

# Rebooting Japan's mobility market

## Discussion paper

November, 2018

Mobility is a critical factor in our economies transporting people and goods to enable our daily activities. Numerous disruptions to the energy grid, IOT-enabled connectivity, delivery logistics and vehicle technologies are transforming our mobility systems. We all recognize the powerful effects of new mobility mega-trends: electrification, autonomy, connectivity and sharing on both B2B and B2C business models for the broader mobility ecosystem. Yet, new technologies and business models alone are not sufficient to overcome the intensifying pressures that cities face to make their mobility systems to be cleaner, faster and safer, and at the same time more affordable. Urbanization is expected to increase average city density by 30% over the next 10 years. Simultaneously, freight volumes are projected to grow by a staggering 40% by 2050 with the growth of online and new commerce – meaning many more vehicles are expected to be on the road.

Public and private players should join hands to accommodate the additional demand for and presence of mobility services. Ecosystems, made up of OEMs, technology players, telcos, utilities, urban planners and city officials need to be formed in order to develop a truly integrated and seamless mobility system.

Given that Japan is a front-runner of many of these macro and technological trends, the country is well poised to transform its own mobility system. In this discussion paper, we examine how digital applications are partnering with Japanese taxi operators in order to revamp the long stagnant industry in the face of new challenges. The outcomes from newly formed partnerships in Japan are likely to have broader implications to other markets facing similar economic, demographic and regulatory environments.

Renowned for high quality and convenience, Japan's mobility services face new challenges as the country undergoes a series of macro shifts including customer preferences, demographics, and regulations. Overcoming these challenges will require new approaches and partnership models.

Lauded as a world benchmark a generation ago, Japan's hailed mobility industry is hitting the reboot button. Global ride-hailing giants Uber and Didi, along with local incumbents, are finding new ways to move into the \$17 billion taxi market. Yet there is plenty of room to further integrate these disruptive technologies in order to mobilize future transportation services, such as self-driving "robotaxis."

Ride-hailing companies are challenging the traditional taxi business globally. In the United States, market leaders Uber and Lyft have combined net revenues of \$13 billion<sup>1</sup>, and in China, Didi has an estimated 300 million users, representing 95 percent of the ride-hailing<sup>2</sup>. Yet few Japanese taxi companies have revamped their offerings to include digital services, given the existing regulatory environment and mixed customer perceptions<sup>3</sup>.

Meanwhile, Japanese taxi operators are facing challenges to their traditional business model. In particular, taxi use has declined steadily over the past 30 years, passenger kilometers have stagnated at about 40 percent of total kilometers driven<sup>4</sup>, driver shortages are persistent, and industry profits have fallen. These trends have been exacerbated by continued migration in Japan to megacities, where public transit is both cheap and convenient, and by an overall population decline.

## Higher demand for cheaper point-to-point transport

Many mobility players sense an imminent entry into Japan, with latent demand for more affordable, mass-market, and on-demand point-to-point transportation options. Younger populations believe ride-hailing services could serve as an alternative to public transit for shorter trips priced more competitively. Passengers also recognize other benefits such as faster hailing during peak periods and simpler communications with drivers. However, several concerns linger among more conservative passengers, who perceive private car-sharing services to be of lower quality and potentially unsafe, providing regulators with reason to proceed cautiously.

Also, tourists, accustomed to ride-hailing services at home, are expected to push demand higher. Tourism in Japan grew 30 percent a year over the past three years<sup>5</sup>, and it will likely continue to increase during the 2019 Rugby World Cup and the 2020 Tokyo Summer Olympics. In response, in July 2018, China's Didi announced it would enter the Osaka market, catering mostly to the growing number of Chinese tourists with language and digital-payment options.

Intrinsic demand, coupled with the lack of a dominant market leader, has compelled global ride-hailing companies and their investors to rethink strategies to break into the Japanese market. Instead of enlisting private drivers, ride-hailing companies are forming partnerships with local taxi operators and established Japanese corporations to boost utilization, capture demand, and thus consolidate a large user base for future robotaxi offerings. By doing so, many players are now gaining access to one of the last major undisrupted OECD mobility markets.

Global ride-hailing players maintain competitive advantages via their mobile-app technologies, which include robust interfaces and matching algorithms. By partnering with local operator fleets, they can further optimize taxi supply, pricing, and routing, thus improving both customer experience and margins.

## What's behind the imminent disruptions?

### A steady shift away from private transportation

Japan's mobility mix skews heavily toward public mass transport, which accounted for 43 percent of the total passenger kilometers traveled in Japan in 2016 (Exhibit 1), compared with around 2 percent in the United States<sup>6</sup>. In megacities such as Tokyo and Osaka, that number jumps up to 52 percent, largely due to the convenience, reliability, and affordability of public transportation services. Going forward, increased urbanization is expected to expand the use of mass transit, with some estimates as high as 70 percent of total passenger kilometers in urban areas by 2025.

Similarly, with an aging and more urban population, private vehicle purchases are falling. With this in mind, car manufacturers are looking to form new ecosystems to make private mobility more flexible and affordable. Toyota recently invested in both Japan Taxi and Uber in order to improve the efficiencies of Japanese taxi operators and eventually develop ride-hailing services for shared robotaxis.

#### Exhibit 1

Travelers rely heavily on public transit in Japan, especially in megacities, such as Tokyo.

Share of passenger-kilometers by mobility mode, 2016, %

Japan	Public	43	Other	57	
	Tokyo		Public	52	Other

**Source:** Ministry of Land, Infrastructure, Transport and Tourism: annual report on changes in automotive distances traveled

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## A constrained regulatory environment

Regulations currently limit the supply of taxis in circulation, control pricing, and enforce parking and licensing requirements, thereby limiting the options for passengers. Since Uber launched in Japan in 2015, the company has been allowed only to operate under its premium chauffeur brand, Uber Black, as private car owners are prohibited from transporting for-fare passengers. Under those conditions, the company has struggled to gain penetration. In 2017, Uber accounted for less than 1 percent of monthly rides in Tokyo<sup>7</sup>.

In contrast, Tokyo operator Nihon Kotsu launched Japan Taxi, an e-hailing service that allows in-app reservations and payments, which has achieved five million downloads to date<sup>8</sup>. Since then, Uber, Didi, and Sony have adopted the same e-hailing model without challenging either market supply of taxis or pricing structures.

The government—aware that in certain rural areas, public transport is fast becoming too costly to support financially—is exploring alternatives. Ride-hailing options are seen as an intermittent solution. With the government's approval, Uber is piloting an e-dispatch service for a dozen companies on Awaji Island as public-transit options are streamlined. While more efficient than the current public transport solutions, the question remains as to how much value a basic e-hailing service can create.



## Fragmented competition in the local taxi market

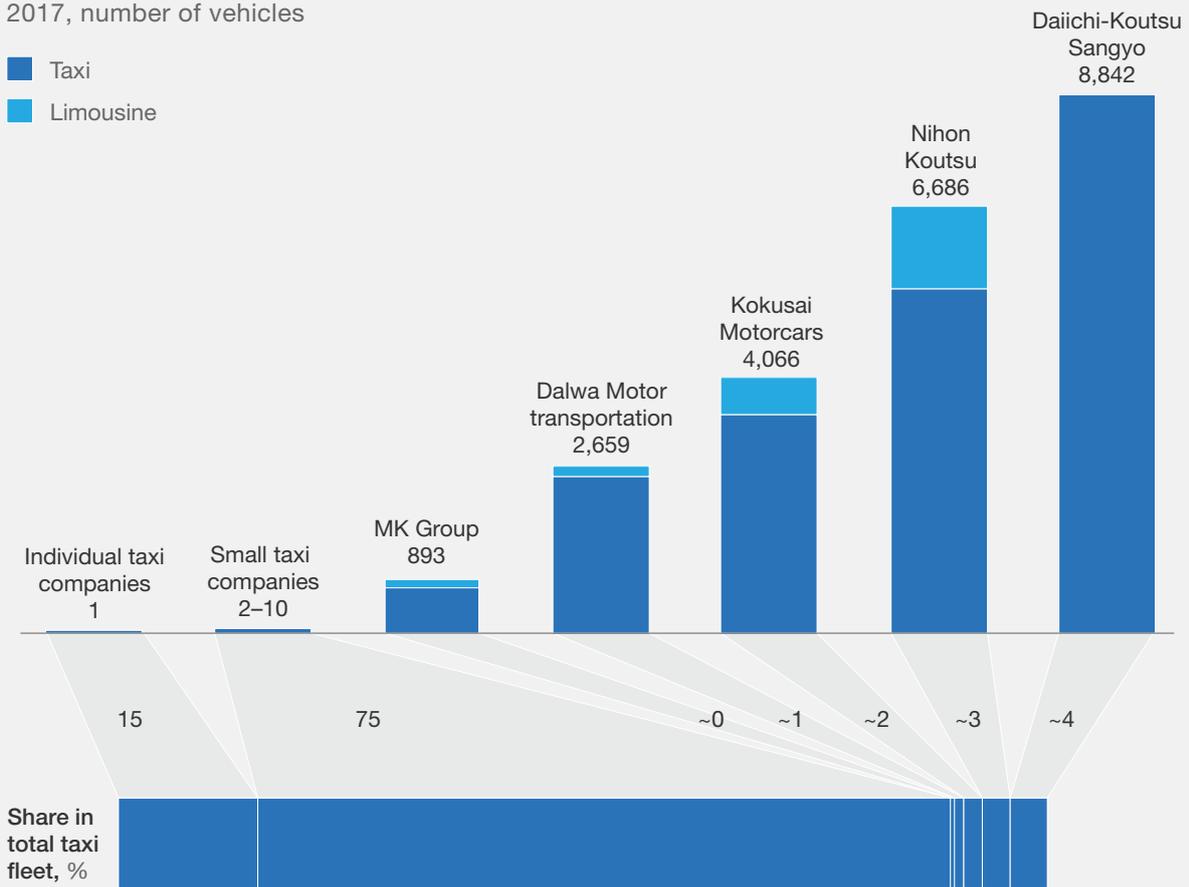
The Japanese taxi market is highly fragmented, with most fleets regionally focused. Based on our analysis of companies' annual reports, small companies with up to ten cabs constitute 90 percent of the national fleet of 240,000 cars (Exhibit 2)<sup>9</sup>. Because of this fragmentation, providers of e-hailing apps, which run on algorithms that need scale to optimize routes and supply, must work with multiple operators to capture a large enough user base and fleet network. For instance, Sony launched a ride-hailing service trial in March 2018 after forming an alliance with six taxi operators, including Daiwa Motor. Even JapanTaxi, whose coverage now extends to over 60,000 taxis, about a quarter of the market, across 870 operators in all 47 prefectures<sup>10</sup> sought to further partner with their traditional competitor Tokyo Musen in order to bolster coverage. The severity of fragmentation and lack of a dominant market leader, today, leave plenty of room for new players to try to consolidate operators under their umbrella.

**Exhibit 2**

Small companies dominate the taxi business in Japan.

**Distribution of national taxi fleet by player size, 2017, number of vehicles**

- Taxi
- Limousine



McKinsey&Company | Source: Company websites; McKinsey analysis

## Largely satisfied local consumers

Altogether, about seven million users or 5 percent of the population have downloaded ride-hailing apps in Japan, compared with an estimated 30 percent in the United States and 20 percent in China<sup>11</sup>. One reason for this low penetration is an ample supply of traditional taxis in the country. In central Tokyo, taxi wait times average less than five minutes, and taxis hailed on the streets or at a stand account for 90 percent of total passenger fares in the country (Exhibit 3)<sup>12</sup>. This has led to a far slower adoption of e-hailing apps, as Line, the instant-messaging platform, found out. In mid-2018, Line had to discontinue its in-app ride-hailing service Line Taxi, citing low usage rates.

### Exhibit 3

In Tokyo, taxi passengers usually hail a cab or find one at a stand.

Fare division by mode of hailing in Tokyo, % of fares

Roadside	58	Taxi stand	32	App	10
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90% of Tokyo taxi fares are done old-school, by hailing, or by waiting in line

Average wait time in Tokyo for hailing a taxi is about 3 minutes but can be significantly longer in mornings or rain

Japan is a cash-heavy society, with around 70% of fares paid nondigitally

McKinsey&Company | Source: McKinsey Mobility Consumer Survey, June 2018

Urban commercial transport in 2030 will look dramatically different than it does today. Consumer expectations will likely be higher and demand for individual mobility will increase, potentially bringing more congestion, pollution and ultimately frustration. Getting ride-hailing right sets the stage for more efficient and convenient future mobility offerings such as robo- or flying taxis and intermodal mobility. Such solutions depend on the innovative technologies featured in e-hailing apps that can optimize supply in circulation, trip routes and pricing by accelerating the accumulation of customers and mobility data. Enabling ride-hailing solutions today will likely help mobility players form ecosystems that accelerates the shift to shared mobility solutions that hold the potential to relieve intensifying pressures on many urban mobility systems.

## Open questions

As taxi operators, technology providers, and investors come together to form new ecosystems, there is a growing push to revitalize private mobility services in Japan. These partnerships have the potential to boost utilization, efficiency and affordability. Doing so will allow players to consolidate a large user base for future offerings such as robo- and flying taxis. To achieve these feats, Japan's mobility industry must answer three critical questions:

1. Will major stakeholders agree to a new demand-based mobility scheme that optimizes supply and pricing, allowing ride-hailing services to add value?
2. Can mobility providers consolidate operators to build a sufficiently large customer base and fleet, allowing the demand aggregators to deploy their full range of services and monetize the next generation of mobility options?
3. Can partnered companies develop a meaningful suite of services that exceeds the benefits of current mobility offerings and excites passengers?

Both new and incumbent players recognize that to compete with other widely available, more convenient, and cheaper mobility modes, they need to improve their efficiency and affordability. If mobility players can answer these questions successfully, they will be able not only to penetrate this massive market but also to use lessons learned in Japan to move into other highly regulated markets.

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## Notes

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- 12 McKinsey & Company Global consumer survey: Key reasons for using ride-hailing services, 2017.



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