

Car sharing in China: another storm is coming in city mobility

The booming car-sharing business in China, its challenges and key success factors



After Didi acquired Uber China in 2016, the fierce battle between the two chauffeur giants came to an end, resulting in a large customer pool that was well educated on new urban mobility. Now the battle in city mobility continues, with another storm coming in – car sharing. Arthur D. Little analyzes the market dynamics, major challenges, and implications for the future.

The car-sharing market in China is growing with strong momentum

Car sharing is short-time car rental, usually charged by the hour, whose target customers make occasional use of a vehicle or use it for commuting on an as-needed basis.

In China, the earliest car-sharing player is CC Clubs (车纷享), founded in 2010. The market grew mildly in the first few years, and the total fleet size was still less than 1,000 by 2013. However, since 2015 car sharing in China has gained momentum, and reaching fleet sizes of up to 30,000 vehicles as of early 2017 – mainly in Tier 1 and 2 cities, with an average yearly growth rate of over 200 percent. The strong growth is driven by two major factors:

Strong government support – The Chinese government leverages car sharing to stimulate the new energy vehicle (NEV) market and increase individual mobility efficiency. In June 2017, the central government released a draft of guidance for the car-sharing industry, in which supporting policies for car sharing were defined. It specified requirements for car-sharing businesses, defined their role in urban mobility, and offered high-level support measures such as parking spaces. Prior to this, many local governments had already defined support policies for car sharing. For example, in February 2016, the Shanghai government set a target for car sharing to achieve 6,000 service spots, a fleet of 20,000 electrical vehicles (EVs) and 30,000 charging poles by 2020. Free parking spaces were provided to car-sharing companies in government-controlled parking lots,

e.g., at government organizations, state-owned enterprises (SOEs), airports and so on. Subsidies are granted for operations and car-sharing platform development. For instance, for 2017 and 2018, it covers 30 percent of the cost of parking spaces, charging infrastructure and electricity, with an upper limit of 3 million RMB per year.

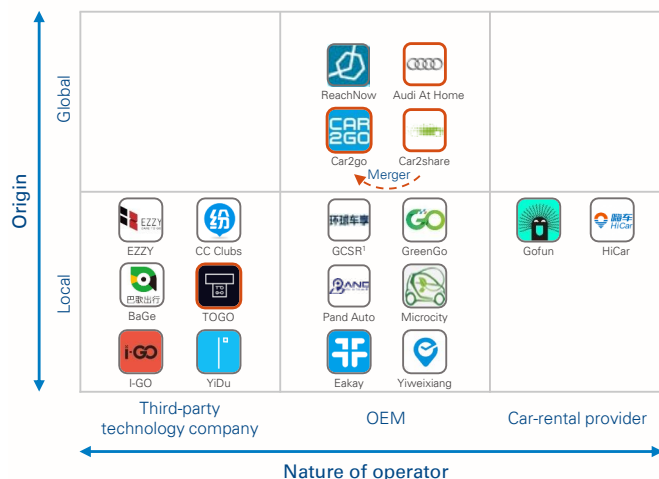
Fulfillment of citizens' mobility needs – Public transportation is still insufficient in China. For instance, average bus ownership is 0.3 per thousand people in China, while that number is 0.5 in the UK. The average subway length in Shanghai was 25 meters per thousand people in 2016, which is about half of that in London. Private-vehicle ownership is also low in China, at ~110 per thousand people as of the end of 2016 (only 1/8 of that of the US and 1/5 of the UK). In addition, in certain large cities, such as Shanghai and Beijing, registered car plates are strictly controlled by government due to traffic jams, which consequently restrains citizens from owning cars. Even for those with cars, there is inconvenience due to traffic control on private cars in cities such as Beijing and Hangzhou.

As a result, car sharing as an alternative solution has been well received by Chinese customers. According to Arthur D. Little (ADL)'s recent global study of over 6,500 customers, "The Future of Automotive Mobility," 42 percent of Chinese customers are willing to replace private cars with appropriate car sharing and other new mobility services, in comparison with the global average of 22 percent.

Local OEMs take a leading role in car sharing

Since 2015, a large number of players have entered this market. By early 2017 the total number has reached over 100. Currently, there are mainly three types of car-sharing players in the market – OEMs (~75 percent of the market share), car-rental companies (~5 percent), third-party technology companies (mostly start-ups funded by venture capitals, ~20 percent).

Mapping of key car-sharing players in China



Legend:
 □ Offer EV car
 □ Only offer gasoline car
 1) GCSR = Global Car Sharing & Rental, the newly founded company after the merge of EVCard and E-Sharing
 Source: Arthur D. Little analysis

Most local OEMs have entered the car-sharing business proactively, and are now taking a leading role in the Chinese car-sharing market, including Shanghai Automotive (SAIC) – GCSR, Beijing Automotive (BAIC) – GreenGo, Lifan – Pand Auto, Geely – Microcity, Chery – Eakay, Dongfeng – Yiweixiang, etc.

For example, Microcity, founded in 2013, the largest player so far in China, has strong support from Geely. All of its vehicles are provided by Kandi EV, the joint venture between Geely (50 percent) and Kandi Group (50 percent). With substantial support from the Hangzhou government, including free parking spaces and a subsidy for infrastructure construction and charging, it had ~11,000 vehicles in operation by late 2016. Besides the network inside Hangzhou, it has built up service spots in neighboring Tier 3 and 4 tourism cities (e.g., Jiande City). Tourists can drive the cars from Hangzhou to these places of interest nearby very conveniently.

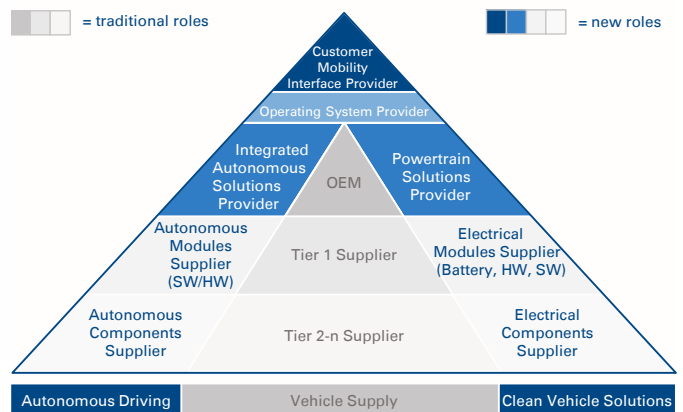
Foreign OEMs have also launched car-sharing businesses in China, although the market share is much lower than for local ones. Even Daimler, the largest foreign player by volume, had only ~1,000 vehicles in operation in early 2017. Daimler launched two car-sharing brands in China in 2016 – Car2Share (focusing on B2B) and Car2go (focusing on B2C), and then merged them in early 2017. Compared with local OEMs, vehicles by foreign OEMs are more premium, and mostly with internal combustion engines (ICEs). Considering most supporting policies of local governments focus on NEVs only, foreign OEMs will be at a

disadvantage in the future if they do not have NEV fleets, in terms of getting subsidies, business plates and parking spaces.

There are two major reasons for OEMs in China to enter the car-sharing business.

The first one is pressure to reach NEV sales targets. The Chinese central government has released fuel consumption and NEV credit requirements for OEMs, defining the NEV penetration target for 2020. Car sharing can be a major way for OEMs to digest the NEV volume quota for OEMs. Currently, 90 percent of the shared cars in the market are NEVs (major models including Kandi EV, Lifan EV, BAIC EV160, ROEWE E50, Chery EQ and so on), and 10 percent are ICE cars, mainly run by the brands of TOGO (models including Smart, Mini, Citroen C3-XR, ROEWE 550, Peugeot 2008) and Car2go (Smart).

Future automotive pyramid



Source: Arthur D. Little

The other reason for OEMs to enter car sharing is their strategic transformation from manufacturers to mobility service providers. According to ADL's global study of over 100 leading automotive players from 10 countries, the classic automotive pyramid is changing due to the development of shared mobility, autonomous driving and electric vehicles. (See Figure above; more details are available in Arthur D. Little's study, "The Future of Automotive Mobility," 2017). The new role of "customer mobility interface provider" is taking access to and relationships with end customers from OEMs. Moreover, they are likely to have higher bargaining power due to large procurement volumes. Given these risks, OEMs have strong motivation to be engaged in this role.

Of all the new mobility services, chauffeur and car-sharing services are considered to have high potential in China. However, Chinese local governments have launched very strict controls over chauffeur services. For instance, one requirement is that the wheel base for the chauffeur car must exceed 2,700mm for ICE cars and 2,650mm for NEVs. This makes it impossible for small NEVs to penetrate the market. Additionally, in Tier 1 cities, it is required that chauffeur drivers have residency in these cities, and the cars have local license plates. This puts the bar even higher.

Besides chauffeur, car sharing is also a good starting point, considering it is at an emerging stage with more opportunities. In addition, OEMs have advantages in vehicle procurement and maintenance cost, as well as in local government relationships, which is key for car sharing. With car sharing, big data from end users, such as driving habits, can be collected to improve products and services, and enhance innovation and precision marketing.

Challenges

Although car sharing is booming, the business faces multiple challenges. Most players are not profitable and struggling to overcome various operational difficulties. Take leading player GCSR, by Shanghai Auto (SAIC), for example: its average daily income per vehicle was ~50 RMB in early 2017, which is still far from the total daily cost of ~120 RMB. On the other hand, in only half a year, with utilization improved, the average daily usage has been improved from ~2 hours to ~3 hours, and revenue had increased to 90 RMB by Q3 2017, which improved the business case, although not reached breakeven yet.

Low revenue. The price of car sharing is relatively low in China. The major competitor of car sharing is taxi, which is also low priced compared with that in developed countries. For instance, the taxi price in Shanghai is RMB 14 for the first three kilometers and RMB 2.5 for each kilometer thereafter, which is already the highest in China. This price is ~1/7 of that in Tokyo or ~1/8 of London for a ride of 10 km. As a result, the price of car sharing is even lower. For instance, the price of GCSR (headquartered in Shanghai) includes a fixed 15 RMB for the first 30 minutes and 0.5 RMB per minute afterwards, with an upper limit of RMB 180 per day. In addition, the increasing competition imposes pressure for players to keep prices low. In the long run, with salary levels of taxi drivers increasing (due to the rapid increase of labor cost in China), relative competitiveness of car sharing versus taxi will improve.

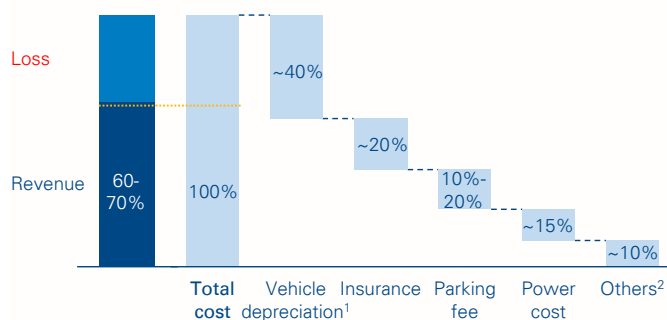
On the other hand, utilization of vehicles is low – less than 20 percent as of Q1 2017. The major reason is the limited number of service spots, which are scattered among different players, as well as operational hurdles such as tides (insufficient supply during rush hour, while cars are idle during non-rush hour).

High cost. The fixed cost of vehicles is high. In China, over 90 percent of car-sharing vehicles are EVs. But the residual value of EVs is much lower than for ICE vehicles – ~20 percent after three years of use, compared with ~40 percent for ICE, which leads to higher depreciable cost.

Besides depreciable cost, vehicle insurance is high, because the insurance rate for operational vehicles, including taxi, car sharing and car rental is fixed and much higher than for private cars. However, utilization for car sharing is currently much lower than that of other operational vehicles, such as taxis.

Parking is expensive, too, especially for Tier 1 and 2 cities. For instance, the cost for YiDu in Beijing reaches ~900 RMB per month per vehicle. For car-sharing companies, downtown areas such as Central Business Districts (CBD) are critical spots that drive business, considering their high customer flow and hence strong possibility of being departures and destinations for customers. However, the parking cost is also higher in these areas. It's key to balance the benefits and costs when choosing parking locations.

Typical cost structure of car-sharing business in Shanghai (Q3, 2017)



1) Typical local EV models, price RMB 80-90K;
 2) Others include labor cost, maintenance cost, etc.
 Source: Arthur D. Little analysis

Besides the profitability, car-sharing players also have operational difficulties to overcome.

Limited parking spaces. In Tier 1 cities, the number of business plates (license plates issued for business operations such as car sharing and taxi) is strictly controlled. Beijing released only 2,000 plates for NEV car sharing businesses in 2016. This consequently becomes a major challenge for players to expand their businesses in these cities.

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Insight for the executive

Despite the challenges above, car sharing will grow with big momentum, with more players entering the battle. In the near future, the sector will further consolidate, as the business requires scale and the necessary resources are limited (e.g., plates, parking lots). Industry consolidation and improved customer acceptance, or even loyalty, will lead to higher fleet utilization and scale of economy. Breakeven of the business case will then be achieved. However, given the challenging environment, players need to outperform in several key areas to survive and achieve competitive advantages.

Cooperation. Car sharing requires a variety of resources, including vehicles, plates, parking spaces, etc. To get these resources, it is necessary to cooperate with players along

the value chain, including local governments, OEMs, owners/operators of parking lots, operators of charging facilities, and organizations with specific usage scenarios, such as airports, train stations, industrial parks, universities and tourist attractions.

Revenue and cost optimization. Given the current low prices and utilization, income from sources other than car rental should also be creatively generated, e.g., advertisement, precise marketing based on big data, and value-added services (such as providing child safety seats, Wi-Fi in car, car delivery). Dynamic pricing can also be applied to guide customers' behavior and boost utilization. Meanwhile, it is important to improve operational efficiency and optimize labor, maintenance cost and so on.

User experience improvement. User experience can help players to differentiate, increase customer loyalty and even achieve premium prices. However, the current user experience of car sharing is not satisfactory in China. This includes, for instance, complex registration processes and high deposits, homogeneous services and low-end perceptions, limited parking spots, and inability to address last-mile transportation. To deliver excellent user experience, it's key to define target customers, understand their needs and pain points, and provide tailored services accordingly. For example, EZZY offers mainly BMW i3, targeting the premium female market.

Digitalization. To optimize operation efficiency and identify business opportunities, it is necessary to digitalize operations, collect and analyze big data, and obtain insight. For instance, big data can help analyze and forecast customer behaviors and minimize the "tide". It can also help monitor vehicle status and reduce downtime.

In the long run, with autonomous driving (AD) commercialized to a large scale, different public individual-mobility services will evolve to a similar operation model – on-demand and door-to-door mobility service by AD vehicles. By then, car-sharing companies will need corresponding brand new capabilities, such as running platforms for dispatching and route planning, which is the strength of chauffeur players. Before AD is commercialized in the market, we believe car sharing will still grow with strong momentum, such as ~50 percent compound annual growth rate, and surpass 200,000 cars in five years. How should incumbent and new car-sharing players focus on car sharing in the short-term and gain experience providing mobility service, as well as accumulate big data on end users? At the same time, how can they prepare for the transformation when AD is implemented on a large scale? Such important questions need thorough strategic planning.

If you would like more information, please visit the automotive section of our website or contact us directly.

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