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Future Mobility
Understanding a new transport ecosystem
Contents

04 Future mobility and technology innovation
06 Growth of the future mobility market
08 Assessing the future mobility value chain
12 Future mobility and listed equity
It is easy to take getting from point A to point B for granted. Whether a destination is across town or further afield, transport is a key element of how society works. Transport represents a significant part of the economy as well — at around 13% of total outlays, transportation is second only to housing as the largest category of expenses in the average U.S. or European household. In addition, this is a sector that has already faced substantial disruption. Vehicles have become more connected and more cars are now electric. Both these trends seem likely to deepen and broaden at least based on plans global carmakers have announced to invest over USD 300 billion in electric vehicle technology alone over the next five to 10 years. Buses, cars, trains, scooters and aircraft have also become more automated. Moreover, a shift from ownership to “usership,” as part of a “shared economy,” means that the traditional business models across the transportation, travel and automotive sectors have become increasingly vulnerable. A widely quoted study from Berkeley’s Transportation Sustainability Research Center suggests that each car-sharing vehicle replaces nine to 13 vehicles purchased.

Today, many travelers are more likely to hail a ride with their smartphone than to get a rental car or taxi. According to the business travel expense management company, Certify, Uber is now the largest single recipient of travel expenses among U.S. business travelers, accounting for over 12% of travel expenses — three times more than any single restaurant, airline or retail outlet. Particularly for residents in cities, the economics of directly owning a car seem to be changing, as alternatives such as ride-hailing and car-sharing services are becoming more transparent and available, and as low-emissions zones are introduced. A new ecosystem — broadly called “mobility,” i.e., mobility-as-a-service (MaaS) — has been emerging.
Growth of the future mobility market

The MaaS market has been quantified between USD 400 billion (IHS Markit) and USD 1 trillion (KPMG). ARK Research even suggests that the autonomous MaaS market could exceed USD 10 trillion in sales by the 2030s. In line with these estimates, Uber’s initial public offering (IPO) prospectus defined a global, so-called total addressable market (TAM) as being USD 5.7 trillion, comprising the value of all passenger vehicle and public transport trips in 175 countries. To put this in context, this value is higher than the GDP of Japan.

The scale of such estimates is beguiling, but without defining the scope of the industry, such projections are difficult to assess and compare.

Exhibit 1:
Total addressable market estimate for mobility-as-a-service

The use of a TAM in relation to a single company is controversial ("Tech: total addressable nonsense", Lex column, 17 December 2019, FT) but here we are assessing the scale of total economic activity instead.
To fairly gauge estimates of the size and scope of the mobility industry, we first require a consistent definition of the full ecosystem. For comparison, as summarized in Exhibit 2, the automobile industry’s value chain stretches from raw material provision, to second- and first-tier suppliers, to original equipment manufacturers (OEMs) at the center and finally to dealers and the after-sales network as the customer-facing elements. The new formulation starts from autonomous hardware and software and reaches MaaS aggregators.

The car-centric culture that has developed over the past 120 years has led to economic growth as well as indirect growth through suppliers and the support of other related industries. The oil, insurance, and finance industries, as well as the tire and rubber industries have grown in tandem with the automotive industry. Beyond this, rental cars, fleet management, and motorsport entertainment have also benefited from OEM activities. In aggregate, these industries can amount to a large proportion of a country’s workforce and exports; for example, in Germany, 16% of all exports and 20% of the total domestic industry revenue have been generated from the automotive industry.9

How does the emergent mobility industry compare with the established automotive industry? Each of the top four OEMs have — at some point in the past three years — declared its ambition to become a leading “mobility company.” Toyota, for example, has declared that it is now a “human movement company”10 and has even trademarked the term.11
Just as cars, buses and other vehicles are forecast to become progressively “electrified” and greater users of autonomous technology, they are also expected — indeed, in some places mandated — to become more connected. The EU has already agreed that, from April 2018, all vehicles must be equipped for the so-called eCall system, thereby connecting them to the cellular network for emergency service alerts. Greater connectivity facilitates the management of vehicles within a MaaS model. This is one reason for considering fleet management as likely to take on a much greater role in the future mobility industry. Mapping, positioning, cleaning and maintenance of all vehicles are core (but unglamorous) activities for mobility operators such as Uber, Grab and Lime. End-users don’t currently keep keys for dozens of rental cars in their pocket and hence industry observers anticipate that there will be resistance to the need for 30 or 40 mobility apps on smartphones. This is likely to support a trend towards MaaS aggregator apps, which might draw from the ranks of search and booking platforms such as Citymapper and Google and from wallets such as Alipay, for example.

To clearly define the mobility value chain, investors may want to consider which businesses to fold into the model. Does the value chain include lithium-mining companies, as batteries make up over a quarter of the value of an electric car, according to Bloomberg New Energy Finance? Does it include the oil companies that have begun diversification investments and have made acquisitions into the networks of electric-vehicle charging stations (such as BP’s investment into FreeWire, Chargemaster, PowerShare and StoreDot)? Should technology companies (such as Alphabet) that create elements of the software for autonomous vehicles be included? What could be incorporated from the field of public transport, which has become more integrated into “multimodal” platforms and seen experimentation with on-demand transport to complement its traditional fixed routes? At which stage would it make sense to consider entertainment services provided en-route to the riders of autonomous vehicles?

Ultimately, it seems that mobility might be defined less as an industry and more appropriately as an ecosystem that includes renewable energy, technology, transportation, travel, infrastructure, entertainment and even public health. Within the future mobility trend, these industries could be thought of as co-dependent, just as leasing companies and car manufacturers are considered today.

12 https://www.handelsblatt.com/unternehmen/industrie/autobauer-flugzeugbauer-und-kleine-airlines/25049514.2.html
13 A European initiative intended to bring rapid assistance to motorists involved in a collision anywhere within the EU.
Future mobility and listed equity

An industry in transition can experience change, volatility and growth given the potential scope for significant new entrants and for established companies to redefine themselves. For automakers and their suppliers, the mobility transition has been called a “Blockbuster moment” by Ptolemus consulting. While Blockbuster’s investors experienced bankruptcy in 2010, Netflix’s shareholders benefited from this same transition, as the entertainment industry moved significantly to an online and on-demand model.

For equity market institutional investors, the size of an industry such as mobility typically becomes actionable information when the participant companies are investable. As a new industrial sector, it still has many, sizable private players, including the so-called “unicorns” of automotive and transportation — DiDi Chuxing, Grab, Ola and Rivian. Moreover, regulations, such as the 2012 JOBS Act in the U.S. and the increasing allocations to private assets by asset owners, have lowered the levels of public issuance in recent years.

Bessemer, a well-known Silicon Valley investor, in 2019 raised a USD 525 million late-stage fund with the express aim to keep start-ups as private for longer. Softbank’s USD 100 billion Vision Fund has invested in companies across the mobility value chain — from autonomous hardware and systems, to mobility-operators and even used-vehicle sales platforms. With an implied valuation of over USD 55 billion following its latest funding round in July 2019, DiDi Chuxing matched Daimler’s market valuation and far exceeded those of Fiat Chrysler and BMW, or even of suppliers such as Continental. Therefore, with billions in private funding at high implied valuations, the market still lacks complete transparency and liquidity for listed equity investors.

Nevertheless, in public markets, there is still a wide range of companies that participate in the future mobility trend in our view. A granular analysis of an individual element of the mobility value chain and of the companies and products contained within will usually generate a long list including both public and private companies, companies fully dedicated to future mobility, and companies who contribute only partially through their overall operations. This trend could affect other industries well beyond the immediately impacted fields. It may also include companies pioneering technologies as well as established companies in other fields that are looking to adapt to a world of electric, connected, autonomous and shared mobility.

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18 This term is a reference to the former film-rental giant who ignored online video transmission until shortly before its demise. https://www.ptolemus.com/insight/new-mobility-the-car-rental-industrys-blockbuster-moment
19 This refers to private companies with a calculated or assumed valuation of over USD 1 billion. The sample is taken from CB Insights. https://www.cbinsights.com/research/unicorn-companies
20 https://www.bvp.com/year-in-review-2019
22 https://craft.co/didi-chuxing/funding-rounds
23 As on Nov. 29 2019.
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