OliverWyman Forum | Berkeley Institute of Transportation Studies

Value Pool Report

How Urban Mobility Will Change by 2030

By the end of the decade, more apps, shared services, and electrification will significantly expand mobility's scope and modes

A wave of shared and digital services is transforming mobility with options that go beyond traditional public transport and privately owned cars. Applications have accelerated the deployment of new modes and services, reshaping urban and suburban travel. These new services are expected to grow over the next decade about twice as fast as traditional mobility, with potential benefits for climate, pollution, and the livability of cities.

To gauge the impact, the Oliver Wyman Forum and the Institute of Transportation Studies (ITS) at the University of California, Berkeley analyzed 13 services in three regions: North America, Europe, and Asia. In addition to mobility services, the study covered complementary services such as electric-vehicle (EV) charging stations and smart parking solutions. The study projected an average growth of almost 10% a year over the current decade through 2030, compared with 5% for the overall mobility sector. The new services are expected to generate annual revenue of $660 billion in 2030, up from $260 billion in 2020.

The industry is expected to be more sustainable with the increased electrification of mobility services. By adopting EVs at a faster rate than private car owners, new mobility services could improve air quality, reduce noise levels, and shrink the carbon

13 mobility services included in Oliver Wyman's value pool analysis

Cars as a service

Car rental
Car sharing
Car subscription

Ride-hailing and taxi services

Air taxis
Carpooling
Ride-hailing & taxis
On-demand bus pooling

Micromobility

Bike sharing
Kick-scooter sharing
Moped sharing

Complementary services

Charging services
Navigation services
Smart parking payment services

footprints of cities — providing renewable or low-carbon energy used for the generation of the additional electricity needed.

Whether new mobility services will reduce congestion over time is more up for debate. On one hand, people moving to bicycles and scooters could reduce the number of cars in a city, but ride-hailing and car sharing may contribute to congestion if in fact commuters choose these services over mass transit.

Subways, buses, and commuter light rail are by far the most efficient and environmentally friendly mode for moving people around cities based on the number of passengers alone transported with each trip. At points, the COVID-19 pandemic caused the use of public transport to plummet as much as 95% in certain cities, an Oliver Wyman Forum survey found, with many of those riders choosing shared bicycles, scooters, and car services to avoid crowds. While many of those riders have returned to public transportation as COVID fears have subsided, the systems have been weakened by the loss of revenue. Any long-term shift from mass transit to ride-hailing could not only deprive systems of needed financial and public support but also lead to congestion — a trend already observed in several cities.

Emissions also could rise if these new services rely on internal combustion engines (ICE). Cities will need to find a balance between encouraging new solutions and bolstering mass transit systems. This can be accomplished through consistent investment in mass transit infrastructure, maintenance of affordable fares, and the

creation of sustainable and intermodal ecosystems that connect new services with mass transit as much as possible.

Regional variations

The study examined three regions — North America, Europe, and Asia — and found that the new services would evolve at different speeds, depending on the location. European cities are densely populated, which facilitates the deployment of micromobility services. The European region is also expected to see the strongest expansion in the numbers of EVs and charging services, as the region overtakes Asia to become the fastest-growing region in electric mobility in the next years.

In North America, where smart parking payment services are expected to grow fastest, commuters have long relied on cars. This is primarily because of the significant worker population living in North American suburbs; the relatively inconsistent support of mass transit outside of certain cities, especially in the US; and the urban sprawl of many of the region's large cities.

On the other hand, many parts of Asia have long traditions of bike or moped use, making them more open to shared services and micromobility. Super apps have proliferated in the region, combining services for communication, transportation, and commerce into a single platform. Thanks to the super apps and the success of local players, these mobility services are expected to continue to expand. The Asian market, with its large population and dense cities, is about the same size as the markets in Europe and North America combined. It will remain larger through 2030. Asian revenue from mobility services is forecast to reach $337 billion by that year. North American revenue will hit about $175 billion and European, $144 billion.

High-growth services

Some of the strongest growth will come from semi-mature and emerging services, which are expected to grow at an average of 23% a year, four times faster than the overall mobility market. These include the following:

Electric-vehicle charging services

The global market for charging services should rise about 35% a year to reach $12 billion by 2030, simultaneously encouraging and reflecting a significant expansion in the sales of EVs. The highest growth is expected in Europe because of significant government support of electrification through EV incentives and mandates against the sale of new gasoline or diesel-powered cars. Reflecting the mounting public alarm over climate destruction, these have been passed by nations and several European cities, some beginning as early as 2025.

The European Union as a whole has also proposed a 55% carbon-dioxide emissions cut from cars by 2030 and a ban on fossil fuel cars by 2035.

87%

of respondents to a March Oliver Wyman Forum survey expect to use a personal car or to walk to accomplish important daily errands at least once monthly while 45% expect to use public transit

Bicycle sharing

The overall bike sharing market is expected to grow 10% per annum and reach $15 billion by 2030. Bikes have long been popular in China, where cycling is booming again after a short pause caused by the COVID pandemic lockdowns in 2020. Asia accounts for 90% of the global market, and it is expected to have the highest regional growth.

Electric scooter sharing

The overall market is expected to grow at an annual 23% to reach $7 billion in 2030. In Europe, electric scooters are considered an environmentally friendly form of individual mobility. Scooters also are growing in popularity in some big North American cities: The US was the first country to introduce dockless models, which soon overtook shared bikes.

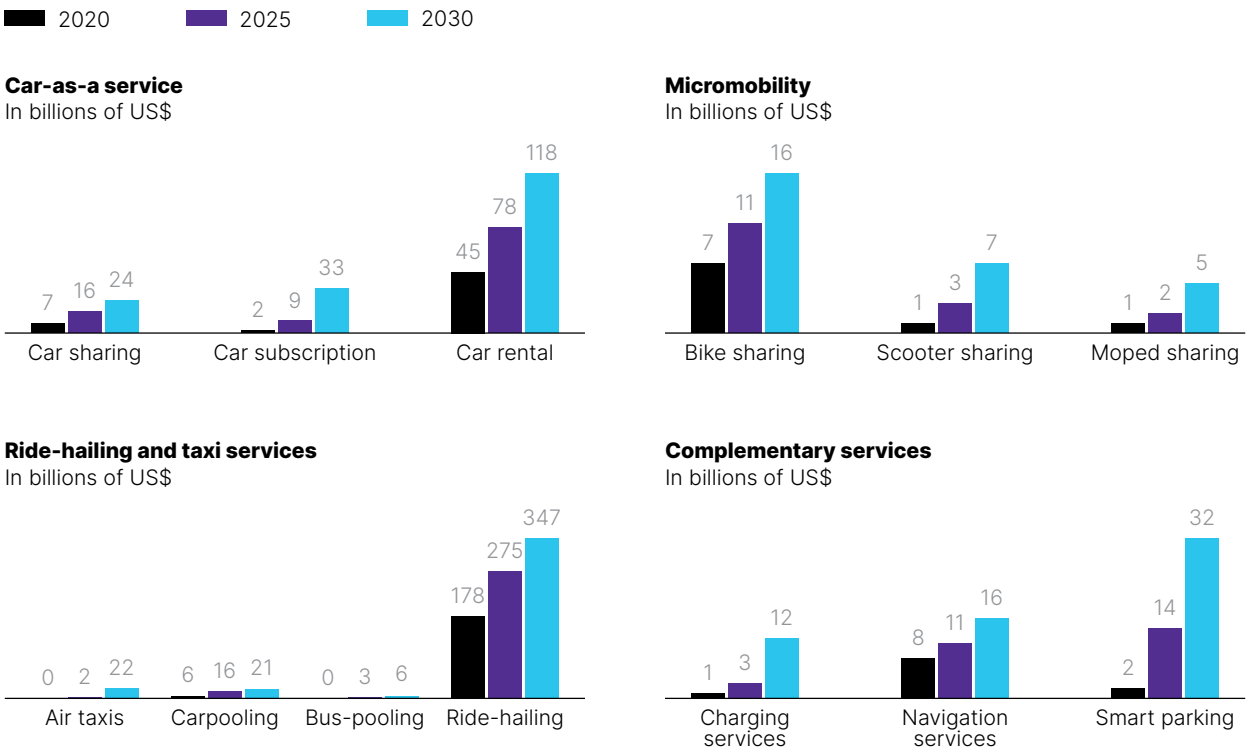
Carpooling

The global carpooling market is expected to reach $21 billion by 2030, after growing at an annual 14%. It's led by North America where services were early to digitize and are driven by the high frequency and loyalty of daily commuters. Some municipalities, especially in Canada, provide special parking lots, discounts on personal car insurance, and high-occupancy vehicle lanes.

Smart-parking payment services

The overall market is expected to expand at an annual 34% to reach $32 billion in 2030, led by growth in North America, which is expected to surpass Europe in 2025. The US is one of the world's largest parking markets, but it is

Global value pool sizes by mobility service



Source: Oliver Wyman Forum mobility value pool analysis

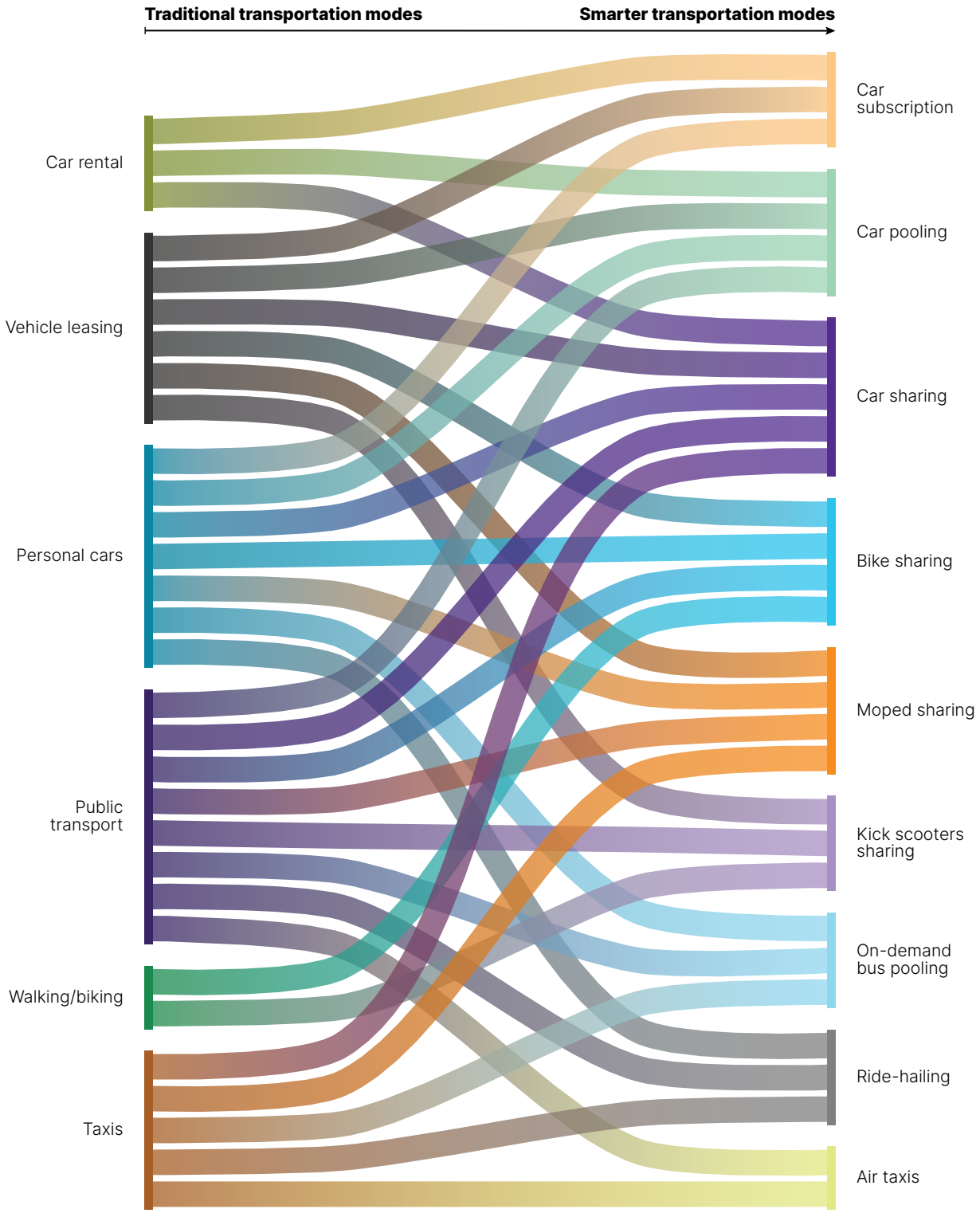
highly fragmented among many players, its digital potential remains untapped. Given the room for growth, the market is expected to become a target for consolidation through mergers and acquisitions.

Driving forces for change

Three forces are generating the growth in mobility services: technology, regulation, and consumer demand.

Technology will accelerate the growth of new services through digitization, electrification, and automation. Smartphones will play a pivotal role by enabling connectivity and geolocation services such as ride-hailing, shared cars, and micromobility, accessed through apps and managed by integrated reservation and payment systems. The integration of platforms for different modes will make mobility services easier to navigate, resulting in greater usage and potentially lower costs. Separately, the development of compact batteries is increasing the range for electric

Apps and digitization give shared services an edge over traditional modes



Source: Oliver Wyman Forum mobility value pool analysis

scooters, mopeds, and bike sharing. The promotion of electrically powered mobility will lead to more sustainable transportation, providing the source of energy is clean.

Regulation plays a major role through innovative governmental schemes, such as road user charge and road pricing for motorized vehicles, access restriction for specific modes, or subsidies for modal shift. Cities often take the lead on environmental measures, such as restrictions on older, dirtier vehicles, which are progressing to outright bans on all gasoline and diesel engines. The role of cities increased with the COVID-19 pandemic, as many incentivized specific services, especially in micromobility. Local authorities will have to decide how much to fund mass transit and whether to allocate space to car parking or bike lanes. At all levels of government, technological progress will often outpace regulation, so regulators will need to become more agile to unleash the full potential of mobility innovations. This is one reason that many cities have adopted public-private partnerships as a means of collaboration.

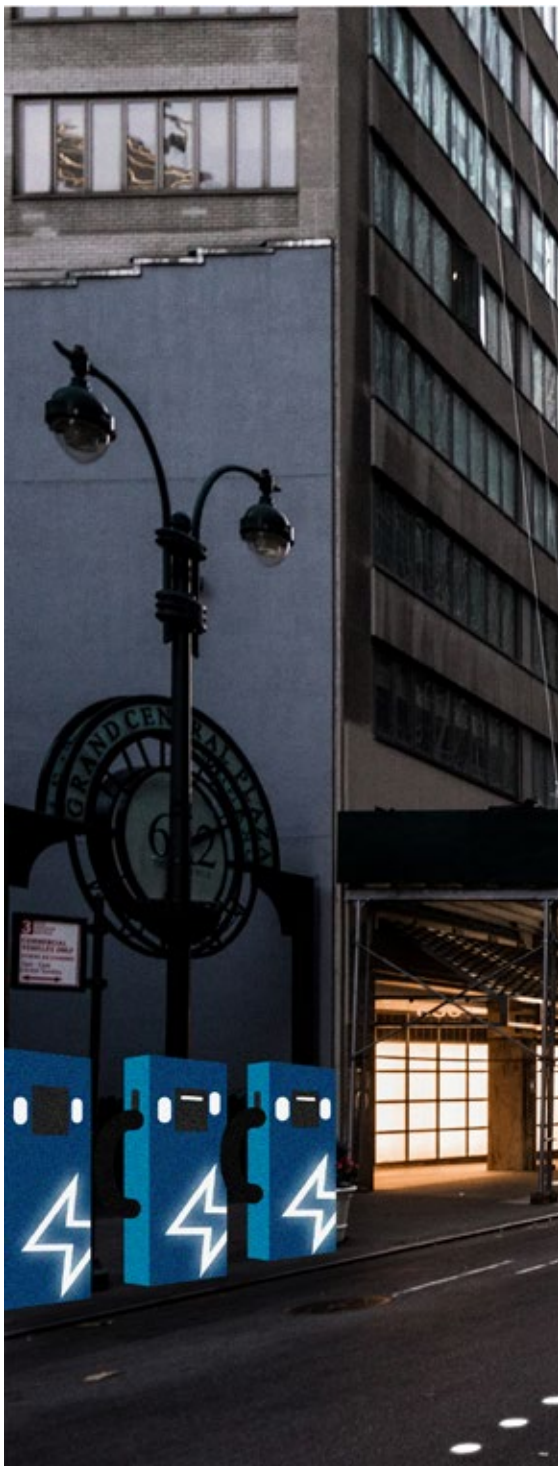
Consumers' mobility demands are evolving in seemingly contradictory ways that make them open to digital and on-demand services. On the one hand, people want inexpensive mobility: Financial uncertainty is leading some to avoid buying a car, and 54% of respondents told the Oliver Wyman Forum Global Consumer Sentiment (GCS) Survey that affordability was a factor in their selection of a mode of transportation. [The GCS surveys more than 9,000 consumers in 10 countries quarterly. For more details, please contact the Oliver Wyman Forum.]

But the pandemic accelerated a shift away from mass transit, which is the cheapest service available. Instead, many consumers are opting for individual mobility and active modes such as cycling: 90% of GCS respondents expect to use a personal car or walk at least once monthly in the next six months, while just 35% expect to use public transit. Consumers also want agile, on-demand, and affordable transportation, which creates challenges that are difficult to reconcile. New mobility players will struggle to make a profit as they try to fulfill these consumer demands.

Mobility growth by region

New mobility will vary significantly from region to region because of several factors: the availability of mass transit services; how people traditionally get around; and population density, geography and the layout of cities. Below are more details on how the new forms of mobility will change the way people get around in the three regions in the analysis.

North America



North America has strong demand for mobility services that use cars because of the region's spread-out cities, which are often not designed for public transportation. In urban areas, taxis have long played a large role, creating natural demand for hailing services. A high rate of smartphone penetration makes all kinds of mobility services easy to access and means that those that have not yet taken off, such as smart-parking payment, have a good shot at a higher growth rate in the near future. North America accounted for about one-quarter of the mobility market in 2020 when it totaled $260 billion and is projected to maintain that share in 2030 when the market will grow to $660 billion.

Cars as a service

Cars are essential in much of North America because of the long commutes, low population density in much of the region, and underfunded, inadequate public


BUS LANE
BUSES ONLY

transport in many cities as well as suburban and rural communities.

Car rental accounted for around 34% of North America's consumer spending on mobility services in 2020, and the region is home to some of the world's leading players. Car rental is already a major transportation mode for vacations, and it could be part of a bigger societal shift away from the traditional concept of ownership.

Because of the pandemic, both North American and European car rental markets saw large drops in prices and utilization. In response, companies cut their fleets. But the market is expected to more than double by 2030 — from $20 billion in 2020 to $33.4 billion in 2025, and $44.9 billion in 2030.

A shift away from ownership in cities also could fuel growth in car sharing. Growth will be supported by the placement of car sharing locations at mass transit hubs, as well as partnerships between public transit operators and car sharing providers. Government support comes in the form of tax and other incentives, as well as obstacles to car ownership in cities, such as limited parking spaces and low-emission zones that effectively ban old cars. The market was $1.2 billion in 2020 and is forecast to expand strongly, to $2.8 billion in 2025 and $4.3 billion in 2030.

Thanks to the flexible offer of car subscriptions, 24% of North American respondents told a 2021 Oliver Wyman Forum study they were interested in the model, often because it offers a purely digital buying experience. The target market is the younger population and middle- to high-income individuals. The largest players in the market are automakers, car rental companies, and startups. Growth will be limited by relatively high pricing and stricter regulations, as well as the population's already high rate of car ownership. From $700 million in 2020, the market could attract revenues of $3 billion by 2025 and $10.3 billion by 2030.

Hailed and on-demand services

As much of North America is dependent on car-based travel, its ride-hailing and carpooling markets are large.

In ride-hailing, North America has the highest average distance per ride of the three regions, as well as the most digitized market. That's thanks to the most pervasive smartphone penetration. But given that most ride-hailing services are still predominantly comprised of ICE vehicles, the services' expansion is leading to stricter regulation of ride-hailing emissions. In response, Uber and Lyft in the US are electrifying their fleets.

Leading players are also investing in robot taxis, which could make the services more convenient and affordable. Total revenue for the market was $37.9 billion in 2020. It's forecast to rise to $53.3 billion in 2025 and $61.5 billion in 2030.

North America is leading the carpooling market, which was early to digitize. Given the region's relative lack of public transport, demand is driven by daily commutes and characterized by a high frequency of usage

and loyal customers. (In contrast, Europeans tend to use the service for long-distance trips.) Some municipalities, especially in Canada, provide special parking lots, discounts on personal car insurance, and high-occupancy vehicle lanes. Carpooling can also lower car insurance rates.

That said, North America is also the most mature market and will experience the lowest growth of the three regions in percentage terms. It will expand from $3.5 billion in 2020 to $8.6 billion in 2025 and $9.3 billion in 2030.

North America's on-demand bus pooling market currently is negligible, as the service typically thrives when providing short trips in areas of dense population and is not cost-effective for long trips and less-dense cities. However, some new players are entering the market. Vehicles are expected to be six-seaters, similar to Europe. From virtually zero in 2020, the market is expected to reach $300 million in 2025 and $1.3 billion in 2030.

Micromobility services

North America is the leading market for electric scooters because of their growing popularity in many large cities. The US was the first country to introduce dockless e-scooters on city streets. They soon overtook shared bikes as the preferred form of micromobility. California and its urban areas are leading the market acceptance, thanks to residents who adopt new technology early and state policies to reduce emissions. And the services are expanding to new cities with each passing month.

Electric scooter sharing has faced various obstacles to growth, including road and charging infrastructure. In some cities, a lack of regulation has created safety problems. In others, the scooters are banned. And they are sometimes stolen.

However, practices are being developed that can be used elsewhere and foster orderly growth, such as restrictions on their use on sidewalks and measures to make them available in low-income communities as well as a more robust and sustainable product design. The market is expected to grow this decade, from $500 million in 2020 to $1.7 billion in 2025 and $3.5 billion in 2030.

Cycling is not a popular mode of transportation in most of North America, and regulations, such as permit requirements, hinder the growth of bike-sharing startups. The regional market is the smallest of the three, although 64% of trips in the US are five miles (eight kilometers) or less, according to official transportation statistics. That should mean that bikes have at least some growth potential. The market was $400 million in 2020 and is expected to expand a little, to $500 million in 2025 and $700 million in 2030.

Moped sharing has grown in cities that already have public transportation, as people began to switch to individual forms of transportation during the pandemic. It could potentially fill the gaps for middle-distance trips.

Still, a significant proportion of journeys in North America are longer, and the mobility culture favors cars. Moreover, the providers'

business models are often fragile. There were just 600,000 users in 2020, but there are expected to be 3.4 million in 2030. Revenues are forecast to rise from $100 million in 2020 to $200 million in 2025 and $500 million in 2030.

Complementary services

North America is the region with the highest annual distance driven per vehicle, and automakers are beginning to offer larger EV models, such as sports utility vehicles, to capture more share. In addition, the progressive deployment of bidirectional charging will further stimulate demand, particularly in regions prone to climate disasters and power outages.

EVs are likely to grow significantly, from two million in 2020 to 41 million in 2030, thanks to supportive government policies including a tax credit of up to $7,500 and an executive order by President Biden to replace all government vehicles with American-made EVs.

The high adoption of solar power, which makes electricity much cheaper, may also provide a boost to car electrification and charging services. The market for charging services is forecast to rise from $200 million in 2020 to $1.3 billion in 2025 and $4.9 billion in 2030 — pretty dramatic growth for a new technology that took a while to catch on.

North America's market for navigation services also has been driven by joint efforts and an actively evolving market from both large tech players as well as startups. However, the smartphone market is already mature, and revenues are expected to grow slowly — from $1.2 billion in 2020 to $1.4 billion in 2025 and $1.7 billion in 2030.

The US is one of the largest parking markets, but it is scattered with many players and likely to be consolidated through mergers and acquisitions. This leaves plenty of room for growth in smart parking payment services. The overall utilization of parking spaces is low, so there is potential to optimize it. The digital potential (for both off-street and on-street parking) remains untapped. And the US is the second biggest car market in the world, which implies plenty of demand for parking. North America's smart parking payment services market is expected to surpass that of Europe in 2025. Revenues are expected to grow from $700 million in 2020 to $7.9 billion in 2025 and $21.0 billion in 2030.

Car services are an essential driver of growth for mobility services in North America

North America accounted for about one-quarter of the mobility market in 2020 and is projected to maintain that share in 2030 when the market will grow.

How the new forms of mobility will change the way people get around
2030 forecast of revenues per form of mobility, in $BN

Source: Oliver Wyman Forum mobility value pool analysis

Europe

European cities are relatively densely populated, and many have well developed public transportation systems. That combination makes them particularly suitable for micromobility services. Governments are making efforts to support new services, by building infrastructure and providing subsidies and tax reductions. These include incentives to switch to electric vehicles, and the region's fastest growing service is forecast to be charging services. Because of its extensive mass-transit networks, Europe was also the region in which mobility was most severely affected by the pandemic. Its share of the total global market in 2030 is forecast to remain at the same level as in 2020, around 20%.

Cars as a service

Europe has a low rate of car ownership relative to average incomes, and its consumers are attracted to usage services. That creates great potential in the sharing and subscription markets.

The region's densely populated cities make car sharing attractive for people who only need to use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a car occasionally. Car sharing reduces congestion, by taking vehicles off the road, and Europe is the world's biggest market, led by Berlin and Paris. Free-floating services optimize fleet utilization and provide the highest degree of flexibility for customers, as one-way trips are possible. No investment in station infrastructure is needed, and roadside parking increases brand visibility. Station-based car sharing services are found in smaller cities. However, some of the services have not survived, leading to restructuring and mergers.

Car sharing is replacing public transit for some people, and trips have been getting longer — increasingly dissolving the gap with car rental. Services are expanding to new cities and the urban periphery. In Germany, 25.5% more drivers registered with car sharing services in 2021 than in 2020, as people looked for alternatives to public transportation during the pandemic. About a fifth of public transport users said they intended to continue avoiding public transport even after the pandemic. Preferential parking incentives often provide another boost. The market is expected to grow from $3.0 billion in 2020 to $6.9 billion in 2025 and $9.6 billion in 2030.

Europe is also the leading market for car subscription. One factor is the high degree of interest among consumers. A key motivation behind car subscription is the end-to-end online customer journey as a recent Oliver Wyman Forum study shows. The market is expected to take off this decade, expanding from $900 million in 2020 to $4.1 billion in 2025 and $15.1 billion in 2030.

Europe has the smallest car rental market of the three regions, because of the many alternatives for long distance travel, such as high-speed trains. Still, short-term rental will increase as tourism recovers after the pandemic. The European market is forecast to grow from $10.8 billion in 2020 to $16.8 billion in 2025 and $23.7 billion in 2030.

Hailed and on-demand services

Relatively dense urban rail networks mean that hailed services are a smaller market in Europe than in the other two regions. However, they are still significant.

Europe is the most expensive region for ride-hailing and taxis: The average price for a 20-minute taxi ride was $21.40 in 2020, compared with $14.50 in North America and $7.50 in Asia. Europe's well-developed public transit systems limit demand, and restrictions on Uber limit supply in many local markets. As a result, Europe is the smallest of the three regional markets, and the one that will grow most slowly — from $36.6 billion in 2020 to $49.4 billion in 2025 and $55.6 billion in 2030.

Carpooling, too, is expected to grow less in Europe than in the other two regions. The dominant use case is long, inter-city trips, but there is competition from railways, buses, and car rental. However, corporate carpooling is promising, given its lower costs and higher efficiency, and new players are entering the market for daily commuting services. The market is forecast to grow from

$1.1 billion in 2020 to $3.1 billion in 2025 and $4.2 billion in 2030.

On-demand bus pooling is still a niche market in Europe and only present in selected cities, specifically in Germany. It typically uses small vans with six seats. From $100 million in 2020, the market is expected to grow to $1.3 billion in 2025 and $2.1 billion in 2030.

Micromobility services

Dense cities and moderate distances make Europe ideal for micromobility solutions, but there is competition from the public transportation widely available in many places.

Europe is leading in moped sharing, with 70% of the world market in 2020, as mopeds are a solution to commuting and traffic challenges in dense cities. Most vehicles are now equipped with a second helmet so that two people can ride on a single moped.

Europe is also home to the four largest players which only offer moped sharing. (Other Mobility as a Service solutions integrate moped sharing into their apps.) Growth is being led by Paris, which is rapidly becoming a two-wheel city, but could be strongest in small and midsize cities. From 4.2 million users in 2020 generating $92 in average revenue per user (ARPU), the number is forecast to grow to 29.7 million in 2030 with ARPU of $107. Total revenues for the region are expected to increase from $400 million in 2020 to $1.5 billion in 2025 to $3.2 billion in 2030.

Bicycles are a common mode of transportation in Europe, and cycling is expected to increase along with zero-emissions and carbon-neutrality goals. One condition for growth is infrastructure, such as bike lanes. These projects got a huge boost in the pandemic, especially in London, Paris, and Munich. But bike sharing in Europe has reached maturity and is expected to grow relatively little. The European bike-sharing market is forecast to expand from $600 million in 2020 to $800 million in 2025 and $1.0 billion in 2030.

Electric scooters also are considered an environmentally friendly form of individual mobility, as many cities introduce bans on gasoline and diesel vehicles. They are particularly practical in Europe for the last mile when integrated with public transport, and they are helped by Europeans' generally high acceptance of shared mobility. The market is forecast to grow from $300 million in 2020 to $1.5 billion in 2025 and then $3.0 billion in 2030.

Complementary services

Europe is the leading and fastest-growing market in charging services, and battery EVs are expected to grow much faster than plug-in hybrid EVs. Passenger electric car sales shot up 143% in 2020 from 2019 to surpass China's market, with the highest EV share of new passenger cars in Norway and the Netherlands. The EU proposed a 55% carbon dioxide emission cut by 2030 and a ban on fossil fuel cars by 2035, and public

authorities are providing a range of incentives for EVs, including purchase grants, subsidies for commercial EV chargers, and parking advantages. As a result, growth in the EV stock is expected to be higher than in other regions, and the number of EVs on the road is forecast to increase 41% a year from 2020 to 2030. That would take the EV fleet from 3 million in 2020 to 74 million in 2030.

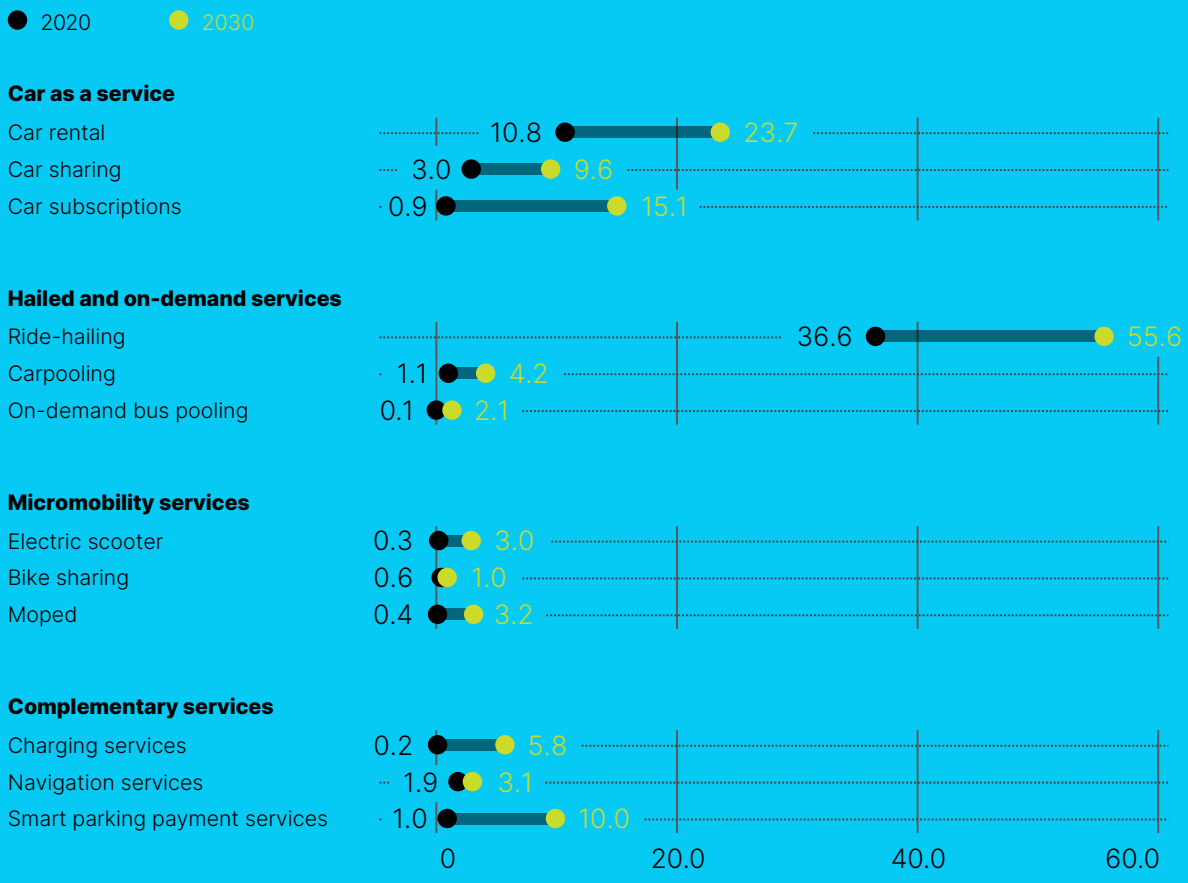
The region's charging networks are expanding at 32% a year, according to the European Court of Auditors (ECA), mainly to fulfill the needs for the ambitious European emission cut goals. Revenues from charging services are forecast to increase from $200 million in 2020 to $1.5 billion in 2025 and $5.8 billion in 2030.

Navigation services in Europe integrate public transit directions, and growth will come from the rise in the number of smartphone users, which is forecast at 4% a year. (The current penetration rate is 76%.) Revenues are expected to rise from $1.9 billion in 2020 to $2.4 billion in 2025 and $3.1 billion in 2030. Europe is the leading region in smart parking payment services, and digitization is now mature in countries such as Estonia, the Netherlands, and Sweden. Growth will come from the digitization of immature and semi-mature markets such as Italy and Spain. Revenues are forecast to grow from $1.0 billion in 2020 to $5.7 billion in 2025 and $10.0 billion in 2030.

Europe is well positioned for micromobility

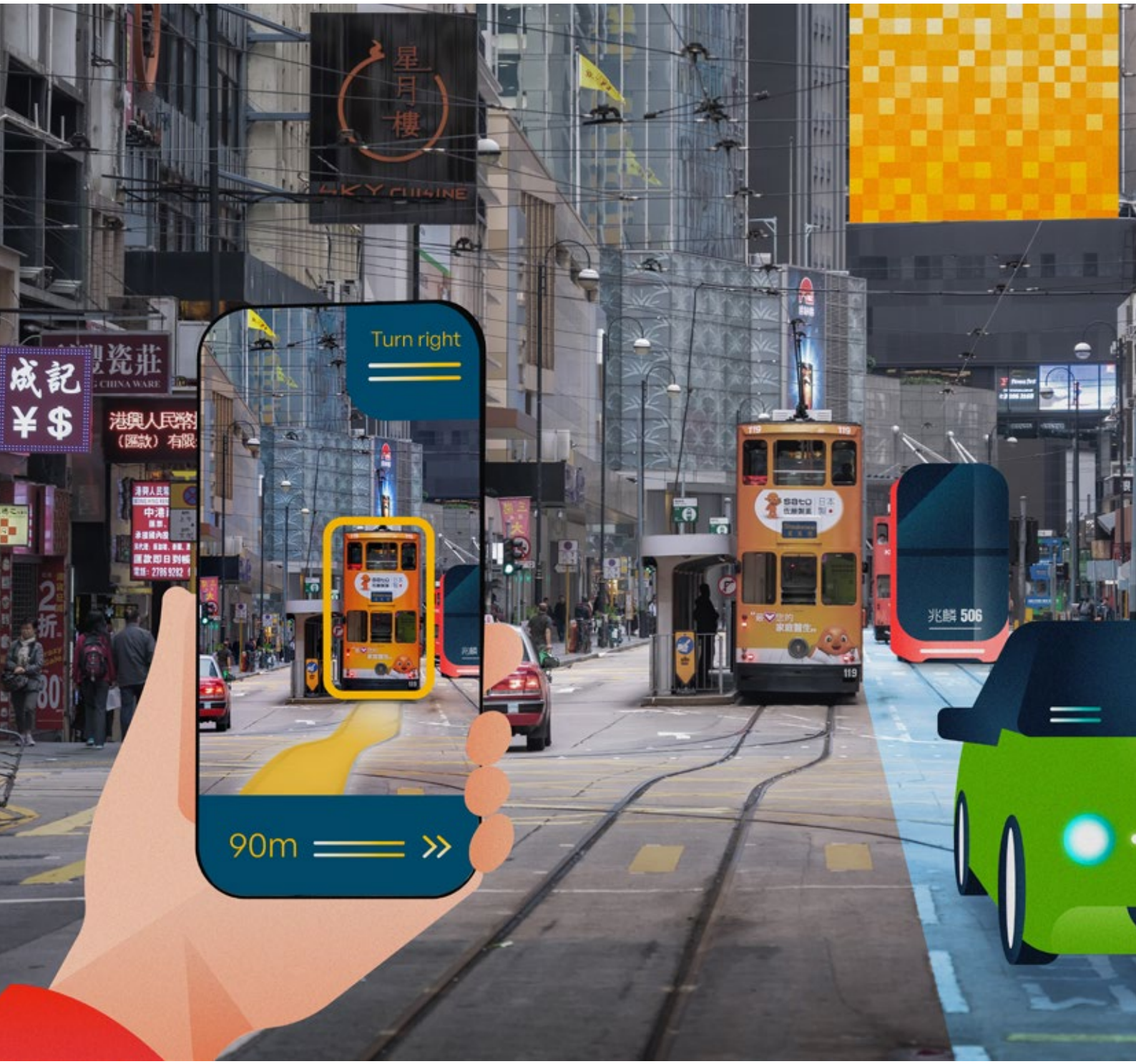
Europe's mobility revenue will reach $143.9 billion in 2030 from $56.8 billion in 2020, but the region's share of the global market will remain around 20%.

How the new forms of mobility will change the way people get around
2030 forecast of revenues per form of mobility, in $BN



Source: Oliver Wyman Forum mobility value pool analysis

Asia



Asia is already a large market for ride-hailing and taxis, and demand is expected to continue to grow. The region's share of the total global market for mobility services is forecast to fall slightly, from 52% in 2020 to 51% in 2030.

Cars as a service

Asia is home to developing countries with large populations, and huge growth is expected in car rental and sharing.

The car rental market is less saturated than those of other regions, and there are many small, local players. Moreover, its most populous country, China, has a low ratio of car ownership to driving licenses due to restrictions on car registrations. In other countries, car ownership constraints offer great potential for growth. Total revenues are expected to grow from $14.7 billion in 2020 to $28.3 billion in 2025 and $49.0 billion in 2030, when they will overtake North American revenues.

Rapid industrialization and urbanization stimulated demand for cars in Asia, and they are also fueling car sharing, as is the inconvenience of car ownership in India and China. The market tends to be station-based (unlike Europe, which tends to be free-floating), saving the costs of repositioning vehicles and making fleet management easier. Dedicated parking also makes it easier to manage EV charging, maintenance, and cleaning. Growth is helped by partnerships between automakers and car sharing companies and will be the strongest in the world, from $2.6 billion in 2020 to $6.0 billion in 2025 and $9.7 billion in 2030.

The largest Asian markets for car subscription are India, where automakers are extensively partnering with third-party players, and Malaysia. However, the Chinese

market is insignificant, due to the registration restrictions and the social status conferred by vehicle ownership. And in Japan, costly insurance for young people is an obstacle. The region's market is smaller than those of North America and Europe and is expected to stay that way. It will grow faster than the markets for car rental and car sharing, though from a low base — from $300 million in 2020 to $1.6 billion in 2025 and $7.2 billion in 2030.

Hailed and on-demand services

Asia has 60% of the world's population and a rising middle class, many of whom live in big, dense cities with a lack of parking. This creates potential for a variety of hailing services.

Asia is by far the biggest market for ride-hailing and taxis, accounting for 60% of the global total and 80% of the region's total consumer spending on mobility services. One major reason is the existence of super apps with high user penetration, which make it convenient to hail car services. In addition, a large share of the population is middle class, a group that is expanding in developing countries such as India, China, and Vietnam. They often find it hard to own cars because of the lack of parking spaces, so they tend to hail rides.

Taxis and ride-hailing services are relatively low cost compared with other transportation modes: Some markets have caps on prices, and ride-hailing companies in China provide subsidies to drivers. One result of the low prices is an average revenue per user (ARPU) lower than the other two regions. ARPU is expected to increase just 5% a year, from $101.90 per user in 2020 to $174.00 in 2030. Asia is expected to have the biggest growth this decade: from $103.7 billion in 2020, to $171.9 billion in 2025 and $230.0 billion in 2030.

Carpooling is still a relatively small market in Asia. But it has good prospects because urbanization is outpacing the expansion of public transportation, and carpooling helps alleviate traffic congestion and the shortage of parking spaces. It is mainly used for daily commuting, especially by IT workers in India, the leading market. However, constraints include complex and inconsistent policies, as well as fewer digital platforms for the services than in other regions. Revenues are forecast to rise from $1.1 billion in 2020 to $4.0 billion in 2025 and then $7.2 billion in 2030.

On-demand bus pooling in Asia is still subcritical when it comes to overall mobility usage, and most players closed operations during the pandemic. But bus pooling is now expanding to new cities, and new operators are entering the market, so the service is expected to grow in coming years, especially in India and Singapore. In some developing countries, government initiatives are encouraging the services to connect rural areas in a sustainable way, as has been a long-standing tradition with on-demand bus pooling in various African regions.

The buses used in Asia typically have up to 40 seats, compared with six or so for the vans used in Europe, and the services typically work out at half the price of ride-hailing.

Autonomous driving systems will make the model more efficient. Revenues are expected to rise from $100 million in 2020 to $1.2 billion in 2025 and then $2.3 billion in 2030.

Micromobility services

Micromobility often works well in dense cities, and Asia has many. It also draws on local habits, such as moped use in Taiwan and cycling in China.

Asia accounts for 90% of the global market in bike sharing, and it is expected to have the highest growth of the three regions thanks to e-bikes and new players. Most of the current demand comes from China, where cycling has been popular for decades and is booming again amid demand for cost-effective mobility that beats traffic and avoids public transportation. China was also the first country to implement a dockless bike-sharing platform in 2015.

Asian governments are also providing a push, by building infrastructure such as dedicated bike lanes, and in general sharing services face less red tape here than in Europe and North America. Some of China's biggest bike-sharing players shut down in 2020 amid intense competition, but new players are entering the market. Though Asia has the lowest ARPU of the three regions, revenues are expected to grow from $6.2 billion in 2020 to $9.9 billion in 2025 and $14.0 billion in 2030.

Mopeds have long been widely used in the region, and sharing services are now replacing ownership and electric mopeds are taking over from traditional models. The services cost less than other forms of mobility, including public transportation, and various payment options are available, combining an unlock charge with a fee for usage time. Moreover, they do not require major new infrastructure, and in some countries driver's licenses are not required to ride a low-power moped.

Though Asia will have the highest number of users in 2030, it will have the lowest ARPU of the three regions because of low pricing. From 4.1 million users in 2020 with ARPU of $26, in 2030 there are expected to be 32.1 million users with ARPU of $36. Total revenues are forecast to rise from $100 million in 2020 to $500 million in 2025, and then $1.2 billion in 2030.

Electric scooters have a very limited presence in Asia, at least partly because of a lack of infrastructure: They are mostly allowed only on roads, where they must compete for space with cars and motorbikes. They are not permitted on sidewalks or cycle lanes. They are also hampered by limits on numbers due to safety concerns, as well as competition from other cheap mobility options, such as bikes, mopeds, and three-wheelers. However, some demand is expected for short-haul trips, and there has been some penetration in South Korea. Revenues are forecast to rise from virtually zero in 2020 to $100 million in 2025 and $300 million in 2030.

Complementary services

Asia has the largest EV fleet of the three regions, creating potential demand for charging services. There are various incentives to buy EVs: Certain Indian states exempt them from road tax and registration fees; Singapore offers EVs a temporary rebate on the car registration fee; and China subsidizes EVs with a longer driving range and eases restrictions on peak-hour driving for EVs in Beijing, to name but a few However, the Chinese market, which accounts for more than 90% of the region, has matured faster than most European and North American markets, slowing the growth of EVs and charging services. The EV fleet is expected to grow from 5 million in 2020 to 28 million in 2030. Charging services are expected to expand from $200 million in 2020 to $600 million in 2025 and $1.4 billion in 2030, by far the lowest of the three regions.

Asia is leading the navigation services market, being home to the most populous countries in the world. The region has the highest share of smartphone users utilizing navigation services, at 81%. Digital maps offer free B2C services and are well-integrated with diverse functions such as ride-hailing, bike sharing, and hotel booking.

Asia is also expected to have the highest expansion in this market till 2030, thanks to growth in population and the number of smartphone users. The region currently has the lowest overall smartphone penetration rate, at 50%, and annual growth in the number of users is expected to be 5%. Growth also will come from partnerships with autonomous driving startups and from regional customization, such as services to provide motorcycle directions in South Asia and a cycling navigation feature in Singapore. Revenues are forecast to grow from $4.9 billion in 2020 to $7.5 billion in 2025 and $11.1 billion in 2030.

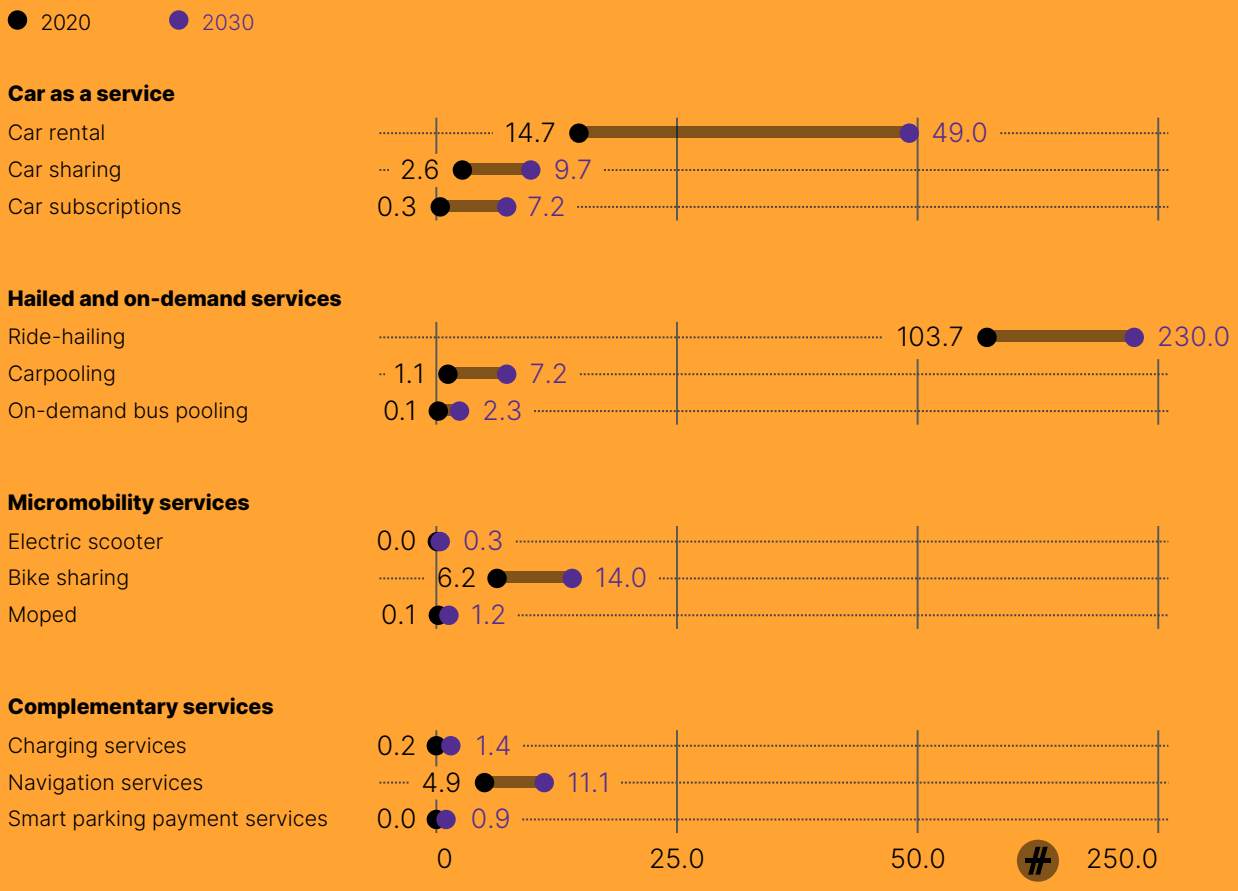
Despite being the most populous region, Asia's market for smart-parking payment services is almost non-existent and is likely to grow very little, remaining far smaller than the markets in the other two regions. The main reasons are a low penetration of digital currency and low usage of credit cards, combined with a large number of unregulated parking spaces and substantial free parking.

However, the immaturity of the market means it has some growth potential. From virtually zero in 2020, revenue is forecast to rise to $200 million in 2025 and $900 million in 2030.

Asia has potential for further growth in smartphones and the services that depend on them

The region's share of the total global market for mobility services is forecast to fall slightly, from 52% in 2020 to 51% in 2030.

How the new forms of mobility will change the way people get around
2030 forecast of revenues per form of mobility, in $BN



Source: Oliver Wyman Forum mobility value pool analysis

Conclusion

New mobility services have the potential for a positive role in future mobility — whether it's getting commuters to exercise riding bicycles to commute to work, letting people rent a scooter to do errands, or providing rides to places not close to mass transit and to people without cars. But policymakers have to be more actively involved envisioning how these new services fit within current urban transportation ecosystems. New mobility services and established mass transit must complement each other to build systems that serve consumers regardless of where they live within cities or their circumstance. This collaboration is particularly relevant for micromobility services that are often overlooked by public transit agencies when mapping out long-term urban mobility investments.

On top of these ecosystems is the overlay of privately owned cars — owned by those who live in cities, work in cities, or are just visiting. Thanks to global efforts to reduce greenhouse gas emissions, ICE vehicles — most privately owned cars these days — may be the target of regulation at some point over the next two decades. The same goes for new mobility services based on gasoline- or diesel powered vehicles.

It's a fast-growth period for many mobility services, especially the newer ones. But that growth will be complicated by urban problems like congestion, pollution, noise, electricity grid limitations, and climate change, to name a few. It will be on investors, policymakers, and mobility executives to work together to make expansion less disruptive and a net positive for society.

About the Oliver Wyman Forum

The Oliver Wyman Forum is committed to bringing together leaders in business, public policy, social enterprises, and academia to help solve the world's toughest problems. The Oliver Wyman Forum strives to discover and develop innovative solutions by conducting research, convening leading thinkers, analyzing options, and inspiring action on three fronts: Reframing Industry, Business in Society, and Global Economic and Political Change. Together with our growing and diverse community of experts, we think we can make a difference.

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