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Master Degree Project in Logistics and Transport Management

Crowdsourced Freight Delivery

The value created via logistics platform

Authors: Yinhe Yang and Qian Yuan
Supervisor: Sharon Cullinane
Graduate School

Crowdsourced Freight Delivery

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guslisy@student.gu.se

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gusyuaqi@student.gu.se

ABSTRACT

With the rapid development of Internet information technologies such as big data, artificial intelligence, and cloud computing (Perego et al., 2011), the sharing economy has been gradually applied to various industries as a new economic form. Crowdsourcing logistics is an application of the sharing economy in the logistics industry. Due to the huge freight demand and the strong support of the Chinese government for the development of the “Internet + Logistics” model, crowdsourced freight logistics in China has attracted attention from many investors. However, the uncertainty of the profit model has brought great challenges to the companies of the crowdsourcing freight logistics platform. It is well worth studying the issue of feasibility and value creation for the logistics platform. This paper used the research method of case study to conduct research on Huochebang, a leading company of China's crowdsourcing freight logistics platform. Through PESTEL analysis and SWOT analysis, this research aims to analyze the factors that affect the feasibility of the case company and put forward some suggestions for improvement. This paper not only studied Huochebang's operating model, the services it provided, and the situation of its competitors, but also collected user views through semi-structured interviews. The findings revealed that although the crowdsourcing logistics platform model is still immature and faces various opportunities and challenges, in general, the major external factors are conducive to the development of crowdsourcing logistics platforms. The logistics platform of Huochebang has already solved many problems for the logistics industry, creates value through both online and offline services, and remains to be improved in many aspects such as corporate image and customer loyalty.

Keywords: sharing economy, crowdsourcing, logistics platform, freight delivery, intermediary

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LIST OF ABBREVIATIONS

B2B	Business to Business
B2C	Business to Consumer
BTL	Below the Line
C2C	Consumer to Consumer
FTL	Full Truck Load
GDP	Gross Domestic Product
IT	Information Technology
LCL	Less than Car-load
LSP	Logistic Service Provider
O2O	Online to Offline
OC	Open Collaboration
RMB	Renminbi
SME	Small and Medium-sized enterprises
TC	Tournament Crowdsourcing
VLM	Virtual Labor Market

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1 INTRODUCTION

This chapter brings the topic of thesis. It introduces a general background of crowdsourcing, the present status of road freight industry in China and the case company to readers. Based on the background and the research gap, we also present the formulated research questions and study purpose.

1.1 BACKGROUND

1.1.1 INTRODUCTION OF THE CROWDSOURCING

In recent years, logistics industry which contributes an important share of GDP has developed itself with the aid of rapid development of information technology. By adopting various innovative technologies, a company can serve better services, improve the operation efficiency and even formulate new business model. The internet as a mean of integrating and exchanging information has made a lot of changes in the business world, including but not limited to the logistics industry. The success of Wikipedia, Uber who utilize the idle resource of public by internet platform also inspires logistics industry to develop a similar business model.

Under this background, crowdsourcing gradual emerges in different links in the logistics chain. The crowdsourcing came into notion majorly in the early of the 21st century. Howe (2006) reported about the competition between the professional photographer and the website iStockphoto (www.istockphoto.com) that sell photos at much lower prices by gathered great numbers of amateurs. The power of the crowd in business especially referring to the idle resource was arising. Then this concept was applied in the logistics industry. The definition of crowdsourcing has been improved and modified in recent years. According to the definition by Dictionary of Merriam-Webster (2018), it is defined as “the practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people and especially from the online community rather than from traditional employees or suppliers”. In the definitions, the crowd of people and the IT-mediated platform are always stressed.

As a popular topic in the last years, crowdsourcing is favored by investors in either maturity market such as USA (Uber Freight: freight.uber.com; Transfix: www.transfix.io) and France (Fretlink: www.fretlink.com) or the emerging

market such as India (Porter: www.porter.in; Lets Transport: www.letstransport.in) and China (Huochebang: www.huochebang.com; Yunmanman: www.yunmanman.com). It seems that no matter how mature a market is, the online platform is treated a hopeful mean to solve the problem of empty load rates that causes the cost of idleness and pollution to the environment.

Many startups entered in this market for its imperfect competition status that the rule of the market has not been regulated yet, and the enormous potential for the foreseeable future. Companies with a related background (logistics or information industry) or not piled into the market. Take China, for example, there were over 1000 startups that launched more than 200 related Apps in the market, at least 70 of them got the venture capital (Ifeng, 2017). This investment fever was caused partly by the huge freight market in China, partly due to the government vigorously promoting and also part of causation of the investors' preference of the company with internet gene.

To survive in the market, the company not only needs to develop itself to adopt informatization into the local offline market, it also needs to face the fierce competition from other companies. Huochebang, as the case company in this report, who provides online matching service between carriers and shippers, has recently merged with its previous biggest competitor Yunmanman, not only survives from the competition but also becomes the no-doubt leader company in the market.

However, as a company in the vacuum market in China, it should balance the asymmetry capacity brought from two areas: a fast-growing young industry of internet and an underdeveloped that lacking standardization industry of logistics. It is a challenge for them that whether they can draw support from information technology to reform or reshare the logistics industry as outsiders.

1.1.2 THE STATUS OF LOGISTICS PLATFORM IN CHINA

According to the report from NDRC (2016), the total logistics cost achieved 1.11 trillion RMB which accounted for 14.9% of total GDP in China, of which 54.1% of logistics cost (0.6 trillion) was spent on transport, and the storage cost and management fee took up 33.2% and 12.6% respectively. In general, this proposition was higher than the global average of 12 %. Compared to the data that USA with logistics cost of 8% of total GDP and India with 13%, it shows the potential of logistics industry in China with the current situation of non-standard operation, dispersed structure and low level of service quality.

Further to road transport, 76.3% of total freight volume was carried by road in 2016, by 13.51 million registered freight vehicles (NDRC, 2016). According to a previous report (Zhang, 2017), 90% of the workforce in road transport industry in China are self-employed people which refer to a highly dispersed workforce market. Correspondingly, those individual drivers undertook 90% of freight transport on road. As manual work, the logistics companies with advanced technologies and equipment do not show advantages than individual households on freight volume.

The dominated operation model of freight transport in China can explain the reason of lag informatization for the industry to some extent. From the same report of NDRC (2016), it shows that only 39% of logistics companies have realized the partial informatization in China. The share of the company with comprehensive utilizing information technology merely accounted for 10%. It reflects a high degree of information opaque in China for all transport links from bidding a freight task to in transit and even for the payment after unloading cargo. Coupled with the loose structure of the industry, the empty-loading ratio of freight in China achieved as high as 40% (Cinic, 2018).

Specific to logistics platform which is connected to internet industry, its market size reached 0.13 trillion RMB in 2016 and the intelligent equipment ran up to 34.7 billion. (NDRC, 2016). It confirmed that the utilization of IT in the logistics industry and the combination of logistics and Internet industry was increasing rapidly. As conclusions, it shows that a strong willingness from logistics industry itself and related stakeholders in China to increase the efficiency and to decrease the waste in the industry. And the IT-mediated platform is expected as an effective tool to improve or even reframe the logistics industry. However, it also refers that the competition between traditional freight model and new model adopting internet products is increasing annually.

1.1.3 CASE COMPANY AND ITS MARKET

The predecessor of Huochebang (also named Truck Alliance in English) was established in 2008 by Dai Wenjian, was aimed to serve the area of logistics informalization. After 6 years of development, by the opportunities that the concept of ‘matching platform’ became suddenly popular in China, Huochebang and same kind of other companies were favored by various investors. During that time, Huochebang Science Technology Co. Ltd has been officially registered (Tianyancha, 2018). After that, Huochebang got A and A+ round financing with hundreds of millions of RMB in 2015. From

then Huochebang showed a satisfactory performance to its investors for the large share of market.

Nowadays, Huochebang is the Number one logistics platform in China who provides matching-cargo-with-vehicle services, especially after merging with its once mortal enemy Yunmanman. After merging, the data of the clients is shared on both platform even though the two companies operated individually. Till May of 2018, according to the official website of Huochebang, it claimed it has 4.5 million registered drivers and 0.88 million certified shippers. The daily information of freight source updated on platform achieves 5 million and around 140,000 deals are agreed through the platform. Huochebang and Yunmanman ranked as the 63th and 59th respectively of the companies in Chinese logistics industry (Jiangxiz, 2017). As an internet company, Huochebang rated 926th of top 1000 APPs in China with monthly active users of 1.746 million in 2017(Questmobile, 2017).

1.2 PROBLEMAREA

As an emerging market which interacts with both logistics and Internet industry, there are always controversial debates to them that whether the services provided by Huochebang and similar companies are the real needs in the market of China.

Some practitioners, particularly with freight transport background, viewed the emerging market as a false boom. Especially for the infrastructural reason that, the prosperity of crowd logistics in China was partly inspired by the success of Uber and other similar companies in developed countries, meanwhile, the overall level of Chinese logistics industry is outmoded, especially for its administration, efficiency, service quality, operation mode and profitability are significantly different from maturity market.

However, the Chinese government promotes proposal of ‘Internet +’ which combines information industry with traditional manufacturing and related industries. It aims to improve the efficiency of traditional industry and even create new innovative technologies and market by utilizing the Internet, as well as enhance the synergy of different companies within logistics industry (Lin, 2014).

With the challenges and unforeseeable profitability till now, Huochebang is still valued by certain stakeholders, e.g., investors and App users. It’s necessary to study this company and its business model especially in China

who with strong internal (profitability) and external (government) force restructure or reform the logistics industry. As an emerging market, how those platforms acquired by customers by providing valued services and thus make profitability under the term of sharing economies and crowdsourcing especially with the background of developing country of China combined with its underdeveloped logistics industry is still interesting.

1.3 THE STATUS OF RESEARCH AREA

This report discusses Huochebang as a logistics platform under the concept of crowdsourcing and crowd logistics. According to the systematic literature analysis conducted by Mehamnn, Frehe and Teuteberg (2016), after analyzing more than 1400 papers and identified 79 case studies, they found that urban passenger transport is the most studied topic which accounted for 46% of the analyzed papers in crowdsourcing. The communication (38%) and the routing algorithms (31%) are the second the third topics in related research. It shows that less attention was focused on crowd freight shipping or related platforms from an academic perspective especially further to developing countries. In general, the academic research of online platform for freight transport under the term of crowdsourcing in developing country is still at a very early stage.

1.4 PURPOSE AND RESEARCH QUESTIONS

To fill the gap mentioned in the problem description (1.2) and research status (1.3), the designed purpose of this research is to provide a view to understand the freight transport within the term of crowd logistics in China. The case company Huochebang will be further studied to provide an overview of its service, business model and related background, the views from clients will also be discussed. As a new business model, a feasibility analysis will also be represented in the paper. In general, we thought this case might be unique by its background especially in the context of China. As a company survived from the keen competition, it's hard to say this model can be transferred identically to other industry. However, it is reasonable to believe that this company and its model might be a reference for other developing countries with similar problems.

The research questions are shown as below:

RQ1: For those crowd logistics platforms, what is the value they created especially for logistics practitioners?

RQ2: What are the factors that can impact the feasibility of the case company Huochebang?

RQ3: What are the improvements can be raised for the crowd logistics platform?

By answering those three questions, we hope this paper can provide a general understanding of the topical online platform especially against the background of Chinese logistics market that abundant labor force with high accessibility of smart mobile and provide a low service performance and how the platform utilizes the Internet to reshape logistics industry by their massive user clients.

1.5 DELIMITATION

In this report, we only focus on the company in Chinese market even though we identified the market is immature and it could learn the experiences of other mature markets. Besides, Huochebang as an Internet company within the logistics industry, we mainly study its role in logistics industry. The features of Chinese Internet startups such as destructive competition, irrespective of privacy and so on had not been studied.

2 THEORETICAL FRAMEWORK

In order to study the crowdsourcing logistics platform used in the case company, in this chapter, we will introduce several related concepts and their relationships. These concepts include the sharing economy, crowdsourcing, logistics platform, and infomediary.

2.1 THE SHARING ECONOMY

In recent years, as Uber, Airbnb and so on have swept the globe, sharing model as one kind of new economy has immersed in daily economic activities. The Sharing Economy, also known as collaborative consumption, was developed in 1978 by American scholars Marcus Felson and Joe L. Spaeth, and usually refers to a business model in which people use the Internet platform to share social resources such as material resources and human resources on a fee basis and pay and benefit from each other in different ways so as to jointly enjoy the economic dividend (Wang, 2016).

The rise of the sharing economy is driven and enabled by technology, evolving economic behaviors and social and societal factors (Goudin, 2016). The key to the "sharing economy" is to have a market IT-mediated platform created by a third party. On the platform, individuals can exchange idle resources, share their knowledge and experience, raise funds for companies (individuals) for welfare projects or businesses. Under this model, product owners and consumers are "connected" via the Internet platform, and the right to use personal items on the Internet is temporarily transferred to achieve cooperation or mutual benefit. With the development of information technology, the influence of sharing ideas has been expanding, making it possible to use the Internet platform to more efficiently integrate and share resources such as cars, houses, funds, and manpower, so that the sharing economy has become a concern.

The purpose of doing so is to reduce transaction costs including the elimination of middlemen in sales between a good/service provider and a customer, which both improves access to goods and services, and reduces the need for economies of scale for marginalized groups who lack access to capital and infrastructure (Hira & Reilly, 2017). This method can improve efficiency for both consumers and suppliers. For consumers, the sharing economy increases the utilization rate of goods and the rate of commodity recycling, and it exchanges services and shares productive assets. For suppliers, it reduces suppliers' complacency. According to the research, the

sharing economy can also increase competition in the market and make the informal service more secure through formalization. (Welsum, 2016).

There are many ways to classify the sharing economy. Schor (2014) claimed that sharing economy activities can be divided into four broad categories, which include recirculation of goods, increased utilization of durable assets, exchange of services, and sharing of productive assets. More specifically, Hira et al. (2017) said that the sharing economy can be applied in lots of sectors, such as mobility and logistics, labor and service platforms, goods and equipment, financial services, etc.

Crowdsourcing can be seen as an application of sharing economy in the sector of human resources. On the one hand, the emergence of the sharing economy has promoted innovation in the industry and provided a market entry point for the crowdsourcing model. On the other hand, the development and popularization of the sharing economy have further promoted the popularization of the crowdsourcing model. The speed of development of the sharing economy far exceeds that of traditional industries, and its development potential is huge (Zhou, 2018). In view of the current speed of development of the sharing economy, the crowdsourcing model will further deepen its influence in various fields.

2.1.1 COMPARISON OF DIFFERENT TYPES OF SHARING ECONOMY AND CROWDSOURCING

For the wide range of both sharing economy and crowdsourcing, Taeihagh (2017) examined a series of literature and compared the sharing economy with crowdsourcing under different categories for its functions and applications. Below we will briefly describe his comparison of the sharing economy and crowdsourcing.

Types of Sharing Economy

Sharing economy as a concept with board application has been employed in different sectors from tourism, logistics, to financial and so on (Taeihagh, 2017). Puschmann and Alt (2015) further categorized the type of sharing economy with providers type and interaction type referring to different industries (Table 2.1). Providers type can be divided into startups and incumbents. Unlike innovative startups in this emerging area, incumbents refer to the existed companies who dip their toes in the waters of sharing economy. Interaction types in Puschmann and Alt (2015) assortment are B2C

and C2C. However, the type of B2B is not mentioned in the table which suits more for our case company in this report.

Table 2.1 Examples of sharing economy (Puschmann and Alt, 2015)

Provider type	Interaction type	Industries							
		Food	Financial	Mobility	Travel	Logistics	Work	Education	Others
Start-ups	B2C	Kuhteilen	Finpoint	Uber	Onefinestay	Instacart	Wework	Chegg	The collective Sharen.nl
Incumbents	C2C	Eat With Me	Lendico	Getaround	Airbnb	ShareMyStorage.com	Freelancer.com	Peer 2 Peer University	
	B2C	Wefarm (Google, Telefonica and others)	openforum (Bank of America)	car2go (Daimler)	Tripping.com (Several)	DoorDash (FedEx)	Workspace on Demand (Marriott)	Coursera (Stanford)	Mud jeans (Mud Jeans)
	C2C	P2P Food Lab (Sony CSL)	Crowdfunding (Volksbank BÜhl)	Parkatmyhouse (BMW)	TripAdvisor (Expedia)	MyWays (DHL)	TaskRabbit (Walgreen, Pepsi, GE)	Khan Academy (Google, B. & M. Gates Foundation)	Mila (Swisscom)

Types of Crowdsourcing

According to different roles and characteristics, crowdsourcing can be categorized into virtual labor markets (VLMs), tournament crowdsourcing (TC), and open collaboration (OC) (Braham, 2008; Prpic´ et al., 2015; Zhang et al., 2015; Taeihagh, 2017).

Virtual Labor Markets (VLMs) are the IT-mediated markets where organizations offer some micro-tasks to individuals that can be performed anywhere in exchange for monetary compensation (Brabham, 2008)

Tournament Crowdsourcing (TC) (Zhang et al., 2015) is the platform where organizers offer the tasks with rules and prizes that allow individuals to compete and win the prize. This platform is normally targeted to a more specific crowd with a special skill or interesting to win the prizes (Taeihagh, 2017), in other words, a smaller group of crowds will be drawn attention on this platform compared to VLMs. (Prpic´ et al., 2015)

Open Collaboration (OC) is platform similar with a VLM. It posts tasks or problems to the public however without expecting monetary compensation (Prpic´ et al., 2015). It more stresses the voluntary of the crowd. One typical disadvantage of this platform is that the task is easy to be ignored by the public (Taeihagh, 2017).

Comparison of Different Types of Sharing Economy and Crowdsourcing

Here below (Table 2.2) is the comparison table made by Taeihagh (2017). In this table, he generally compares the differences of accessibility, anonymity, targeted group of crowds and the platform itself.

On the table, IT-structure is decided by whether crowd cooperates with each other through the platform (Prpic´ and Shukla, 2013) while the platform architecture is derived from Choudary’s (2015) classification that is decided by architectural frameworks, configurations and the patterns of exchange. Regarding platform architecture, it refers individual’s interaction via the platform both directly and indirectly, since platform allows the service providers and service buyers do not interact directly. Infrastructure layer is about the value-creation through the platform. Data layer refers to the distinctive role of data in various platforms.

Table 2.2 Comparison of different types of Sharing Economy and Crowdsourcing - partially based on Prpic´ et al., 2015 (Taeihagh, 2017)

	Accessibility	Anonymity	magnitude	the crowd	architecture	IT-structure	interactions
Virtual labour markets (e.g. Amazon Mturk)	Private	High	Millions	General	Community building and infrastructure provision	Episodic	Information, currency, and virtual services
Tournament crowdsourcing (e.g. Kaggle)	Private	Medium	Hundreds of thousands	Specialized	Community building	Episodic	Information, currency, and virtual services
Open collaboration (e.g. Twitter)	Public	Variable	Hundreds of millions	General	Community building	Collaborative	Information
Asset hubs (e.g. Zipcar, Car2go)	Private	Low	Hundreds of thousands to a few millions	Specialized	Community building and infrastructure provision	Episodic	Information and currency
Peer-to-peer sharing networks (e.g. Uber)	Mostly Public	Low	Hundreds of thousands to millions	General or specialized	Community building, infrastructure provision and data layer	Collaborative	Information and currency, in some instances goods/ services as well.

2.2 CROWDSOURCING

Crowdsourcing is one of the numerous outcomes of the digital revolution, and it is a neologism formed from the words “crowd” and “outsourcing”, which was initially popularized by Howe (2006). Howe explained the meaning of crowdsourcing as those activities which were once handled by a firm, and now the firm entrusts the activities to the “crowd” instead of to its designated agents such as employees. In other words, crowdsourcing can be seen as a kind of outsourcing, which means crowdsourcing can be explained as the outsourcing by a firm of some activities to the crowd.

In order to realize the idea of crowdsourcing, individual-owned resources, such as financial, intellectual, material, etc. should be activated through information technology (IT) platforms (websites or mobile apps) to perform traditional business activities. Major resources of the crowd that can be activated includes: financial resources, which can be the basis for crowdfunding practices (Belleflamme et al. 2014); intellectual resources, which can be the basis for crowd-innovation services (Boudreau and Lakhani, 2013); logistics resources, which is currently being exploited by a host of start-ups that are appearing all over the world and provides logistics services.

2.2.1 CROWD LOGISTICS

Crowd logistics is an application of crowdsourcing in the logistics industry. Although crowd logistics has been actively discussed in the business world, the related research paper of crowd logistics is very limited. Chen et al. (2014) worked on algorithms for mobile crowdsourcing problems and mentioned the potential emergence of an “urban crowd logistics paradigm where a participative pool of urban crowd-workers is co-opted to perform a variety of last-mile tasks”. Mehmman et al. (2015) defined crowd logistics as “the outsourcing of logistics services to a mass of actors, whereby the coordination is supported by a technical infrastructure” through examining several German cases and pointed out that research in this area is still in its infancy. Bubner et al. (2016) confirmed that the development of crowd logistics may have a major impact on the logistics industry in less than five years in the Logistics Trend Radar.

Another term “crowdshipping” is also used to describe crowd logistics, meaning “using the crowd to transform delivery”. According to Carbone, Rouquet, and Roussat (2017), there are 4 types of the services related to crowd logistics: crowd storage, crowd local delivery, crowd freight shipping and crowd freight forwarding (Table 2.3).

Crowd storage refers to provide storage service by crowd via Internet platform. Service providers and service seekers can be paired up through the platform for a broad range of storage space, time and cost. It increases the accessibility for storage users and the availability of individuals' idle resource.

The crowd local delivery refers to utilize the individuals to provide logistics service in local, especially in large cities. Individuals can deliver or pick up goods on the way to home or work and earn an agreed unit fee. This service is placed on hope to improve the last-mile delivery in the city which is treated as a bottleneck of e-commerce for its characteristics of expensive and less inefficient from a supply chain perspective (Gevaers, Voorde and Vanelslander, 2011). It also contributes to decrease the emission of CO₂; however, this effect is relied on the modal choice by crowd (Rai, H. et al., 2017; José, 2016), the distance of travel (Jose, 2016) and the involved LSP (Rai, H. et al., 2017).

The crowd freight shipping enlarges the service area from local to nationwide or even within the continent. Through the logistics platform, shipper public the freight information with specific requirements such as destination, time, volume and facility to the crowd. The crowd contains professional LSPs (companies) and individuals with transport capacity for long-distance. The cargo can be either FTL or LCL. Compared to the traditional offline logistics agent, this platform provides tracking service for real-time information, accelerating the turnover rate and decreasing the asymmetry of information. In this paper, our main object of research belongs to this type of the services.

The freight forwarding service targets to the crowd of travelers who can bring required goods to advertisers in a global coverage. The crowd who accept the task with an agreed service fee can purchase and carry the goods for the advertiser. However, more risks and legal issues are involved in this service since the long distance of transport and customs.

Table 2.3 Four types of crowd logistics services (Carbone, Rouquet and Roussat, 2017)

	Crowd storage	Crowd local delivery	Crowd freight shipping	Crowd freight forwarding
Types of items	Furniture, unused, cumbersome archives	Food, parcels	Odd-sized parcels	Valuables, light products, local products
Types of logistics connections	Proximity	Local short distance	Domestic and continental	Long distance (mainly intercontinental)
Logistics value for users	Proximity	Speed	Adaptability	Accessibility
Logistics risk for users	Security (goods) accessibility	Lack of trust in the crowd	Security (goods)Lack of trust in the crowd	Service reliability (customs and air-travel regulations)
Crowd physical resources	Cellars, lofts, rooms, garages, courtyards	Cars, vans, (motor) bikes, public transport	Cars, vans, trucks, buses, trains	Planes, boats, luggage
Crowd logistics capabilities	Handling, storing	Pickup, driving, riding, delivering	Loading, driving, delivering	Handling, packing, completing formalities, delivering
Logistics operational support by the platform	Space calculation software	GPS scheduling software	GPS	Customs process
Logistics transactional support by the platform	Insurance contract models	Pricing system checking drivers' licenses	Pricing scale, checking drivers' licenses	Customs-duty calculation software

2.3 LOGISTICS PLATFORM

2.3.1 DEFINITION OF LOGISTICS PLATFORM

Logistics platform is treated as a buzzword which the definition is vague and in a relative board range (Gajsek and Rosi, 2015) and the meaning of logistics platform vary from authors who use this term from different countries. The term can be used for logistics park (Cambra and Ruiz, 2009), a website or even an electronic bulletin board (Gajsek and Rosi, 2015) in practices. However, the logistics platform in China is inclined to logistics information platform. It refers to IT companies that are not engaged in transport activities directly, however, serving to supply chain. The case company Huochebang is a typical logistics information platform.

2.3.2 INTERMEDIATION AND DISINTERMEDIATION

To discuss the online platform, it is easy to connect them with disintermediation. Some views treated e-commerce as a threat to traditional intermediaries (Bakos, 1998) while others thought it will enlarge the importance of intermediaries in the supply chain. However, the emerging of informatization for the different actors reshuffling and reconfigure their relationship and cooperation method in the supply chain (Evans and Wurster, 1997).

The trend of moving middleman from offline to online endow new characteristics of the cybermediaries to improve the information exchange and decrease the transaction cost: 1) aggregation, aggregating demand or supply can reduce transaction cost for its large economies of scale; 2) trust, those cybermediaries also can provide guarantee to ensure the service quality; 3) facilitation, cybermediaries can simplify the complexity of the market with a mass of service sellers and buyers ; 4) matching: cybermediary can match the service seller and buyer with specific requirements in a diverse market (Jallat and Capek, 2001).

According to an interview with a practitioner in China, there are 3 basic matching for a deal on the logistics platform: route matching, shipping-space matching, and type matching. These 3 elements are mandatory for an LCL deal. However, the FTL normally focus on route matching (Woshipm, 2018).

As discussed above, when the online platform is viewed as a method of disintermediation, there are also discussion for reintermediation. As King

(1999) said, the platforms become information brokers to serve their users and can create value in a different way.

2.4 INFOMEDIARY

Broker is the middlemen between service supplier and buyer (Liu, 2012). The information flow within supply chain system is not only about the information of transport time, cost and location, also about the right ‘people’ to carry the goods. It is not easy to choose or even find a proper forwarder for shipper. However, the relationship between shipper and forwarder is bilateral. For the forwarder, they are also eager to find a suitable buyer among varied selection (Rezaei, 2015).

The middlemen are the roles who connect the service providers and service buyers in a market. According to Krakovsky (2016), she identified several types of different roles for middlemen with different tasks in the market, for example, to decrease the distance (space and time) for a deal, to evaluate the authentication, to enforce an agreed deal for implementation, to decrease the risk and to intermeditate the confliction.

In China, the middleman between shipper and forwarder is named information sector (Liu, 2012), who is responsible to distribute freight information as shown in figure 2.1.

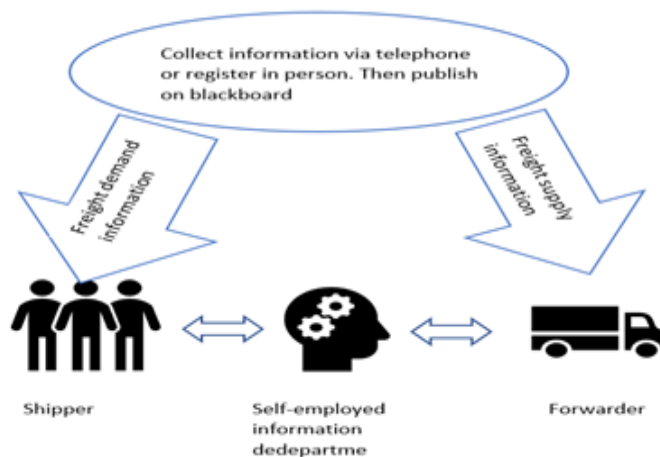


Figure 2.1 The model of Chinese traditional information sector in logistics (Li, Li and He, 2006)

Due to its characteristics of small-scale, they always control very limited information. Some of them have the source of goods (with shipper), and some of them have the source of vehicles (with trucker). The middlemen with the bilateral source are few. Besides, the information source is largely depending on the personal network of the middlemen themselves.

Development of information sector

The information sharing- or matchmaking platform is changed along with the development of IT. In the beginning, the information was collected and published manually by personal information sector, then it was shown on an electronic display screen in logistics park which could release middlemen from complex manual work meanwhile served to a larger group of information seekers. Entering into the Internet era, information was published on the website which had decreased the information asymmetric largely and increased the efficiency of matchmaking. Even though the data still should be collected by the minority. Nowadays, the information sharing can be operated through customer terminal in which allow both shippers and drivers can proactively access and release information without time and location constraints. This report studies the logistics information platform which is entered through clients for both shippers and drivers. With helping of the IT, this platform allows a large group of users to share and exchange the information effectively and quickly (Kuokka and Harda, 20)

However, the traditional information sector and its means didn't extinct along with the development of technology. As the table 2.4 shown, we employed and developed the table by Hu (2017) to compare the different technologies employed by logistics information in China. From the table, it shows the application of electronics have significantly improved the efficiency of information publishing compared to the traditional mean of individual information sectors that collect and sell information manually. However, the Internet technologies have more advantages in information exchange compared to the offline display. With the help of the Internet, information can be viewed by a much larger group of people without the restriction of time and space. Besides, the amount of information gathered on the Internet is much more than offline information brokers. However, it should be noticed that different actors in the logistics industry have different attitudes towards the employment of technologies especially in the case of independent development. For example, from the perspective of an offline information sector, it is not the more information the better for them. They must consider different factors to achieve the beneficial results.

Table 2.4 The comparison and development of information platform, partly based on Hu (2017)
(Source: Authors)

	Information Blackboard	Electric Screen	Information Platform Web	Information Platform Apps
Update frequency	Low	Relatively low	High	High
Information transparency	Low	Relatively High	Relatively High	High
Information Quantity	Very Limited	Limited	Relatively Board	Board
Matchmaking Level	Low	Low	High	High
Operation Restriction	Time, location, cost restriction	Time, cost, location restriction	Internet Required	Internet and smartphone required
Information Sources	Heavily rely on personal connection	Partly rely on personal connection	Integrate the information from private and public	Public, shippers release demands by themselves
Cost of accessing information	High, especially for truckers	High	Low	Low to free
Infrastructure cost	Very low	Low	High	High

2.5 SUMMARY

As we said above, the sharing economy is the allocation of idle resources. In this process, resource owners get rewards, and sharers use the idle resources of resource owners to create value. Crowdsourcing can be explained as the outsourcing by a company or organization of some tasks to the crowd network. In other words, crowdsourcing is the allocation of idle resources. Therefore, the sharing economy is a relatively large economic category, and the crowdsourcing model is a specific application situation of the sharing economy. In addition, the process of resource allocation requires the use of information platforms, which are generally built by third parties, i.e., the information broker. Based on our definition of the sharing economy and crowdsourcing model above, we can sum up the relationship between the sharing economy, crowdsourcing, information platforms, and information brokers in the figure below (Figure 2.2).

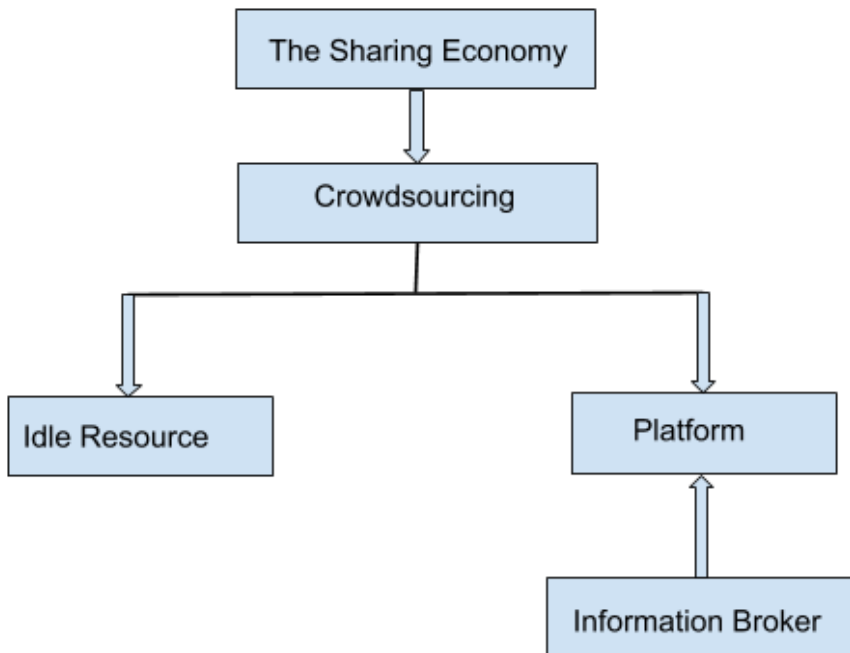


Figure 2.2 The relationship between the sharing economy, crowdsourcing, platform and information broker (Source: Authors)

3 METHODOLOGY

This chapter describes the overall process of the designed research, from research approach to the data analysis. The means of data collection, the model used to data analysis, and the validity, reliability and generalization of this master thesis are also introduced in this chapter.

3.1 RESEARCH APPROACH

In this report, we chose a qualitative approach to conduct our research, as this approach is strongly connected with social constructionism in social research. It aims to create an understanding of the phenomenon (USC, 2018). Unlike the quantitative research that asks the observers to keep independent, qualitative research is more focusing on human interests. The ideal outcomes of qualitative research are providing new insights (Easterby-Smith, Thorpe and R.Jackson, 2015).

3.2 RESEARCH STRATEGY

By reflecting the question that how the designed study will answer the research questions (Saunders et al., 2009), we decided to employ case study method in this report. Case study, as a research strategy which is based on mixed approaches of deductive and inductive, is treated as the most suitable approach to gain in-depth insights under the context (Datt and Sudeshna, 2016). Multiple sources are to be employed to answer the question of why, what and how (Datt and Sudeshna, 2016). In our report, we try to provide insights to understand the company and the related factors connected to the company. We notice that Huochebang as a young Internet company within logistics industry, it might be hard to generalizable to other contexts (Stake, 2006).

3.3 DATA

This report collects both primary data that gathered directly from the interviewees, and the secondary data that collected from related websites, news and literature.

The reasons why we collect these two kinds of data are based on the status quo of Huochebang and the crowdsourcing industry back of the company. As a start-up in the emerging industry, the information of the company is still limited and the research regarding crowd logistics is still infancy (Mehamnn et al., 2015). To gain a deep understanding of the company, we should collect most of the document-based information of the company, which has been proved an effective way to gain insights into emerging topics under the circumstances of only few research studies existed (Benbasat et al., 1987).

Secondary data

As Saunders, Lewis and Thornhill wrote (2009), written documents can be divided into raw data that hardly any to process and compiled data that has already been selected and summarized by authors. In this report, both raw data from Huochebang itself and compiled data from reports, journals and publications have been collected in order to understand the company and further to answer our research questions.

The advantages of secondary data in this report are, e.g., keep the feasibility of report in the time-constraints context and provide the background to compare data within the contextual content. However, we also need to face the challenges, for example, the difficulty of controlling the quality of data, the complex of conducting data with various definitions, or even the data is not compiling the objects of our report.

Primary data

According to Saunders, Lewis and Thronhill (2009), there is a typical classification for varied types of interviews which are structured, semi-structured and unstructured interviews respectively. In this classification, semi-structured and unstructured interviews are more exploratory while structured interview is more descriptive. We conducted semi-structured and unstructured in our report (Table 3.1).

Table 3.1 Assortment of primary data (Source: Authors)

Interview Type	Respondents Role	Respondents number	Total time
Informant interview	Shipper with cargo	4	2.5 hours
	Logistics practitioner	1	0.5 hour
Semi-structured interview (face to face)	Users of Shipper version	2	2 hours
	Users of Driver version	2	1.5 hours
Semi-Structured Interview (via Internet)	Users of Shipper version	6	N/A, written response

We conducted informant (unstructured) interviews with practitioners in logistics companies and factory owners that had freight to deliver. In those informant interviews, we aimed to have a general understanding of how respondents conduct their logistics activities no matter they use the App of Huochebang or not. The questions are majorly around the topics that: how shippers in varied sizes usually send out goods? And how logistics company usually find truck or drivers in the peak time that their own capacity could not satisfy the requirements? In those informant interviews we had no formulated questions to ask, however, we kept in minds the goals of the interviews and encouraged respondents to freely talk about the related topics.

We also prepared the semi-structured interviews after we obtained certain knowledge from secondary data and informant interviews. We formulated question lists to Huochebang (Appendix 1) and users of Huochebang App (Appendix 2) respectively. After several attempts to contact the companies for both Huochebang and Yunmanman, we finally got the rejection from both companies. As one employee of Huochebang replied, most information of company development, strategies and events had been released through the official channel. In order to have enough understanding of the company and to secure the validity and reliability of this report, we had to search, evaluate and summarize ample secondary data. However, we got four in-person

interviews in a local logistics park in Changsha (a city in Hunan Province of China), that two of them are brokers and two of them are truck drivers.

Besides, we also conducted semi-structured interviews via the Internet. To gain more data from the users of Huochebang, we recurred to the Sina Weibo (www.weibo.com), one of the most successful social media platforms in China, to find respondents to our questions. We searched users who used the hashtag of Huochebang and sent them private messages. In those messages, we explained our identities, research goals and attached the question lists. Even though the communication on social media platform is always random and non-instantaneous, we still got 6 respondents online. Even though the identical question lists to unspecific respondents made our interviews more like structured interviews that using identical questions to collect quantitative data, we still argued that we adopted methods of semi-structured interviews in our report. Since there were further message exchanges based on interviewee's responses that allowed interviewees to explore and explain more on the topics and made the interviews more flexible.

3.4 DATA ANALYSIS

Data analysis is an important part of management research that transfers the massive information into a meaningful conclusion (Easterby-Smith, Thorpe and Jackson, 2015). The first step is preparing the data, i.e., transcribing data from audio records (3 of 4 face-to-face interviewees allowed us to record the conversation), organizing electronic textual data from online interviews and related documents (Saunders et al., 2009).

As mentioned in chapter 3.2, both inductive and deceptive approaches were used in this report. As Saunders, et al., (2009) summarized, an inductive approach is “to start to collect data and then explore them to see which themes or issues to follow up and concentrate on”. Since there is normally no clear theoretical framework to analyze data by this approach, it is important for researchers to keep the purposes of research in minds all the time. However, to better answer our research questions, we also adopted PESTEL and SWOT analysis in this report to help us identify the status of the company by internal and external factors.

3.4.1 PESTEL ANALYSIS

Developed from the PEST Analysis, PESTEL analysis has been used for analyzing external macro environment for a company and its business (Yüksel, 2012). It refers to 6 factors which are political, economic, social, technological, environmental and legal respectively. The chosen factors can impact the company significantly both positively and negatively when they are changed.

Political factor refers to the policies and regulations related to entire industry or specific company such as preferential tax policy and industry standard conducted by the government. Economic factor contains the global economy, national economy, and industry trends. Take freight industry for example, both global trade and GDP associated with national economic structure should be considered for analysis. Social factor is about the element regarding social and culture. For example, what are the attitudes toward crowdsourcing by the public? Whether the demographic trend in the future will change the business? What is the impact of the majority family workshop model or self-employment model in China for the business? Technical factor refers to the technological achievement and influences to the business. It contains both opportunities and threats to the industry, as the usage of smart camera results in the bankrupt of Kodak. Environmental factor implies the interaction between the business and environment. The logistics industry laid special

stress on this factor since the emission by transport impact the environment directly and stakeholders of environment issues are massive. The legal factor is about the external (both national and global) legislation that constraint the company behavior.

3.4.2 SWOT ANALYSIS

SWOT, as a tool that is most respected for strategic planning (Glaister and Falshaw, 1999), is normally used to assess the development of a company (also applicable to individual and product) for both external and internal factors (Ivanovic and Collin, 2015). The four alphabets each separately represent Strengths, Weaknesses, Opportunities and Threats.

By listing the four factors for both favorable and unfavorable parts, it can help planners to see the position of the company more straightforward and further have a pretext for decision-makers to overcome the weaknesses and threats (Helms and Nixon, 2010).

3.5 RESEARCH QUALITY

To access a research, the reliability, validity, and generalizability are commonly considered. Reliability refers to the consistency of research while the validity (normally management validity) means the designed indicator to measure a concept whether reflecting the concept or not (Bryman, 2012) while generalizability is about the extent of research findings in this report can transfer to other settings (Saunders et al., 2009). However, there were a lot of debate and opinions on the two terms of reliability and validity regarding a social research. LeCompte and Goetz (1982) generated the different term of ‘validity’ for qualitative research: External reliability refers to the level of duplicate of the study. Internal reliability refers to how multi-authors (two of this report) agree with each other as the observers for the same thing in the study. Internal validity refers to whether our observation match with the theory we develop (if we did). External validity refers to whether findings can be employed in the social settings. For the case study, we should carefully evaluate what is the type of the case we wrote when we consider the external validity (Yin, 2009), especially in this report, the studied company and industry are relatively young in the field. For the generalizability, it is to access whether the finding in this research can transfer to other settings.

Easterby-Smith, Thorpe, and R.Jackson (2015) also generalize a table of validity and reliability regarding different epistemology (Table 3.2). This framework also can be a guideline to reflect what we wrote in the process.

Table 3.2 Different perspectives on validity, reliability and generalizability (Easterby-Smith, Thorpe and R.Jackson, 2015)

Viewpoint	Strong Positivist	Positivist	Constructionist	Strong Constructionist
Validity	Has the design excluded all rival hypothesis?	Does the design make it possible to eliminate plausible alternative explanations?	Have a sufficient number of perspectives been included?	Does the study clearly gain access to the experiences of those in the research settings?
Reliability	Do the measures correspond closely to reality?	Do the measures used provided a good approximation to the underlying concepts or interest?	Will similar observations be reached by other observers?	Is there transparency about data collection and interpretation?
Generalizability	Does the study confirm or contradict existing findings in the same field?	Are the patterns observed in the sample data consistent with findings from other studies?	Is the sample sufficiently diverse to allow inferences to other contexts?	Do the concepts and constructs derived from this study have any relevance to other settings?

Following the guidelines above, we carefully dealt with the data we collected for both audio recordings and written responses. We discussed in a group to see whether we have misapprehension for the data between the two authors of the report (reliability). We also combined the primary data and secondary to access whether our data reflects the research questions we want to develop (validity). However, for Huochebang as a start-up of emerging industry in China with strong features, we noticed that the findings of this case might be hard to generalizable to other contexts till now (Stake, R., 2006).

4 DATA COLLECTION

This chapter introduces the collected secondary data and primary data obtained through interviews. The secondary data mainly includes the background introduction, served market, the merger strategy and the services of Huochebang. The primary data introduced the users' views obtained through interviews.

4.1 SECONDARY DATA

In this part, we collected and summarized secondary data regarding Huochebang. We presented the data that we thought will help readers to understand the company of Huochebang with its background and achievements till now.

4.1.1 BACKGROUND OF HUOCHEBANG

The predecessor of Huochebang was established by Dai Wenjian in 2008 which named Chengdu Yunli Technology Limited Company (Huochebang, 2018). From 2008, Dai Wenjian launched two Apps 56QQ (also named Logistics QQ) and Huochebang one after another which had targeted to shippers and drivers respectively. Those two Apps tried to utilize the Internet to integrate the information resource of shippers and drivers and decrease the logistics cost for both sides.

The founder of Huochebang once jointly established a manufacturing company before stepping into logistics industry. As a shipper, he realized that the logistics cost in China was high even though the operation was less standardization and there were too many transits for one shipment (Geta, 2016). Then, he started a logistics company as a carrier in 2007. During that time, he realized that, as a logistics company, whether own or not own the trucks, it was the same difficult for him to operate in an immature market. He also observed that this logistics market lacked an environment to retain the contract spirits between the crowd of drivers/carriers (service provider) and shippers (service buyer) (Chen, Xiong, 2015). The transport capacity in China is unbalanced, since truck drivers can choose freely and charger much higher in peak season and bet a much lower price (even with no profit) to get a deal in slack season (Geta, 2016).

For those experiences, Dai Wenjian tried to integrate the information for the freight forwarders in China. He took information brokers as the breakthrough

point. Before the era of the Internet, information brokers located in logistics park played a vital role for drivers to find information. The information acquisition was extremely hard for drivers especially in the case that most of the carrier in China are operated by self-employed or family based (Ban, J., 2018). The freight market was lack of standardization for both providers and buyers. The information was extremely asymmetrical (Wang, 2017). When a driver carries the freight from location A to location B, it normally took him/her at least one or two days to remain in logistics park in location B for purchasing and seeking information for a next deal. Even it takes time and money, drivers are always hard to find a suitable deal (Li, Wang, and Luo, 2016).

The utilization of 3G in 2009 in China inspired him. He used QQ group which is a product of Tencent as a communication platform for multiple users' conversation (with maximum 500 users). He recruited shippers and drivers into the same group to exchange freight information in different provinces (Technode, 2015). In 2011, those QQ groups were replaced by independent development APPs of Dai Wenjian's company. This means those platforms no longer rely on other company and Huochebang has grasped the resource and information independently (Huochebang, 2018).

From 2015, Huochebang started receiving the A round of financing and then they successfully received B round of financing which is accumulated to 327 million dollars (Su, 2017). Huochebang also registered their company in Guiyang city in Guizhou Province since Guizhou Province set big data as their development strategy.

4.1.2 BACKGROUND OF CHINA FREIGHT FORWARDER STATUS

The rise of logistics platform is connected tightly with the status of China shipping on road. According to the data from NBS (2017), there were 21.7189 million trucks registered in China 2016 (regardless of different tonnage), which was 5.34% (2.37 million) more than the data of 2015 (13.3 million). The number of new registered trucks was steeply raised from 2008. Before 2008, the new trucks in use were around 1 million each year and the number after 2008 was raised to the range between 2 and 2.5 million. There were 7.5 million registered logistics company and the top 20 logistics companies only account for 2% of the market share. However, the increased number of drivers did not integration of freight industry; this market is still dominated by self-employees which achieved to 90% (Ban, 2018).

For the road freight industry, there were some data collected by the third parties which could provide insights to the understand the market in China (Zhang, 2017; G7, 2017). In the investigation, 44% of drivers chose this occupation based on the reason of low professional threshold, and only 1% of them acquired the undergraduate degree in correspond. Less than 40% of them purchased the commercial insurance, even though 84% of them worked more than 8 hours every day. To do such an intense work, the averaged income was 6000 RMB per month. This was much higher than the average income in China since the number of averaged disposable income for the first quarter of China per capita was 7815 RMB which refers 2605 RMB per month (NBSPRC, 2018).

To present clearly the severed market of Huochebang, we employed another third-party report written by Kwok and Pan (2016). In this report, they assorted different market within freight industry (Figure 4.1).

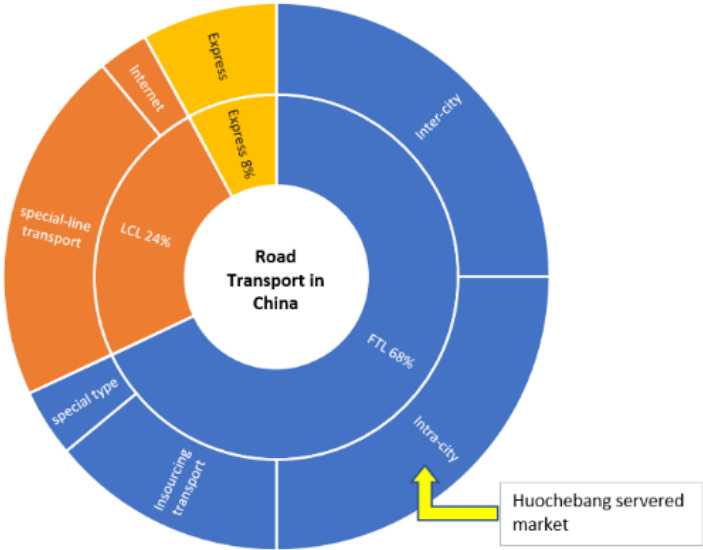


Figure 4.1 Basic facts of road transportation in China (Kwok and Pan, 2016)

From the figure above, we can see that the FTL transport was the dominated type in China. However, intra-city and inter-city transport had almost the equal market share. The targeted market of Huochebang is majorly for the intra-city FTL transport. Combined with the number that logistics cost in

China took up almost 15% of total GDP in China; the potential market of Huochebang is huge.

4.1.3 MANBANG GROUP

Yunmanman, formerly known as Jiangsu Man Yun Software Capital, is backed by Sequoia Capital and Yunfeng Capital, the risk fund co-founded by billionaire Jack Ma, also co-founder of Alibaba. Founded in 2013, Yunmanman is the first freight dispatch platform based on cloud computing, big data, mobile Internet and artificial intelligence technology. At present, the platform of Yunmanman has registered more than 4 million heavy-duty truck drivers and more than 1 million shippers. It has become the world's largest vehicle capacity dispatching platform and the largest intelligent logistics information platform. (Yunmanman, 2018)

On November 27, 2017, Yunmanman and Huochebang jointly announced a strategic merger, and both parties will jointly establish a new group company(Huochebang,2018). Manbang Group is now the second-largest unicorn company in the Chinese logistics industry, following Alibaba Group Holding Ltd's logistics company Cainiao, according to the Hurun Research Institute (Hurun Greater China Unicorn Index, 2017). And unicorns generally refer to companies in the investment community that have a valuation of more than \$1 billion and have established a relatively short period of time. The famous investor Wang Gang served as the chairman and CEO of the group company, and the CEO of Yunmanman Zhang Hui and the CEO of Huochebang Luo Peng served as the group's co-president. The new group company will continue to promote the promotion of China's logistics performance and industrial upgrading as always. At the same time, the original two companies will continue to operate independently. Their business will be strategically integrated with complementary advantages, and data will be shared to improve efficiency. (Huochebang, 2018)

Actually, the business between Yunmanman and Huochebang represents a surprising turn for two companies that even one month before the merger they accused each other of taking unfair competition. The merger is considered as an effective move to put an end to a costly and aggressive battle, as the two companies are seen so similar that no winner was likely to be in the short term. "We realized that cooperation was much more productive than the competition," said Wang Gang. Xu Qiang, the vice-president of Yunmanman, also said that, "Instead of fighting at each other's expense, we figure it is far better for us to devote more time and energy to upgrading ourselves. The

sector is spinning so fast that everyone is likely to be left behind." (CE Noticias Financieras English, 2017)

The new company should be able to match drivers and goods more effectively and on a large scale, with the goal of reducing delays, reducing pollution, and improving the life for 30 million truck drivers in the country. This will be the first step for the Manbang Group to create a revolutionary new transportation system (Adam Minter, 2017). In addition, the Manbang Group will also invest in a series of advanced technologies, such as new energy trucks and autonomous driving technologies. The new company also plans to expand overseas (China Daily, 2017). The Manbang Group has established an artificial intelligence laboratory in Silicon Valley, hoping to acquire cutting-edge technology and top talent (China Daily, 2018).

4.1.4 SERVICE PROVIDED BY HUOCHEBANG

The matching service for freight and truck is the major business for Huochebang. This business determined how many users will install the App. However, other services regarding transport are also provided and those after-market services are treated as the business that can create additional value for all users.

Basic Service

Huochebang is known as the truck freight version of "DiDi" and has built up the largest national cargo source information platform in China, which emerges a large ecosystem that brings together big data for parties involved in credit, vehicle, cargo, users, finance, automotive and trading. Vehicle cargo matching platform is the core competitiveness of Huochebang. The accumulative collection and integration of this platform has exceeded 20PB; the daily new data storage capacity exceeds 10TB; the number of requests per day exceeds 4 trillion times (China.com, 2017). The effective extraction and application of the value of the data drive the continuous innovation and development of the business of Huochebang.

As for specific products, there are three apps launched by Huochebang which are Huochebang for truck drivers, Huochebang for shippers and Huochebang for Vehicle management respectively (Huochebang, 2018). The previous two Apps are the major applications for market promotion. Shippers use the shippers' version to publish transport information and the service provided by the APP including searching for a truck, releasing the information of cargo, online garage, cargo insurance, vehicle positioning, value-added services

(identification, logistics business card, etc.). For the transport information, shippers must fill transport details such as the place of departure and destination, truck requirement (truck type and truck length), cargo information with weight or volume, carriage price and loading time. Once the transport information is published, the truck drivers will see it from the drivers' version and they can determine whether to contact with the shippers. However, only authorized shippers can announce transport information and only authorized drivers can see the contact information of shippers. For the drivers' version, the services provided by the APP cover searching for cargo sources, subscriptions, ETCs, and malls. Drivers can search the freight information by location and truck requirements. They can also subscribe to specific routes for the freight information. Once they prefer to get the deal, they can contact the shippers. To get the deal, drivers should pay the information fee (normally 200 RMB, data got from interview) through the platform to the shippers who publish information. This fee can be treated as a fee to purchase the information and a fee of earnest money to get the deal.

In addition to the apps, the nationwide road logistics index is another product provided by Huochebang. The nationwide road logistics index jointly created by Huochebang and Alibaba's big data team fully reflects the flow of goods, distribution of goods and distribution of vehicles within the territory of China. The data of these indexes are all derived from the data collected by mobile terminals and aggregated into the cloud computing platform and are statistically calculated through multiple algorithm models of the cloud platform. The following figure is the terminal display of the logistics index of the logistics big data information platform (Huochebang, 2018). The displayed contents are national transport capacity distribution, real-time freight information, freight activity index, distribution of cargo types, capacity index conditions, and vehicle types.



Figure 4.2 The terminal display of the logistics index of the information platform (Source: Huochebang Website)

Service for Auto Aftermarket

Huochebang, based on massive amounts of accurate big data of users and logistics, enters the auto aftermarket, which refers to a series of market activities arising from various subsequent needs and services around the operation and use of trucks. Huochebang solved the actual needs of users by inventing the ETC online recharge technology, the hand-held integrated mobile card issuance equipment, the ETC user anti-counterfeiting, ETC wallet system and other innovative technologies and services. In addition, by accumulating the behavior data of each participant in the logistics chain and combining the powerful data analysis engine in the background, technical difficulties such as credit granting, and financial risk control have been solved. The emergence of ETC BaiTiao products has also promoted the screening of high-quality users, the cultivation of users' financial consumption habits, and the construction of credit information systems for industry practitioners. In October 2017, the total number of trucks ETC issued exceeded 1.2 million, and the daily recharge amount has broken 100 million. Huochebang has become the largest card issuer of Truck ETC in China, and the total ETC bank loan of the ETC BaiTiao production has reached 2 billion.

Other services targeted to drivers and shippers are also provided via the Apps. For example, Huochebang cooperated with Hua Tai insurance for both drivers

and shippers. There are three types of insurance for drivers: the insurance of accident; insurance of consignment canceling (the insurance to the loss of drivers who have already departed, however, the deal is cancelled by shippers) and insurance of freight (to drivers who can't get the carriage fee when there is a loss of goods by accident). Similar insurance and other insurance for goods itself are provided to shippers.

Besides insurance, the App provides more other services, especially to drivers. For instance, Huochebang cooperated with different filling stations all over the country. Users place the order via the platform can get a preferential price to fill gas (However, they will pay from a third party). The financial service is also provided to drivers. Truck drivers can loan money through the platform and purchase truck on its online store. During the sale of new cars in August 2017, Huochebang seized orders for 589 new trucks in just 15 days, with a turnover exceeding RMB 200 million yuan (Huochebang, 2018). Besides, other services such as distance calculation, searching maintenance point and parking lots (with vacancy information) are available.

4.2 DATA FROM INTERVIEWS

This part we collected and summarized data from in-person and online interviews for users of Huochebang. We categorized them into users of driver version and users of shipper version respectively. The in-person interviews were conducted at a logistics park in Changsha city. We talked to random people in the park to express our identities and research goals and then invited them to accept the interviews.

4.2.1 USER OF APP DRIVER VERSION

Users of this version are truck drivers. They downloaded the App to their mobile and registered themselves on the platform. They should upload their identification card and driver license to the platform for a platform authorization. Once they were authorized, they could freely search and surf the freight information on the platform and further contact with the person who published information (unauthorized drivers could not see the contact information).

Pre-Huochebang's era

In the pre-Huochebang's era (or similar mobile Apps), after truck drivers offloading at the destination, they had to find the local logistics park for next deal. Those logistics parks provided services such as parking, maintenance,

board and lodging and so on. Most important of all to them was to find the freight information from the information sectors. Those information sectors are stationed inside the logistics park. And the drivers would wander around different stores to find a suitable shipping job. Some agency worked on special-line transportation that they just provided freightage information between locations A to location B, some agencies provided transport information from local to national. The drivers who had the desired destination would find the special-line agency to inquire about the deal.

Drivers should state their desired destination, loading time, the type of cargo they can carry and their truck information to information sectors. Then the middleman would provide suitable sources of information and a quoted price for this task. It was normal to have a negotiation between information sectors and truck drivers for the freight prices. When truck driver accepted the price, he should pay the information fee to information sector to get the shippers' information including the address of loading and shipper's telephone number.

However, this process restricted the mobility of drivers. Drivers had to arrive at one specific logistics park to find information. As one interviewee of truck driver said, 50 kilometers was demarcation line for him to access a logistics park. In other words, if the distance between offloading and logistics park was less than 50 kilometers he would drive to the logistics park. It took time and money (fuel charge and the entrance fee of logistics park). Drivers had to spend at least one day to stay in the logistics park to find a suitable deal. If one day was not enough, then an extra day would be spent or even move to another logistics park. Besides, most of the information sectors sell information unilateral which refers that they only have information from local to outward. For truck drivers, it's almost impossible for them to have a plan in advance. They always had a process that, firstly, arrived at one place to discharge cargo for last transportation, then went to a local logistics park for a next deal, at last, loaded the cargo in the locality and went outward to a new destination. This process would go around and repeat it again.

After Huochebang's era

By using Huochebang, truck drivers can surf the information online and then contact information sectors via mobile instead of going to logistics park in person (Figure 4.3). They surf the massive freight information all over the country via the platform and call each publisher. They can know the general location of load and unloading, transport requirements, cargo type with weight or volume etc. from the published information. If they have interesting for the deal they will call to information publisher for a detailed information

and a quoted price of the task. Drivers will bid the deal separately on phone. Normally, the bidder with the lowest price will get the job since information sectors always want to decrease the cost for shippers or for themselves. Once drivers get the deal by bidding, they send the information fee (via the Huochebang's platform or Wechat) to people who publish information and then receive the precise address of loading and shipper's telephone number. The activity of searching for information has moved from offline to online. It's also changed drivers' working schedule since they can call to different agencies in transit (it normally has two drivers in one truck), the stop in the logistics park is no longer necessary. Drivers can unload in one place and drive directly to next place for loading new cargo. Besides, by searching the information all over the country, the planning in advance for transportation is possible.

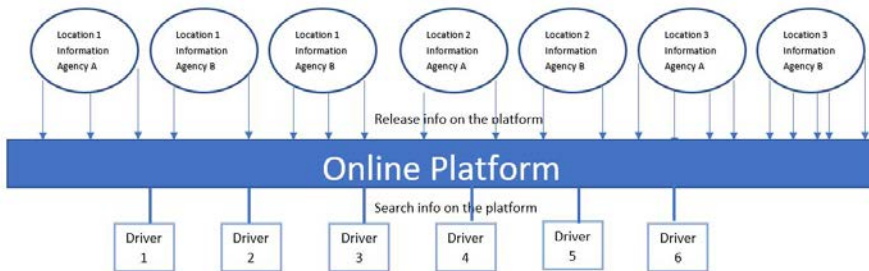


Figure 4.3 The process of searching information via Huochebang (Source: Authors)

Attitude towards the App

From the data collected by interviewees and random pass-by drivers in the logistics park, it showed mixed notices for both positive and negative to this App and the company behind it.

Some respondents said Huochebang have destroyed the whole industry for truck drivers since it forced the price down of the freight. Once the agency published a freight information online, he /she will get at least dozens of calls from different drivers. Since the deal is always sold to the driver with lowest bidding price, the Internet intensifies the competition among truck drivers. Besides, the published prices on the platform (not all information on the Internet disclose price) help the real shippers to know the base price for a transportation. It also contributes to decrease the freight price for the whole industry.

However, one supporter of Huochebang in our interviews thought the decreasing price for whole industry was not caused by this App, it was the result of the popularity of the loan. He said it was hard for most people to pay a full payment of a truck which worth hundreds of thousands of RMB. Right now, to pay a relatively small down payment can help the borrowers own a truck that means more people enter the industry and accelerate the competition.

The opponents of the platform thought it was only more convenient to see the information, however, it was harder to make a deal. He explained that, in the past, they went to logistics park to find freight information, once they paid the service fee, the deal was almost struck. But now, the paid service fee on the Internet is no longer a guarantee. The deal can be canceled by information sectors if they find a lower bidder. It wastes the time and energy of drivers even though they can get the refund of the service fee.

For other services provided by Huochebang, most of the drivers thought it was insignificant. They didn't pay attention to diverse services on the App. They might be willing to try a discounted service. In general, they didn't rely on other services on the App besides information searching.

For the credit problem, most of drivers approved the real-name registration system of the platform. However, they also recognized that even though at the time of pre-Huochebang's era, it was scarce for them that couldn't receive freightage. The risk was normally that when drivers had already set out to the loading place and had traveled for a distance, then they heard the deal was canceled by shippers. This risk has not been changed yet, and truck drivers have to ask help from information sector to claw back their loss (road toll and fuel charge).

For the loyalty question, respondents show different attitudes as well. One supporter said he would like to use the App even Huochebang charges a fee to drivers (there is a rumor that the truck drivers' version will collect fees in the future, even though this rumor had been denied by Huochebang.) However, other responses said that if there are some other Apps or other channels that can help them to find the source of information, they would give up using this one. Quoted from one interviewee, he said: "I preferred to talk to information sector in person. If I saw them, I would give up using this one (Huochebang). But you see, they (shop front) are all closed (to run online), what I can do?"

4.2.2 THE APP OF SHIPPER VERSION

Even though the App is named ‘Huochebang- the shipper version’, its clients are majorly information sectors and stuff in logistics companies. This platform helps information sectors contact massive of truck drivers for one information source and sale the information to the lowest bidder. They should download the App of shipper version and register on the platform as same as drivers. There is also an authorization process for users of shipper version, however, it is not as strictly as users of driver version. A business card uploaded can be approved by the platform. Once users are authorized by the platform, they can publish freight information on it. The freight information is always required basic detail such as general location of freight, cargo type and required truck type. Nowadays, users of shipper version have to pay an annual fee to publish information.

Pre-Huochebang’s era

Before the large-scale installation of Huochebang’s Apps, information sectors who act as the middlemen between shippers and truck drivers should physically stay in the logistics park to sale the information. The logistics park normally builds some low buildings in a corner and rent out these stores to the agencies at a high price.

Information sectors stayed in the stores and listed blackboard with the source of information. The information sectors we interviewed said that, in the past, they normally opened the shop in the morning and closed the shop afternoon. They used an information system developed by a local company which called ‘Terjoy’ (www.terjoy.com). This local system only had information from local to outward and it was not open to truck drivers. In general speaking, it was easy to have a good business in the past.

After-Huochebang’s era

Information sectors didn’t realize the threatens brought by Huochebang in the beginning. The salespeople brought all kinds of small gifts to visit each information sector to ask for installation of the App of Logistics QQ (the predecessor of Huochebang-shipper version). The salesmen promised this App (Logistics QQ) would never charge the fee to clients. They also claimed that this App only served to information sectors and would never be installed by the factories (the real shippers). If anyone knew a factory who installed the App, they could report to the Huochebang and get a reward from the company. With the successful Below-the-Line advertising, more and more

agencies and drivers installed and used this platform, and both conceived the convenience from it. For the information sectors they do not need to stay in the stores, they can do business wherever they are. It also implies that information sectors no longer need to pay the rent in the logistics park at a high price. Some of them didn't renew the lease to logistics park.

With the development of informatization for the whole industry, information sectors felt it was more and more difficult to do the business. The most obvious evidence is that the decreasing of the freightage. As one interviewee said, the freightage is less 30% than before, it led to the decreasing information fee earned by information sectors as well. Besides, the work schedules of information sectors are totally changed. The same interviewee said that he got the call by the truck drivers from 6 am to 12 pm. Every source of information he published online, he could get at least dozens of calls. In general, he could get averaged hundreds of calls per day. Furthermore, the deal was more and more difficult to be settled. As we mentioned before, the drivers suffered a lot of activities of breaking the contract by information sectors when they found the lower bid. The similar things also happened on information publishers. When drivers found a new deal that could earn more money, they would find all kinds of excuse to break the appointment, for example, they were sick, the truck had some problem, or they just said the truth that they would not take this deal. And the information publisher had to find a new driver again. The higher competition and easier transaction mode made the dishonest behavior for both sides became more common.

Then, the users of shipper version felt furious about the company for it broke the words, especially from the information sectors. First, Huochebang started to charge the fee to its users of shipper version. Anyone who wants to publish information on the platform must pay an annual fee (1688 RMB a year). Then, the users felt the threat that Huochebang allowed the factory to register on the platform. They found that more and more unqualified people could publish information on the platform without strictly review by Huochebang. Those people are not from a professional agency or certified logistics company with business licenses, however, they know the source of information (usually by their personal relationship with real shipper) and sell the information to truck drivers through the platform. Information sectors found it was useless to report to Huochebang. They also observed that they lost some customers due to the clients themselves register the shipper version and no longer need the intermediary. This is a shock for information sectors since some of them live by selling information. However, it should be noticed that some information sectors in the logistics park have their own trucks (or truck team) which made

their role as a mixture of information sector and logistics company. Right now, the fear and anger are pervasive among information sectors. Many of them believed that the goal of Huochebang is to eliminate the existence of offline agencies and Huochebang itself want to be the only actor between carriers and shippers in the market.

Similar with the truck drivers, the information sectors approved the real-name registration system of the platform. Since real-name authentication can help shipper to avoid the steal activity by truck drivers. In the past, the shipper had the risk that the drivers used the face identification and counterfeit license plate to get the transport deal and then disappeared with the cargo. The authentication by platform significantly decreases the risk of burglary of goods. For other service provided by the App, they used at a low frequency. One interviewee even described the after-market service provided by Huochebang as unreliable.

Attitude towards the App

Unlike the truck drivers, attitudes towards the App of shipper version users are generally negative. The extent of negative attitude is based on the role of users. Information sectors have a stronger negative attitude towards Huochebang for its bad faith and threats. For the practitioners of the logistics company, they approved the convenience brought by Huochebang since they do not work in logistics park and it was more complex for them to find a driver in the past. Besides, their business is much broader than selling information so that they feel less threat from Huochebang than pure information sectors. However, they still express their unhappy for Huochebang breaking the words of never charging the fee.

Most of the information sectors sensed that Huochebang (Yunmanman) would collect fees soon when they heard Huochebang and Yunmanman were merged. They pinned their hope on the contract between Logistics QQ and themselves that they signed before. In that contract, Logistics QQ promised that no charge to clients forever, no installation by the factory (real shipper) forever. When Huochebang claimed that Logistics QQ is another subsidiary under Huochebang, the information sectors realized that the constraint of the offline contract was limited. However, most of them still paid the annual fee to the App and they admitted that the price was acceptable.

The activity of collecting fee contributed to the distrust by information sectors and it also enlarged their bad imagination to Huochebang. Interviewees from information sectors thought that as the monopoly company in the market who

starves for making a profit, Huochebang will overcharge to its clients. The annual fee will be increased year after year in users' speculation. They also believed that Huochebang will charge a fee from truck drivers in the future (even though Huochebang had denied this rumor yet).

In deduction of interviewees, they thought it was predictable that Huochebang would like to replace the offline information sectors to become the only intermediary between shipper and truck drivers since the profit earned from information sectors (annual fee) is limited. By enlarging profit, Huochebang needs to serve to factory (as the real shipper) directly.

However, no matter how the information sectors dislike the App, they still have paid the annual fee for at least one member. They admitted that without Huochebang, it will be hard for them to find a driver sometimes since most of the truck drivers don't come to logistics park in person now.

4.2.3 LOGISTICS PARK

By searching logistics park to do the interview, we realized that the hit from the online platform to offline logistics park was obvious. We arrived at two logistics parks provided by the App of truck driver version and found that they were both closed. Then we went to another logistics park that told by passengers. To talk with stuff in the logistics park, they said that the logistics park boycotted personnel from Huochebang and refused them entering the park.

One interviewee (users of shipper version) worked in the logistics park said that at least two logistics park he heard had been closed and the logistics park where we did the interview had remained a continuous loss for two years. The location rental of logistics park is two million a year, but half of the park is idle now. We also noticed that less than half of the information sectors were opened during the interview, it implied the logistics park also lost a lot of income by renting out properties to information sectors.

One interviewee of truck drivers in the park said that he knew a lot of boycott by logistics park. And he also knew a lot of logistics park had already been closed. He thought it was not necessary to have logistics park since the drivers can park their truck in the factory that the place to load or unload cargo. However, when we asked why he came to this logistics park, he replied there were some mechanical defects of his truck and he had to come to logistics park for maintenance.

4.2.4 THE FUTURE OF INFORMATION SECTORS

All interviewed information sectors expressed their worry about their roles in the future. They know the informatization is irreversible. What they can do is no more than switch from one platform to another since the operation model has already been changed so that they have to rely on the online platform to do business now.

One interviewee said that to face the future, he would like to take the approach of “muddle through” which refers to not too pessimistic however it was hard to be optimistic. He thought about what they can do is very limited in front of the innovative technologies. ‘We all (including the drivers) will lose jobs when the automobile is popular he said. Right now, he still runs the business, since he still masters some source of information for the reasons that he has good a relationship with some factories.

Other interviewees as information sector thought the intermediaries would not disappear especially in the recent years in China. One of them even laughed at the factories who installed the App privately and affirmed that factories are shortsighted on business. He explained that the role of information sector is quite necessary for both truck drivers and shippers since they both want to maximize their profit.

For factories, they normally don’t have the skills in negotiation with drivers. And they don’t know the regulations on the road either. It’s not easy for them to find a suitable driver. Besides, to answer different calls from different drivers is time and energy-consuming. ‘Image that’ he said ‘a local businessman received dozens of calls from different truck drivers with different dialects! How annoyed!’

The interviewee also believed that the information fee charged from truck drivers were reasonable, and truck drivers should not be hostile to information sectors. There were two reasons claimed by him. Firstly, once driver contacts the factory, they have built a personal connection between them. Next time, the driver can call the factory in private and avoid the information sectors. It implies that the fee can be split for several times in practices which is a totally reasonable price compared to the earning of truck drivers. Secondly, the information fee also covers the after service such as providing necessary information on transportation, regulating dispute between shipper and driver and so on. It’s still a non-standard market; the middlemen between shippers and drivers provide a buffer zone and thus protect both sides.

In fact, the truck drivers do not believe it is good to shippers without intermediary either. One interviewee talked about a recent event he heard. A factory employee registered on the platform for the sake of saving cost for the company. He published requirement for 10 tons cargo online and called three trucks to undertake the task. After loading, truck drivers found the actual weight of cargo was 20 tons. Then the shipper had to pay extra 15 thousand to finish the shipments since drivers had already departed. The interviewee commented that the employee had published information in a wrong format, he should say a range of weight instead of explicitly number when he did not know the actual number. Besides, the negotiation skill of the employee was poor. For a professional intermediary, 3 thousand RMB for an additional charge is reasonable. From this interviewee's view, he did not think the platform can replace the role of offline agencies.

5 ANALYSIS

We thought the previous chapter for the data we got from other sources (secondary) and interviewees (primary) can partly explain the research question 1 for its value-created. In this chapter, we firstly have a brief discussion on Huochebang and then utilize the PESTEL and SWOT to discuss the feasibility of this business model in China with the suggestions of the company.

5.1 THE ROLE OF HUOCHEBANG AND THE VALUE IT CREATED

The role to directly users of Huochebang

Huochebang is an Internet company that gathers a crowd of information agents, logistics companies, and truck drivers to publish and search freight information via its platform. It changes the traditional process for drivers that should be presented in logistics park physically and chat with different information sectors to get a deal. The platform also releases the information sectors and logistics companies from the restriction of space when they want to find a truck driver. By using this platform, they can make the deal with drivers all over the countries anytime and anywhere. This contribution further helps the information sectors do not need to pay the rent to logistics park since they could work from home. Besides, the massive calls from the drivers on the platform contribute to reducing freight cost. It might be not favored by information sectors; however, the decreasing freightage helps the logistics companies to decrease their operation cost.

It should be noticed that information sector and logistics company play different roles on transportation even though they use same products of Huochebang (shipper version). Information sector is a typical role of selling freight messages to drivers in a market full of asymmetric information. Some information sectors live only by selling information while others undertake the transport tasks from shippers. The later ones act more like logistics companies or third-party logistics companies which are determined by whether they have their own trucks or not.

In general, Huochebang as an information platform suits perfectly of the advantages of cybermediaries we mentioned in chapter 2.3.2 by Jallat and Capek (2001). This platform aggregates the massive demands and supplies

from its massive users (aggregation). It has built a real-name authentication system which improves the security of deal especially for the case between two strangers' interaction via the platform (trust). The platform also decreases the complexity of data handling for the massive information exchange happened through the platform (facilitation). At last, as matching-cargo-with-vehicle is the major service of the company, matching is a typical feature of the platform and it especially suits for the case that shippers or carriers have specific requirements (matching).

When we adopt the concept of cybermediary for analysis, it is interesting to see Huochebang's role between shippers and drivers. By providing a platform to gather massive drivers and shippers' representatives (information brokers and logistics companies) all over the country, Huochebang acts the extra role located between shippers and drivers as the intermediary between brokers and drivers. However, the extra tier made by Huochebang contributes to increase the information transparency and decrease the freightage cost for the road freight industry.

From the data, it seems that Huochebang is friendlier to truck drivers. Truck drivers are the biggest beneficiaries of the products of Huochebang till now and they still get the free services provided by Huochebang yet. At the same time, the users of shipper version are not so glad by using the product of Huochebang, especially for information sectors. Even though Huochebang releases the restriction of working space of information sectors, it also brings threats to them. Unlike truck drivers, it is hard for us to find Huochebang's attitudes towards information sectors. Compared to build a bridge between shippers and truck drivers, Huochebang seems to express more interesting to build a closed-loop for truck drivers which refer to covering all kinds of activities for drivers in transit. This development strategy is corresponding to the vision of Huochebang that to make 30 million of freight drivers live with more dignity (Huochebang, 2018).

The role in the context of the Chinese market

As a company of concern, it also worthy to discuss why this (this type of company) is favored in China.

The immature logistics industry has lasted for some decades in China and it is not treated as a very serious problem since China is an emerging country and the immature traditional industries within the countries are reasonable. Besides, with the development of the economy, it is optimistic to believe that the problems in the immature market will be solved by either market initiative

with a pursuing of high efficiency or government proposals. Just as the environmental problems occurred in China, with the development of the economy, all stakeholders from government, companies, and individuals pay more attention to environmental issues.

However, the popularization of Internet and smartphones accelerates the improvement of logistics industry in China. By grasping and connecting the end-users, the Internet can integrate massive users and their data, to impact the offline market and further to reform it. This vacuum market that was hard to be realized in the past nowadays is full of opportunities, even though the business models and profit models of the market are not clear. The immature logistics market provides a huge potential for practitioners to consider whether Internet can play a vital or even a dominant role in those traditional market in the future.

The Chinese government's proposal of 'Internet +' which combines Internet with traditional industry including logistics also give confidence to startups and their investors. Besides, the preference of venture capitalists in China is also fond of software and information service industry. According to the data from the Chinese government, in 2016, 47.55% of venture capital was invested in this category which is exactly the area of Huochebang located (MOST, 2018).

Besides, by integrating the crowded users, the impact of Huochebang is emerging. The bankrupts of logistics parks caused by the arising of Huochebang and its online platform were significant proofs that this platform indeed could impact or even restructure the freight industry. The increasing power of influence by the platform also gives the confidence to its investors and further make a positive cycle that makes the investment received by Huochebang is much more than every last time.

However, the success of Huochebang (without consideration of the profitability of company) is more like a result of joint forces. The willingness of improving efficiency from the inside of industry is an important reason. However, the external factors such as policies supported by the government, invest fever by venture capital, the popularization of smartphone usages should also be stressed when we talked about its success.

5.2 A COMPARISON OF LOGISTICS PLATFORMS IN CHINA.

We chose two other companies which also operate O2O logistics platform in China and discuss their different business models. These two companies are Fuyou truck (<https://www.fuyoukache.com>) and 58 Suyun (<https://suyun.daojia.com/>) respectively (Table 5.1).

Fuyou truck provides a platform between shippers and professional brokers. There are more than 25,000 professional brokers and more than 68000 shippers on the platform now (Fuyou, 2018). Shippers fill in their requirements online for inquiry and the platform will offer a price based on its system calculation. Then shipper places order online and the platform will dispatch the corresponding brokers to the shipper and each broker will bid price anonymous. After selecting the broker, shipper pays the freightage to the platform. After confirming the cargo has arrived at destination in right conditions, the platform will pay the money to the shipper. The platform doesn't serve to the driver directly, however, it asks the driver to install client developed by Fuyou as surveillance equipment.

The 58 Suyun is an online platform for inter-city freight transport. In this platform, the price is fixed, and it only offers several fixed types of vehicles on the platform. When the customer (shipper) place the order and pay it to the platform, the system will dispatch a nearby truck to the customer. This system guarantees the transparency of the prices and it acts the role between shippers (SMEs) and drivers (Daojia, 2018).

As the table presented above, it shows the big potential in logistics market in China especially in the area of 'Internet +Logistics'. Huochebang and Fuyou Truck seems to aim at a different link in transport. Huochebang serves as a platform between truck drivers and brokers/logistics companies while Fuyou Truck serves platform between shippers and brokers. However, they both mentioned building a 'closed-loop' for their business in the future. It seems that their share the same ultimate goal of freight task since it is nonsense to build a 'closed-loop' to either upstream or downstream if there is no transport activity happened.

Working in the same area of FTL transport in China, their main difference is the attitude towards broker (information sectors). Compared to the ambiguity attitude of Huochebang', Fuyou Truck stresses the importance of the brokers and they do not involve the relationship between brokers and truck drivers.

Fuyou Truck believes the transport capacity in China is superfluous that refers to a buyers' market, and a professional broker ought to have fixed traffic capacity (truck drivers). In Fuyou Truck's view, the brokers undertake the task of customer-service between shippers and drivers and they partake of the platform's responsibility to settle disputes. On the contrary, Huochebang must deal with the complaints from their massive clients by themselves.

Another difference between Fuyou Truck and Huochebang is the payment. For Fuyou Truck, a deal must be paid through the platform in order to be finished. This creates sizeable cash flow for Fuyou truck. At the same time, the payment through Huochebang's platform is not mandatory or it is easy to evade by the users. According to the data collected from interviews, Wechat payment is the favorite tool for users of Huochebang for both shipper version and driver version. Even though Huochebang tries to build a payment system that integrates different commercial activities on their platform, for example, restaurants, oil stations and maintenance stations. However, the after-market services provided by Huochebang are not attractive to their users yet except ETC services.

For 58 Suyun, it shows a business model of disintermediation that connects shipper and driver directly through the platform. 58 Suyun works in a different market for inter-city freight transport. As shown in Figure 4.1, the inter-city transport has an almost equal market share as FTL for intra-city transport. The platform regulates the freightage and working standards to drivers who were also idle transport resource in the past. Those drivers with a van or small truck used to find transport tasks in logistics park and now they accept the order through the platform (Suyun, 2018.) However, to build a platform that links shipper and driver directly is not easy. In fact, 58 Suyun is one business developed by 58.com Inc. (founded in 2005) who is the largest information marketplace that serves to local merchants and individuals in China. Before entering into freight market, 58.com had accumulated enough group of customers, technology support, human resource, and capital. And its model decided it could not build a national network (at first). It had to serve to a small number of cities in the beginning and then copy the procedure to other cities and build the local system again and again.

The model of 58 Suyun shows the complexity of disintermediation. In fact, before Huochebang and Yunmanman merging, Yunmanman once launched an App (<http://www.yunma1688.com/>) that linked to shippers and drivers directly in the middle of 2015 and they claimed that this platform would

Table 5.1 The comparison between Huochebang, Fuyou Truck and 58 Suyun (Source: Authors)

	Huoche Bang	Fuyou Truck	58 Suyun
Establish time	2011	2015	2014
Target customers	Truck drivers and broker (information agencies and logistics company)	Shipper (factory and logistics company) and broker	Shipper (factory) and drivers
Users number	4.5 million registered drivers 0.88 million registered shipper brokers	68000 shippers and 25000 brokers	1 million registered drivers
Transport range	Intra-city	Intra-city	Inter-city
Carto type	FTL	FTL	Chartered car
Value-added service	Many services in after market	Medium, insurance and financial service	Less, loading and unloading activities to shipper
Payment platform	Non-mandatory, can pay information fee through the platform	Mandatory, pay freightage through the platform	Mandatory, pay freightage through the platform
Payment	Information fee is negotiated between brokers and drivers	The broker bid the transport task	Platform state the freightage
Profitability	Annual fee to clients, ETC services	Commission from broker	Commission from driver
Financing situation (till May of 2018)	0.327 billion dollars in Series B financing, 1.9 billion dollars in 2018 after merging with Yunmanman	0.4 billion RMB in Series C financing	No disclosure, the mother company has market value over 10 billion dollars

replace the intermediaries between shippers and drivers. However, this App was boycotted by information sectors seriously; besides, the speed of spending money and the complexity of building a platform were underestimated by Yunmanman. Till early of 2017, Yunmanman changed strategy from intermediation to data mining and offline services construction (Guigu, 2017). And till May of 2018, this App had been shut down. It's reasonable that this experience will give some lessons to both Yunmanman and Huochebang, even though they have far more capital than before.

In general, among the O2O logistics platforms with heterogeneous products or homogenous products in China, Huochebang showed a satisfactory performance. Its notable advantages compared with other companies are the huge amount of users and the high investment they received. However, as we always doubt, the ability to transfer the massive users to profitability is still not clear so far.

5.3 PESTEL

The PESTEL model is a tool to analyze the outside environment of a company. It also can identify the outside impact of both positive and negative side. The detailed view from political, economic, social, technical, environmental and legal point is discussed below.

5.3.1 POLITICAL FACTORS

The Chinese government proposed the thirteenth Five-Year plan that set forth the development goals of national economy between 2016 and 2020. In this proposal, it stresses the importance to of reducing enterprise logistics costs. It also made explicitly plan to develop better modern comprehensive transportation systems. Besides, it brought forward the 'Internet +' plan which refers to realize the Internet of Things including Internet-based supply and logistics chain. The service that Huochebang provided is consistent with this plan and it should get political support for its business (NDRC, 2016).

Huochebang has gotten political support from the Guizhou Province for policies and operation. The mayor of Gui Yang city (the capital of Guizhou province) once promised to 'give the green light' for helping the development of the company (Tian, F., 2016). For Yunmanman, their CEO also has a close relationship with the government. He is the member of National Big Data Advisor Committee which is initiated by the Chinese government. Both Huochebang and Yunmanman are favored by different local officials for inspection and investigation.

Guizhou is an inland province that located in the southwest of China. It is a relatively underdeveloped province for its complex geographical position. There are many mountain and plateau in Guizhou which is hard to living and develop the industry. Besides, it is far away from the economic centers of China. Recently years, the local government decided to develop 'big data' by utilizing its unique natural resource. It has abundant and cheap energy and water resource with a cool climate and it has seldom natural disasters in the record. All the conditions are similar to the data center of Colorado Springs in the USA except the intelligent resource (Verge, 2013). However, this also refers to a relatively cheap human resource. Thus, the central government decides to help Gui Zhou province to become 'the city of big data' and it means a lot of policy incentives to attract enterprises. Those policies include that enterprises in a related industry can get a rent relief, discounted energy price and allowance; financial support for enterprises, brainpower and industrial employee; tax preference and even a government reward (Guanshanhu Government, 2017).

In such an atmosphere, Huochebang as an Internet company who deals with massive data every day can conform to receive preferential policy provided by Gui Zhou province. And it is understandable that they change their registration address from Chengdu City (Sichuan Province) to Guiyang city. It seems a win-win situation for both Huochebang and Guiyang local government. And those cooperation is widely reported in the public media. Huochebang got the preferential support and show a good relationship with the government while the local government had an example company for conduct propaganda. What it is worth pounding, from the official website of Huochebang, most of the jobs to recruit are in Chengdu instead of Guiyang. And their operation center is still in Chengdu. Besides, in one report, the CEO of Huochebang stress that Huochebang didn't leave Chengdu and will be still in Chengdu (Wu, L., 2017).

For the political aspects, Huochebang seems located in a very favorable position for its essence of an Internet company who utilizes the technology of big data, cloud computing, and artificial intelligence. It is also a company who aims to increase the efficiency and decrease the waste (pollution) that shares the same goal of supply-side structural reform in China. In general, Huochebang is favored by the government for the reason their business is what the government want to develop. However, whether Huochebang can transfer the outside support to its development is still a question, at the same time, its development is also affected by the relationship of local governments (for example the competition between Chengdu city vs. Guiyang City) and

central policies tendency (for example, the Ulanqab City in Nei Mongol is chosen as another data center by central government). Besides, Huochebang is also under the pressure that shows a good performance for its business on account of policy support.

5.3.2 ECONOMIC FACTORS

As an Internet company within logistics industry, Huochebang is affected largely by the economic tendency from national and industrial level. By analyzing China GDP annual growth rate, it shows that after rising again from the financial crisis of 2008, the index achieved the highest point in 2011 for 10.6% in recent 10 years. Then the growth rate went downward steadily and remained stable at around 7%. The GDP annual growth rate of 2017 was 6.9%, and the first quarter of 2018 kept almost the same pace for 6.8% (Husna, R., 2018). Compared to the forecasting global growth rate of 3.1%, the Chinese economy still shows a good tendency. However, regarding the growth rate of 6.5% of governmental expectation, it shows that Chinese government is no longer to engross a high-speed development and it is even a challenge for them to keep the on-going growth rate.

From a financial aspect, the increment of money supply (M2) in China has been run down which refers that less money will be invested in all kinds of businesses. In other words, the attitude toward investment will be more cautious than before (CEIC, 2018). Since both Huochebang and Yunmanman have not realized making a profit, their businesses have largely relied on the investors and their capital. Once there is less money on the market, the start-ups will be hard to pay for the excessive cost of operation and unable to attract customer by offering discount services.

For logistics industry, the total logistics cost of China in 2016 achieved to 1.11 billion RMB which had a year-to-year increase of 2.9%. However, the proportion of total logistics cost in total GDP had declined. It refers to that efficiency of logistics industry had been improved for less cost spent on logistics activities and it can satisfy more transport activities for the whole society. Besides, for the Internet industry, it also shows a cheerful prospect. For example, the turnover of sharing economic market in 2016 achieved 0.345 billion RMB which had an increase of 103% than the previous year.

However, logistic as important activities throughout the supply chain is affected by domestic trade and international trade. The political black swans such as Brexit and winner of Donald Trump for president of America will also impact on the economy to all over the world especially to China which

is largely relying on exportation. Take the trade war initiative in March of 2018 for example, if the trade war will be a long-term activity, it will impact the operation for many factories in China who export products to the USA and it will also harm the upstream and downstream of the manufacturing including logistics companies.

To sum up, the economic tendency as a factor at the national level is not very optimistic. However, for a company interacted with Internet and logistics industry, it is in a right path for development.

5.3.3 SOCIAL FACTORS

Unlike other crowdsourcing platforms which are always connected with end-users, the employee in road transport has a very small population base in the supply chain. However, as users of the Internet company, they should own and have the ability to operate a smartphone. In 2017, the mobile's user had achieved 1.41 billion in China which refers 102.5 mobiles per hundred people. This guarantees the mobility of communication during transportation, especially for truck drivers. There were 0.772 billion Internet users in China, and 0.753 billion of them surf the Internet through mobile (NBS-PRC, 2018). According to Consumer Barometer, a statistic tool by Google, it shows that 83% of people in China use the smartphone which is higher than the percentage of the USA for 78% and lower than the percentage of Swedish user of 88% (Consumer Barometer, 2018). Besides, regulation of Chinese government restricts the age of truck driver's license holder (A2 License) should be between 25-50 years old, for those people, they have a higher percentage of using smartphone. In general, the large population base of smartphone user laid a good foundation for drivers and shippers doing business through mobile.

Besides, the population aging might have an impact on the business of Huochebang. As China has already been a population aging society, the median age of the population in China has moved to 37 (Knoema, 2018). As an emerging country, the trend of the aging population will bring various pressures on society and economy. Specific to the logistics industry as a labor-intensive industry, the aging trend of the population might impact the number of people worked as drivers and further have a negative impact on Huochebang.

In addition, the oral skill of Mandarin Chinese might also impact the willingness of using mobile to make a deal. Since the popularization of standard Mandarin is 73% in 2015 (MOE, 2017) which refers that people with

less Mandarin skill are difficult to communicate with other people who can't understand their dialect especially via the phone. Moreover, hand-written on the screen of mobile to communicate is time-consuming and inefficient. In this case, drivers might prefer an offline deal in logistics park that they can talk to shipper or middleman in person.

5.3.4 TECHNOLOGICAL FACTORS

When it comes to the technological factors, there are many external factors that may affect the future competitiveness of Huochebang. First of all, we identified some detailed sub-factors that were relevant to the technological factors and the sub-factors were categorized according to the literature we have collected, such as technologic investment, new technology, the development trend of technology, etc.

As we said above, according to the thirteenth Five-Year plan, the Chinese government has increased the technological investment in the big data which will contribute to the development of Huochebang. In 2016, the General Office of the National Development and Reform Commission of China issued a notice saying that it will set up 13 national-level big data labs which based on the two dimensions of the basic technology and applied the technology of the big data. In September 15, 2017, Huochebang signed with Southwest Jiaotong University to cooperate and build "the National Engineering Laboratory of the comprehensive traffic of big data application technology - the Guiyang research and development center of the intelligent logistics service technology", which is the only laboratory in the traffic field among the 13 big data national engineering laboratories in the country (Xin Lang News, 2017). This measure, on the one hand, proves that Manbang Group attaches great importance to the development of big data technology, on the other hand reflects that big data technology will get more investment in the future. Therefore, Manbang Group will have more opportunities to obtain technology investment, which will facilitate its development.

The development of Internet technology has driven the development of a series of new technologies such as cloud computing, big data, artificial intelligence, which also brings opportunities for the development of Huochebang. On the one hand, the continuous development and improvement of the matching platform are inseparable from the development of new technologies. This is the core competitiveness of Huochebang. On the other hand, the emergence of new technologies such as auto-driven and real-time monitoring has also provided new ideas for the future development of Huochebang. However, studies have shown that if driverless cars become

mainstream, besides some advantages, such as accident avoidance, fuel saving, and traffic jam avoidance, this improvement is likely to reduce the number of jobs and pose a threat to the work of truck drivers (Xin Lang Cars, 2017). Therefore, new technology may also have a negative impact on the development of Huochebang.

As a popularization and application of crowdsourcing logistics platform, Huochebang's operation mode is in line with the development trend of smart logistics technology. Intelligent logistics is an opportunity for China's logistics industry. The data shows that the market size of China's intelligent logistics in 2016 is 200 billion yuan. By 2025, the scale of smart logistics market is expected to exceed one trillion yuan. Huochebang plays an important role in this market (Tencent News). Specifically, Huochebang can help to make trucks more intelligent. In the future, Huochebang can help freight vehicles intelligently transform, for example, by cooperating with equipment manufacturers or parts factories, allowing trucks to be connected in real time, and then obtaining more accurate, real-time and comprehensive freight big data.

5.3.5 ENVIRONMENTAL FACTORS

There are only 4 kinds of factors in the PEST analysis and the factors of environment and law have only really come to the forefront in the last fifteen years or so. Due to the increasing scarcity of raw materials, the improvement of environmental awareness, and so on, they have become important. More and more consumers tend to consume the products which are sourced ethically and if possible from a sustainable source. Two detailed sub-factors which may influence the development of Huochebang can be identified to help us analyze the feasibility of Huochebang. They are transport infrastructure and green issues.

With regard to transport infrastructure, the backward traditional transport infrastructure is far away from the requirements of the idea of the Internet logistics, so it provides a huge market demand. For example, the traditional logistics industrial park was originally designed to provide drivers with parking and information exchange services. Due to the excessive concentration of vehicles, it often brings with it super traffic jams, road damage, dirty mess and so on. The mobile Internet can relieve this situation and match the two ends of the cargo and truck more reasonably. The park can provide more value-added services for drivers by relying on the platform of Huochebang. Different from the previous logistics park construction model, Huochebang helps the intelligent logistics park to focus on the nationwide

supply information and integrated after-sales service for trucks, bringing innovation to the industrial model of the park and improving land utilization. Actually, the corporate mission of Huochebang is to build China's road logistics infrastructure. "Huochebang is a typical entrance for the 'Internet +' transformation of the traditional industries. Due to the intervention of the mobile Internet, the unreasonable consumption is compressed, and the operation modes at each stage of road logistics can increase efficiency greatly. "Dai Wenjian said, who is the founder of Huochebang. (Huochebang, 2018)

As we said above at chapter 1.1.2, China's logistics costs account for 14.9% of GDP, which is about twice that of Europe and the United States. More than 85% of China's large-scale trucks are operated by self-employees, with an empty-load rate of 40%. On average, cargoes are unloaded for 3-5 days, and operations are scattered and inefficient. The integration of Huochebang has greatly reduced the waste of resources for road logistics and transportation, and improved the efficiency of the industry (Huochebang, 2018). By reducing the empty-load ratio of trucks, Huochebang has also contributed a lot to saving energy and reducing emissions. The existence of Huochebang can be a good solution to these urgent environmental problems, so these green issues will supervise the development of Huochebang.

5.3.6 LEGAL FACTORS

Legal factors refer to the integrated system of laws, regulations, judicial conditions and citizens' legal awareness outside the organization. In this part, the sub-factors of the legal factors include legislative process and legal pilot.

Both the Chinese government and local government have accelerated the legislative process in big data. The continuous improvement of the law will benefit the future development of Huochebang. The Guizhou Province, on January 15, 2016, passed the "Regulations on the Promotion and Application of Big Data Development and Application in Guizhou Province" (hereinafter referred to as the "Regulations")(GZRD, 2016). The country's first local regulations on big data were born in Guizhou. The "Regulations" consists of 6 chapters and 39 articles, which will come into effect on March 1, 2016. They include provisions for development and application, sharing opening, safety management, and legal responsibilities (The Guizhou Province, 2016). As China's first local regulations on big data, this regulation fills the gap in the big data industry. And for the first time, the big data industry is included in the rule of law. This landmark event is a major breakthrough for Guizhou province as a western province trying to leapfrog development. First of all, the regulation explicitly incorporates the big data industry into its local

economic plans; secondly, it supports the full openness and sharing of big data resources; and thirdly, it clarifies the legal responsibilities regarding big data and formulates emergency plans to protect the safety of big data.

As one of the pilot companies of truck broker across the country, the development of Huochebang will be even more concerned. On September 1, 2016, the General Office of China National Transportation Department issued the "Opinions on Accelerating the Innovation and Development of Truck Broker Logistics through Promoting Reform Pilot Programs" (MOC, 2016). At the same time, it announced the official launch of a pilot program for truck brokers in October and preliminary implementation of 48 non-vehicle carriers transport pilot units. "Non-vehicle carriers" refers to a person or unit that does not own a vehicle and engage in the transportation of goods. In March 2017, the General Office of China National Transportation Department issued the "Notice on Doing a Good Job of Monitoring the Pilotless Operation of Truck Brokers" (MOC, 2017) and announced the approval of 283 truck broker transport pilot companies identified by 29 provinces (autonomous regions and municipalities) across the country. Huochebang has become one of the pilot companies for truck broker transportation and this is very beneficial to the future development of Huochebang.

5.3.7 FACTORS AFFECTING THE FEASIBILITY OF HUOCHEBANG

Through the PESTEL analysis, we have summarized many external factors that will affect the future development of Huochebang. In this section, we present these factors in the form of a table (Table 5.2). Among them, "+" means that this factor is conducive to the future development of Huochebang; "-" means that this factor will hinder the future development of Huochebang; "+/-" means that this factor has both positive and negative impact on Huochebang. This table will provide ideas for our answer to the Research Question 2.

Table 5.2 The factors affecting the feasibility of Huochebang based on the PESTEL analysis
(Source: Authors)

	Political		Economic
+	Central government proposals	-	Global economy/trade
+	Local government policies support	+	National economy
+/-	Close relationship with local government	-	Financial aspect of China
		+	Industry economy
	Social		Technological
+	Popularization of smartphones	+	Technologic investment
-	Trend of demographic structure	+/-	New technology
-	Skill of Mandarin	+	Development trend of technology
	Environmental		Legal
+	Transport infrastructure	+	Legislative process
+	Green issues	+	Legal pilot

5.4 SWOT ANALYSIS

Through the advanced information platform, Huochebang has accumulated a large number of users, but how to make profits is still a major problem faced by the company and even the entire industry. In this section, we analyze the internal strengths and weaknesses, external opportunities and threats of Huochebang to understand the operational feasibility for the company and its business model and further improvements from this analysis.

5.4.1 STRENGTHS

As we have mentioned in the section of PESTEL analysis, Huochebang has its unique development strengths as the leader in the freight crowdsourcing industry.

First of all, Huochebang invests heavily in its advanced information platform and various aftermarket products. It has built up the largest national freight information platform in China. And it enters the aftermarket by inventing ETC services with features of online recharge, anti-counterfeiting, e-wallet and so on. Continuous technological investment and new products improve the competitiveness of Huochebang.

Second, as of May 2017, Huochebang had completed a total of US\$371 million in financing. On April 24, 2018, Manbang Group announced the completion of the first round of financing after merging with the amount of US\$1.9 billion (Huochebang, 2018). All kinds of data show that Huochebang has become a giant in the industry by occupying the top resources in the logistics industry for both capital and assets. It keeps ahead and far away from other similar products on the market. The sufficient capital from investment also implies a higher development since the company can utilize better assets and recruit better intellect.

Third, as the “2017 Logistics Industry Report” published by TalkingData (TalkingData, 2017), the Apps' coverage rates of Huochebang and Yunmanman were ranked as the top two in China in the freight industry. Then the merger of the two big companies and the shared information between two platforms made them even more powerful. On the one hand, a high installed rate is conducive to the collection of big data in the database. These data are the core resources of Huochebang. On the other hand, high market share brings bargaining advantages and is conducive to Huochebang's related activities such as charging fees.

Table 5.3 SWOT analysis (Source: Authors)

<p>Strengths</p> <p>Heavily investment on technologies and new products that improve the competitiveness</p> <p>Abundant capital resulting from substantial financing</p> <p>Large user base gains big capacity of data</p> <p>Merge strategy enables information sharing</p> <p>Large market share enhances bargaining power</p> <p>Changing the industry model brings price advantage</p> <p>Focus on creating social value and strengthening brand value</p>	<p>Weaknesses</p> <p>Collecting fee from users may hurt the group's image</p> <p>Dispute between company and information sectors</p> <p>The information collected is still not transparent enough</p> <p>Profitability is still in the exploration stage and it is not yet achieved</p> <p>Under the pressures on presenting profitability to investors</p> <p>The aftermarket services are less attractive to users</p> <p>The popularization of payment system developed by Huochebang is limited</p>
<p>Opportunities</p> <p>China's economic development is still in a good situation especially for logistics industry</p> <p>Government support and favorable policies</p> <p>Rapid development of technologies, such as big data, cloud computing, and AI</p> <p>Strong market demand</p>	<p>Threats</p> <p>Intense competition</p> <p>Charges have not been generally accepted by the market</p> <p>The risks of information security problems</p> <p>The innovative technologies might hit the existing market of Huochebang such as auto-driven truck</p>

Fourth, Huochebang has actively shaped corporate image through its social value. In addition to the contributions that made in energy saving and emission reduction, Huochebang has also participated in the exploration of new modes of national defense mobilization and helped the construction of credit information system in the freight industry.

5.4.2 WEAKNESSES

With many strengths, Huochebang also faces some weaknesses. Among them, the loudest voice is the credit crisis brought about by the breach of contract by Huochebang.

As this report introduced previously, The App of Huochebang has a predecessor named Logistics QQ in the early days of its development. When the company upgraded the software, it also changed the main operating entity of the software from Chengdu Yunli to its parent company, Huochebang Science Technology Co., Ltd. However, the Logistics QQ, the predecessor of Huochebang, once promised to permanently free for users and signed a commitment in paper when it began to promote the users of shipper version. This leads to the fact that when Huochebang started charging, many users of shipper version think it is a renege. Although the change of the legal entity makes Huochebang avoid the legal risk of in breach of contract so far, it still has a very bad influence on the reputation of the company.

In addition, the authenticity and transparency of the information released on the platform have still much to be improved especially for its auditing the users of shipper version.

Moreover, Huochebang is still under the pressure of their profitability, for both responding to their investors and covering the huge operating costs. The hired intelligent also refers to a higher salary expense. Besides, the aftermarket that Huochebang pumped a lot of funds to develop is not as attractive as the matching services to their users. The profit model is uncertain which could cause other problems to the company.

5.4.3 OPPORTUNITIES

The opportunities derived from the PESTEL analysis section is relatively plentiful, and it can be considered separately from the aspects of economy, politics, technology, and market.

From the economic aspect, China's GDP annual growth rate remains steady at around 7% and it shows that China's economy is still in a good tendency,

which provides a good economic environment for the development of Huochebang and related industries behind the company. In term of the policy, the service that Huochebang provided is consistent with China's development plan and it has got a lot of political support for its business from central government. Local governments have also provided support and facilitated the development of Huochebang, including rent relief; discounted energy price and allowance; financial support; tax preference and even government reward. In the view of technology, the emergence of new technologies is the basis for the birth of the "Internet + logistics" model. Big data, cloud computing, artificial intelligence, etc. provide conditions for the development of Huochebang.

In terms of market demand, as mentioned before, carriers operated by individual household represent roughly 90 percent of all commercial trucks on Chinese roads nowadays. The asymmetric information, non-standard procedures, notorious traffic conditions especially in the urban area and the heavy toll road raised a strong willingness to improve the efficiency and effectiveness by all logistics practitioners. Huochebang provides an effective method to solve this market problem, which greatly shortens the time for truck drivers to find cargo and improves the transportation efficiency. At the same time, it also provides more choices for shippers to facilitate their price comparison.

5.4.4 THREATS

As the matching-cargo-with-vehicle platform is an emerging industry, the imperfection of industry standards and the vacancy of relevant laws have brought certain threats to the development of Huochebang. People's limited knowledge of the platform, coupled with people's resistance to new things and sense of the complexity of using, have all contributed to the threats of the development of Huochebang. However, the greatest external threat posed by trucks comes from fierce competition.

The competition mentioned here refers to both the competition in the same industry and the competition from other industries. In the same industry, Yunmanman was once a strong competitor of Huochebang before. Although they are merged now, there are still many similar platforms providing matching-cargo-with-vehicle services in the market. Especially for some small-sized companies that focus on serving regional territory are preferred by local information sectors and truck drivers that intend to run between fixed locations. Those local online platforms can be considered as potential competitors for Huochebang. Furthur, Huochebang is engaged in road

transport, and the increasing utilization of other transport modes such as rail transportation or the intermodal freight transport will also pose a threat to it. Moreover, the rises of new technologies, such as auto-driven, blockchain, etc., are all new challenges that Huochebang needs to face.

6 CONCLUSIONS

This chapter focuses on summarizing the whole thesis by reflecting key findings in our report and answering the research questions. The limitations of this article and research suggestion in the future are also discussed.

This article studies the platform developed by Huochebang and the provided services. We try to figure out what are the values created for its clients and what are the problems have been solved through the platform. By studying Huochebang, we also provide an angle to see the logistics market in China behind the company.

In the background of China with a rapid development of Internet industry, large-scale of 3G coverage, low price of mobile and corresponding governmental proposal, there were many innovative startups entering logistics industry in China. They treated the status of the market with a poor service level, non-standard procedure and low efficiency as the challenges that can be solved by the Internet. Under this background, Huochebang is one of the companies who under the concept of ‘Internet Plus Logistics’ and favored by investors. Its successful BTL marketing made it become one of the largest companies in China. And then, it merged with another leading company in this area and became number one in the market beyond any doubt.

As a company who provides matching services between truck drivers (truck owners) and shippers (information brokers and logistics companies in facts), Huochebang acts as a role between truck drivers and information sectors/logistics companies. It mainly serves to market of intra-city freight transport for FTL cargo. It gathered the largest number of drivers and shippers on its platform in China. This platform has changed the working habit of truck drivers on searching for information and released them from the restriction of time and space. It also changed the working conditions for information brokers (also named information sectors in the previous chapter). Besides, it had a significantly negative impact on the certain type of logistics parks who mainly provide board, lodging and information exchange services to truck drivers. It decreased the demand of the truck driver to enter logistics park thus made a lot of logistics parks bankrupt.

Furthermore, by providing matching services to massive users, the platform (also includes other similar platforms) contributes to decrease the transport cost for it increases the information transparency on the platform that allows users to compare the prices on the platform. Besides, the platform integrated

massive users also increase the competition among different truck drivers thus also contributes to the decreasing freightage for the whole industry.

As a young Internet company with ambitious and controversies, it has shown the ability of lock-in to its clients no matter they love it or hate it. As the data collected by the interviews, it shows that the information sectors are hard to find the suitable drivers if they did not use the App of Huochebang, since most of the long-distance truck drivers that work in intra-city transport with FTL have installed the App and they are no longer willing to go to logistics park in person. An information sector without installing the app of shipper version is hard to contact with truck drivers. With this ability of lock-in, Huochebang dares to collect fees from users of shipper version by breaking their previous promises that never charging the fee from the users. However, after collecting the fee, it seems that Huochebang is still under the pressure of making a profit from its massive clients (traffic monetizing).

6.1 ANSWERS TO THE RESEARCH QUESTIONS

RQ1: For those crowd logistics platforms what are the value they created?

Those platforms utilized the technologies of the Internet and contribute to easing complexity the exchange of information and money in the logistics industry. It also broadens the transaction scenario of purchasing information from logistics park to anywhere as long as with an access to the Internet.

The users (with their data) integrated by the platforms also provide a new view to study the logistics status in China. It also makes it possible to identify their requirements of users and then create value for them by utilizing innovative technology.

Besides, by gathering massive users of freight market, it is possible for Huochebang to build an ecosystem for truck drivers and also connects various commercial activities through the platform from maintenance to accommodation.

RQ2: What are the factors that influence the feasibility of the business of logistics information platform based on a PESTEL model in China?

By adopting PESTEL model, we identify some external factors that we think might impact the development of the company. Pragmatically, from the facts that the amount of the platform's registered users and the capital they got from investors, we think this platform have indeed solved some problems in the Chinese market for its immature status. By analyzing the six factors of PESTEL, we believe the external environment in the main is propitious to the development of company especially from the view of political, economic, environmental and technical. However, the company also will face the challenge from the external factors such as innovative technologies that might change the whole freight industry, demographic trends to population aging that might impact the number of drivers in China, the uncertain political issues that might impact the manufacturing industry and even national economy of China and so on.

RQ3: What are the improvements can be raised for the crowd logistics platform?

We use SWOT model to identify the strengths, threats, opportunities, and challenges of the company. From this model, we think it's necessary for the company to increase their public confidence by its clients, especially since it is in the highly competitive Chinese market that the competitors can be emerged from anywhere. And the competition is not limited to the area with homogeneous products. In other words, the loyalty of customers is usually low. In this case, a good relationship between company and users can increase the competitiveness of company in the market.

To increase the profitability of the company, Huochebang decided to develop the auto aftermarket regarding truck drivers in China. We understand it's not easy to build a closed-loop for the company on the auto aftermarket. Since auto aftermarket involves a lot of actors from different areas. Especially those areas are unlike the industry that Huochebang served, most of them are large enough, for example, the insurance industry, the oil filling industry, the financing industry and so on. It is not easy for Huochebang to build such huge hybrid market especially using their own payment system. However, as an Internet company with crowded users in a specific market, Huochebang can view itself from a different angle and create value for both online (advertising) and offline (auto aftermarket). Besides, its massive data collected from users also shows a big potential for development of the company. The data is valued; however, it should be cautious of Huochebang to utilize the valued data.

6.2 CONTRIBUTIONS

The development of Internet industry in China is sudden and fast. However, compared to the Internet industry, many traditional industries in China are still operated in a low-efficiency way. Under this background, the logistics platform that combined the logistics and Internet in China is young and probably unique.

This article studies a fast-growing start-up who provides a platform to link the truck drivers and information brokers (or even shipper) directly online. However, this type of company in the Chinese market is less studied in an academic area and we hope we can fill a gap to understand how a company creates value to its users with a new business model by combining two industries with different degree of development. However, this business is not profitable yet.

6.3 LIMITATIONS

Due to the restriction of time and space, we only interviewed one logistics park in person and we think different logistics park in different areas might have distinct experiences and attitudes towards the same product. We also failed to do any interview with the employee from either Huochebang or Yunmanman. We might lack some insights from inside of the company. However, we believe that by gathering data from different users of the companies, we still can study the company in a proper way.

6.4 SUGGESTIONS

In this article, we studied the role of Huochebang and its background in China. However, we noticed that investors with capital play a significant role in the development of start-ups. Especially for some of the investors are active and influential. The investors of Huochebang and Yunmanman carry weight for its development and merging. We think the investor behind two start-ups is worth to be further researched for their selection logic on investment and the interaction between company and investors.

Besides, as we always stressed in the report, the profitability of this company is still unclear. As a business, the pursuit of profit is understandable and deserved. We thought it is interesting to study the profitability of Huochebang that has already made a significant impact on freight industry.

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8 APPENDIX

Appendix 1: Outline of interview questions in English (For internal employees)

Introduction of company

- Can you explain briefly for the company for its scale?
- Can you introduce briefly for the major services in your company?
- In present logistics market, what problems can be solved through the platform provided by Huochebang, and how does it solve it?
- In a market with various homogenizations of products, what is the advantage of Huochebang
- By utilizing data analysis, can you show us some interesting data?
- How does Huochebang view the role of broker? Do Huochebang treat itself as a broker? If so, what is the advantage of Huochebang compared to tradition logistics company?
- How does Huochebang attract shippers (information sectors) to register on the platform?
- Does Huochebang will to enter small cities, towns and rural area? Does Huochebang will to enter the area of LTL cargo?
- What are the most risks undertaking by Huochebang? How to minimize the risks?

Product

- Can you explain for the ETC services? What is the relationship between the online and offline services provided by Huochebang?
- From the official website, it said Huochebang provided products of big data? Who are the users of this service? Does Huochebang use this service in company operation? If so, what's the kind of data will be used?

Profitability and value-creation

- Every users are concerning about the fee charging; do you think collecting annual fee from users can significantly improve the profitability of company?
- What is your opinion to the business of the company and its profitability?
- What are the major after-market services provided by Huochebang?
- From the official website, we saw the contribution made by the platform to environment, can you name some other contributions made by Huochebang?

Development

- How does Huochebang view the future of logistics platform?
How about the company?

Appendix 2: Outline of interview questions in English (For users)

- What is your job? How did you know this App (Huochebang or Yunmanman)? How long time have you used it?
- What do you think about this App? Why?
- Do you use other App to receive (publish) information? How did you exchange freight information before using this App?
- Excepts searching (publishing) information on the App, do you use other services provided by App?
- What is the change after using this App? Do you get more deal via it? Do you think the deal online is trustful? How about the quality of the shipper (driver) you find it online?
- How do you evaluate the influence of this App on the logistics industry?
- What are the risks by using this App?
- What are the advantages and disadvantages of the App?
- Do you use another platform? Can you name it? In what scenarios you will switch to another platform?
- What are the suggestions from you to improve the experiencing of this App?