A case study examining the business model of Mobike - The ‘sharing economy’ (collaborative consumption and access but not ownership) or ‘Access economy’?

Abstract: The sharing economy has developed rapidly in recent years by finding suitable ways to fully use resources, which have not been effectively utilized in the past. With the growing awareness and thoughtfulness of environmental protection, along with the evolution in consumption concepts and economic depression, the sharing economy has gained considerable popularity. A prime example of this is the sharing bike industry and the company Mobike is the largest competitor in the smart bike share sector. In comparison to consumer usage of the traditional bicycle, Mobike offers much more convenient experiences with ease of parking and security through adopting new technologies such as intelligent unlocking and convenient mobile payments. However, it raises the questions of whether sharing bikes belongs to collaborative consumption or the sharing economy and would the improvements of its operation and technology lead to innovation in business models? Based on Mobike's business model we carried out an analysis to examine the relationships between cost, capacity and profitability structure. This ultimately led to determining whether it really embodies the essence and elements of the sharing economy. Moreover, this study provides certain guidance and reference to assist in understanding the "sharing economy" correctly.

Key words：**Sharing economy**；**Sharing bike**；business model；the relationship between cost and capacity (cost component); profitability feature.

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1. Introduction to case study

The rapid development of global Internet technology has continuously provided more powerful tools for business activities. Meanwhile, people's concept of consumption and participation in their economic activities have also gone through tremendous changes. This way of life is no longer unusual to us, for example: click on a mobile app, find a nearby Shared bike and unlock it; click on a mobile app, call a cab and swiftly reach your destination; click on a mobile app, search for information of affordable, comfortable hotels, motels or guest house while traveling. Nowadays it seems to be a cliché to say "economy" yet the word "sharing" has become "sexy" at the same time. Almost the whole venture and incubation industry is devoted to the "sharing economy" and an ever-increasing share of the consumption platform has successfully gained rising capital. From making reservations for cars to bikes, it has been unconsciously integrated into life, and consumers have been enjoying the convenience of "sharing" in the field of "travel". Since the second half of 2016, the concept of sharing bikes has gotten so popular that media hyped, capital supported companies such as Mobike, within a month had completed five rounds of financing, without carrying out a real operation. Thus, shared bikes have become an economic leader in their field after online car reservations.

1.1 Overview of sharing bike industry

Sharing bike refers to bike-sharing services and these can be found in campuses, subways, bus stops, residential areas, commercial and public service areas. They are usually provided by enterprises themselves or in cooperation with the government. At present, the first intelligent bike sharing mode in China is a new form of intelligent bike travel. This enables consumers to find the vehicle through a dedicated app and unlock the bike by using intelligent methods such as scanning QR code. The condition of bike and operation status are monitored remotely from the back office in real time. Along with the development of the Internet economy, more and more people are attracted to "Sharing Bike". The majority of primary and middle school students, college students and office workers use it to solve the problems of last kilometer travel and promote green travel to both save energy and reduce pollution.

“Bike sharing” is not only good for people’s health, but also conforms to the concept of having a low carbon economy. Therefore, the “sharing economy” is a kind of collaboration of resource integration and also resource sharing.

With the rapid development of companies such as Uber, Didi、 Mobike, OfO Bike and Airbnb, more and more people witnessed the "Shared economic business model" becoming globally popular. The emerging business model of these companies have some common characteristics, such as the use of the available access (access), and non-commercial title (ownership). It relies on a distributed network rich in resources to establish a trustworthy social public platform. The sharing economy business model has excavated idle resources and capabilities, which makes it popular in the environment of economic depression, growing environmental awareness and changing consumption concepts. Among them, the sharing economy model of O2O (online to offline or offline to online, etc.) has the innovation of breaking through the tradition, and its development is extremely rapid. Most of the sharing economy models that we are familiar with nowadays are operated by O2O mode. However, this business model has been under discussion and controversy throughout its development. Especially in the field of transportation, it is one of the most influential and controversial areas of the sharing economy in the world, mainly including sharing car rental, sharing car driving, sharing bicycle and sharing parking space.

The sharing of traffic trips is based on the huge stock market, which enlivens a large number of idle car resources, driver resources, and parking space resources of the society. While changing the way in which people travel, it greatly improves the utilization rate of idle traffic resources. The transportation rental-sharing field is a very special field, in which enterprises share their own transportation vehicle assets (cars or bicycles) through the platform. This has been a subject of widespread debate. Many people in China believe that this is not a sharing economy model, and believe that C2B2C model must take its place. In addition, many studies conducted by domestic and foreign scholars show that this "product service system" model is incorporated into the sharing economy. Therefore, compared with the traditional municipal bicycle, the Shared bike represented by Mobike is getting rid of the shackles of parking piles and utilizes use of new technologies, such as intelligent

unlocking and convenient mobile payment. However, is the Shared bike part of the sharing economy or the access economy? Will its operational approach and technological advances lead to innovation in business characteristics?

1.2 Introduction of Mobike case

Mobike is an Internet based company that provides short-distance travel solutions and was developed by Beijing Mobike technology LTD, founded by Hu weiwei. It provides people the opportunity to quickly rent and return a Mobike bicycle via their smartphones, and the affordable prices allow consumers to complete a few kilometers of city riding without a high expense. Mobike is responsible for creating the world's first intelligent sharing cycling model and utilizes patented technology, based on independent research and development. This provides integrated security with GPS and communication modules, using a new generation of Internet technology through a smartphone app that allows use of the nearest bike from wherever they are located. The bicycles can be parked on the side of the road at a suitable area wherever or whenever the customer has arrived at their destination. Locking it then automatically completes payment and settlement. Mobike was been established in January 2015, as a small indebted enterprise (table 1),

Table 1. Financial status information of Mobike

Total Asset of Enterprise	Report of 2016	Report of 2015
Total	N/A	4,825,100RMB
The main business income of the total revenue	N/A	0RMB
Owner's equality	N/A	-1,325,700 RMB
Net profit	N/A	-5,525,700 RMB
Gross revenue	N/A	0 RMB
The total amount of tax	N/A	0 RMB
Total profit	N/A	-5,525,700 RMB
The total amount of liabilities	N/A	6,150,800 RMB

Resource：National enterprise credit information public system

By October 2015, Mobike completed the A-round financing, and launched the smart bike sharing service in Shanghai on the 22nd of April, 2016 to officially start operations. Thereafter, it developed rapidly, expanding its business into various different regions. It has now been set up successively in Singapore, the UK, Italy, Japan, Thailand, Malaysia, the United States, South Korea and nine other countries in more than 180 cities, whereby there are currently more than 7 million operating Mobike's. The intelligent travel service caters to the needs of more than 200 million users in the world, with orders per day amounting to more than 30 million, thus, creating the world's largest smart sharing bike operating platform and mobile networking platform. Mobike generates over 30TB of cycling data every day, and it has the most comprehensive cycling big data in the world, providing scientific reference for planning out smart cities, healthy cities and low-carbon cities. Starting from the second half of 2016, Mobike has completed several rounds of financing in a row, gradually gaining a leading position in the competitive pattern of the Sharing bike industry (table 2).

Table 2 Financing status of Mobike

No.	Financing rounds	Date of investing	Amount of financing	Investor
1	Angle rounds	2015-03-01	1,460,000RMB	Bin Li
2	A round	2015-10-30	3,000,000USD	JOY capital
3	B round	2016-08-19	10,000,000USD	Panda capital 、 JOY capital 、 Sinovation Ventures
4	B+ round	2016-09-02	10 million USD	Vertex、Sinovation Ventures
5	C round	2016-09-30	100 million USD	Warburg Pincus、Hillhouse capital
6	C+ round	2016-10-13	100 million USD	Hillhouse capital、Warburg Pincus、Tencent、XingWang from Meituan.com 、 Hongshan capital china 、Qiming Venture、Bai fund
7	D round	2017-01-04	215million USD	Tencent、 Warburg Pincus、Ctrip、Huazhu、TPG
8	D+ round	2017-02-20	100 million USD	Temasek、Hill house Capital、 Foxconn

9	E round	2017-06-16	600million USD	Tencent 、 Bocom international 、 icbc international 、 Farallon Capital 、 TPG 、 Hongshan capital、Hillhouse capital
10	Strategic investment	2017-11-15	N/A	Quaicomm Ventures
11	Strategic investment	2018-01-25	1 billion USD	Unknown investor

Resource：Mobike official website、qichacha.com-《Enterprise basic credit report》

After the completion of multiple rounds of financing, the management of Mobike still holds more than 70 percent of the equity and owns the most discourse power of the enterprise, as shown in table 3 below.

Table 3 Information of Mobike's shareholder contribution in 2016

No	**Shareholders**	**Leadership**	**The amount of the contribution subscribed （ 10 thousands）**	**Ratio**	**Duty**
1	Weiwei Hu	Y	180.6	36.12%	Mobile founder、president
2	Bin Li	N	146.25	29.25%	None
3	Xiaofeng Wang	Y	100	20.00%	Mobile founder、CEO
4	Yiping Xia	Y	73.15	14.63%	Mobile founder、CTO

Resource： National enterprise credit information public system、 Mobike official website

Mobike has set off a cycling boom in the cities where it appeared, motivating return of bicycles to the cities, bringing convenience of life to more people and providing sustainable intelligent solutions for cities to advocate green travel. Since it has been operated officially, Mobike users have cycled more than 5.6 billion kilometers, saving more than 1.26 million tons of carbon in emissions, which is equivalent to reducing the carbon emissions of 350,000 cars driven in a year. Mobike created the world's first

intelligent sharing cycling model and focuses on technological improvement of supplying products and services. Patented technology, based on independent research and development, provides lock integrated with GPS and communication module, using a new generation of Internet technology through a smartphone app that allows use of the nearest bike from wherever they are located, parked the bike on the side of the road at suitable area when they arrived at the destination. Locking it then automatically completes payment and settlement. In November 2017, CAICT and Mobike jointly drafted the general technical requirements of shared bicycle application system based on Internet of things. It is since then the shared cycling industry has launched its first domestic shared cycling system based on Internet of things, which only shows the technical level of Mobike in the shared bicycle industry. Mobike held its shareholders' meeting to vote on the Meituan takeover in the early hours of April 4, 2018. This resulted in Meituan buying Mobike with 35% Meituan stake and 65% cash, of which $320 million was used as a future liquidity supplement. Round A and round B investors and the founding team were bought off with $750 million in cash. Thus, it can be seen that, when the bike-sharing industry has seen a large number of acquisitions or cases of taking sides, the new operating resources will accelerate the refined operation process of the bike-sharing platform, and the operation model of bike-sharing will soon take off.

2. The Business model of Mobike and sharing economy

2.1Business model of sharing bicycle

China's bike sharing market has gone through the third stages of development. From 2007 to 2010 for the first stage, the public bike model begun to be introduced into China, which was then dominated by the government agencies and managed by cities, mostly by pile bike. From 2010 to 2014, the second stage, enterprises specializing in the bicycle market began to appear, but in this early stage public bicycles were still dominated by pile bicycles. In 2014 we have entered the third stage. With the rapid development of mobile Internet, Internet Shared bikes led by Mobike emerged, and more convenient non-pile bikes began to replace pile bikes. The innovative elements of the O2O sharing economy business model include: excavating idle resources,

establishing effective sharing network and establishing credit mechanism. These common features can be used to further analyze the innovative elements of the Mobike business model:

1. Excavate idle excess capacity - When Mobike was founded, it was mainly to solve the problem of users who needed the "last kilometer" service in cities -- the population of big cities is increasing year by year, and the demand for transportation is rising sharply. However, problems such as road congestion and shortage of parking resources have caused the problem of "closer to the destination but longer walking time". The solution is to establish a Rachel Bostman proposed "product service system", namely the lease type, single vehicle rental, O2O, sharing model that allows short destination travel without walking around tools. "Shared cycling" was the idea "to provide customers with city travel solutions that are convenient by means of the technology, economy, and environmental protection". Whether there is spare capacity or excess capacity is the premise of the existence and development of the sharing economy. Therefore, understanding whether the bike-sharing industry is truly a sharing economy requires understanding what “spare capacity” or “excess capacity” is. The original intention of Mobike is to transfer the right to use a certain number of bicycles continuously in order to meet the travel requirements of more people, instead of requiring everyone to have their own bicycles, which emphasize the transfer of the right to use instead of ownership. From this point of view, the business offered by Mobike belongs to the sharing economy.

2. Effective sharing network - In the whole cycle of service offering, Mobike is not only the supplier of idle resources or capacity, but also the platform connecting the supplier with the demand side. Therefore, for Mobike, it only needs users, namely users who have demand. The demand side of idle travel resource capacity is widely dispersed in the society, and the integration, centralization and docking of the supply and demand across space and time is the most critical point for the survival of the platform. Therefore, advanced Internet technology is a necessary condition for transportation and travel sharing enterprises to build an efficient O2O platform, whose SOLOMO (social, localized and mobile) features are reflected by the current big data Internet technology. With its launch, Mobike has built an intelligent system for

accurate matching of travel data and this complete system provides bicycle positioning with regional changes. Subsequently making the O2O platform of Mobike - a platform connecting the supply of resource capacity and the demand side of resources - fast and efficient matchmaking. In this case, the construction of its shared network is fast, timely, accurate and flexible, which improves efficiency and reduces cost.

3. Establish a credit mechanism - In a TED talk, Bostman mentioned three major trends of trust related to the Internet. The first wave refers to acceptance of online sharing information that the appearances of social networking make it more significant. The second wave refers to people's trust in the online payment system in e-commerce, which is closely related to the emergence of the "third-party payment" system. The third wave is the current state of trust, where people can accept online and offline connections with complete strangers. As the third wave of trust proposed by Bostman emerges, without effective credit mechanism and "reliability" provided by the platform, it is difficult to realize the typical stranger economy of the sharing economy. This can be especially said in the sharing economy of transportation that emphasizes the cooperation between supply and demand. Mobike has established a credit system called credit score. Improper bicycle use will lower the credit score, which will increase users' car fees and can even disable them from renting a car. As a result, the reliability of orders has increased greatly. Finally, the rating data is provided by the users after the transaction is completed and therefore further enhances the cycle of credit mechanism.

2.2 Sharing economy model of Mobike

Sharing a bicycle has become so popular that it is not easy for new players to enter the market. Although the Didi model has been proven itself successful, it can’t be easily copied. Numerous apps have failed after they used up their capital. As a kind of transformation idea of online ride hailing, Shared bike is actually an intelligent upgrade and renovation of traditional piled bike. The Didi sharing model is based on private cars, while the biggest difficulty lies in the supply chain of bicycles. Most importantly, the past era of pure asset-light operation and "cash burning" to win users has come to an end. The purchase, transportation and delivery of the core assets of

Shared bikes are all asset-based operations. Therefore, the Shared bike company is doomed to not only develop an app, but also face the asset operation, including supply chain, logistics and other problems.

First of all, in terms of the number of vehicles, the domestic Shared bike market in the first and second tier of large cities has been close to "saturation" status, and the number of bicycle products put by enterprises can be clearly capped. Since August 2017, 12 cities including Beijing, Shanghai, Guangzhou and Shenzhen, have announced the suspension of new rollout of Shared bikes. According to data released by China Internet network information center, there were nearly 70 Internet bike rental and operation enterprises in China as of December 2017, with a total of more than 16 million Shared bikes. Among them, Guangzhou has more than 800,000 Shared bikes, Shanghai has more than 1 million and Shenzhen has more than 890,000. The number of users of Shared bikes has reached 106 million, and the amount of deposit in the field of Shared bikes alone is close to 10 billion. This shows that although the number of vehicles in a certain areas is limited, product density will not be a competitive advantage, and it is an inevitable trend to explore new urban markets and foreign markets. As for the regulation of bicycle parking, since Shared bikes are not equipped with fixed lock piles like public bicycles, they may cause serious impact on public order while making it convenient for users to park. In addition, it may also lead to difficulty in finding rides for the next user. This shows that the development of electronic lock and matching Internet software technology is the inevitable trend of self-regulating parking.

In terms of vehicle durability, the failure loss of Shared bikes is relatively fast due to the uneven quality of users. Low manufacturing costs often means higher maintenance cost and shorter scrap time. Faced with the huge amount of bicycle sharing, Hangzhou, Shenzhen, Fuzhou, Zhengzhou, Nanjing, Beijing and other cities have announced the suspension of new bicycle sharing. Beijing municipal commission of transport and communications released the supporting documents of the Shared bike policy on September 19, 2017, proposing that Shared bikes should be updated or scrapped after being put into use for three years. This shows that balancing the manufacturing cost and maintenance cost is one of the important strategic

decisions of the bike-sharing enterprises.

In early November 2017, CAICT and Mobike company jointly drafted the 《General technical requirements of shared bicycle application system based on Internet of things 》 "(hereinafter referred to as the" technical requirements ") standards. The 《technical requirements》 of the regulation is the overall architecture of Shared cycling application system based on Internet of things, and according to the architecture of intelligent terminal user side, the functionality, performance, technical requirements and information security regulation of Shared cycling side and the side of the enterprise application platform. This is the first domestic Shared cycling system based on IOT group standards (see table 4 below). This also further illustrates the importance of technical specifications in all aspects to the development of Shared bike enterprises.

Table 4 《 overall technical requirements for an IOT based Shared bike application system》

No	Main sector	Main content
1	Customer service	The Shared bike app should be settled automatically after the trip. Should have the functionality to deposit payment and return the bike. In addition, in order to regulate parking, it is advisable to have parking area guidance functions, recommended parking area near the destination to users, and have a set of forbidden parking/riding areas
2	Vehicle technology	The Shared bike app should be settled automatically after the trip. Should have the functionality to deposit payment and return the bike; In addition, in order to regulate parking, it is advisable to have parking area guidance functions, recommended parking area near the destination to users, and have a set of forbidden parking/riding areas
3	Enterprise platform	Sharing bike enterprises should establish a user credit system, which registers users' non-standard usage or illegal actions on the credit system. It should have the big data management function, and have the analysis ability such as the distribution quantity of bicycles in different regions, the number of active users, the number of trips in each period of the day, the distribution of active areas, and the statistics of bicycle and personnel attributes. It is advisable to support the electronic fence service and record whether the user abides by the rules and stops in the electronic fence, which is reflected in the user credit system.

4	Others	The specification of data security, access security, business security and management operation and maintenance security of enterprise application platform

Resource：According to the Mobike official website related information collated

2.3 Structure of Mobike business model

"Sharing" can make use of idle or surplus resource capacity, which is conducive to maximizing benefits. This is the reason why the sharing economy has been recently highly sought after. Mobike utilizes the transportation lease class sharing economic model in a broader sense in that it uses the excavation of the use of idle "short-distance travel" resources and capabilities. To establish its own network platform, the resources and capacity share paid to each big city medium or short distance travel service demander makes suppliers the revenues from the demise-ability right of return, to meet the demand the user's access requirements. Without the participation of the sharing economy, the realization of the above situation is unlikely to occur on a large scale, which leads to the fact that the benefit from resources cannot be maximized. In addition, the sharing economy encourages people to switch from ownership to transfer of right, which can greatly reduce the sales of new products, thus reducing resource consumption and greenhouse gas emissions. Especially in the field of transportation, "sharing" will reduce the purchase amount of new transportation tools, which is in line with the concept of green consumption and conducive to environmental protection. To this end, the overall framework of Mobike's business model is constructed in this case (see figure 1 below).

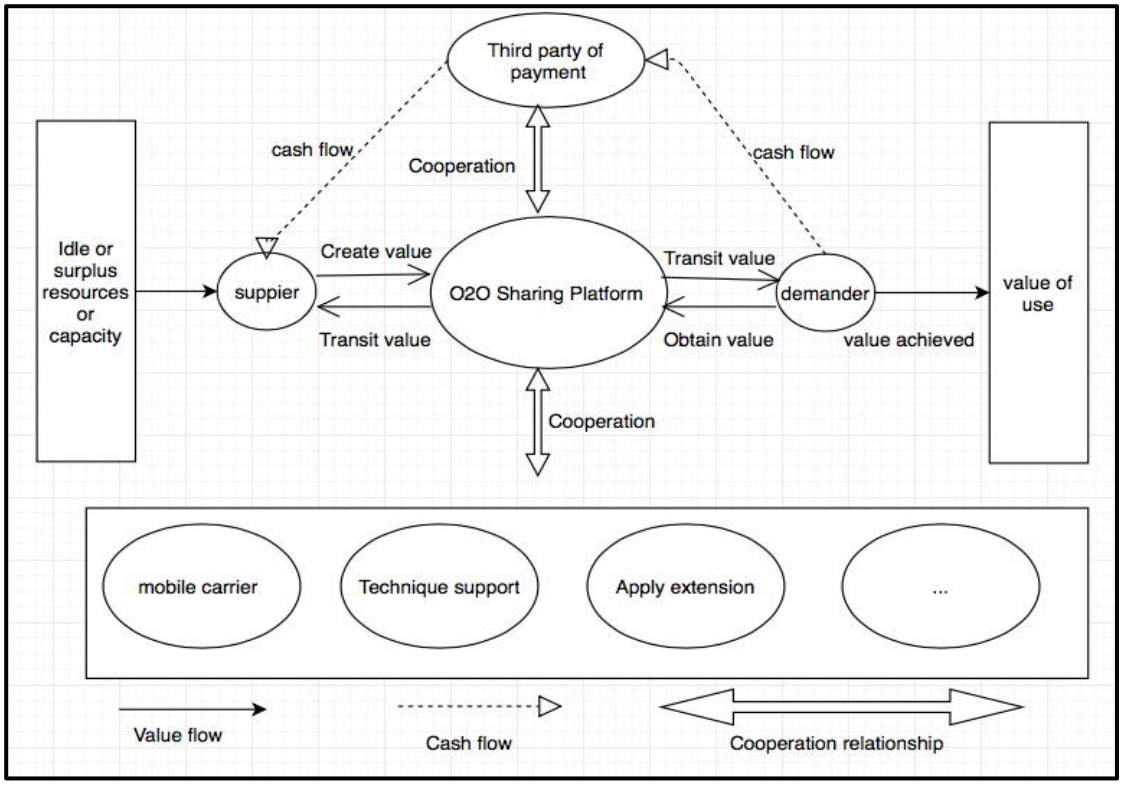


Diagram 1 Overall structure of Mobike O2O sharing economy business model

3. Further analysis of the profitability characteristics of Mobike

3.1 Current profit model: deposit + charge for use

The name suggests sharing of a bike, but in reality, it is a lease. The bikes that users ride are not supplied from sharing, but directly provided by bike service providers. Users pay essentially cycling fees and in the case of Mobike, its cost is around 1800 yuan after the mass production, and the minimum cost for users is 0.5 yuan to 1 yuan per ride. Even if 10 people use one bike, it is still far from profitable to rely on the rental return, and the bike will be damaged after a long time. The profit model of Shared bike shows in its deposit model. At present, the direct income of Mobike includes cycling fee and deposit income and the cycling fee is divided into two prices according to different models. The classic edition (sports edition) is 1 yuan per half hour, the light cycling edition is 0.5 yuan per half hour and the deposit is 299 yuan. The deposit will not be automatically refunded after the trip, but requires the user to submit the application manually, which may, in due to the convenience of the user, incline the user to ride again. It takes 2-7 working days for the refund of

Mobike's deposit. According to the above example, if 10 people use one bicycle, the deposit is 2,990 yuan, and the actual refund period takes 2 days. In this way, it provides space for bicycle service providers to rely on big data to obtain deposit income. In addition, advertising within the app is the way to make money in an explicit state. However, the hidden profit approach is the operation of stranded funds and the operation of big data technology. The way forward for Mobike is to use its vast user data as its most profitable potential.

This case tries to estimate the direct income of Mobike from cycling business by using the data of domestic Mobike users in the first 11 months of 2017. Mobike's direct income can be divided into deposit and cycling fees. Among them, the deposit of Mobike is 299 yuan, which tends to be illiquid assets. From a conservative perspective, in this case, active users are used to calculate the relatively stable deposit assets held by Mobike, and the new users are used as the reference for the cash flow of the deposit. For the cycling fee part, the cycling time, vehicle type and the different charging situations arising therefrom shall be considered. After the typical one yuan/half an hour, the bike lite model shall be 0.5 yuan/half an hour. Since Mobike has been launched as a lite bike in October 2016, this case assumes that the cycling proportion of both types of bikes is 50% each. In addition, since Mobike launched monthly CARD on 29th June 2017, using a monthly card which offers two hours free before every ride during the month, this case will consider this factor in July to November, at the same time, due to most of monthly card are based on the users pay the deposit, this case does not consider using monthly, and avoid the situation of the deposit. Thirdly, Mobike has its own credit system, and users with less than 80 points will ride for 100 yuan per half hour. As the starting point of this regulation is to regulate the civilized use of vehicles by users, it is difficult for low-credit users to have the consumption motivation. In this case, extreme cycling expenses of low-credit users are not considered. Finally, since Mobike did not access ant credit deposit like OfO before, and only after the launch of Tencent credit in December, the two started cooperation, which did not affect the data period of this case study. This case did not consider the impact of the situation of non-deposit.

1. Deposit income - Mobike sets the deposit to 299 yuan. On one hand, it is in line

with the high-end brand positioning of Mobike and the consumer positioning of middle and high-income groups. On the other hand, it also gives Mobike more space in terms of capital security. The monthly active users (MAU) of Mobike in the first 11 months of 2017 are shown in table 5. From the table, it can be clearly observed that the cycling business of Mobike is seasonal. The Chinese Spring Festival affects the monthly active users of Mobike in January and February, and the growth of monthly active users is slow. The monthly active users are taken into account to calculate the stable deposit amount of Mobike. Without considering the exemption of the deposit, the total stable deposit amount of Mobike after June 2017 is more than 10 billion yuan, which offers strong stability. If the liquidity is limited, it will have great potential value.

Table 5 Mobike active users and deposits from January to November 2017

Date	Active user（thousand）	deposits（10thousand）
2017.01	57,629	17,231,088
2017.02	101,905	30,469,498
2017.03	186,640	55,805,451
2017.04	292,417	87,432,706
2017.05	317,083	94,807,816
2017.06	354,859	106,102,841
2017.07	367,286	109,818,576
2017.08	379,979	113,613,783
2017.09	370,760	110,857,100
2017.10	340,983	101,953,959
2017.11	339,370	101,471,619

Resource：analysys.com

In addition, due to the limitation of available data, this case takes the number of independent devices as the approximate number of monthly users for further analysis (see table 6 and figure 2). From table 9 and figure 2 shows, new users are more volatile in their usage of shared bikes, if we ignore that new user may be showing

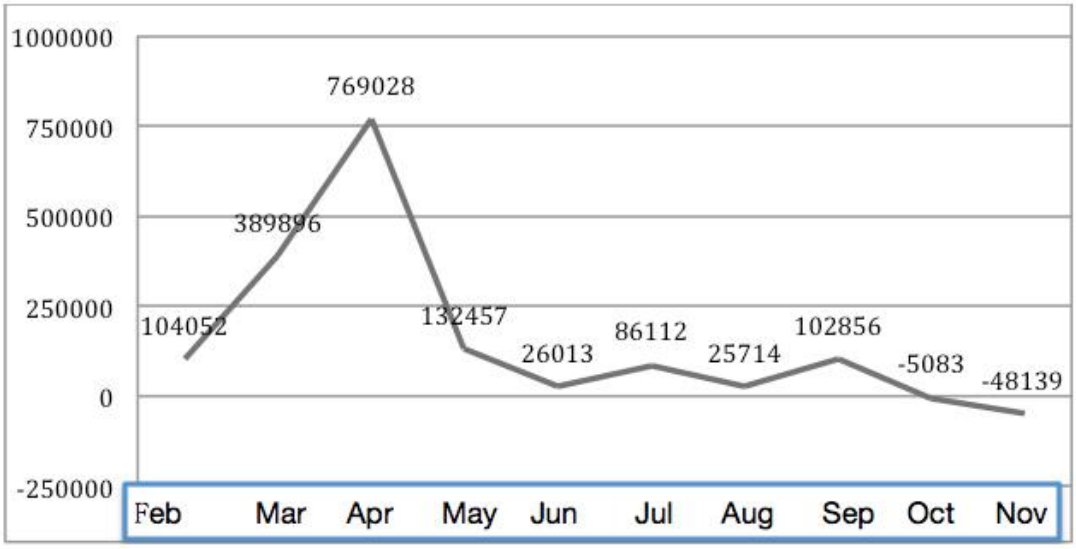
more activity to smooth the flow of deposited assets (Non-deposit). From February to May and September, 2017 - there were more than 1 billion deposit inflows, from March to April, 2017 is the time of highest user-generated income, the most dramatic growth of the deposit inflows of nearly 3.8 billion yuan and 7.7 billion yuan respectively. There is significant slowdown of new users income in May 2017 after growth. During July and September rebound is due to the positive influence of introduction of back-to-school month card. The trend is not continuous; on October and November, 2017 subscribers' count was reduced. Let's assume that 100% lost users choose refund of the deposit now, so it will bring 50 million yuan and nearly 500 million yuan of Mobike of the deposit outflows, due to the impact of the climate factors of the next year's Spring Festival, The pressure of Mobike cash flow will increase. To sum up, based on the conservative perspective, the estimated amount of stable deposits with monthly active users is now stable at around 10 billion, but the slowing growth of new users will put pressure on the cash flow of Mobike deposits.

Table 6 User and deposit fund flow of Mobike from January to November 2017

Date	Monthly users（10 thousand people）	Monthly Additional new user （10 thousand yuan）	Deposits fund flow （ 10 thousand yuan）
2017.01	1171	-	-
2017.02	1519	348	104052
2017.03	2823	1304	389896
2017.04	5395	2572	769028
2017.05	5838	443	132457
2017.06	5925	87	26013
2017.07	6213	288	86112
2017.08	6299	86	25714
2017.09	6643	344	102856
2017.10	6626	-17	-5083
2017.11	6465	-161	-48139

Resource：i-reasearch.com

Diagram 2 Fluctuations of fund flow of Mobike deposit (10,000 yuan)



2. Cycling income, the estimated cycling fee for monthly active users is considered to be negligible because the cycling charge itself is low. The table 7 shows that the average riding duration daily for active uses is less than 20 minutes, considering within the frequency of use Mobike per capital daily per, the riding time per capital daily will be shorter. It illustrates that Mobike as sharing bicycle for short distance travel has solved the problem.

Table 7 Usage of Mobike from January to November in 2017

Date	**Frequency of use per capital daily (numbers of use)**	**The average riding duration daily (min)**
2017.01	3.24	12.97
2017.02	3.23	13.41
2017.03	3.47	14.11
2017.04	5.11	18.03
2017.05	4.90	16.78
2017.06	3.10	11.86
2017.07	2.83	12.28

2017.08	2.76	7.06
2017.09	2.60	6.72
2017.10	2.58	4.51
2017.11	2.51	4.31

Resource：zhiku.com

Based on the above hypothesis, this case takes the average of 0.75 yuan/half an hour of the pricing of two types of vehicle to calculate the monthly active users' cycling fee income. The monthly active users' cycling fee income = the monthly use time *0.75*2. As mentioned before, in beginning of July 2017 the bicycle card service opened, with ① 2 yuan for one month, ② 5 yuan for three months, ③ 60 yuan for six months, ④ 120 yuan for 12 months; four kinds of services, ③ and ④ we clearly reflects the intention to guide customers to choose ① and ②, so this case assumes that 5% of the monthly active users choose ①month card, 5% of the monthly active users in July and October start ② month card, single monthly active users use time averaged. The calculation results are shown in table 8 and figure 3. The average monthly cycling fee income of active users in January to November 2017 is 42,940,900. Usage of monthly card has decreased of income in July 2017, combined with the monthly usage increased, the trend reversed in June, but as a result of active the monthly duration of usage of active users continued to decline since August, Tucked money of October, which is not obvious, and the income of usage fee for the next couple of months is going to have an significant impact.

Table 8 Mobike incomes of active users using from January to November 2011

Date	**duration（10 thousand hours）**	**the riding fees of active users（10 thousand yuan）**
2017.01	481.39	722.09
2017.02	905.13	1357.69
2017.03	2333.68	3500.52
2017.04	5099.97	7649.95

2017.05	5245.08	7867.62
2017.06	3795.58	5693.37
2017.07	4679.59	8891.21①
2017.08	2708.83	3496.74②
2017.09	2443.28	3085.15
2017.10	1549.55	2944.15
2017.11	1457.38	2026.51

① 4679.59*0.8*0.75*2+4679.59*0.1*2+4679.59*0.1*5

② 2708.83*0.9*0.75*2+2708.83*0.1*2-4679.59*0.1*0.75*2

Resource：zhiku.com

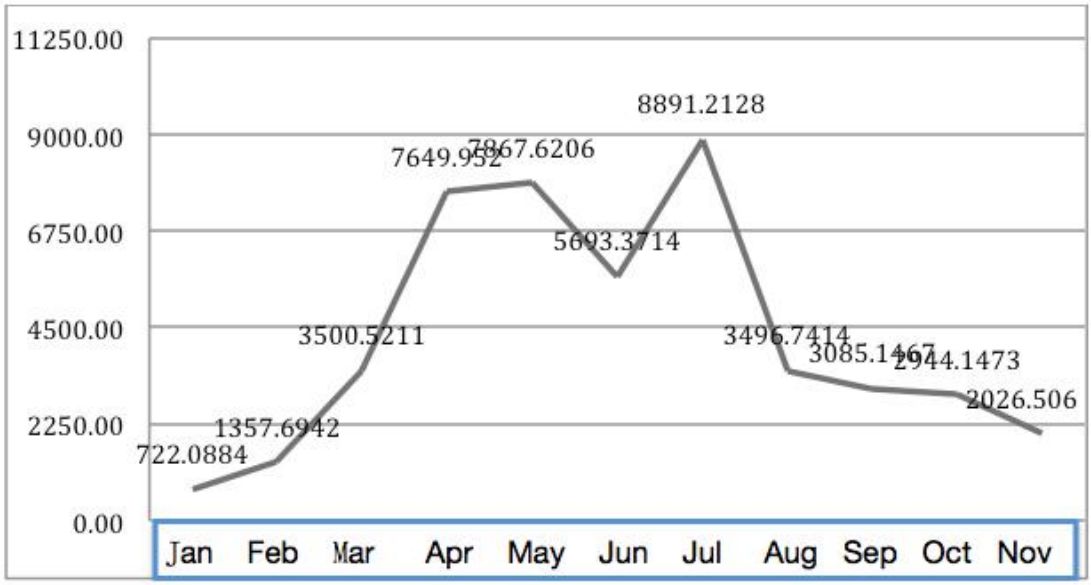


Diagram 3 Monthly cycling incomes of Mobike active users (10,000 yuan) from January to November 2017

It can be seen from table 8 and figure 3 that, in general, the cycling fee income of Mobike is very limited compared with the capital income brought by the deposit. The current cycling fee cannot be the main source of income of Mobike, which makes it more crucial for Mobike to use its retained deposit.

3.2 Future profit model: rental + deposit + commercial + big data sales

Based on the profitability of government-led public bikes, most urban and county public bike systems still rely on government subsidies to maintain their operation, and only a few cities such as Hangzhou can achieve break-even. The public bicycle system in Hangzhou is mainly built and operated by Hangzhou public transportation system. Started late with the annual operating cost as high as 80 million yuan, the end user fees does not constitute a main source of income (free public bicycle commonly allows usage for 1 hour time. The usage of more than 90% of the citizens in within 1 hour interval), so the revenue mainly comes from the advertising resources and model output. In the future, the profit model of the Internet Shared bike is expected to be diversified, increasing advertising and big data revenue on the basis of rent and deposit. For the current, government - dominated, public bikes, advertising revenue is the largest source if income. Big data is an advantage for Internet companies, such as Mobike, which says it is a data-driven company. Therefore, sharing bikes to make money must be a combination of two business models. The first is the charge, the second is the indirect business model, but the indirect business model is based on market share and user base to generate significant profit.

In addition, the main costs of Shared cycling enterprise, formed in the different stages mainly include the following (see table 9).

Table 9 Break down of Cost of sharing bike

Stage **Type of cost**	**R&D stage**	**Operation stage**	**Maintain stage**
Hardware and software procurement costs	√		
Technical R&D and production costs	√		
Network operator fees	√	√	
Advertising and marketing expenses		√	
Human resource cost		√	√

Bike spare parts maintenance fee			√
Dispatch cost			√

Resource：iresearch.com

Due to "Mobike's high-end brand positioning and high-to-middle consumer orientation, the quality of bike and bike smart technology requires high investment. First to study and test the Shared cycling special smart locks, secondly to design the bike appearance, in order to achieve a product of high safety, low damage rate, thereby lowering the damaged bike repair cost. The technological research, development and production cost are the largest Mobike cost composition. As a result, the cost of Mobike is much higher. When Mobike launched its Shared bike, officials claimed that the classic version would cost as much as 6,000 yuan, but the price has gradually reduced to 3,000 yuan. However, the high cost brings the capital pressure when increasing the number of bicycles. In the process of mass launching low-cost bicycles to seize market, Mobike launched lite bicycles with lower cost, lighter weight and safety at a cost of about 500 yuan per piece on October 17, 2016 in order to adapt to the competition. With several vehicle updates, the total cost of Mobike has dropped to around 1,000 yuan per vehicle (see table 10).

Table 10 The updated product and change process of Mobike

Time	Mobike types	Features	Fees
2016.4.22	Sports（classic 1.0）	—	1yuan/half an hour
2016.10.17	Light （“Lite”）	With drum brake, maintenance free for 5 years	0.5yuan/half an hour
2016.11.15	Upgraded sports （ classic 2.0）	—	1yuan / half an hour
2017.4.22	“cool windy”（classic3.0）	Lightweight: the lightest Mobike of all time	1yuan /half an hour
		Safety: no maintenance required for 5 years in an urban environment. With the automotive disc brake system, the braking efficiency is 20% higher than the ordinary brake	

		For the first time, adjustable seat cushions can quickly adjust the height of the seat	
2017.9.22	Released new models and automatic variable speed models	Weight is further reduced and there will be automatic transmission	—

Resource：according to Mobike official website, Weibo

4 Either sharing economy or access economy of Mobike?

4.1 the comparison between the business model of sharing economy and access economy

With the rapid arouse of products and services such as Mobike, Uber and Airbnb, "sharing economy" especially "access economy" has become a very fashionable word and topic. Since the word "Sharing" in English has two meanings, namely "Sharing" and "Access", many scholars, including the authority of the so-called "Sharing Economy", translate as "Sharing Economy" or "Access Economy", stressing that there is no special difference between these two.

However, the modern "sharing economy" is developed by the traditional leasing industry to make full use of the Internet, especially mobile Internet and Internet of things technology. Mobile Internet greatly facilitates the connection between people, people and things, and the reuse of idle resources in society. The application of mobile payment and positioning technology, the popularization of social network, and the perfection of user evaluation system create material and technical conditions for suppliers to share idle resources with others for compensation, cost reduction, consumer search, and meeting consumer demand. Coupled with the enhancement of people's awareness of environmental protection and low-carbon life, experiential consumption and personalized consumption have been widely accepted, jointly promoting the rapid rise of the sharing economy in the world. It can be seen that "sharing economy" is a new rental economy model emerging in the Internet era, and it is an "Internet +" economy. However, it just gives the traditional leasing industry a new model of operation and expands the market. It does not fundamentally change the business model of leasing industry and its profit model still belongs to the category of

leasing economy. In the property rights, Mobike has the ownership of bicycles; users get the right to use. This kind of ownership and right to use have exclusivity, as it cannot be owned by different economic subject at the same time and also cannot realize the true meaning of sharing. In the profit model, bicycle enterprises rely on consumers to buy cycling services to earn income. In terms of operation model, although sharing bicycle simplifies the business operation process, changes the business capital collection and payment method, and expands the market scope, it is still restricted by the place of operation, policies and regulations, public interests and safety, etc. (see table 11).

Table 11 Earnings forecast for Mobike's time-share rental model

Content1	Content 2	Mobike
	Rental	0.5 yuan/time, 1 yuan/time
Price of bike uses		0.75 yuan/time
	Daily order	16 million times
	The total quantity	3.5 million
Frequency of bike daily uses		4.6 times
Annual income of bike		1,259 yuan
	Manufacture cost of bike	1,500 yuan/bike
	Use fixed number of year	4yrs
Annual depreciation costs		375yuan
Operation cost		600yuan
Maintenance cost		100yuan
Vehicle scrap rate		5%
Annual net profit and loss per cycle		175yuan
Payback period for each cycle		14 months

Resource：ireaserch.com

Based on existing data and relevant assumptions, we have a preliminary to speculate on profitability of Mobike based on table 16. It shows that after considering the practical influence factors, according to our calculations, every Mobike has a - 157 yuan/year net loss. If this depended solely on the bicycle rental revenue model it would be a very pessimistic forecast, not to mention the model profit sustainability. By contrast, Mobike's loss seems to be in the early stage of market development, and its strategy of high-cost bike and high-quality service is more cost-effective.

4.2 Either access economy or sharing economy?

Does a real sharing economy exist now? Yes. Besides air, sunlight, public facilities and services, which have long existed as not-for-profit Shared products and services, the App Store created by Steve Jobs at Apple Inc. is an early sharing economy and profit model. Apple's App Store has plenty of apps for users to download, some free and some paid, but none of them are exclusive and anyone can download and use them at the same time. Internet platforms such as Taobao, BAT (Baidu, Alibaba, Tencent), TMD (Toutiao, Meituan, Didi Taxi), BDS (China Beidou satellite navigation system) and GPS (us global positioning system) are typical forms of the sharing economy at present. In a sense, sharing economy is platform economy. These platforms built with the help of modern information technology sell products or services for free or at a set price. For example, Apple App Store does not provide products but only services, and it is completely free to consumers. Its income comes from other consumers or channels, same as BAT and GPS. It is the innovation of this business model and profit model that can break the original industrial chain and its competitive pattern, achieve cross-boundary penetration and development, and then will have a huge extrusion effect or even subversion effect on the industries inside and outside the industrial chain. For example, the emergence of online shopping sharing platforms has up-ended the traditional retail industry, making a large number of traditional brick-and-mortar stores hard hit and even shut down. Free sharing of anti-virus software completely changed the entire computer anti-virus fee market pattern. It needs to be emphasized that Didi taxi, Uber, Airbnb and other platforms that provide transportation vehicles and homestay rental and booking services are typical forms of sharing economy, but the specific taxi and private car they provide and homestay are sharing economic products or services.

From this point of view, sharing economy is not equal to access economy. Sharing economy contains access economy. “Sharing economy" refers to the sum of economic activities that use modern information technologies such as the Internet to integrate and share massive decentralized idle resources to quickly and efficiently meet diverse demands. "Sharing economy" relies on the sharing platform established by modern information network technology to share, utilize and integrate domestic and foreign social resources. By strictly distinguishing the access economy from the sharing economy, one can see that all products and services available for lease have a sharing nature. But not all products and services available for rental are suitable for the sharing economy model. Sharing economy can maximize the sharing, utilization and integration of global resources. Internet platforms, because of its extremely low initiation, sharing and operation, become an important form of Shared economy development and the carrier to promote the development of small and medium-sized enterprises for the masses.

Innovative new products and innovative undertaking business model provides more opportunities to create a more convenient, lower cost, services and allow to expand the market demand, alleviating the problem of asymmetric information. Therefore, sufficient supply side and sufficient demand side participation is the precondition of sharing economy development. However, Mobike has been developed independently since its inception, and its own production is clearly not part of the sharing economy. Currently, 90% of its vehicles are self-operated and only 10% are shared. If a large number of dust-covered and quality bikes were shared, it would be the real sharing economy in the cycling sector. But now, this goal cannot be achieved. On the one hand, bicycle owners are unwilling to share because of distrust. Bike sharing is different from car or course sharing. Car can be Shared because there is always a driver behind it, house can be shared because it won't go away. On the other hand, platform enterprises cannot find ways and models to make ordinary bicycles low-cost and efficient. Although there are a lot of idle resources, there are still obstacles to popularize the sharing model in the campus market to the social market. Obviously, China's so-called "sharing bike" and many "sharing economy" do not have these characteristics, and thus do not belong to the real sense of sharing economy and its

products.

Since Shared bikes do not have the condition of idle resource sharing, they do not have the characteristic of sharing economy. On one hand, reusing unused resources in the sharing economy is cheaper than cheap bikes manufacture. Right now, the industry is struggling to remove the high costs of heavy assets such as vehicle manufacturing, maintenance, loss, and damage. In search for solution, Mobike has decreased manufacturing cost from as high as 6000 yuan to 3000 yuan and in future might lower it further to as little as 1000 yuan or less. Still it is huge investment for the company. Sharing economy, on the other hand, belongs to the typical bilateral market, namely the supply and demand sides both trade through the platform, as participants. The more the other party adds to it, the greater the benefit two groups attract; promote one another The network effect will be further enhanced. Positioning oneself on the platform of enterprises can quickly allow growth into "unicorn" and even get the notion of "sovereign". The platform providing C2C Internet application will make use of the low-cost aggregation effect, gathering hundreds of millions of users for free. As the platform controls the entrance of the supplier to customers, it will have a huge impact on the players on the supply side. Right now, the sharing of bicycle market may not have the above characteristics, " The battlefield of Carpooling, and Didi drivers will be in 90 days, Bikes is going to not be an exception", "end in 90 days represent for the pace of development that is Sharing model, which may not have Shared economic characteristics as bicycle market wouldn't be so quick to form a unified pattern. Perhaps this is just an illusion of VC and wishful thinking.

If the development of the bike market cannot be considered under terms of the sharing economy, the bike operators should at least have a differentiated or novel profit model. Otherwise, how would it bring returns to those investors? Charging 1 yuan or 0.5 yuan for the fare alone seems thin. Many people have drawn the conclusion that the cycle can be used several times a day to maintain the profit and loss balance. However, it should be noted that the cycle operation market development has its own boundary, for example, cycling is limited by time. Development will be limited by region. In many western regions, there is no bicycle path, and ordinary people do not have the habit of riding. Therefore, it is doubtful whether these frequencies can be achieved to

maintain the balance of profit and loss. Moreover, the frequency calculation only takes into account the foreseeable costs such as manufacturing costs, as well as other costs such as loss, damage and research, but these costs are unpredictable. Unfortunately, the bike companies themselves have no clear goal or even concept of more advanced model.

5 Conclusions

The traditional economic era is a world of exclusivity, which creates monopolies, maintains stable status quo, and creates solid barriers to access industry. In the past, private property was advocated to be sacred and inviolable. Now, the emergence of mobile social network makes the exclusive economy gradually move to the backstage and introduces the succession of a sharing economy. Under the sharing economy, people's life tends to be concise as more and more people go to the ranks of public enjoyment. They not only take the initiative to apply the public benefits of others, but also enjoy the idle resources in their hands. A sharing economy can be said to be a product of the Internet era. Sharing economy involves three major themes, namely demand side, platform and provider side.

The Internet is the best platform for sharing economy as it can rapidly match the demand side and the provider side through big data network. The platform and provider receive income while the demand side gets the tools or services it needs. With the development of the sharing economy, more and more business models based on the sharing economy will appear. The boom in Shared bikes has extended to Shared trolleys, Shared cars and so on. Sharing economy can be as big as earlier rapid growth in car or house sharing platforms, and can scale to things as small as a pencil eraser; you can share your own Wi-Fi, your own parking space, and even your own toilet. In a word, as long as there are idle things, things that can be recycled or used together can realize the sharing economy and achieve win-win cooperation. As American management guru Peter Dracker pointed out, the competition in the future economy is no longer product and service, but business model and platform, which can realize the use and integration of global resources. As a new economic form, the

sharing economy represents the future direction of economic and social development, which is of great significance for economic transformation and upgrading.

Sharing bike has been praised as one of the four new great inventions of China, which has provided great convenience to citizens, but also has put entrepreneurs at great risk. The risk is so great that it goes beyond the company's own debt and is so closely tied to its life. The most importantly, sharing a bike is considered as a "heavy assets" enterprises, where the most of the enterprises funds have been invested into the bike production and operation, and the industry competition is really intense though that leads an outcome of idle resources, It is difficult to collect cost whereby bike rental quickly, increasing funding pressure makes many latest startup enterprises have to be shut down in 2017. Wukong bike announced its closure on June 13, 2017. After Wukong bicycle withdrew from the market, in half a year, 3Vbike cycle, town cycle, Xiaoming cycle, cool cycling, little blue cycle and other six Shared bikes have also been closed. In August 2017, the ministry of transport issued a statement 《About encouragement and regulation of the development of the Internet lease bicycle guidance》 explicitly proposing to encourage Internet rental bike operating enterprise adopting the exempt deposit method and providing rental services. It also required enterprises to charge its users through specific established account. The deposit shall be subject to the supervision of the departments concerned. So it remains to be seen whether the future of bike sharing is one of prosperity or another of chicken feathers.

6. Reflection and Discussion：

1. How to understand the essential of the sharing economy? What's the difference between it and the access economy? Is the sharing economy a rental economy? Is rental economy equal to sharing economy?

2. From the perspective of corporate finance and strategy, discusses what the business model of Mobike is? What is the strategic objective of its sustainable operation? Compared with OfO bike, what are the commonalities and differences between Mobike's business model and financing features?

3. From the perspective of management accounting, what are the nature of the state and earnings characteristics of Mobike? Where are the boundaries of sharing bike enterprises? How to build the profit competency in the future? What are the commonalities and differences between Mobike and OfO bike in their profit model?

4. From the perspective of economics and management, the bike is either sharing economy or access economy? What level has China sharing economy achieved? How is it different from the traditional leasing industry? What is the theoretical logic for the bike-sharing enterprise to choose this business model?

5. Why there are so many shared bikes business have been failed in nearly a year? Under the trend of Internet +, where is the future of the bike sharing enterprise? What does this case try to implicate us?