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OFO BIKE SHARING: RIDING ON A BUMPY ROAD

Riding is the best way to know the world.

— Wei Dai, CEO and Co-founder of ofo¹

It was just a normal sunny Sunday morning, but Wei Dai was particularly happy as he finally found some time during his busy schedule to go out and enjoy cycling. Dai was the CEO and a co-founder of ofo, the world's first “non-docking” bike-sharing platform using a mobile application. Dai and his schoolmates developed ofo in 2014, combining smart applications with the idea of a sharing economy² to overcome the “last kilometer of travel” problems facing people living in cities. The company grew very fast. By June 2017, ofo connected about 10 million registered users with over one million bikes across 34 cities in China, including Guangzhou, Shanghai, Beijing and other major cities. The company handled more than two million transactions every day, and became the ninth Chinese company to exceed one million daily transactions.³ Ofo had also expanded its businesses outside China into the US, the UK and Singapore.

Along the way, Dai was so proud to see many people riding shared bikes. According to the China Bicycle Association, the percentage using bikes for transportation increased from 5.5 percent in 2015 to 11.6 percent in 2016.⁴ Nevertheless, Dai felt the pressure; he saw a surge of different coloured shared bikes, each colour provided by a different bike-sharing company besides the yellow bikes provided by ofo.

To his disappointment, Dai also saw a number of purposely damaged bikes left on the roadsides, some of which had no saddles, handles or even wheels. Some bikes were misplaced; for example, some bikes occupied car park slots. On one occasion, he even saw a bike intentionally left in the middle of a main road, which could easily have caused car accidents.

¹ Lv, Ruoling (12 Oct. 2016) Wei Dai and his ofo: Riding on capital's shared bikes, http://www.sohu.com/a/116017632_247350, in Chinese, accessed on 6 June 2017.

² Sharing economy refers to “an economic model in which individuals are able to borrow or rent assets owned by someone else.”, adopted from Investopedia (2017) “Sharing Economy”, <http://www.investopedia.com/terms/s/sharing-economy.asp>, accessed on 20 August 2017.

³ Company website, www.ofo.so/aboutus.html, accessed on 6 June 2017.

⁴ Zhi, Xie (8 May 2017) Bicycle industry moves into a new development era featured with sharing, innovation and co-operation, China Bicycle Association, <http://www.china-bicycle.com/News/View/f7fb0206-1896-4ca5-9ba9-1261ed058282>, in Chinese, accessed on 16 June 2017.

This cycle tour made Dai realise the urgency of discussing these issues with his colleagues and seeking solutions. There were two particularly important key issues to be raised. First, ofo seemed to have lost its first-mover advantages, as many competitors were emerging and growing fast. How should the company leverage on its first-mover advantages and overcome its disadvantages to survive and grow in the future? Second, as non-docking bike sharing was still an emerging and immature business model, ofo had to decide quickly how to deal with the social problems brought about by bike sharing to avoid unfavourable impacts on the company.

Bike Sharing Industry

Public Bike Sharing

Bike sharing started in Europe in the 1960s and became popular again in the mid-2000s [See **EXHIBIT 1** for the different stages in bike sharing businesses]. Before the concept of non-docking bike sharing emerged, a public bike-sharing system was already in place in many countries. These public bikes had fixed docking stations, which were approved by local authorities and were normally located close to underground stations and shopping malls. Therefore, it was normal for local governments and public-private partnerships that ran the businesses to participate jointly.

A successful example was Vélib', which was developed in France in July 2007 with the full support of Bertrand Delanoë, the Mayor of Paris at that time. In 2011, about 86,000 people used the bikes provided by the programme on a daily basis. In 2015, the programme already had over 1,200 docking stations and about 20,000 bikes. It became the role model for many other countries to follow and was the largest bike sharing programme outside China.⁵

In China, the traffic jams and air pollution posed a serious problem for local governments of the top-tier cities; thus, bike sharing became a solution. In Hangzhou, Zhejiang Province, the public bike-sharing system was run by the Hangzhou Public Transport Corporation which was developed in 2008 with investment from the local government. The programme had about 2,700 stations with over 70,000 bikes in 2015. It was expected to operate 175,000 bikes by 2020.⁶

Theft and vandalism were common problems in public bike-sharing systems. In Vélib's case, for example, many bikes were found stripped for parts and abandoned in a state of disrepair. Some bikes were stolen and even sold to other countries.⁷ Another problem with the public bike-sharing system was that bikes were limited to local cities. The number of docking sites limited the number of bikes available. Problems of narrow roads and difficulties of bike maintenance also put constraints on the development of public bike-sharing programmes.

Non-Docking Bike Sharing

⁵ EcoWatch (30 September 2015) 8 of the world's best bike sharing programs, <https://www.ecowatch.com/8-of-the-worlds-best-bike-sharing-programs-1882105476.html>, accessed on 19 July 2017.

⁶ EcoWatch (30 September 2015) 8 of the world's best bike sharing programs, <https://www.ecowatch.com/8-of-the-worlds-best-bike-sharing-programs-1882105476.html>, accessed on 19 July 2017.

⁷ EcoWatch (30 September 2015) 8 of the world's best bike sharing programs, <https://www.ecowatch.com/8-of-the-worlds-best-bike-sharing-programs-1882105476.html>, accessed on 19 July 2017.

The increasing popularity of fast, small value, mobile payment channels in China made payments for shared bikes possible. Wechat Wallet and Alibaba's Alipay became a normal way for the Chinese to make small money payments in convenience shops, supermarkets, restaurants and even utility bill payments.

With mobile payment channels available, Dai Wei and three partners came up with the idea (in 2014) of "Using shared economy + intelligent hardware to solve the transportation difficulty of the last kilometer".⁸ Unlike public bike-sharing programmes, ofo offered the first non-docking bike-sharing platform in the world by combining offline bike movements and online payments. Users could pick up and leave the bikes anywhere. Using mobile apps or wechat services, users no longer needed to apply in person and look for bikes in specific locations. At the same time, all the transactions including deposits and fee payments could be completed on the online platforms using electronic wallets and finger prints in less than a minute.

Following ofo, a large number of bike sharing companies have emerged. In the second half of 2016, except for ofo and Mobike, more than 25 new shared bike brands entered the market. On 7th May 2017, the China Bicycle Association developed a Bike Sharing Specialist Committee, signalling bike sharing had been formally admitted into China Bicycle Association. The Committee members included representatives from China Bicycle Association, Shanghai Forever Bike Manufacturer, Tianjin Pigeon Bicycle Manufacturer, ofo and Mobike.

The Growing Market

In 2016, with the surge of shared bike companies, the bike-sharing boom started taking off [See **EXHIBIT 2**]. The competition among shared bike companies was intensifying. Companies were producing more and more bikes to win the battle for market share, because the main channels of raising users' brand awareness was through parking and riding on the shared bikes and word-of-mouth. At the same time, more and more people were willing to use shared bikes. During the last quarter for 2016, for example, ofo and its closest competitor, Mobike, together had more than 9 million new active users each month.⁹

Frequent users used shared bikes on a wide range of occasions. Nevertheless, the main spots for using shared bikes to replace walking concentrated on between public transport spots, such as underground stations and bus stops, and residential and commercial destinations such as homes and shopping malls. Nearly 70 percent of users normally used other public transport along with the shared bikes. Most of the journeys were no longer than 30 minutes.¹⁰

Research also found that over 60 percent of frequent users normally prepaid one hundred or more RMB. Compared with occasional users, frequent users were more loyal and responsible. Traffic jams and air quality also played a key role in the users' willingness to ride.¹¹ For example, usership was heavily influenced by seasonal factors and weather. When bad weather such as a storm or typhoon struck, there would be no users but more damaged bikes.

China used to be a kingdom of bicycles. When I was young in the '90s, there were bikes everywhere. And given the population is already well-

⁸ Hui, Ting (28.03.2017) Co-founder and CEO of ofo – Dai Wei's background, <https://www.laonanren.com/news/2017-03/161570.htm>, accessed on 16 June 2017.

⁹ Yang, Yuan and Xinning Liu (19 March 2017) China's bike-sharing boom in charts, *Financial Times*, <https://www.ft.com/content/5efe95f6-0aeb-11e7-97d1-5e720a26771b?mhqsj=e1>, (accessed 20 July 2017).

¹⁰ Shi, Rui (2 May 2017) China Shared Bikes Industry in 2017 Research Report, *iResearch*, <http://cj.sina.com.cn/article/detail/5161570758/236634>, Accessed on 6th July 2017.

¹¹ Shi, Rui (2 May 2017) China Shared Bikes Industry in 2017 Research Report, *iResearch*, <http://cj.sina.com.cn/article/detail/5161570758/236634>, Accessed on 6th July 2017.

trained [to ride them], they're just looking for something more convenient.

- Xue Huang, Mobike Spokesman¹²

Nevertheless, the future of shared bikes looked promising. Urbanisation created the demand due to traffic congestion and parking difficulties. Changing climate raised the public's environmental awareness, making cycling a green means of transport. At the same time, local governments around the world focused more on "bikability" of a city by developing dedicated bike lanes and financially supporting the bike-sharing programmes. Bike users recognised the fringe benefits of bike sharing and were willing to use shared bikes. According to Roland Berger, there were about 600 bike-sharing programmes in the world worth more than 1.3 billion euros, which was expected to reach 5.3 billion euros by 2020.¹³

Competitive Landscape

With the increasing number of bike-sharing companies, the competition was intensifying [See **EXHIBIT 3**]. On 13th June 2017, Wukong Bike became the first Chinese bike-sharing company to close its business and claimed that about 90 percent of bikes were lost¹⁴. It was immediately followed by 3Vbike which announced business closure on 21st June 2017.¹⁵

For those successful bike-sharing companies, one study suggested the following six contributing factors:¹⁶

1. A high -density network of bikes helped to increase usage frequency.
2. Integrating bike-sharing businesses with the infrastructure, payment and information structure should be achieved to smooth and facilitate business operations.
3. An automated user-friendly bike rental handling process allowed no obligatory advance booking and fast tracking for registered users.
4. Pricing schemes should be affordable and attractive to users.
5. High-quality bikes should be provided because of low maintenance, theft prevention and good user experience.
6. The support of local authorities was also important, as they needed to have land use rights and local business agencies.

Among ofo's dozens of competitors, Mobike was the most competitive [See **EXHIBIT 4** for a comparison between ofo and Mobike]. Mobike, headquartered in Beijing, was established by Beijing Mobike Technology Co., Ltd. Mobike started business in Shanghai in January 2015 and then entered the Beijing market in September in the same year. Mobike invited Wang Xiaofeng, then the Shanghai city manager of Uber, a successful car sharing business, to join the company, using his knowledge of business expansion into new cities and bike allocation to maximise market coverage. Mobike received about US\$ 300 million funding from investors including Singapore Sovereign Wealth Fund Temasek and Foxconn. Mobike

¹² Huang, Echo and Josh Horwitz (28 February 2017) China's "Uber for bikes" startups are being taken for a ride by thieves, vandals, and cheapskates, *Quartz*, <https://qz.com/1028802/cheap-eames-aeron-and-barcelona-chairs-inside-the-trillion-dollar-black-market-for-fake-designer-furniture/>, accessed on 24 July 2017.

¹³ Roland Berger (2016) *Bike Sharing 4.0 Study*, Hamburg, June.

¹⁴ Zheng, Baosheng (19 June 2017) The first Chinese bike sharing company closes down, only 120 out of 1200 bikes found, <https://www.hk01.com>, accessed on 20 August 2017.

¹⁵ Sing Tao Daily (3 July 2017) Another bike sharing company closes down after only five months in operation, <http://std.stheadline.com/daily/news-content.php?id=1625859&target=2>, accessed on 20 August 2017.

¹⁶ Roland Berger (2016) *Bike Sharing 4.0 Study*, Hamburg, June.

was operating in many top-tier and second-tier cities in China and expanded to Singapore in March and Manchester in the U.K. in June 2017.

Mobike's bikes were featured as orange bikes. Each bike had an internet-controlled electronic wheel lock that automatically unlocked after a user used Mobike's mobile application to scan the unique QR code attached to each bike. After using a bike, the user was supposed to lock the bike manually. Mobike's locks had GPS functions, allowing a potential user to locate a bike nearby. The cost for using a bike was about 1 RMB per hour.

Technologies are helping [us] to operate more efficiently. Take intelligent locks as an example. I can learn the bike has a problem and where the bike is. I just go there to solve the problem, which won't create any social problem to society. Our bikes are maintenance free for four years. The four-year period is used for calculating depreciation, and a bike probably can last for eight years. If a bike is of poor quality and can only last for three months, the bike may go wrong after three months and no one knows its location, then it probably becomes a city's rubbish.

- Weiwei Hu, Founder of Mobike¹⁷

At the start, when Mobike was unable to find a bike manufacturer willing to significantly modify their production lines, Mobike decided to make bikes itself. Mobike developed its own research and development team and own factories to manufacture the bikes. Over the years, Mobike became the market leader in terms of intellectual property applications [See **EXHIBIT 5**].

ofo

Cycling is a perfect method of transportation. It is environmentally friendly, good for exercising, and easy to store and maintain. However, with the development of the global economy and living habit changes of people, the number of bikes declines rapidly, which is particularly evident in China.

— Wei Dai, CEO and Founder of ofo¹⁸

Wei Dai, Siding Zhang, Ding Xue, Pinjie Yang and Xin Yu established the company in 2014. All loved cycling and had joined the same cycling club at university. They started by finding out the reasons behind the abandonment of bikes, which included the lack of maintenance facilities, high costs, inconvenience to carry and a very limited number of locations for public bikes. They decided to use the shared bikes system to solve the problems facing bike users, and ofo became the first “non-docking” bike-sharing platform.

The three letters, ofo, look like a person riding a bike or like a bike, which is easily understood around the world.

— Wei Dai, CEO and Founder of ofo¹⁹

Their original idea was to encourage users to bring their own bikes to the shared bike platform, allowing them to use ofo bikes for free by abandoning their own bike ownerships. This system could save costs, as ofo would not need to spend money on producing bikes. At the same

¹⁷ Zhou, Changfan (3 November 2016) Here come Mobike and ofo - shared bikes increasingly popular on the roads in China, <https://theinitium.com/article/20161103-mainland-mobike/>, Accessed on 2nd June 2017.

¹⁸ TMTPost (25 Apr. 2017) Wei Dai, ofo founder, talks about starting a business: direction is more important than money and technologies, http://www.sohu.com/a/136422995_116132, accessed on 6 June 2017.

¹⁹ TMTPost (25 Apr. 2017) Wei Dai, ofo founder, talks about starting a business: direction is more important than money and technologies, http://www.sohu.com/a/136422995_116132, Accessed on 6 June 2017.

time, it allowed the re-distribution of existing resources without putting a large number of new vehicles into the market, creating traffic jams and waste.

The test bed was Peking University where they studied. They started with an open letter to encourage students to donate their bikes and join the bike-sharing platform. Those who donated their bikes could use all ofo bikes for free. The cost of using a bike was very low, only 0.5 RMB for less than one hour. The company started operating in June 2014 [See **EXHIBIT 6** for the rental process]. It was good timing due to the graduation season, allowing ofo to have the first batch of bikes for testing.²⁰ By October, students and teachers had already become used to using ofo to travel around the campus. Building on the success of Peking University, ofo started to expand into other universities in China.

In September 2016, ofo received US\$100 million from Didi Chuxing. They decided to move beyond the university boundary and open the business to the public. The trial run started in Shanghai and Beijing [See **EXHIBIT 7** for its business expansion]. The company also decided to improve the bike structure, making it more stable, stronger and safer. The bike seat became adjustable to fit customers of different heights. They also replaced their tires with solid tires to prevent damage by needles and other sharp items. Brakes were replaced by drum brakes to strengthen the brake pads, thereby improving the bikes' stability and safety. Concurrently, ofo increased the pricing scheme, charging teachers and students 0.5 RMB per hour and others 1 RMB per hour.²¹

In March 2017, ofo received US\$450 million from Atomico, Coatue Management and others. To ofo, the cost of making a bike was around 300 RMB. The company bought about 90 percent of its bikes; the others came from donations and recycling.

On 22nd June 2017, ofo announced an increase in the deposit from 99 RMB to 199 RMB for new users. The company hoped that it would help solve the problem of bike vandalism. At the same time, ofo was building a new intelligent credit control system based on a user's cycling habits and credit ratings. Additionally, as Alibaba's Alipay already had a strategic partnership with ofo, users in Guangzhou, Shanghai and Hangzhou could use their sesame credit points rated by Alibaba's credit system to exempt them from paying the deposits.²²

Besides Alibaba, ofo had developed strategic alliances with other companies. On 27th April 2017, Didi Chuxing, a major ride-sharing company in China, formed a partnership with ofo. Didi Chuxing users were allowed to directly use its app to use ofo bikes. User registration, authentication, deposit management, online payment and customer services would be connected and shared between the two parties. Didi Chuxing was a one-stop ride-hailing platform, serving 30 million users in more than 400 cities in China. In 2015, Didi Chuxing completed 143 million orders and became the second largest online transaction platform after Alibaba's Taobao.²³

In May 2017, ofo signed an agreement with Shanghai Phoenix, a well-known bike manufacturer in China, to buy no less than five million bikes a year. They agreed on research and development collaboration in manufacturing bike components and bikes. These new bikes would carry the phoenix label, while Phoenix would manufacture a variety of bikes meeting the industry standards tailored to user requirements in different countries around the world. A South China Research and Development Centre for Shared Bikes would also be jointly

²⁰ Zhou, Changfan (3 Nov. 2016) Mobike and ofo are coming: shared bikes rapidly popularize on the roads in China, *Initium Media*, <https://theinitium.com/article/20161103-mainland-mobike/>, Accessed on 9 July 2017.

²¹ <https://kknews.cc/tech/e24r6z.html>

²² 21st Century Economic Report (22 June 2017) Behind ofo doubles the deposit – a tug of pricing war among bike sharing, <http://tech.qq.com/a/20170622/001575.htm>, accessed on 26 July 2017.

²³ Didi Chuxing (2017) About us, in Chinese, <http://www.didichuxing.com/fazhan.html>, accessed on 21 June 2017.

developed to carry out research in bike frames, appearance, painting process, parts and intelligent hardware. At the same time, they agreed to build a South China Quality Control Centre to develop a quality management standardisation system with quantifiable indicators in order to ensure the bikes' quality.²⁴

Challenges

As long as the ideas are not dried up, there are always more solutions than difficulties.

- Wei Dai, CEO and Founder of ofo²⁵

User Expectations

To users, bike sharing was a flexible, affordable and low-maintenance option. Cycling was faster than walking while it was cheaper than taking a taxi or owning a car. Bike sharing was easily combined with other means of public transport, such as bus and underground.

It's about 20 minutes to ride [from my office to home], so I only need to pay 0.5 RMB. It's cheaper than public transportation.

- Judy Zhao, user of shared bikes²⁶

Compared to other shared bike companies, however, ofo missed some features. Mobike and Bluegogo, for example, allowed users to book bikes in advance. Users could enter the address and reserve a bike for the following fifteen minutes. This function was particularly useful in office districts where bike sharing was so popular that the bikes were rented out very fast.

Additionally, to keep track of their bikes, many companies including ofo and Mobike used their app to track users' routes, which raised concerns of privacy issues. Mobike provided other interesting statistics; for example, the distance they rode, the calories they lost and the carbon emission they saved, which helped to ease a user's privacy concerns.

User Negligence and Vandalism

Bike sharing meant bikes being available to the public, but some users chained the shared bikes to prevent others from using them. Abuse and vandalism of shared bikes were rather common. One of ofo's bike repair stations in Beijing, for example, received more than 1000 bikes every day and had nearly 10,000 bikes piled up along the roadside waiting to be repaired.²⁷

Some bikes were stripped for parts, some number plates or QR codes were removed, and some were even painted another colour. Even though ofo encouraged users to report illegal behaviours and trace errant users by giving ofo vouchers, the problems still persisted.

²⁴ Shanghai Securities News (8 May 2017) Shanghai Pheonix and ofo's shared bike strategic cooperation, *Shanghai Securities News*, <http://company.stcn.com/2017/0508/13336946.shtml>, accessed on 9 July 2017.

²⁵ Bai, Yang (04 Mar. 2016) ofo Team: Riding + Internet = Hobby + Career, http://pkunews.pku.edu.cn/xwzh/2016-03/04/content_292956.htm, in Chinese, accessed on 6 June 2017.

²⁶ Huang, Echo and Josh Horwitz (28 February 2017) China's "Uber for bikes" startups are being taken for a ride by thieves, vandals, and cheapskates, *Quartz*, <https://qz.com/1028802/cheap-comes-aeron-and-barcelona-chairs-inside-the-trillion-dollar-black-market-for-fake-designer-furniture/>, accessed on 24 July 2017.

²⁷ Sing Tao Daily (9 April 2017) Shared bikes suffer vandalism, thousands of faulty bikes last 300 metres, in Chinese.

For safety reasons, a bike sharing company might also need to know more about who used the bike and how the bike was used. It happened that an eleven-year-old boy unlocked an ofo bike manually and got killed in a car accident in March 2017, which brought the safety issues of bike sharing to the public's attention.

Bike Design

Two-way communication was the core of a bikes' intelligent terminal. Operators were able to locate each bike accurately. After a bike was locked by a user, the information was automatically transferred back to the operator and the fee was automatically deducted. This also helped to build a big database and an artificial intelligence platform.

Nevertheless, ofo used a mechanical lock with a fixed password for each bike, making it easy for a user to bypass the mobile app and use the password to ride for free. In the first half of 2017, ofo started adding an electronic lock to each bike, which was compatible with the existing mechanical lock and operated using a password token. However, without a GPS locator, it was still hard to avoid the problem of some users hiding a bike for their sole use.

Government Regulations

Since non-docking bike sharing emerged only two years ago, local governments realised several problems associated with bike sharing and started taking action to regulate the industry.

First, the number of bike-sharing companies and bikes were increasing rapidly. In Beijing, for example, more than six companies had put in nearly 700,000 bikes between August 2016 and April 2017, and registered users reached nearly 11 million.²⁸

Second, as bike sharing companies did not have fixed stations for bikes, users put their bikes everywhere. Local governments received complaints from road users and local communities, such as bikes occupying car park spaces, blocking roads and creating other road hazards.

Third, local governments also saw the need to regulate the deposit management of bike-sharing companies to prevent companies from misusing funds. They wanted to ensure that deposits were distinguished from other funds collected by the companies. In May 2017, the Ministry of Transport, the National Development and Reform Commission, and the People's Bank of China issued a proposal to focus on the management of bike users' deposits and suggested putting deposits into a designated bank account to prevent misuse.²⁹

Several local governments started taking action. In Shanghai, the Government announced the Guidelines for Bike Sharing Advancement in Shanghai. The guideline clearly specified the responsibilities of (a) the banks managing the deposits and (b) relevant government departments. Bike sharing companies were no longer allowed to leak their customers' personal data to the public. By sharing users' creditability information, companies were expected to strengthen their management of user creditability. Companies were required to restrict bike users to be over 12 years' old with a height between 1.45m and 1.95m.

On 20th April 2017, Zhengzhou Public Transportation Corporation formally launched a management platform for shared bikes, Bikes' Home, to solve parking problems. The

²⁸ Fang, Yan and Jun Feng (22 April 2017) Ofo and Mobike's responses to Beijing's Attempt to Regulate shared bicycles, *Tencent Technology*, <https://hk.wxwenku.com/d/100026947>, Accessed on 2nd June 2017.

²⁹ Wu, Yujian, Zhang Yuzhe and Dong Tongjian (22 May 2017) China to roll out tougher rules on bike-sharing deposits, *Caixin*, <http://www.caixinglobal.com/2017-05-23/101093496.html>, Accessed on 24 July 2017.

platform used signal control equipment to draw a virtual parking area electronically. Users could use their mobiles to look for the location to get and return their bikes. If users locked their bikes outside virtual parking areas, they could lock their bikes but the counting of bike usage fees did not stop. Therefore, users were trained to park their bikes in the parking areas. Bikes' Home supported payments using either mobile QR scan or Bus IC cards. The use of Bus IC cards allowed the public to use the same card for renting bikes and riding buses and undergrounds. At the same time, the Bikes' Home was also a sharing platform, supporting all brands of shared bikes. The platform centralised the management of shared bikes by allocating the bikes based on the data of customers using public transportation.

On 22nd April 2017, Beijing Transportation Department also announced a guideline to regulate the Sharing Bicycles Industry. It was expected that more local governments would follow suit.

Forced Service Withdrawal

The company's business expansion was not always smooth. In February 2017, ofo placed 50 bikes on the campus of the University of California San Diego (UCSD) in the United States, then 250 more in April. Every day there were over 1000 uses and students were able to ride free of charge. UCSD Transportation Services, however, ordered ofo to remove all bikes, which ofo accepted and moved all the bikes off the campus on 21st April.

UCSD gave the following reasons: First, the University never formally entered an agreement with ofo. Second, UCSD Transportation Services received several complaints of the bikes blocking access ramps, hand rails and sidewalks. Third, ofo failed to meet certain insurance policy requirements set by the University for bike sharing programmes.

As a matter of fact, the University already had the Triton Bikes bike-sharing programme in place, a formal programme operated by the campus, allowing students to check out recycled bikes free of charge. Unlike ofo, however, students had to visit the Gilman Parking office, complete a waiver, and show a valid form of I.D. to check out a bike. These bikes had to be returned within 48 hours.

A lot of people I know don't own a bike because they don't use it enough or it's too much of a hassle to get it to and from campus. This allows them some of the perks of a bike without the hassle and maintenance. I'm disappointed that [ofo is] being discontinued. They provided a service that I used and I believe was a net positive for the community.

- Griffin Stamp, UCSD student³⁰

Ofo's partner was a first year UCSD student, D.P. Li. He said he spoke with a transportation services representative in October 2016 to propose the idea. He carried out a survey and received more than 1400 responses, among which 99 percent noticed the yellow bikes and 53 percent already used the service.

³⁰ Cho, Shine (20 April 2017) Yellow ofo bikes to be removed from campus by Friday, <http://triton.news/2017/04/yellow-fo-bikes-removed-campus-friday/>. Accessed on 14 June 2017.

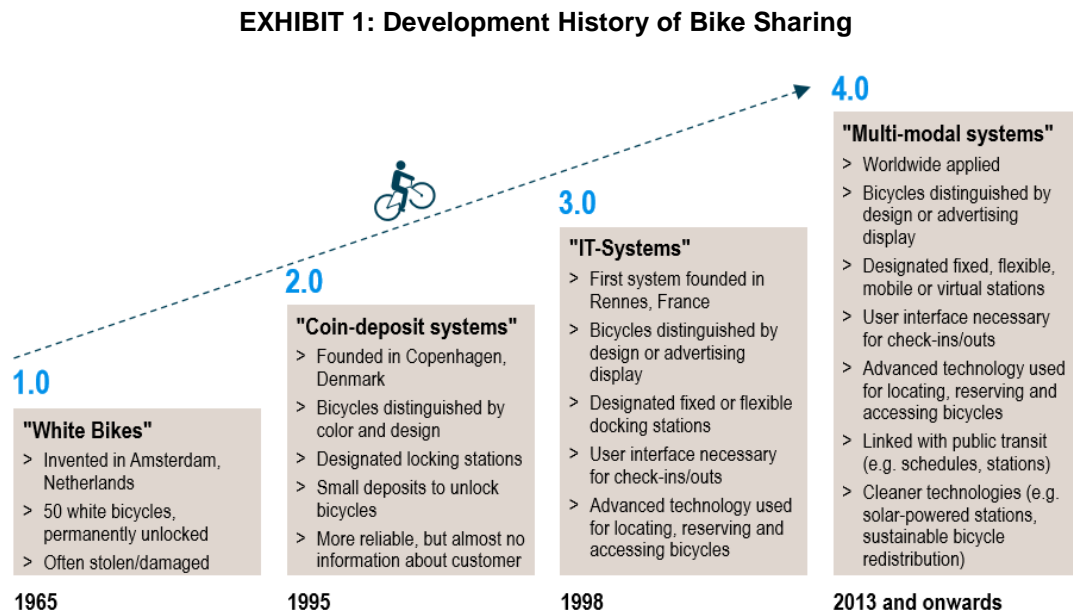
What Next?

New things will face a lot of difficulties and challenges because they are not strong enough. Their strengths are very limited, compared with a matured society operating for a long time. But we are happy to see the non-stop demands from users.

- Wei Dai, CEO and Co-founder of ofo³¹

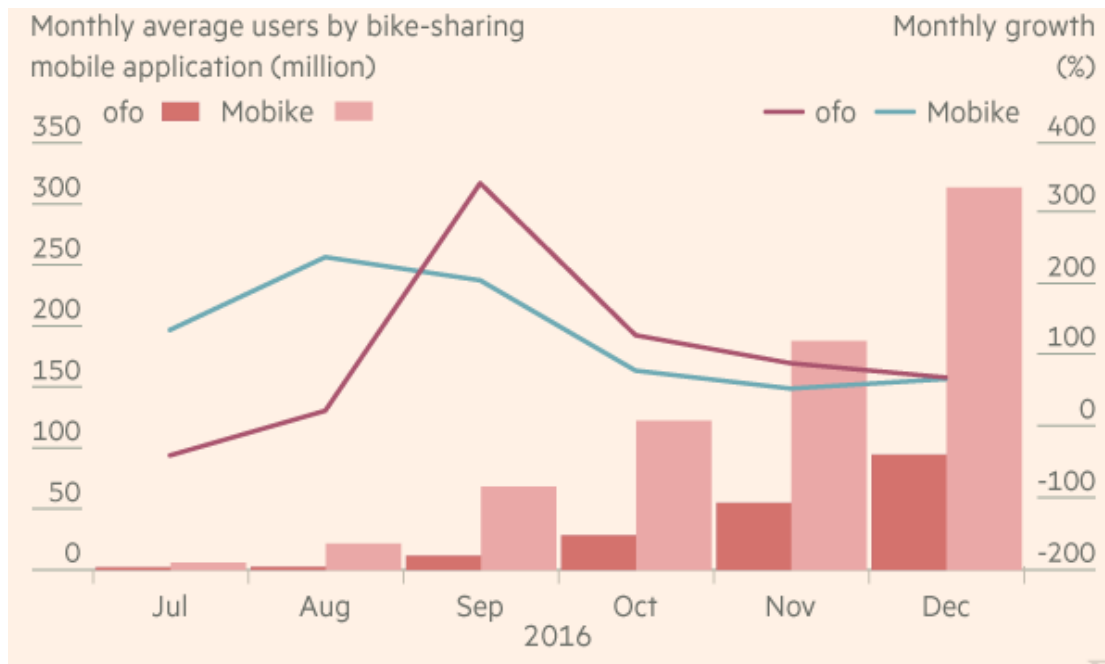
As the first non-docking bike-sharing company, ofo was standing at the crossroads. Dai and his colleagues were facing unprecedented and difficult questions. The company had been overtaken by its competitors, especially Mobike. Mobike had surpassed ofo in several aspects, such as the number of intellectual property rights and the use of GPS for bike users to locate a bike and make an advanced booking. With new competitors entering the scene and innovative technologies being introduced to the fast-growing bike-sharing industry, ofo needed to think carefully how it could leverage its first-mover advantages and overcome the disadvantages. Meanwhile, ofo was also facing pressures from bike users, investors, local communities and governments, all of which also needed to be dealt with immediately.

³¹ Yan, Ru. (27 Apr. 2017) Green sharing brings life changing, *China Intellectual Property News*, http://www.iprchn.com/Index_NewsContent.aspx?NewsId=99795. Accessed on 10 July 2017.



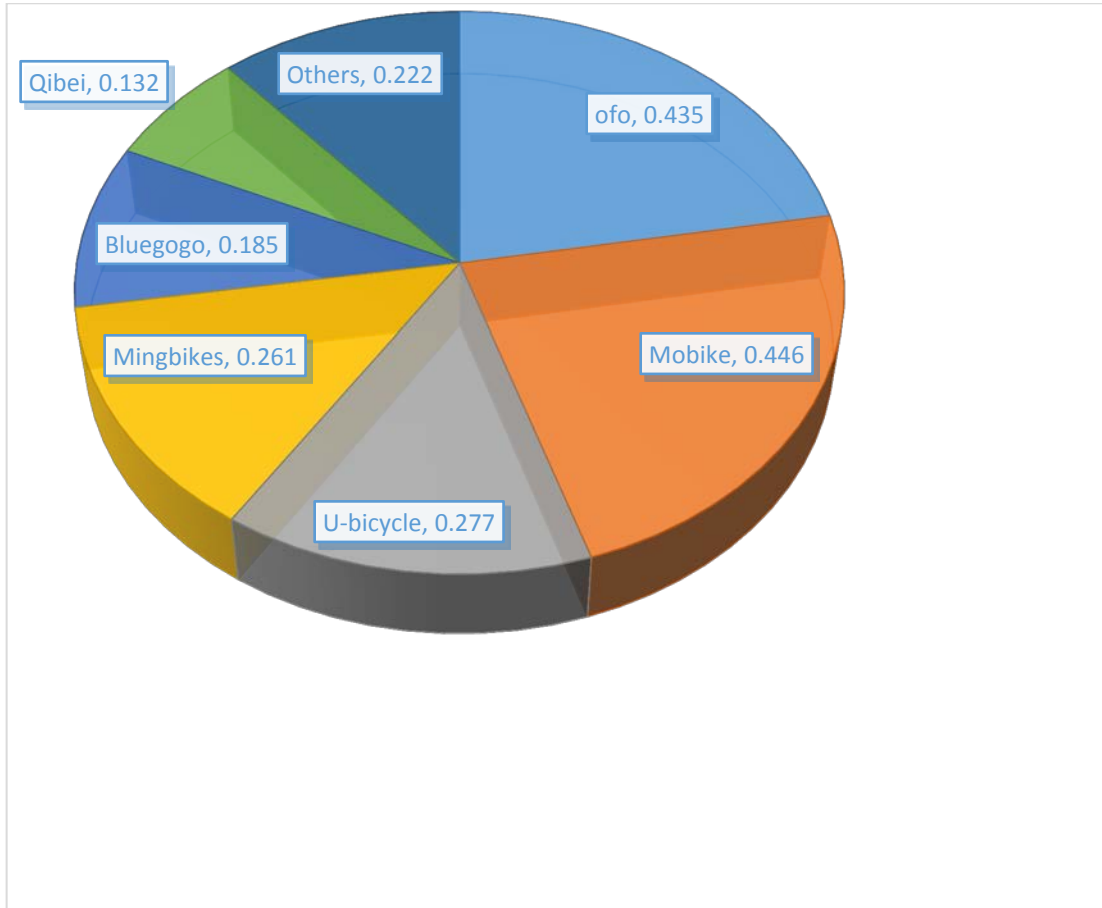
Source: Adopted from Roland Berger (2016) *Bike Sharing 4.0 Study*, Hamburg, June.

EXHIBIT 2: Use of Bike-Sharing Mobile Applications in China



Source: Adopted from Yang, Yuan and Xinning Liu (19 March 2017) China's bike-sharing boom in charts, *Financial Times*, <https://www.ft.com/content/5efe95f6-0aeb-11e7-97d1-5e720a26771b?mhq5j=e1>, accessed 20 July 2017.

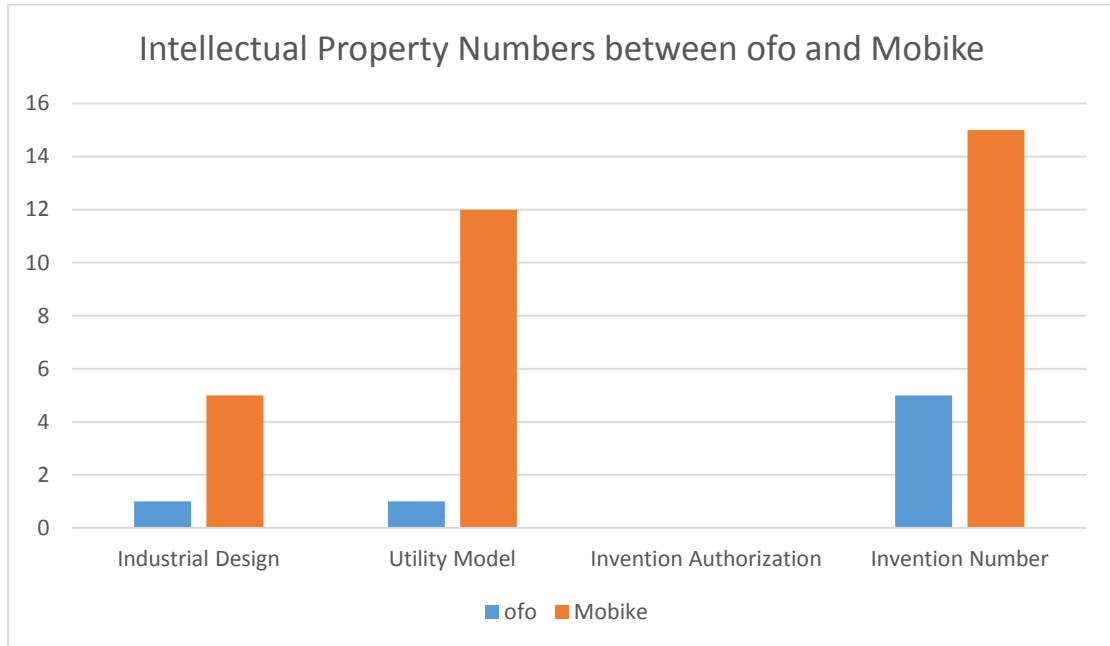
EXHIBIT 3: Market Shares of Shared Bikes in China in the First Quarter of 2017



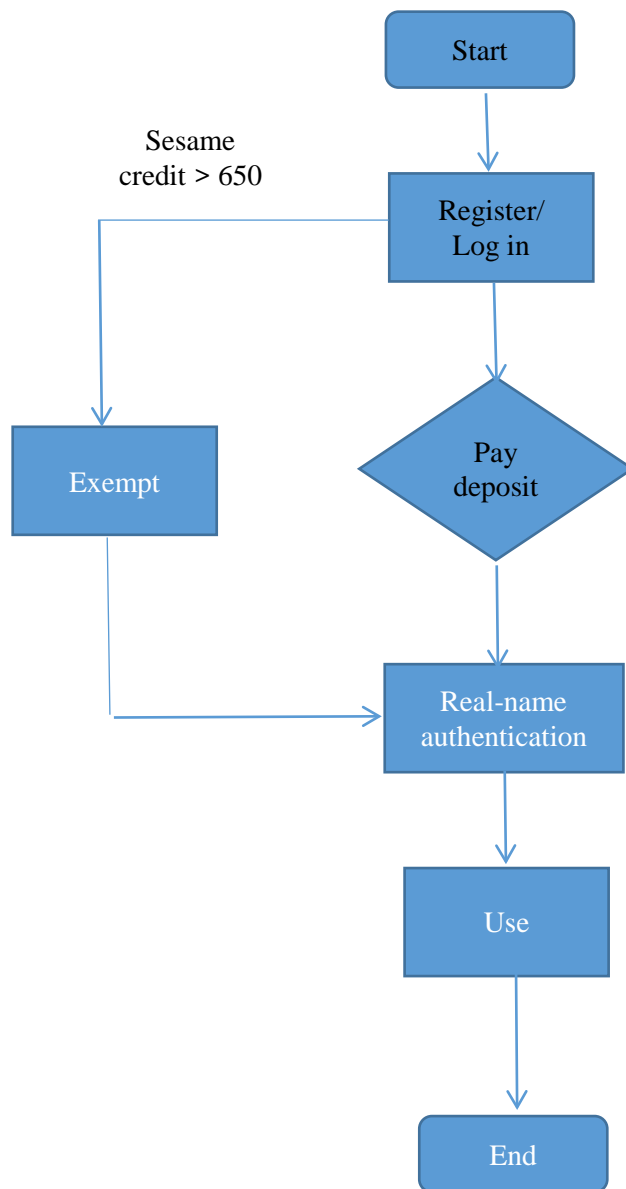
Source: iiMedia Research (2017) 2017Q1 China Renting Bicycle Market Research Report.

EXHIBIT 4: A COMPARISON BETWEEN OFO AND MOBIKE

	ofo	Mobike
Colour	Yellow	Orange
Establishment	Beijing in 2014	Shanghai in 2015
Sources of Bikes	Purchase, Recycle, Donation	Production
Cost of Bikes	About 300 RMB	Old style: about 2000 RMB New style: about 500 RMB
Pricing	1 RMB for 30 minutes	1.01 RMB for 1 minute 0.04 RMB for 1 kilometres Maximum 2 RMB
Procedures	Login Wechat or download APP Bind ID Card Pay 99 RMB as a refundable deposit Prepay refundable fees	Download APP Bind ID Card Pay 299 RMB as a refundable deposit Prepay non-refundable fees
Usage	Locate the bike using GPS Scan the bike's QR code Unlock by the system remotely	Locate the bike using GPS Input the bike's plate number Receive the pin sent by the system to unlock the bike
Fee Calculation	Start calculating Use the password to lock the bike Finish calculating the fee	Start calculating Lock the bike on return Finish calculating the fee
Anti-theft	Upgrade password	Credit points-based system GPS
Improvements	Smart lock Solid tires Rotating bells	Lighter weight Add baskets Solar charge

EXHIBIT 5: A COMPARISON OF INTELLECTUAL PROPERTY RIGHTS BETWEEN OFO AND MOBIKE IN CHINA BY 11 March 2017

Source: Li, Junhui (12 March 2017) Which company is stronger from the perspective of intellectual properties, ofo, LIVÉLO or Mobike?, http://www.sohu.com/a/128619310_123380, in Chinese, accessed on 26 July 2017.

EXHIBIT 6: OFO BIKE RENTAL PROCESS

Source: http://www.sohu.com/a/131713123_115207.

EXHIBIT 7: OFO'S BUSINESS EXPANSION

Year of Entry	Month of Entry	City, Province, Country
2014	6	Beijing, China
2016	4	Shanghai, China
2016	9	Hangzhou, Zhejiang Province, China
2016	11	Shenzhen, Guangdong Province, China
2016	12	Guangzhou, Guangdong Province, China
2016	12	Chengdu, Sichuan Province, China
2016	12	Xiamen, Fujian Province, China
2016	12	Kunming, Yunnan Province, China
2016	12	London, U.K.
2016	12	Silicon Valley, San Francisco, U.S.A.
2017	1	Tianjin, China
2017	1	Wuhan, Hubei Province, China
2017	1	Nanjing, Jiangsu Province, China
2017	1	Hefei, Anhui Province, China
2017	2	Singapore
2017	2	Nanning, Guangxi Zhuang Autonomous Region, China
2017	3	Wuxi, Jiangsu Province, China
2017	3	Qingdao, Shandong Province, China
2017	3	Zhuhai, Guangdong Province, China
2017	3	Cambridge, Cambridgeshire, U.K.
2017	2 (Suspended in April)	San Diego, California, U.S.

Sources: Varied news and reports.



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STEVE YANG
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OFO BIKE SHARING: RIDING ON A BUMPY ROAD

Teaching Note

Synopsis

A new wave of bike sharing has emerged in recent years and is receiving increased public attention. On the one hand, it is a form of green transport which is both convenient to use and affordable for the general public. On the other hand, as an entrepreneurial innovation, it poses many new management challenges to bike-sharing companies. This case study uses ofo Biking Sharing, one of the earliest and largest Chinese bike-sharing companies, to illustrate the problems related to entrepreneurship and corporate social responsibilities. In terms of entrepreneurship, the company is a typical case showing first mover advantages and disadvantages. In terms of corporate social responsibilities, the company is facing some unprecedented challenges of working with governments, bike users and other stakeholders because the bike-sharing business, which is new and growing fast, is yet to be regulated. Therefore, this case allows students to apply their knowledge of entrepreneurship and corporate social responsibilities to deal with complicated issues facing a first mover in a real-world business setting.

Teaching Objectives

This case can be used to teach entrepreneurship and corporate social responsibilities courses on the master and MBA levels. Students can critically evaluate the business and social environments facing the company based on the information, concepts and evidence provided in the case study to develop creative responses to these business and corporate social responsibility challenges.

The case study provides an opportunity for students to learn some strategic issues facing first movers. It allows students to debate whether a business should choose to be a first mover. The case also allows students to make judgements on stakeholder-related corporate social

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This teaching note was prepared for class discussion purposes and is not intended to demonstrate how business decisions or other processes are to be handled. Ref. 17/006T

responsibility issues based on the limited and incomplete information available, and come up with creative ideas.

Therefore, the teaching objectives of this case study are to:

- Provide an opportunity for students to critically review, consolidate and extend their knowledge of advantages and disadvantages of first movers.
- Enable students to diagnose complex corporate social responsibility issues in a real-world setting.
- Allow students to undertake critical overall evaluation of a company's business challenges and corporate social responsibility strategies.
- Encourage students to make an informed judgement in complex strategic issues and communicate their recommendations in a proper way to business audiences.

Suggested Student Assignments

1. Apply the knowledge of first movers' advantages and disadvantages to critically evaluate ofo's strategic positioning in the bike-sharing industry in China.
2. Make recommendations on the company's future strategies and explain the rationale behind your recommendations.
3. Critically review ofo's corporate social responsibility approach, diagnose any problems, and make recommendations for future improvements.

Theoretical Framework

First Mover Advantages and Disadvantages

To gain competitive advantages, a company needs to decide *when* to make a strategic move. It is as important as *what* strategic move to make. Being the first to the market can give a company some advantages and disadvantages.

The following conditions have been identified in the literature which may lead first-mover advantages¹:

1. When customers are worried about product quality, pioneering (as a first mover) can help the company to build a reputation among customers and create brand loyalty.
2. When customers are facing significant switching costs, they will tie to the first mover and be reluctant to switch.
3. When the first mover has some property rights protections such as patents, copyrights, and trademarks, these will thwart rapid imitation by other competitors.
4. When it is difficult to learn, this deep learning curve will give the first mover the advantages of moving down the learning curve ahead of its competitors.
5. When the first mover can set the technical standards for the industry, it will be a powerful advantage like an experience-based advantage.

¹ Thompson, Arthur A., Margaret A. Peteraf, John E. Gamble and A.J. Strickland III (2012) *Crafting and Executing Strategy: Concepts and Readings*, 18th Ed., New York: McGraw-Hill, pp. 222-223.

Therefore, what is strategically important to a first mover is not being the first company to do something, but the first one to put product features, customer values, and profitability together to win the battle for market leadership.²

Nevertheless, first movers face several disadvantages which are considered as late-mover advantages. First-mover disadvantages may happen under the following circumstances³:

1. When it costs more to pioneer than to imitate, the leader can gain only negligible experience or learning-curve benefits.
2. When the products or services the first mover offers do not live up to buyer expectations, a clever follower can study customer behaviours and win the customers with better offerings.
3. When an industry is characterised by rapid market revolution as a result of technological advancement or customers' changing expectations, the first mover's products may be surpassed by more attractive next-generation products offered by fast followers.
4. When the potential market is full of uncertainties, the first mover can make a lot of mistakes that fast followers can learn from and avoid.

When a company needs to decide whether to adopt a first mover position, it needs to consider the following questions⁴:

1. Are there complementary products or services available to allow the market to take off?
2. Is new infrastructure available to enable buyer demand to surge?
3. Will buyers need to develop new skills or develop new habits? Are there switching costs for the users to use newly introduced products or services?
4. Are there any influential competitors existing to delay or derail the first mover's efforts?

Corporate Social Responsibilities

Since the case is about dealing with complicated relationships with stakeholders, the discussion of corporate social responsibilities adopts a stakeholder perspective.

According to Lawrence and Weber⁵, a company is usually embedded in a complex network of interdependent stakeholders. Stakeholders can be grouped into market stakeholders and nonmarket stakeholders. Market stakeholders have economic transactions with the focal company as the company provides goods and services to society. Nonmarket stakeholders are people or groups who have no direct economic exchange with the company, but they are affected by and can affect the actions of the company; for example, communities, governments, non-governmental organisations, media, business support groups and the general public.

To analyse stakeholder relationship, some key questions arise, including⁶:

² Hamel, Gary (2001) Smart Mover, Dumb Mover, *Fortune*, 3rd September.

³ Thompson, Arthur A., Margaret A. Peteraf, John E. Gamble and A.J. Strickland III (2012) *Crafting and Executing Strategy: Concepts and Readings*, 18th Ed., New York: McGraw-Hill, p223.

⁴ Thompson, Arthur A., Margaret A. Peteraf, John E. Gamble and A.J. Strickland III (2012) *Crafting and Executing Strategy: Concepts and Readings*, 18th Ed., New York: McGraw-Hill, p225.

⁵ Lawrence, Anne T. and James Weber (2011) *Business and Society: Stakeholders, Ethics, Public Policy*, 13th Ed., Boston: McGraw Hill.

⁶ Lawrence, Anne T. and James Weber (2011) *Business and Society: Stakeholders, Ethics, Public Policy*, 13th Ed., Boston: McGraw Hill.

- Who are the relevant stakeholders?
- What are each stakeholder group's interests? What do they want from their unique relationship with the company?
- What is the power of each stakeholder group?

Stakeholder power is “the ability to use resources to make an event happen or to secure a desired outcome.”⁷ Stakeholder power may include voting power, economic power and legal power.

Certain stakeholders may be more important than others at different stages of a company's organisational life cycle due to their potential to satisfy organisational needs. The importance of some stakeholders may change when a company moves from one stage to the next. When there are conflicts among different stakeholders, a company needs to balance their importance to make a decision.⁸

Phases	Pressing needs	Important stakeholders
Start-up	Access to finance, market share	Shareholders, creditors, customers
Emerging growth	Need to build a quality workforce and products and obtain resources to accommodate rapid growth and expansion	Suppliers, employees
Mature stage	Often characterized by “tempered overconfidence” of success and attended by strong cash flows, without particularly attractive investment opportunities.	Likely to deal with all primary stakeholders in a proactive manner
Decline/transition stage	Dwindling patronage, loss of market share, and/or efforts to build a new market or rebuild market share	Main stakeholder focus will be customers and creditors. Unless government, community, trade associations, and so on are essential for survival, the organization is very likely to adopt defensive strategies toward these latter groups.

Table 1 Stakeholder Salience and Organizational Life Cycle⁹

Analysis

1. Apply the knowledge of first movers' advantages and disadvantages to critically evaluate ofo's strategic positioning in the bike sharing industry in China.

As the first company to develop a non-docking bike-sharing platform, ofo has gained the following first-mover advantages¹⁰:

⁷ Lawrence, Anne T. and James Weber (2011) *Business and Society: Stakeholders, Ethics, Public Policy*, 13th Ed., Boston: McGraw Hill.

⁸ Amaeshi, Kenneth, Paul Nnodim and Onyeka Osuji (2013) *Corporate Social Responsibility, Entrepreneurship, and Innovation*, London: Routledge.

⁹ Amaeshi, Kenneth, Paul Nnodim and Onyeka Osuji (2013) *Corporate Social Responsibility, Entrepreneurship, and Innovation*, London: Routledge, p. 24.

¹⁰ Thompson, Arthur A., Margaret A. Peteraf, John E. Gamble and A.J. Strickland III (2012) *Crafting and Executing Strategy: Concepts and Readings*, 18th Ed., New York: McGraw-Hill, pp. 222-223.

1. *First-movers can build a reputation among customers and create brand loyalty, especially when customers may be worried about the product or service quality.*

The yellow bikes provided by ofo have gained a reputation among bike users. As the first company to operate this kind of shared bike operation, ofo has the first mover's advantage of distributing their bikes in larger numbers and in more cities than its competitors. Mobike and ofo have become the leading bike-sharing companies. Moreover, as the first mover, ofo has built its reputation and successfully secured a significant amount of funding from various investors.

2. *Customers will tie to the first mover and be reluctant to switch if they are facing significant switching costs.*

Bike-sharing companies require users to register and pay a certain amount of money as a deposit, while ofo is the first company to introduce non-docking bike sharing. Those users who already paid a deposit to ofo may be reluctant to switch. Even though they could apply to get their deposit back, they may not want to invest time and effort to do so if the service another bike-sharing company provides is not significantly different from ofo. In June 2017, ofo increased the deposit from 99 RMB to 199 RMB, which will further increase its users' switching costs.

Additionally, the company's efforts to build its own credit control system and to have strategic partnerships with other credit systems such as Alibaba's Sesame Credit System will increase customers' switching costs, as the more often users use ofo's bikes the more credits they will get. For example, their sesame credit points will not only influence their future use of ofo, but also influences their use of other e-commerce platforms based on Alibaba's Sesame Credit System.

3. *When the first mover has some property rights protections such as patents, copyrights, and trademarks, these will thwart rapid imitation by other competitors.*

As mentioned in the case study, Mobike owned 15 intellectual property rights—more than the five intellectual property rights ofo owned. Therefore, ofo has not gained first-mover advantages from this perspective.

4. *When it is difficult to learn, this deep learning curve will give the first mover the advantages of moving down the learning curve ahead of its competitors.*

As a large number of bike-sharing companies have emerged in 2016, we can argue that the bike-sharing industry does not have a deep learning curve. Therefore, despite being the first company, ofo has not gained any first-mover advantage from this perspective.

5. *When the first mover can set the technical standards for the industry, it will be a powerful advantage like an experience-based advantage.*

As the first mover and a market leader, ofo has become a member of China's newly established Sharing Bikes Specialist Committee. In this way, as a founding member, ofo can participate in making the rules and regulations of the Sharing Bike Industry.

Since a large number of bike-sharing companies are emerging, Mobike has become an especially strong competitor, and ofo is suffering from some first-mover disadvantages. First-mover disadvantages may happen under the following circumstances¹¹:

1. *When it costs more to pioneer than to imitate, the leader can gain only negligible experiences or learning-curve benefits.*

The bike-sharing industry does not have a deep learning curve. Thus, it is not difficult to imitate the leader in terms of the business model. Arguably, ofo's business model is relatively easy to imitate. Mobike's business model, which is built on the ideas of big data and artificial intelligence, is more unique and more difficult to imitate.

2. *When the products or services the first mover offers do not live up to buyer expectations, a clever follower can study customer behaviours and win the customers with better offerings.*

As the first mover, for example, ofo's bike locks were originally mechanical and each bike had its unique and unchanged password. Some people took advantage of this problem to use ofo's bikes for free. Even though ofo has tried to solve this, the problem has already cost ofo a large amount of money. The followers are able to learn from ofo's mistakes and develop better locks. For example, Mobike's locks have GPS functions, which allows Mobike to locate its bikes more easily than ofo. In future, if ofo wants to replace all its bikes' locks, then it needs to invest a large amount of money. Unlike ofo, latecomers can try to avoid such problems. Moreover, using the GPS functions, bike-sharing companies like Mobike can allow its users to locate an available bike nearby and place an advanced booking. However, ofo is unable to provide such services.

3. *When an industry is characterised by rapid market revolution as a result of technological advancement or customer changing expectations, the first mover's products may be surpassed by more attractive next-generation products offered by fast followers.*

The bike-sharing industry is an example of rapid market revolution as it is still a fast-growing industry. Technological advancement has given birth to the non-docking bike-sharing industry and is expected to lead the industry's future development. Moreover, customers are just starting to accept and use shared bikes and their expectations will change as the industry becomes regulated and mature. It can be expected that in the future the shared bikes offered will make users feel more comfortable and be easier to use.

4. *When the potential market is full of uncertainties, the first mover can make a lot of mistakes that fast followers can learn from and avoid.*

When ofo started putting shared bikes on the campus of Peking University, ofo's founders were unsure whether these shared bikes would be accepted by teachers and students. When they discovered bike sharing was well accepted, they started expanding to other universities and later to areas outside the boundaries of universities, such as city downtowns, other cities and even other countries. Since there is no others' experience to be learned from, ofo has learned by trial and error.

¹¹ Thompson, Arthur A., Margaret A. Peteraf, John E. Gamble and A.J. Strickland III (2012) *Crafting and Executing Strategy: Concepts and Readings*, 18th Ed., New York: McGraw-Hill, p223.

2. Make recommendations on the company's future strategies and explain the rationale behind your recommendations.

Students may answer this question in several different ways as long as they can justify their answers well. Here we will combine ofo's first-mover advantages and disadvantages with the current development trend of bike sharing.

First, ofo should continue to integrate its service with the whole value chain. As mentioned in the case, ofo has developed alliances with a well-known bike manufacturer to manufacture bikes, with Alibaba's Sesame Credit Control System to check credit ratings, and with Didi Chuxing to access a wider mobile transportation platform. In the future, for example, ofo can consider working with an insurance company to provide an insurance option for bike users.

Second, ofo may need to make better use of emerging technologies such as big data and artificial intelligence. The company has a large user base, which will be useful to allow the company to do big data analysis. Compared to Mobike, ofo has fewer numbers of intellectual properties. The company may need to invest more in Research and Development. The company's strategic collaboration with the bike manufacturer is moving in the right direction, which should improve the comfort and reliability of ofo's bikes.

3. Critically review ofo's corporate social responsibility approach, diagnose the problems and make recommendations on future improvements.

In terms of ofo's corporate social responsibility approach, the company has emphasised the concept of environmental friendliness. Bike sharing encourages users to use a green transport system which saves carbon emissions. From the start, ofo has encouraged users to donate their bikes by giving them free rides. Apart from producing new bikes, recycling and donation are the other two sources of bikes which are also environmentally friendly (by reducing waste).

Nevertheless, ofo is facing the following stakeholder problems in relation to corporate social responsibility.

First, as mentioned in the case, ofo was forced to close its local businesses by local authorities on a number of occasions. Take the University of California as an example. The University forced ofo to withdraw its business on three grounds: the lack of a formal agreement between ofo and the University, misplacement of bikes on campus, and the lack of insurance policies.

Second, when an accident happens to bike users, ofo's reputation can be jeopardised. For example, the boy who was killed in a car accident brought safety issues relating to ofo to the public's attention. The boy opened the mechanical lock in order to use the bike, which is related to the design of bike locks. A good lock not only protects the interests of the company but also ensures a bike is used safely by an eligible person. The boy was under 12 years old, which brought the minimum age and other safety issues related to ofo and bike sharing to the public's attention.

Third, like other shared bike companies, ofo has suffered many losses associated with vandalism and theft. It is common to find bikes stripped for parts or abandoned in a state of disrepair. The damaged bikes are not only costly to the company and its investors, but are not

environmentally friendly either. Moreover, some users have left shared bikes in inappropriate places, even blocking roads or creating hazards to road users.

However, it is clear that there is a conflict of interest among different stakeholder groups. It requires ofo's senior management to strike a balance in the real world. Generally speaking, in response to the problems discussed above, we can recommend that ofo considers making the following improvements.

First, when expanding its business, ofo needs to not only know the local rules and regulations but also work with the local community. The company needs to take into account the local social and political context. In some cases, forming strategic partnerships with local players may be a good option.

Second, ofo needs to pay more attention to the health and safety issues of users. Before the birth of bike sharing, bike users were responsible for their own health and safety. With bike sharing as a new business model, ofo as a business operator needs to take into account the safety aspects of users and to look for new solutions. One of the possibilities ofo may consider is to work with insurance companies to work out a new insurance plan for its bike users.

Third, ofo needs to educate users and clearly set out rules to ensure that bike users behave themselves and do not cause trouble to other road users, local communities and other people. One solution ofo can consider is to work with the police and other interested parties to punish those who behave illegally or pose threats to public safety.

Synthesis

This case offers an opportunity for students to systematically analyse a start-up company's first-mover advantages and disadvantages as well as its corporate social responsibility approach and recommend strategic improvements.

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