more in its fight against monopolistic behavior. Since DiDi got charged with a huge fine for various cybersecurity mishandlings, the government is on track to build a more secure framework avoiding future clashes in that matter. While DiDi Chuxing's case is of big importance for the future of the Chinese regulatory approach, it could also have consequences internationally, especially for Chinese companies taking part in the US stock market as companies planning to list will undergo a more complex screening process (Cong, 2021). China's regulators have reacted to the past few years of uncertainty about DiDi's ride-hailing behavior in the market and a new Anti-Monopoly law will be taking effect on August 1st, 2022. The new law, which is a revision of the initial law going into effect in 2008, will focus on several aspects. First, the law will establish a system to assess fair competition in the industry and state more rules about competition in China's socialist market economy. Next, it will have a specific focus on the platform economy and introduce standardized rules for it. Reasons for the late implementation of such rules were the fast development of platform economies and insufficient supervision of such (Li & Xiong, 2022). Furthermore, one of the main discussion points for the future remains the driver's employment status. Concerning the driver's employment, platforms are currently required to follow the "Interim Measures" for their employment relationships with their drivers. Those measures require the company to enter in an employment contract or "other agreements" with the drivers (Jiang & Wang, 2020b). The problem is that employment contracts are costly for the sharing mobility platforms as their business models do not consider those fixed costs and having drivers as independent freelance drivers gives the companies more flexibility.

With employment contracts not being standardized in the sharing mobility economy, regulators are not yet able to make sure drivers' employment rights are well protected and regulations in this regard should be strengthened to guarantee safety and security. Furthermore, as long as the legal status of all sharing mobility economies has not yet been determined, regulators will struggle and ride-hailing companies will find loopholes to fight against accusations in case of legal issues (Jiang & Wang, 2020b, p. 98).

As the sharing mobility economy is predestined to a certain point for the formation of monopolies and the market tends to favor monopolies, one possible solution to deal with monopolies suggests that governmental actors should not block mergers and acquisitions but rather form partnerships with them and actively collaborate with each other. This will both benefit the community and the drivers (Shen, 2020, pp. 30-31).

Apart from employment regulations, China will also strengthen its general data supervision for ride-hailing platforms. New regulations will require car-hailing companies to report

the company's basic data, vehicle data, driver data, order data, and other business information such as service quality information and positioning information to China's Ministry of Transport once they have received their business license. Furthermore, data cannot be collected or passed on to third-party platforms anymore ("China Strengthens Data Supervision of Car-hailing Platforms," 2022).

The Future of the Monopolies in the Ride-Hailing Market

In general, the ride-hailing market is an undersupplied market in normal times. Considering that people need to travel from one place to another, there will always be the need for transportation and therefore the demand for ride-hailing services (Shen, 2020, p. 9). Knowing that the market is undersupplied leaves room for new companies to enter. However, considering the high entry barriers companies are better off finding a niche market strategy since DiDi is dominant in the pure platform market in China. One of the reasons why it is not easy for new companies to enter the market even if it is undersupplied is because of a resource allocation problem. This means that while the need for ride-hailing is there, there is not much consistency in the pick-up and drop-off places which result in more variability of supply. Therefore, it is easier for all the stakeholders when demand and supply are all in one platform which is the case for monopolistic ride-hailing markets (Shen, 2020, p. 14).

Ride-hailing companies all over the world are known to be market-dominant and this raises the question about monopolies in the ride-hailing market. In different markets price wars have been observed in the ride-hailing market, usually ending with only one dominant company staying in the market. This was the case for Uber China and DiDi before the merger & acquisition happened in 2016. The main reason for DiDi's success and Uber China's failure was DiDi's competitive and financial advantages in its home market leading to a snowball effect and forcing Uber China out of the market (Smichowski, 2018, pp. 64-65).

Even though ride-hailing monopolies can have negative effects on the market because of monopolistic behavior in pricing, monopolies have been proven to be more responsible as well as more socially optimal when it comes to their drivers than in duopolies or oligopolies. This is because DiDi puts a lot of effort into its brand image and sustainability. After the merger with Uber, DiDi had to put its focus on supply management to satisfy demand in the long run (Shen, 2020, p. 30).

6.4. Bike-Sharing

Bike-sharing in China is mainly responsible for solving the last-mile problem. Over the last couple of years, it got a lot more famous and many dockless bike-sharing companies have emerged. However, because of profitability problems, many of those newly emerged

bike-sharing companies had to shut down their business again. Since the two main bike-sharing companies Ofo and Mobike take over 90% of the market, the question about the future of the bike-sharing market remains.

With Meituan having acquired Mobike, and DiDi Chuxing partnering up with Ofo after a failed acquisition makes it look like bike-sharing companies are becoming an accessory and a means to diversify and complement the ride-hailing giant's services. Since bike-sharing services are making use out of the same basic technology (Deighton-Smith, 2018, p. 4), the implication of such an addition to current services should be of small concern since companies can simply integrate the services into their existing applications. Furthermore, bike-sharing companies will still be solving the same negative externalities as the ride-hailing business, that is solving issues about urban pollution and congestion (Deighton-Smith, 2018, p. 4), as well as the resource allocation problem.

7. Discussion and Conclusion

This thesis discussed business models in the sharing economy in China, more specifically in the sharing mobility market where one company, DiDi, has been dominant since 2012. The goal was a detailed analysis of China's sharing mobility economy. While the focus is on China's market leader, DiDi Chuxing's business model, there is ample comparison to its competitors. Through exploring the differences and success factors of competitors there is potential to answer the question about a possible first-mover-advantage. Furthermore, the thesis focused on the assessment of business model innovation and its effect on future development. To assess the business models, the Business Model Canvas was used for the internal analysis.

The sharing mobility economy in China is a comparatively advanced industry and has potential for growth. China has the biggest base of netizens in the world which leads one to believe that business models based on smartphone technologies are the future of fast and convenient transportation. This emerging type of economic business model brings various advantages for all stakeholders and can help solve current environmental concerns such as reducing carbon footprint. The external market analysis conducted with a PESTEL framework shows that China has prerequisites for the further development of the sharing mobility economy. Being one of the countries with the highest CO2 emissions, it faces a lot of pressure to reduce its carbon footprint. China's changing demographics to a more modern metropolis structure connects smaller villages to bigger cities which in turn, favors the need for transportation and the demand for ride-hailing. While the country is technologically advanced with a high level of innovation, political and legal factors will play an important role in the future of China's sharing mobility economy.

There are various conclusions that can be drawn from the analysis of DiDi Chuxing's business model. First, the company has been the market leader since its entering of the market in 2012. While DiDi Chuxing has had fierce competition leading to price wars with its temporary competitors, Uber China and Kuaidi Dache, DiDi managed to merge with them and be the main market leader with a market share of almost 90%. Even though various anti-trust scandals and regulatory violations threw DiDi off track and led to temporary removals from app stores, the company never lost enough market share for competitors to step in. This can be traced back to a clear first-mover advantage and the acquisition of its big customer base in the 1st tier cities in China. Since competitors mostly focused on 2nd tier cities and lower, they did not have enough time to enter the market and take hold of some of DiDi Chuxing's market share. Furthermore, DiDi Chuxing is well diversified in the ride-hailing sector and has its own ride-hailing brand for almost every customer segment. This way, it does not have to put focus on any specific customer segment and is largely covered. Because of its market size, the company has established a

broad partnership network with many different stakeholders like the D-Alliance. Because of its size, the company is also able to put pressure on pricing for certain customer segments. Another advantage achieved through its size is that DiDi is investing a lot in its big data research which advances artificial intelligence, increasing the existing technological advantages the company already has.

Comparing the competitors to DiDi Chuxing, conclusions can be drawn from the comparison of their business models. Smaller companies have started out with B2C business models and therefore have higher fixed costs than DiDi's C2C model as they are heavier in assets with their own car fleets and drivers. However, the reasons behind that are the focus on different customer segments such as high-end travel or strictly business travel. The diversification is not as broad as in DiDi's case and the demographic focus lies on the lower-tier cities. While the 1st tier cities are under DiDi Chuxing's control, lower-tier cities provide a chance for competitors to gain market share and at a later stage expand into higher-tier cities, as is the case for Caocao. Even though all sharing mobility functions as a platform economy, the cost for B2B platforms is higher. Companies in the sharing mobility market are faced with a trade-off between the pure platform model where fixed costs are low and asset-heavy capacity models that produce high fixed costs but more security in compliance measures. In direct competition, smaller companies do not have a chance of competing directly with DiDi Chuxing. Since DiDi is in a position of monopoly, the only way for competitors to gain more market share is by focusing on a niche in the sector or winning market share from the lower-tiers. Furthermore, even if the competition is visible, companies have specialized in their core service which ranges from high-end to electric vehicle travel. This is interesting because all these companies do partially share the same investors, being Alibaba, Tencent, Baidu, and more Chinese Internet companies. While 80% of all startups in China have the same initial investors which are the big Internet companies, it is worth mentioning that ride-hailing competitors have some of the same investors for reasons that are out of the scope of this thesis.

While DiDi Chuxing has had various regulatory issues and faced fines in the past, the same has happened to its competitors. The political and regulatory system set in place for the sharing mobility economy has played a big role in that. Through the PESTEL analysis, concerns about the regulatory framework became clear and it is necessary to fill the existing loopholes to provide a legal and compliant sharing mobility economy for all stakeholders. Since China is fighting against monopolistic behavior, regulatory policies need to be stricter and focus on platform's security measures, legality of its drivers through employment contracts, and unifying regulatory policies in the sharing mobility economy.

Finally, business model innovation is essential for the success and profitability of the companies as it used to be relatively easy for new companies to enter the market by copying an existing business model. However, while regulatory measures were not in

place in the beginning of the sharing economy, China has put in place stricter measures which will make it more difficult for new companies to enter the market. For services to be distinguished enough and the business model to be unique, companies must be innovative in the sharing mobility economy. While the industry first got attention disrupting the taxi industry, disruptive industries have been seen to have an effect in the short term. Companies need to keep up their level of business innovation especially with regards to product innovation to differentiate themselves from competition in the long run to increase margins for profitability.

Limitations and Future Research

While literature on the sharing economy in China is present, the mobility sector is dominated by literature about DiDi Chuxing and any competitors in the market are only briefly mentioned. Websites are partially restricted and not working well outside China if the company has not expanded internationally. Therefore, it is difficult to get the same amount of information as DiDi Chuxing to conduct a full business model analysis for the ride-hailing competitors. Therefore, more research needs to be conducted on the competitors' strategies for the future and it is best conducted on-site.

This thesis sheds new light on a topic with little previous research and literature available by focusing on business models in the Chinese sharing mobility economy. It continues the discussion about business models in the sharing mobility economy and highlights important points that can generate further research.

Future research should dock onto the profitability question and examine the correlation between business model innovation and profitability closely. Furthermore, the investment landscape into the sharing mobility economy should be further analyzed.

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