

共享经济模式上的“刀锋创业”——来自共享单车的经验与教训

"Blade Entrepreneurship" In Shared Economic Model--Experience and Lessons from Shared Bicycles

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Abstract

The concept of sharing is a unique social practice that has been redefined and extended under the vast horizon of "sharing economy" by means of influencing the energy of Web 2.0 technology. Besides the passing time since the evolution of this concept there is no one concrete definition yet designed to explain what is concept of sharing economy. The ideology encompasses very varied practices and sectors and covers an extensive spectrum of organizational dimensions, such as from profit making organizations to non-profit making organizations. The sharing economy is an idea that has encompassed its roots through contemporary economics at a massive scale and continues to present digitalization at its forefront. Moreover, the sharing economy has experienced rapid increase and has a persistent impact on society; it is presently supplied with absurdities and rigidities about its limitations, effects, and logic. In addition, few believe that shared based economy as a substitute to market capitalism although in reality it strengthens capitalism. On one side of the coin if the share-based economy encourages 'more sustainable intake and manufacturing practices, [it also] urge[s] the contemporary unsustainable economic paradigm.' This study addresses the unique problem as a whole – offers a technique to investigate that takes account of the inner range, complexity and contradictions of the sharing economy under the global, institutional and economy level dimensions. In the subsequent, we first shed light on the characteristics of the share-based economy system as a theoretical concept and later on explain the concept with the aid of case study on shared bicycles, which are not yet much explored in academic arena.

Keywords: shared based model; self-organized entrepreneurial behaviour; blade entrepreneurship, China bicycle sharing.

Introduction

There has been large ambiguity and even misperception about the "shared based economy" among the academic family and public at large. The major reason behind the confusion about shared based economy is its

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novelty. Participants inside the share-based economy appoint a discourse of up to date adoption of tricks and techniques, technological complexity, progress and innovation. Although, such characteristics narrate each class and racial biases to what historian's referred to as "presentism" or either blindness to the past. Since the evolution of mankind, they have used the sharing concept. The sharing mechanism replicates social members of the family and solidifies cultural practices (Belk, 2009). Furthermore, sharing is not only an artifact of pre-modern-day societies, for instance, Carol Stack's conventional ethnography of the dense relations of mutuality and interdependence among poor black urbanites in the U.S. showed how critical sharing changed into to survival even a few many years ago (Stack, 1974). In contrast, Hochschild's (2012) current research on the growth of outsourced services amongst center class whites shows decrease and declining tiers of sharing. Therefore, the declaration that sharing is a new paradigm ignores the advance stages of sharing that the working class, poor and multi-cultures have traditionally practiced and have moderately preserved within the face of the increase of markets.

Bike Sharing also stems from this concept of the sharing economy, which will be clarified in the dynamics of the case study to follow. Its impact on generating a considerable effect on shared based economy approach can be viewed from multiple spectrums. China has seen a vast base of bikes step in their economy over time and how that has shifted the principle in favor of a sustainable economy in the long run, yet it continues to suffer from poor demand, high property damage and a poor revenue model for the manufacturers and operators. Thus, questions arise as to whether this part of sharing economy applies with different sets of notions in different settings? Or is it the same everywhere? The case study that follows later will address this concern in a comprehensive manner in order to shed some light on the factors that account for its failure in China while the same factors served as points of success in other regions of the world.

It is understandable from the prior events that the sharing economy tent has come to be pretty spacious. Platforms want to be beneath the massive tent of the 'sharing economy' because of the representative value of sharing. In other words, the confusion about the definition of the sharing economy is dynamic because of the term itself. From an academic point of view, there are quite smooth routes to cope with the definitional trouble. First, one chooses no longer to define and outline the economic sharing system however instead attempts to capture why special actors' characteristic one-of-a-kind meanings and why such rhetoric processes can also or may not fit them.

The belief of sharing of idle capacity is imperative to the definition of sharing economy because it distinguishes the exercise of sharing of products from the exercise of on-call for non-public offerings. There is an essential difference between ordering a taxi through Uber, Lyft, or Didi and sharing a ride through BlaBla Car or every other get a ride or carpooling platform (Meelen and Frenken, 2015). In the case of a taxi provider, the consumer creates new capability through ordering a taxi on call to drive the passenger from A to B. Without the order, the journey would not have been made within the first place. In this example, the time period now coming into not unusual use is the on-call/on-demand for economic system. By analysis, inside the case of carpooling, the purchaser occupies a seat that could in any other case now not have been used because the motive force had planned to move from A to B. Get a ride and carpooling are examples of trip-sharing and part of the share-based economic structures (Benkler, 2004). Although, within the context of transportation, this distinction among on-call and sharing economy has ended up vibrant over time as most commentators now call Uber, Lyft and Didi experience-hailing companies rather than ride-sharing.

The definition that we use for sharing economy platforms, and the three different kinds of platforms that may be outstanding from it, accommodate the perception of sharing as a traditional practice. Before the appearance of Internet structures, humans were already lending or renting out goods to others. They shared with family and close associates due to the fact had been regarded and depended on social groups and communities. What is new is that users now additionally lend goods to strangers, because the Internet has extraordinarily reduced transaction expenses among unknown. By transaction costs, economists suggest all of the charges and

hassle incurred in making an economic transaction (Williamson, 1981). This refers specifically to the prices related to search and arranging an agreement. Among strangers, these have been high earlier than the arrival of the Internet, as there have been little facts to be had approximately supply, reliability and contract paperwork (Benkler, 2004). This is one motive why sharing becomes normally restrained to a circle of close friends and family. As a result of Internet systems, the costs of the search and the contract have to turn out to be lot decrease. Consumers now locate it lots simpler to find items and services they want, and transactions are regularized via standard contracts and online payment structures. In addition, on most sharing-economic system platforms records on the behavior and therefore trustworthiness of customers is elicited as an ordinary function of transactions. This further lower transaction fees and probability of risk.

Share-Based Economy: Organization Dimensions

Based on an overview of the literature, we explain the economic sharing system as resting on three-dimension cores: (1) Access economy, (2) Platform economic system, and (3) Community-based economic system. In the subsequent, we define every organizing ideology and provide an explanation for how they relate to the promises and absurdities of the economic sharing system.

Access Economy

The access economy system entails a set of initiatives sharing underutilized assets, including material and human resources, to optimize their use. Many definitions of the sharing economy system are built at the concept of optimizing underused assets to promote access in place of ownership (Belk, 2014a; Belk, 2014b). Access-primarily based transactions that rely upon temporal access of a transfer of possession aren't new. They have long history in for profitable business enterprise models, e.g. Apartment or leasing, and non-profit models, e.g. borrowing books in public libraries (Bardhi and Eckhardt, 2012). However, Rifkin (2000) expected the emergence of an 'Age of Access,' envisioning an international shift of capitalism closer to submit-ownership societies, counting on brief-term use and enjoy rather than long-time period possession of belongings.

The access economy system holds different guarantees. On the economic and social facet, the access to the economic system gives broader and inexpensive access to offerings for clients within the brief time period. Access avoids the need to spend money on obtaining ownership (Bardhi and Eckhardt, 2012). On the environmental side, the economy is encouraged as a sustainable solution (Firnkorn and Müller, 2011). Sharing and mutualisation permit more extensive use of products, providing higher 'leverage' of natural capital. This is 'trapped' in a given product. Besides, as manufacturers remain the owners of the belongings, they may be accountable for environmental externalities, and feature the inducement to layout green and durable merchandise (Braungart and McDonough, 2002).

On the other hand, the access economic system additionally suffers from tensions and absurdities, which limit their social and environmental impact. A first problem concerns the incentives, ethical danger and facts asymmetries involved with shared sources (Arrow, 1963). Since people are deciding to buy or either share for a short time frame, they lack incentives to deal with products properly. Bardhi and Eckhardt (2012) display that sharing does not continually cause a caring mindset and provide some explanations for why users do now not care for shared vehicles.

Platform Economy

The platform economy shapes are surrounded as the center of the sharing economy. We characterize the platform economy as an arrangement of activities that halfway decentralized trades among peers through computerized stages. Platforms are putting on extensive weight in modern capitalism (Srineck, 2016). As per Evans and Gawer's (2016) review, around 70% of unicorns private new businesses with a valuation higher than \$1 billion without getting public has experienced rapid growth using platform model. Platforms numbered more

than \$4.3 trillion in market capitalization in 2016. Such stages make an incentive by interfacing and arranging exchanges instead of creating themselves. They additionally make solid system impacts, as their relative esteem ascends with the number of on-screen characters – clients and providers – joining their 'environment.'

The platform economy's guarantees are steady with the dominating business sector rationale and post-bureaucratic beliefs. Platforms offer the monetary guarantee of new market advancements in view of vast, secure, and decentralized access. For those that advance the platform economy, these business sectors give chances to people, either as consumers (giving less expensive and secure access) or as producers (making entrepreneurial endeavors). Pervaded with liberal and libertarian esteems that have impacted the computerized culture and their business visionaries (Turner, 2006), platform advance themselves as an approach to battle brought together establishments, for example, the state, professions, or huge corporations. This perspective of disturbance and disintermediation as a liberation ideal, which questions the authenticity of built-up foundations, is probably going to play a part in the contention relationship platforms have a tendency to have with regulatory foundations (Edelman and Geradin, 2015).

Community Based Economy

The community based economy frames the third center of the sharing economy. It alludes to activities organizing through non-legally binding, nonhierarchical, or non-adapted types of communication (to perform work, take part in a task, or shape exchange connections). Instead of the creation and expansion of economic value, the basic role of activities having a place with the community based economy is to add to a group venture, to make social holding, to elevate values, or to accomplish a social mission through an aggregate and collaborative project. While communities generally include historical ties among close individuals interfacing at the local level (Bowles and Gintis, 2002; Marquis et al., 2011), digital innovative technological advancements have made types of 'social sharing ' crosswise over groups of meagerly associated people (Benkler, 2004). Group is along these lines progressively conceptualized as a sort of arranging that includes important and meaningful connections in view of shared understanding or interests (Marquis et al., 2011).

The digital culture has brought forth new types of common sharing (both for creation and appropriation), as exemplified by the open-source development and related tasks, for example, Linux (Raymond, 1999; Von Hippel, 2001) and Wikipedia (Jemielniak, 2014). These associations appear to fit Belk's meaning of 'genuine sharing ' (Belk, 2014b), as neither patrons nor clients are expecting express or direct correspondence for their activities (Benkler, 2004; Demil and Lecocq, 2006). Contributors are driven by inherent inspirations as opposed to material ones (Benkler, 2017). These modern types of cooperatives are delivered helpfully by big-hearted group supporters and made openly available to all (Bradley and Pargman, 2017). They depend on particular coordination and administration components that are distinct from the market, chain of command, and public or government control (Bauwens, 2005; Benkler, 2004; Demil and Lecocq, 2006; Lee and Cole, 2003). Likewise, these associations are moving past the great administration vocabulary (Laloux, 2014), creating new prime examples, for example, 'swarm associations ' (Falkvinge, 2013), 'holacracy ' (Robertson, 2015), or 'democracy ' (Kostakis et al., 2015). They have additionally resuscitated previous types of the group based economy, for example, social economy or non-benefit associations and agreeable administration structures (Bauwens and Kostakis, 2014; Scholz, 2016b).

The following case will establish a link of how, under the form of a shared economy principle, China has been facing a severe problem within the bike-sharing model. Links to an access shared economy will also be established where it will be discussed that due to no asset-sharing principle, the major players in the market have also suffered losses, and lack of sustainability exists in the business model. Questions are raised at the effectiveness of the shared economy under the bike-sharing model and therefore, the inclusion of any organizational branches under this concept is also discussed accordingly. The case also highlights the successes in Europe and other parts of the world, to set out a comparison of how demographics, socio-economic

distribution and other significant factors align or misalign the success and failure of such projects. It will serve as a comparative study to that of China, where the influx of bikes over the years has been excessive and trends continue to show that it will still be showered with more of these vehicles, yet the demand in relevant context seems to be on the lower side. Complexities and challenges will also be discussed and put in context along with mild recommendations to overcome these if the plan is to be made a success.

Case Study

‘Sharing economy has a huge market in China. Besides bike-sharing, various new types and models of businesses are emerging with the development of Internet Plus’.

-Chinese Premier Li Keqiang at the State Council executive meeting

‘I never denied my mistake. My heart is full of suffering and I am in trouble for months’.

-Li Gang, CEO Bluegogo (a third largest bike-sharing company in China that filed for bankruptcy last year)

The concept of bike-sharing or bicycle sharing originated from the 1960s, an experiment/venture that received ample response in its early days within the European market. The idea coined as ‘1st generation’ bicycle sharing evolved into a much sophisticated, subscription-based model much later and was then signified under the ‘3rd generation’ model within this industry. Although the idea stems back in time, the concept of modern-day bike-sharing startup entered the Chinese market much later (almost about two years ago) and since then has flooded the domestic market with a large supply of bikes in order to replace the traditional mode of transportation. Since then, the bike-sharing boom has gripped the country with millions of bicycles in the streets available to be used through smartphone apps and a nominal or no fee at all. With a few companies stepping in to secure funding and consequently considerable customer response, only two have emerged as the major players. Ofo and Mobike have been able to flood the Chinese streets with bicycles in huge numbers and continue to expand despite setbacks. Ofo has landed almost 2.2 million bikes in over 43 mainland cities, whereas Mobike has over 1 million in its fleet in 33 cities and the expansion plan seems to be ambitious, covering over 100 cities in the near future (source: South China Morning Post). This case study will highlight as to why did this apparent bike-sharing booming economy has slumped to a massive failure for this innovative startup. Since its inception, the model has only gone from bad to worse, exhausting funds, generating little or no profit and resulting in chaos rather than grounds for successful expansion within the country. The case will also look into specific factors that have fueled the downfall of this venture in the Chinese market.

Over the course of a year or so, the concept of bike-sharing has been seen thriving in China. However, this boom, as observed by many has been short-lived and the market dynamics have changed since. Karl Ulrich, vice dean of entrepreneurship and innovation at Wharton observed how the bike-sharing market has evolved over time in China. Currently, there are over 16 million bikes on the sharing platform and almost 70 different companies in the market that are competing for market share and catering to the demand of this new trend that gripped the local market in 2016 (Source: NewYork Times, Asia Pacific division). In an overview of the market, the data reveals that in 1980, a staggering over 60% of commuters in China used cycles as the main mode of transportation (source: The Beijing Morning). A significant development in those statistics took place over the course of the next few years and the number fell to almost 38% in 2000 and consequently to 12% currently. However, in 2016, the state allowing for private initiatives and easing out regulations did encourage the investors to step in and revisit this mode of transportation in an otherwise clogged upcountry. An influx of cars during the time when bike commuting went down made China transform into a motor vehicle-based economy and in 2010 it surpassed the United States of America in becoming the world’s largest market for cars with 13.5 million vehicles sold in a span of a year. The result was imminent and as the world debate featured a more ‘responsible’ attitude towards environment, China could not afford to lose out on that front. The massive motor vehicle drift fueled the pollution crises and the state media confirmed that with 5.65 million vehicles officially

registered in the system, an annual 500,000 ton of pollutants were being injected into the atmosphere as a consequence. This gave way to resurgence of the bike-sharing initiative and startups emerged from within the system to pave the way for a responsible way of commuting. The contemporary form featured technology upgrades as well that included GPS installation and dock-less parking that caught the attention of the public on a massive scale and convenience factor played a crucial role in its initial success.

Bike Sharing: Origin and Progression

For decades now, bike-sharing has been in operation across different parts of the world and has, in some ways, replaced the traditional mode of transportation on a partial level. The partiality level can vary, but the question about this being one of the effective systems in some parts of the world is not without a convincing answer. Bike-sharing is primarily referring to a collection of bicycles roped in a network of strategically placed ‘stations’ in an urban and rural setting, that is available at the disposal of a wide base of users. These users can be characterized by different motives (point-to-point commute or casual travel) and statuses (registered or non-registered). Under different names, bike-sharing programs or schemes have been in place, giving commuters an alternative way to commute (Miriam, 2015).

Bike Sharing projects or schemes have existed for over 50 years, yet the popularity soared in the last decade in a considerable manner. it now covers almost 800-900 cities worldwide and the bicycle fleet is over 900,000 combined (Meddin, 2015). In 1965, almost 50 bicycles were introduced in Amsterdam in an attempt to introduce a healthy yet different way of commute, one that does not involve motorized vehicles. It was free of chargeback then and was available for anyone to use and try this new experience. Soon, this idea proved to be a disaster and the bikes were either never found or were damaged well after a while. This serves as a significant contextual point since the explanation involving China’s bike-sharing system failure will also feature this at the introductory level. It was only in the 1990s that a formal system of bike-sharing was introduced in Denmark, with proper racks and coin deposits to use this service and check out bikes. The famous ‘Bycyklen’ program initiated at that point and served for over 17 years in a successful manner before a revamping process in 2013 was introduced to update the system with contemporary technology changes. Its significant in that sense since the program has almost reached a staggering 50% in terms of commuting trips share in the cities overall. It can easily be regarded as a successful program in bike-sharing projects.

It was only after the 1990’s that other countries also picked the pace across different regions. In Europe, Italy, Spain, Ireland, amongst others, started to show signs of catching up bike-sharing initiative. It was France in the same regional bloc that signified the essence of bike-sharing to a new level by introducing the third generation of bike-sharing in 1998. It is important to understand that there are four generations of bike-sharing levels that have evolved since the idea was first floated.

First Generation Public Bike Sharing	Free System (1965) Free access, free usage, no stations
Second Generation PBS	Coin based system (1995) Access with coin, free usage, fix stations
Third Generation PBS	ICT based system (1998) Access with user card, free for a limited time, fix stations
Fourth Generation PBS	Complex, integrated system (2005) Access with a mobile device, free for limited time, real-time information processing, large scale integration with an integrated system

**(Source: Generations of PBS systems Midgley, 2011; Shaheen et al., 2010; Tóth and Mátrai, 2015).*

France began its bike-sharing campaign in Rennes to feature the very first public computerized scheme with over 200 bikes. Soon after that, the range of cities was expanded and Lyon was also included in this race to the bike-sharing craze with over 1500 bikes coming into the system. This was not all and docking stations were also introduced, giving a message that modernization will be taken seriously in this part of the world. Such

calculated investment was sure to pave the way for success and it did whereby 44% increase in bicycle ridership in the very first year. Paris was also included in this success story and added fuel to the working model of bike-sharing scheme in France.

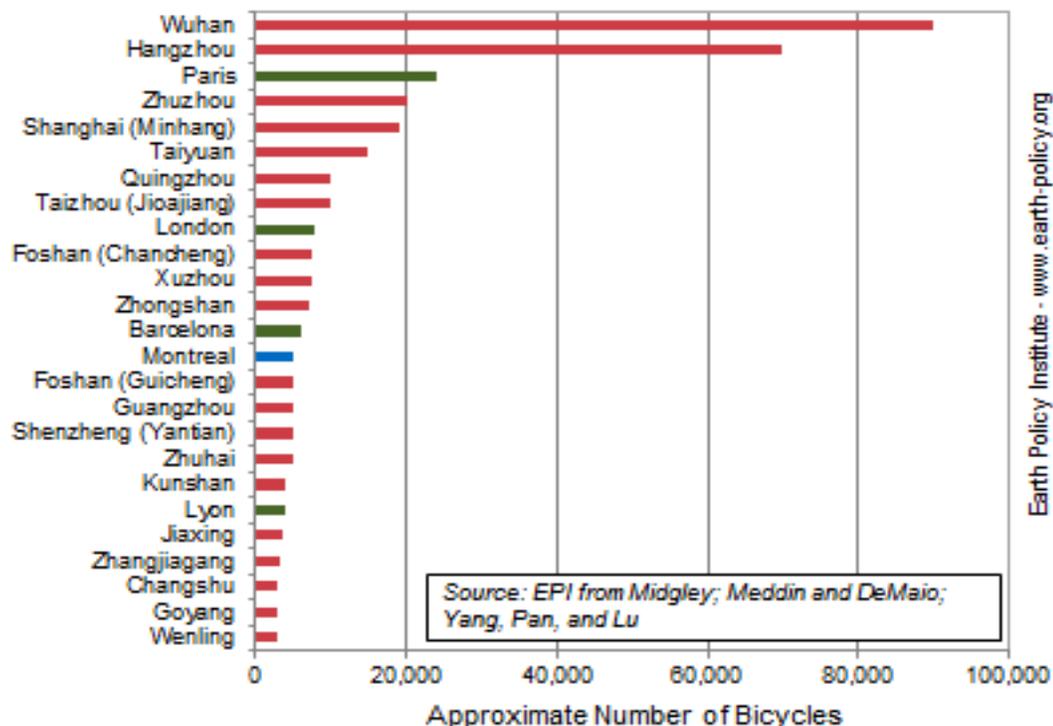
The craze soon engulfed other regions of the world, as well. The trend moved to Eastern Asia, Australia and the Americas, where the bike-sharing programs also enjoyed its stint of success in the region. Even Dubai, which cannot be considered as a place where bike-sharing initiative would be a possibility due to weather conditions and socio-economic factors, launched the bike-sharing scheme in 2013. Montreal, Mexico City, Vancouver, Calgary and many more stepped in and the number of bicycles in the system exceeded 6000 combined with over 500 dock stations also installed in to cover parking and other operational systems.

Overall, Public bike-sharing came in as a phenomenon where a lot of strings that are attached to using private goods were not a part of this venture. It had all the properties of a public good, but in addition, the ownership angle was also not present. This meant that cycling did not mean going through the hassle of owning one. On the contrary, one could use it as a service where the concern of ownership, maintenance and every other responsibility such as security was a concern for the operators.

One can note from earlier research and findings that the public bike-sharing system falls in between walking and public transportation due to its unique nature of operations. The trips seem to be short in length but the frequency is relatively better. This means that in the shorter run, this mode cannot be coined as the replacement for other ways to commute (which was originally the plan) but if given enough investment and awareness campaign, this can act as a substitute on a certain limited level. In addition, the potential to boost this as a healthy initiative, boost upcycling can be another aspect and objective that can be achieved. The placement reassures that the public bike-sharing system has certainly established its position in between the mainstream ways to commute and therefore, its rapid increase meant that it would cement its base in most of the countries in review. Moreover, due to short travel distances and high frequency, the last mile problem can certainly be taken care of under this pretext.

This is where the trend eventually moved towards the economic hub of the contemporary world, Asia and the Pacific region. Singapore came in with its adaptation of the bike-sharing program in 1999 and after 2007, there are two major companies operating in the country (*Source: University of Berkeley*), one of which was a car-sharing company that rolled out electric bikes. South Korea had its fair share of contribution with six programs and a total of over 7000 bikes in the system. Japan also chipped in, which was a destination famous for its commuters favoring bikes to work anyway. Between 2009 and 2012, almost nine programs were initiated for about 2.1 million users in the Japanese setup. Taiwan, also boasts two bike-sharing programs to date that have set the tone for bike-sharing schemes in their setup. All of this, yet the 'takeover' in the world of bike-sharing scheme belongs to none other than China. In 2013, a whopping 79 bike-sharing programs were in the system crowning China as the 'Bicycle Kingdom' of the world. The fleet at that point had almost 400,000 bikes (*Source: Transportation Research Board, China*), which has crossed 1 million in times to follow. Hangzhou pioneered in introducing computerized bike-sharing system in 2008 in China, with a card that could be used across all modes of transportation in the vicinity with a transfer of credit also available.

Largest Bike-Sharing Programs Worldwide, Early 2013



Considering the statistics in the early phase where China adopted this model, one can see that the progress has been impressive. Yet over time, even in Hangzhou, where systems were in place giving incentives and allowing for users to have convenience, demand fell from 44% to 37% in the 2014-2015-time frame, and the numbers continue to fall. The same is the case with other cities in China, where new users were coming in every year, yet the old consumers were not going for the same number of trips and overall the number of trips fell. This started off a vicious cycle where the users now being added to the system were less than the original number of people who joined in. Demand fell, bikes increased, revenue fell, negative spillovers increased. So, what did go wrong that induced this downward demand spiral? What factors contributed to the downfall of an otherwise successful concept such as bike-sharing in China specifically? How did the market change?

What went wrong in China? Major players and market shift

All was going well when suddenly 'brakes' had to be applied within the bike-sharing industry. An investment that took the country by storm and attracted big investments in the dockless bike-sharing business was now seeing a massive drop in terms of overall usage and its sustainability. Three major players emerged as a result of the investment amongst over 60 other small companies. These players, namely Ofo, Mobike and Bluegogo were backed up by major funding (the first two had raised over \$1 billion respectively) channels and therefore millions of bikes were landed in the mainstream street market. All of this also ensured that stiff competition would take place when it comes to tariff and operational usage. Not only this, but this market shift was causing mayhem on the streets with bike clogging to its maximum, traffic being choked up massively and mismanagement setting in acutely. People in central cities were given a low-cost travel option that was carbon-free as well, therefore not a burden on the environment and so the initial demand was rampant. All of this was seemed perfectly plausible until it was soon realized that no viable business or revenue-generating model was introduced in the bike-sharing business and so sustainability would soon become an issue.

Cost vs. Revenue Mismatch:

While the system that was introduced was based on a low-cost option for the commuters, the revenue model has not been a sustainable one as the operations costs with ever-increasing bikes along with maintenance surged and was not compatible with generating enough revenue for the companies. Exhibit A reveals how the two major players, Ofo and Mobike charged between 0.5-1 yuan (7-14 cents) for 30 minutes. Whereas, if the average price of a premium bike is considered then it can be noted that it varies from 3000-3500 yuan (over \$400) that makes the model highly unprofitable. Some of the normal bikes have also been considered to cost almost 250 yuan (\$36), yet the tariff that has been implemented does not account for any profits after trip costs, maintenance costs and salaries of the staff are accounted for. This is exactly the reason why Bluegogo had to let go of 99% of its staff (source: Fortune) even after landing over 600,000 bikes within the Chinese market and securing over \$58 million in their last fundraising cycle. The areas where the bike-sharing concept has thrived have mainly been in Europe where the station density and population flow is accounted for when designing tariffs and moreover, subsidies from the government also step in to act as a buffer. The hit in the Chinese market has also forced Mobike to explore other markets and since then they have stepped into the Singapore market to diversify the funding utilization after the last fundraise. The market dynamics there have not been as crucifying as that in China yet, mainly due to higher tariff possibilities and no fierce competition overall. The subsequent graphical illustration indicates the points for cost and revenue for both companies with the data discussed above. Note that the revenue is still lower than the cost at any given point. Note that this is the initial cost, along with the revenue of trips made during an average day. The cost is still not recovered within a 3-month timeline (initial investment), whereas other miscellaneous costs (such as maintenance) have not been included yet, which is set to increase the cost number even more.

Lack of Network Effect and Rise in Competition

The operational model in China was not based on an Uber model that would ensure economies of scale. Every time a user is added, the companies have to increase their fleet of bikes and that is exactly what was taking place in China. Although major players landed a large number of bikes in the mainland cities, yet the cost soared and the usage started to take a hit as well. Other players also did the same but could not sustain and within no time, the supply exceeded demand causing costs to rise and rendering the bikes useless along a few routes. The most significant factor to comprehend was that no asset sharing was taking place as a result, which essentially implies that no one was listing bikes as part of sharing option, but every addition in the number of users asked for similar increase in number of bikes that in turn meant keeping tab on all the bikes as far as companies are concerned. This model already depicted complexities that required equal and effective management, which was a cumbersome task. The competition also got stiffer and stiffer, at least for the early stages of this bike-sharing revolution. The distinction was not possible since all of the companies resorted to comfort and stylish outset of their merchandise and after a point consumer was interested in the service and not the brand image of the company. Therefore, companies with substantial capital remained in the market and the others either exited or suffered losses. Until recent times, Bluegogo also raised \$400 million in funds, yet the unsustainable model, low demand, high maintenance, thefts, and stiff competition forced them to exit the market. As for the two other major players, Ofo and Mobike, talks of merger were being discussed in order to survive the market and for the government it meant lesser regulations to carry out across the private sector in this industry (source: Japan Times)

The case for one of the cities, Zhongshan, has also been discussed where its respective bicycle program research was conducted with respect to the expansion in the system that still could not ignite the demand to the levels that were expected. Transport Department of the Urban Planning and Design Institute of Zhongshan (China) shared the data and information that was required to run statistical models by researchers to understand demand patterns. The study worked on how the usage of this bike-sharing system has changed and how has system expansion affected overall usage. Trip data for March 2012, 2013 and 2014 were analyzed in this respect. Overall, system expanded over the first year with number of stations equipped with parking slots and the same was noticed for the next year. Spatial analysis and statistical analysis were conducted to signify the levels of

users and system dynamics, incorporating before and after phases for system expansion. It was measured using aggregate use of system, spatial distribution of user demands and demand to supply ratio, travel on weekdays and travel on weekends data as well. The results were reflective of the fact that a great variation exists in the number of users every year. 45-46% of the entire user base was using the system even after expansion. Many of the steady users ceased to use this system, while a few new registered to be part of the system after its expansion. Not just this, but an overall decline in system usage was recorded after the expansion in comparison to usage before the expansion phase. This clarified one of the factors that the expansion did not bring out desired results as expected and the former users were not being retained through a repeated and thought out strategy. The system expansion ignored critical points in keeping what is required from the users that frequently used to make trips. Instead the focus was only to attract new users without understanding the concept of retention.

Comparative Analysis: China Vs. The Rest of the World

Considering the data points mentioned above, one can simply deduce that something is wrong in the working model for bike-sharing in China whereas the success stories have been in place when it comes to the rest of the world. Therefore, it is important to highlight and understand what factors differentiate the models that are successful against those that are not performing up to mark. The dynamics vary in demographics, psychographics and sociographic perspective and these are the main factors that are going to shape the understanding of this scheme as well. All other factors on a micro level fall under these main categories identified above.

One of the factors that the researchers attribute success to is that of geographical coverage. The study of bike-sharing scheme in one of the successful destinations, Lyon, explained the uneven spatial distribution of bike stations with an offer that was focused on socio-economically active areas, included multimodal transport interchange hub and universities. Here, one can simply identify that sociodemographic angle played its part in ensuring success at an unprecedented rate. Attracting customers was in direct link with this aspect where the target market was students, qualified professionals, and similar households.

Evidence in other respects also suggests that the average profile of users comes into aspect and factors such as population also play a key role in the success or failure of any bike-sharing scheme. Therefore, demographics, on the whole, play a vital role in shaping the future with which this will scheme moves ahead. This is why this scheme also talks of success especially in the European setup. It started in Amsterdam, but the dynamics of the economy at that time inclined towards theft and inflicting damage to property. The income distribution in that respect, moral compass of the population, access to technology, culture of adapting to a change and similar factors were not favorable. Therefore, the instant failure came into play. Yet, directed investment in all of these factors changed the norms of society, and a great adaptation to sustainable mindset came into play. The economy also started to show signs of a promising future. Therefore the income distribution angle was also covered. Ethics and morality also improved, whereby sense of business also revolutionized. A revitalized setup and success from other European countries such as France in the 1990s induced a chain effect on the rest of the region as well. Infrastructure investment was then conducted specifically with regards to acknowledging and accommodating the bike-sharing scheme into the national domain. Dedicated lanes, installation of docks, upgrading to new technology, GPS installation, the era of bar code, national campaigns, attracting private investors, government incentives were a few factors that changed this model into a success for Europe.

In the U.S., factors such as “time travel savings” were also attributed to the success in some cities such as Washington where 73% users mentioned this as the turning point. This was followed by enjoyment (42%) and factors such as exercise (41%) and travel cost savings (25%) as the key points on which demographics of that region were resting (Buehler and Hamre 2014). The key aspect was to coin the idea of joining to save money that had positive spillover effects on new trips. This was a campaign to show that bike-sharing can make urban

travel a more affordable and inclusive experience. In a society where emotions and relevance on an individual level connect to an unparalleled scale, this was always going to change the national narrative. Therefore, the success in U.S. region can be understood from this perspective. Although, the scale of U.S. operations also signifies failures in other states where the factors have been high crime rate, low level of responsibility, higher supply than demand and less friendly social and economic laws that may help this idea grow. Psychographics have also played a role in these regions where this is considered an inclusive act in some areas whereas not so much in others.

Evidence on users suggests that bike-sharing induces inadequate patterns of participation in relation to cycling, gender class and ethnic differences in countries that have cycling levels on the lower side overall (Steinbach et al., 2011). Moving towards Singapore and Thailand, one can also see that economic activity and more receptivity to bike-sharing programs on an individual level has changed the market into an attractive one in that respect. It is important since China being in close vicinity with some similar dynamics has not been able to serve up to the level that was expected despite being known as the bicycle kingdom of the world. With huge numbers of bikes dumped in the country, the model is still not successful and the demographics have played a pivotal role in this failure as well. Singapore and Thailand have attracted companies operating in China to divert their investment in these markets where students, qualified professionals and large number of tourists have made this model a success. Lower subscriptions, favorable government policies have attracted private investment to operate in that setup while the general population receptivity has been impressive as well. Laws preventing illegal parking, damage to property and responsible citizens and responsible use of the product have indeed changed the course of this game in these countries. Moreover, the system has also proved to be inclusive in these countries and therefore, the expansion has allowed for more users to be added to the system than the original number every year.

When the literature about users is reviewed, one can understand that socio-economic and demographic characteristics have a huge role and evidence does exist to substantiate upon this point. It can be attributed that bike sharing schemes fit within a particular profile of a user reflecting ethnicity, employed or unemployed, younger, affluent, educated and independent and these are the ones that are attracted to this idea. Also, in the Asian setup and in that of some countries in the west, this idea of bike-sharing is associated with a male user and not a female user at large. London data revealed that women are 20% less in number when it comes to total bike-sharing trips (Goodman & Cheshire, 2014). In China though, the dynamics have been associated with a different level.

The main problem that has been identified is that the data also reveals that, for example, in Beijing, Shanghai and Hangzhou, the users who are engaged in the bike-sharing program are having a higher level of car ownership than the non-users (reviewed by Fishman et al., 2013). This is striking in terms of the concept of substitution since that implies that for the users the switch to cars is not a problem in the larger context and it also suggests that they are engaged in this practice as well. Therefore, the number of trips reduces every time and is inconsistent with the findings mentioned above. Not just this but illegal parking, no strict laws when it comes to implementation and demand projection has allowed for mayhem to continue and more and more bicycles have been dumped into the cities in China. In some cities, lack of responsible behavior, low education levels, low adaptation to technology has hampered the use of latest products and eventually the last mile problem still exists.

Car Substitution table

BSS	Car Substitution rate
London BCH, UK	2 %
Below, Lyon, France	7%
Bicing, Barcelona, Spain	9.6%
BIXI Montreal, Canada	2%
Capital Bikeshare, Washington DC, US	7%
Nice Ride Minnesota, Minneapolis-Saint Paul, US	19.3%
Melbourne Bike Share, Australia	19%
CityCycle Brisbane, Australia	21%

(Data Source: *A review of evidence on impacts and processes of implementation and operation, 2015*)

Here the data reveals how, in different countries, the situation is still controllable and a behavioral change has been recorded that has induced a more sustainable approach in the users to switch to bicycles as the mode of transportation. In China, as previously mentioned, this behavioral change has not been recorded on a massive scale yet. The numbers that show users with a higher percentage of car ownership points out that this means a trial and error approach for them and no permanent user base is expected unless behavior in favor of a sustainable approach is present. The effect of cycling, health benefits, work benefits, accessibility, approach to the station and bikes all of these factors are directly linked with the behavioral aspect and in China Vs. the Rest of the World, this has been a major point of difference. Promoting the use of bikes through national campaigns has also not been present and with China's economic ambitions, the room for such startups seems to be limited. Since the automobile industry is present on such a large scale, the possibility of any other mode of transport also begs the question of practicality. Other factors that hit china in the category of behavior change was how different patterns existed with regards to public transport use, namely quality, level of service and availability. Although stations were installed, yet the level of service that was expected dipped and resulted in adding to the overall failure. Large fleets were difficult to manage and lack of planning and demand projection made it even more difficult to maintain these services.

Data on selected PBS systems

City Name	Lyon	Paris	Montreal	New York	Madrid	Budapest
Name of the system	Velov	Velib	Bixi	Citibike	BiciMAD	MOLbubi
Number of Bikes	3000	20600	5200	6000	1560	1100
Number of station	350	1800	460	332	123	76
Number of docks	NA	NA	9670	13600	3126	1500
Service Area (sq.km)	NA	NA	95	53	NA	13
Capital costs (million euros)	3.9	75.5	15.2	NA	25.3	3.6
Annual operating cost (million euros)	1.3	29.3	NA	NA	NA	0.1

Source: *Comparative assessment of public bike-sharing systems*

The table above indicates how, on a different level, the distribution against the population is important for this model's success as well. In comparison, the number of bikes and stations is positioned fairly, whereas. China now serves as the hub where a large number of bikes have been dumped and no real demand projection and/or number of stations against a set number of population figures are present. This has caused fair bit of damage and the government has banned any more bikes from being brought to the system. A lot of this has to do with the population dynamics, topography of the region and the acceptability on a national level. All of these cities are on the higher side in terms of general acceptability and have a fair distribution with population side as well. Hence, the success is imminent. China, on the other hand, has not put much research into all these factors when it comes to the bike-sharing perspective. Additionally, the environment factor also came into play. Poor air quality levels, high levels of smog presence and hazardous environmental conditions also added to the bike-

sharing project to be a failure. So, is bike-sharing and consumer behavior on a national level of a nation linked? Where does the blame lie? Is there anything other than demographics adding to the failure of bike-sharing in China?

Bike Sharing and Consumer Behavior: Is China to Blame?

The influx of bikes across the Chinese market has also raised a few questions on consumer dynamics of the Chinese as collective behavior. This has also been identified as one of the causes of decreased market interest, lower demand and other concerns that led to the downfall of the bike-sharing model's success within the country. China has a crime index of 39.44 and a safety index of 60.56 (*Source: Crime Index 2018 Numbeo*), which signifies that it is a fairly safe country in terms of law and order situation and therefore should not present any problems. However, over the last years, petty and street crimes have increased in the mainland cities and this is where bike-sharing has also taken the hit. Theft reports have reportedly increased over the course of last two years and one of the problems that dock-less bike parking has encouraged is overall lack of responsibility on the part of the users. The New York Times article observes that as consumers, the Chinese have been drifting towards showing irresponsible attitude when it comes to bike-sharing. Riders have been seen abandoning their bikes at residential, commercial, parks and community centers without any sense of returning it safe and sound to any area from where it can be tracked from. GPS trackers are disabled; equipment is manhandled, parts are removed and sold off causing maintenance woes for the manufacturer and the operator. Digital locks and GPS improvements have set in but that is only possible for the major players in the equation and it still does not ensure full proof security and maintenance ease for the operators. Tens of thousands of bikes have been reported missing or being used for personal reasons. A few of the bikes have been found in canals, rivers and lakes, thereby adding to the financial cost due to property damage. This has also sparked a debate over the social status of the country where such innovations cannot operate without a high cost. It has also raised concerns about investment safety and sustainability in the emerging sector of the economy and the viability of a shared economy nonetheless.

In other instances, questions have been raised on the companies as well. The supply is mostly more than demand in several cities and that has added to the nuisance on the streets and an overall congestion on roads, pavements, sidewalks and in front of buildings. This has also affected the aesthetic outset of the cities. No research is put in as to how much of the demand is and any contingency plans if the demand falls. According to the statistics by the national media, there is one bike for every 14 people in the city of Shanghai, where maintaining law and order has been an issue, and therefore this puts the operator at risk with their merchandise as well. Instead of making this a viable option, increasing theft reports, improper parking and carelessness has resulted in confiscation of bikes and cost the companies more than their worth. A startup by the name of '3V bike' went belly up after a 1000 bikes belonging to the company were stolen. This is also the reason as observed earlier that forced the giants operating in the Chinese market to focus their investment utilization at different geographical settings where public property is respected.

The Road to Objectives, Challenges and More: Conclusion

The bike-sharing model and how it quickly took downhill road can be attributed to a number of reasons identified above. In addition, station density was intensified, bikes per resident were poorly distributed and resulted in mismatch at most mainland cities, quality of bikes was premium, yet the maintenance was an issue and therefore its operational quality deteriorated. Despite the 'last mile' problem of commuters not wanting to travel long distances to the stations was resolved in by bringing dock-less stations, the coverage security and increased demand along with convenience could not be capitalized upon, resulting in the decline of this service. Poor financial management and tariff plans and lack of economies of scale also hit the companies hard, forcing them to exit market and forcing others to diversify their scale of operations to include other more favorable

companies. This seems to be the order of the day and China, a market which is considered helpful to innovative practices fell short on the bike-sharing front and could not ensure that this business thrived.

Initially the objectives that were outlined through this bike-sharing initiative for most countries included reducing car journeys and easing traffic congestions, reducing emissions and ensuring environmental safety, adding to a better air quality, improving public health and safety, promoting cycling and help boost cycling levels, improving accessibility to such mode of transportation and adding to more choices in this regard. Yet the objectives have not been met when it comes to bike-sharing performance in China. The road is bumpy and requires a fair bit of dealing with the problems.

The government needs to play its role in ensuring all of the factors mentioned above are aligned with the private sector and in cooperation, better results can be achieved. Behavioral changes and demographics are areas on which the concerned stakeholders can work in elimination of this challenge. Enhancing image of this project and its connection to local economy and tourism also needs to be revised and promoted. All the stakeholders need to indulge in research and then project demand and ways to improve the dying down of such project in China and factors other than quantitative nature can be resolved through improved measures and awareness levels as well.

References

- i. Arrow, K.J., 1963. *Social Choice and Individual Values*. Yale University Press, New Haven and London.
- ii. Bardhi, F., Eckhardt, G., 2012. Access-based consumption: the case of car sharing. *J.Consumer Res.* 39, 881–898.
- iii. Bauwens, M., 2005. *The political economy of peer production*. *CTheory* (1 December).
- iv. Bauwens, M., Kostakis, V., 2014. From the communism of capital to capital for the commons: towards an open co-operativism. *tripleC* 12 (1), 356–361.
- v. Braungart, M., McDonough, W., 2002. *Cradle to Cradle: Remaking the Way We Make Things*. North Point Press, New York.
- vi. Belk, R., 2009. Sharing. *J. Consum. Res.* 36, 715–734.
- vii. Belk, R., 2014a. Sharing versus pseudo-sharing in Web 2.0. *Anthropologist* 18 (1), 7–23.
- viii. Belk, R., 2014b. You are what you can access: sharing and collaborative consumption online. *J. Business Res.* 67 (8), 1595–1600.
- ix. Benkler, Y., 2004. Sharing Nicely: on shareable goods and the emergence of sharing as a modality of economic production. *Yale Law J.* 114, 273–358.
- x. Benkler, Y., 2017. Peer production, the commons, and the future of the firm. *Strateg. Organ.* 15 (2), 264–274.
- xi. Bixi. 2009b. Information. <http://montreal.bixi.com/home/home-info/>(Cenrowski, 2017)_(Ulrich, 2017) (Ye, 2017)_(Phillips, 2016)_(Minter, 2017)
- xii. Bowles, S., Gintis, H., 2002. Social capital and community governance. *Econ. J.* 112 (483), F419–F436.
- xiii. Bradley, K., Pargman, D., 2017. The sharing economy as the commons of the 21st century. *Camb. J. Reg. Econ. Soc.* 10 (2), 231–247.
- xiv. Cenrowski, S., 2017. Wait, Chinese Bike-Sharing Doesn't Make Any Sense. *Fortune*, March.
- xv. DeMaio, P. 2003. Smart bikes: Public transportation for the 21st century. *Transportation Quarterly* 57(1): 9–11
- xvi. Demil, B., Lecocq, X., 2006. Neither market nor hierarchy nor network: the emergence of bazaar governance. *Organ. Stud.* 27 (10), 1447–1466.
- xvii. Edelman, B.G., Geradin, D., 2015. Efficiencies and regulatory shortcuts: how should we regulate companies like Airbnb and Uber. In: *Stan. Tech. L. Rev.* 19. pp. 293–328.
- xviii. Evans, P.C., Gawer, A., 2016. *The Rise of the Platform Enterprise: A Global Survey*.
- xix. Falkvinge, R., 2013. *Swarmwise: The Tactical Manual to Changing the World*. CreateSpace Independent Publishing Platform, North Charleston.

- xx. Firnkorn, J., Müller, M., 2011. *What will be the environmental effects of new free-floating car-sharing systems? The case of car2go in Ulm.* *Ecol. Econ.* 70 (8), 1519–1528.
- xxi. Hernandez, J. C., 2017. *As Bike-Sharing Brings Out Bad Manners, China Asks, What's Wrong With Us?*. *The New York Times*, September.
- xxii. Hochschild, A.R., 2012. *The Outsourced Self: Intimate Life in Market Times.* Metropolitan Books, New York.
- xxiii. Jemielniak, D., 2014. *Common Knowledge?: An Ethnography of Wikipedia.* Stanford University Press, Stanford, CA.
- xxiv. Kostakis, V., Niaros, V., Giotitsas, C., 2015. *Production and governance in hackerspaces: a manifestation of commons-based peer production in the physical realm?* *Int. J. Cult. Stud.* 18 (5), 555–573.
- xxv. Laloux, F., 2014. *Reinventing Organizations.* Nelson Parker, Brussels.
- xxvi. Lee, G.K., Cole, R.E., 2003. *From a firm-based to a community-based model of knowledge creation: the case of the Linux kernel development.* *Organ. Sci.* 14 (6), 633–649.
- xxvii. Maio, P. D., 2017. *Bike-sharing: History, Impacts, Models of Provision, and Future.* MetroBike LLC.
- xxviii. Marquis, C., Lounsbury, M., Greenwood, R. (Eds.), 2011. *Communities and Organizations.* Emerald Group Publishing, Bingley.
- xxix. Meelen, T., Frenken, K., 2015. *Stop Saying Uber Is Part of the Sharing Economy.* *Fast Company* (January 14, <http://www.fastcoexist.com/3040863/stop-saying-uber-is-partof-the-sharing-economy>, Retrieved October 23, 2016).
- xxx. Minter, A., 2017. *China's bike-sharing bust.* *The Japan Times*, November
- xxxi. Phillips, T., 2016. *Bike-sharing revolution aims to put China back on two wheels.* *The Guardian*, December.
- xxxii. Raymond, E., 1999. *The cathedral and the bazaar.* *Philos. Technol.* 12 (3), 23.
- xxxiii. Rifkin, J., 2000. *The Age of Access.* Penguin Putnam.
- xxxiv. Robertson, B.J., 2015. *Holacracy: The Revolutionary Management System that Abolishes Hierarchy.* Penguin UK, London.
- xxxv. Russel, J., n.d. *Hong Kong's Gobee raises \$9M to take on China's bike-sharing unicorns worldwide, s.l.: s.n.*
- xxxvi. Scholz, T., 2016b. *Uberworked and Underpaid: How Workers Are Disrupting the Digital Economy.* John Wiley & Sons.
- xxxvii. Stack, C.B., 1974. *All Our Kin: Strategies for Survival in a Black Community.* Harper and Row, New York. Warzel, C., 2015. *Let's All Join the AP Stylebook in Killing the Term Ride-sharing.* *BuzzFeedNews* (8 January, <https://www.buzzfeed.com/charliewarzel/lets-all-join-the-ap-stylebook-in-killing-the-term-ride-shar>, Retrieved 6 January 2017).
- xxxviii. Srineck, N., 2016. *Platform Capitalism.* Polity Press, Malden, MA.
- xxxix. Turner, F., 2006. *How Digital Technology Found Utopian Ideology: Lessons From the First Hackers' Conference.* In: Silver, D., Massanari, A., Jones, S. (Eds.), *Critical Cyberculture Studies.* NYU Press, New York.
- xl. Ulrich, K., 2017. *How Bike Sharing Is Maturing in China.* Wharton Innovation, September
- xli. Von Hippel, E., 2001. *Innovation by user communities: learning from open-source software.* *MIT Sloan Manag. Rev.* 42 (4), 82.
- xlii. Westervelt, A., 2011. *Bike-Sharing Grows Up: New Revenue Models Turn a Nice Idea into Good Business.* *Forbes*, Aug.

- xliii. Williamson, O.E., 1981. *The economics of organization: the transaction cost approach*. *Am. J. Sociol.* 87, 548–577. Woolf, N., 2016. *Airbnb Regulation Deal with London and Amsterdam Marks Dramatic Policy Shift*. *The Guardian* (3 December <https://www.theguardian.com/technology/2016/dec/03/airbnb-regulation-london-amsterdam-housing>, Retrieved 6 January 2017).
- xliv. Ye, J., 2017. *Why China's bike-sharing boom is causing headaches*. *South China Morning Post*, April.

Exhibit A:

<u>Company/Operator</u>	<u>Tariff</u>	<u>Cost (Bike)</u>
<u>Ofo</u>	<u>0.5 yuan – 1 yuan</u>	<u>250 Yuan (\$ 36)</u>
<u>Mobike</u>	<u>0.5 yuan – 1 yuan</u>	<u>3000 Yuan (>\$400)</u>