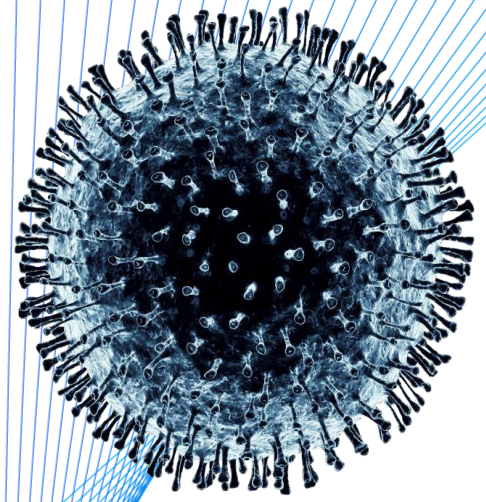
McKinsey & Company

The future of micromobility: ridership and revenue after a crisis

UNECE Workshop on Sustainable Mobility and the Danube region



UNECE

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McKinsey Center for Future Mobility (MCFM)

COVID-19 Consumer Survey: deep-dive micromobility

Micromobility in the next normal: investments and business case

Appendix

The McKinsey Center for Future Mobility is the ideal partner for successfully navigating the mobility revolution

Leading future mobility consultancy

350+

projects worldwide every year using state-of-the-art concepts, covering all disruptive trends (e.g., autonomous driving, electric vehicles, shared and urban mobility, connectivity), business model changes as well as value pool shifts

Integrated, cross-industry perspective

360°

perspective on mobility, covering all industries and institutions in the mobility ecosystem (e.g., advanced industries, electric power, oil & gas, logistics, public sector, travel, insurance)

Unparalleled in-depth expertise

50+

dedicated McKinsey partners worldwide

200k

hours of dedicated research each year by our MCFM researchers and practitioners

Network of world class thought leaders

~30

external advisors: Former CxOs, public sector leaders and tech experts

20+

strategic private/public sector partners (e.g., C40, World Economic Forum, Clepa, VDA)

Proprietary research & knowledge assets

~90

publications in the last 3 years, based on proprietary research

M³

Mobility Market Model, informing 100+ client engagements so far

Source: McKinsey Center for Future Mobility

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Scope of global COVID-19 Auto & Mobility Consumer Survey

Markets

4 EU markets:

UK, DE, FR, IT

Pulse Survey

6 Waves conducted

Wave 1: May 9-17

Wave 2: May 27-29

Wave 3: June 16-18

Wave 4: July 15-17

Wave 5: Sept 2-4

Wave 6: Nov 6-10

Respondents

1k+ respondents per market, thereof:

- **1,000** mobility participants[1]
- **400** car purchase intenders[2]

Questions

20+ questions on mobility behavior

20+ questions on car purchase intent

10 questions on aftersales behavior

10 questions on screening, demographics, COVID-19 impact

1. Demographically representative sample of respondents between age 18-70
2. Consumers having planned or planning to buy/lease a car in the next 12 months

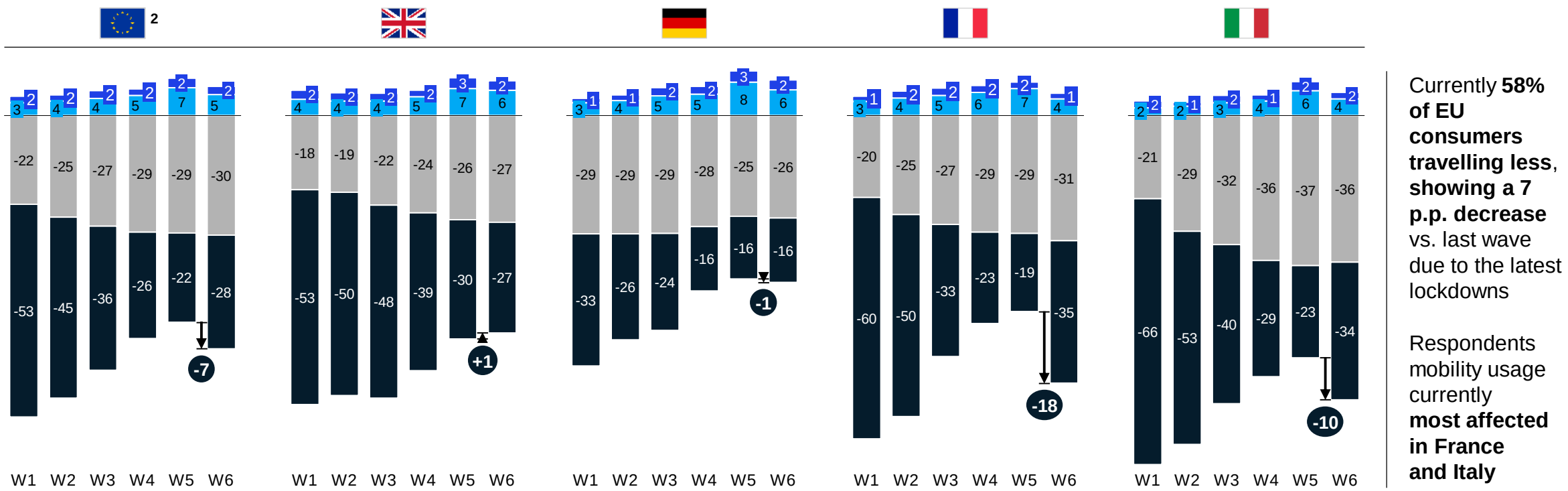
Source: McKinsey Global COVID-19 Automotive Consumer Survey

Mobility usage patterns in France and Italy most affected by the second COVID-19 lockdowns in Europe

Results of wave 1 (may 9-18), wave 2 (may 27-29), wave 3 (june 16-18), wave 4 (july 15 – 17), wave 5 (sep 2-4), and wave 6 (nov 6-10)

Mobility pattern changes (number and length of trips) since the outbreak of COVID-19[1]

Number of respondents, in percent



Currently **58% of EU consumers travelling less, showing a 7 p.p. decrease** vs. last wave due to the latest lockdowns

Respondents mobility usage currently **most affected in France and Italy**

1. Q: Given TODAY'S situation, how has your mobility changed since the outbreak of COVID-19?
2. UK, Germany, Italy and France
3. Total mobility decrease wave 6 vs. wave 5

Source: McKinsey Center for Future Mobility

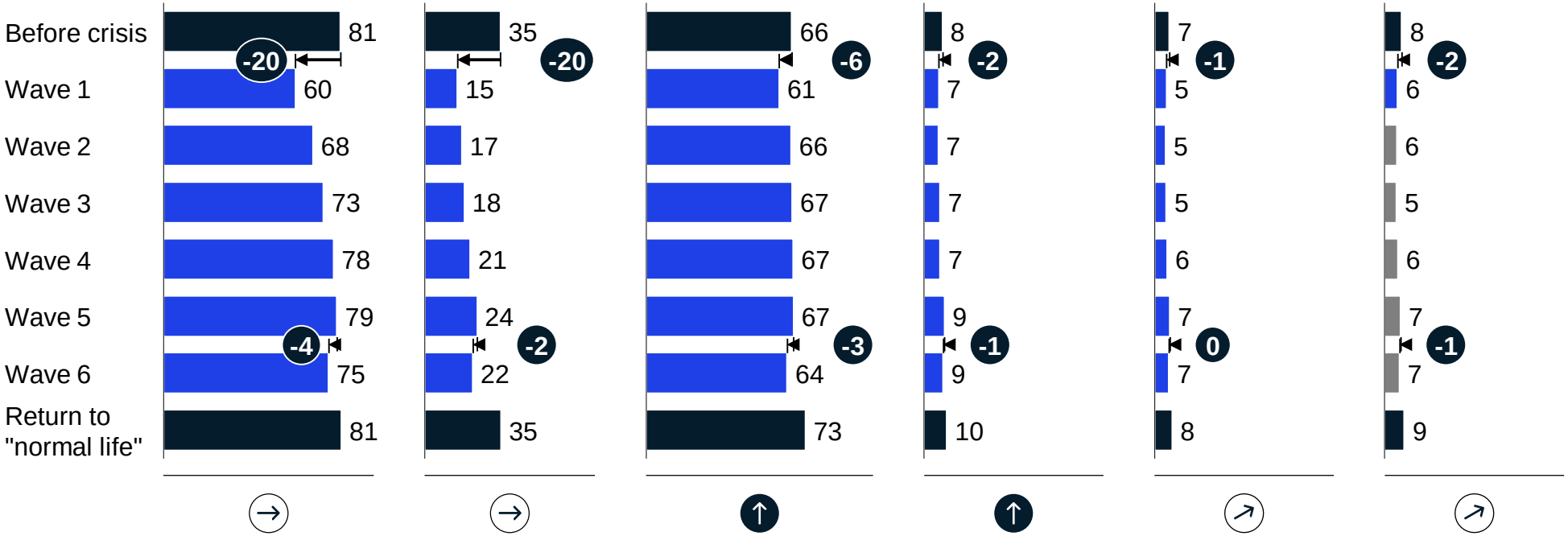
Walking/biking and micromobility potentially becoming more popular in the modal mix of the "next normal"

Results of wave 1 (may 9-18), wave 2 (may 27-29), wave 3 (june 16-18), wave 4 (july 15 – 17), wave 5 (sep 2-4), and wave 6 (nov 6-10)

Usage of transportation modes on a regular basis[1,2]

Number of respondents stating at least weekly, in percent

Mobility usage during crisis | Mobility usage pre- vs. post-crisis | x Mobility decrease, in p.p.



Respondents expect an **increased usage of walking/ biking and micromobility** when returning to “normal life”

Slight decrease in mobility usage across all major transportation modes after 2nd lockdowns in Europe, but with **less magnitude than 1st lockdown**

1. Q: Before/today/when you return to "next normal", how often did/do you/do you expect to use the following modes of transportation?
2. Once or more than once per week, aggregated results from UK, Germany, Italy and France

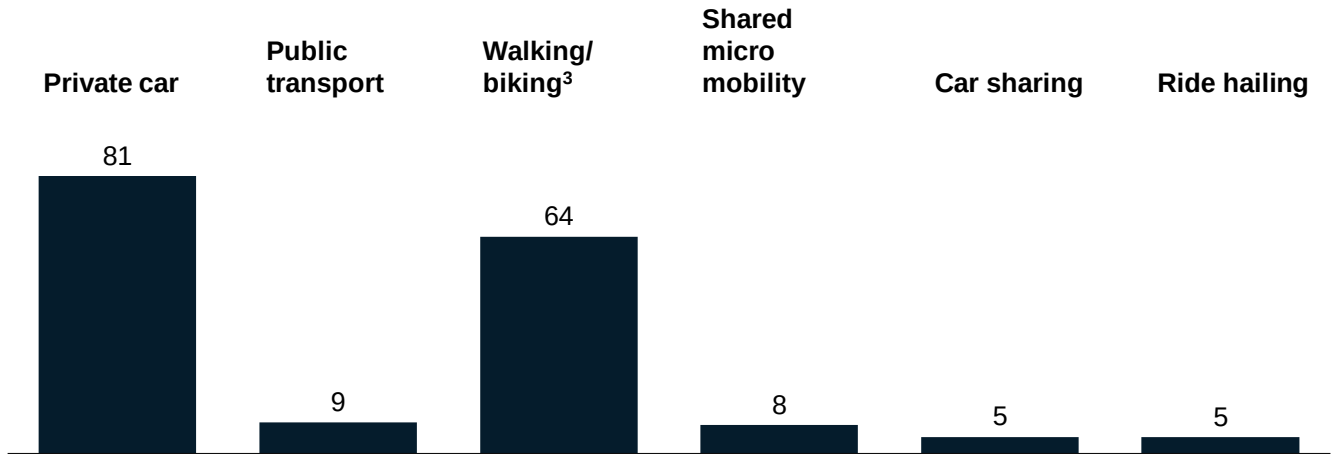
Source: McKinsey Center for Future Mobility

Risk of infection: private car and micromobility considered as safe for health, infections became a top priority for the mode choice

Results of wave 1 (may 9-18), wave 2 (may 27-29), wave 3 (june 16-18), wave 4 (july 15 – 17), wave 5 (sep 2-4), and wave 6 (nov 6-10)

Modes of transportation considered safe for health, concerning a COVID-19 infection[1,2]

Number of respondents, in percent



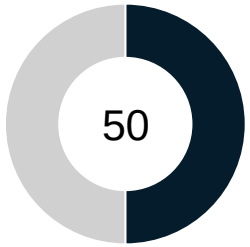
What we observe during the pandemic

- Private car: "Car as safe space": People switch to transport modes with low risk of infection
- Public transport: Public transit ridership has fallen significantly
- Walking/ biking[3]: People increasingly use active transport modes such as walking & biking
- Shared micro mobility: People increasingly use active transport modes such as walking & biking
- Car sharing: Car sharing usage, as all shared mobility modes, dropped significantly
- Ride hailing: Car sharing usage, as all shared mobility modes, dropped significantly

Top 5 reasons to choose transport mode[4]

Reasons ranked by number of respondents

Before the COVID-19 crisis	Today
1. Time to destination	1. Risk of infection
2. Price of trip	2. Time to destination
3. Space and privacy	3. Space and privacy
4. Convenience	4. Convenience
5. Congestion	5. Price of trip



… percent of respondents would increase mode usage with **regular disinfection**

1. Q: Which of the following modes of transportation do you consider safe for your health concerning a COVID-19 infection?
2. Aggregated results from US, UK, Germany, Italy, France, China and Japan
3. With private bike
4. For a private trip

Source: McKinsey Center for Future Mobility

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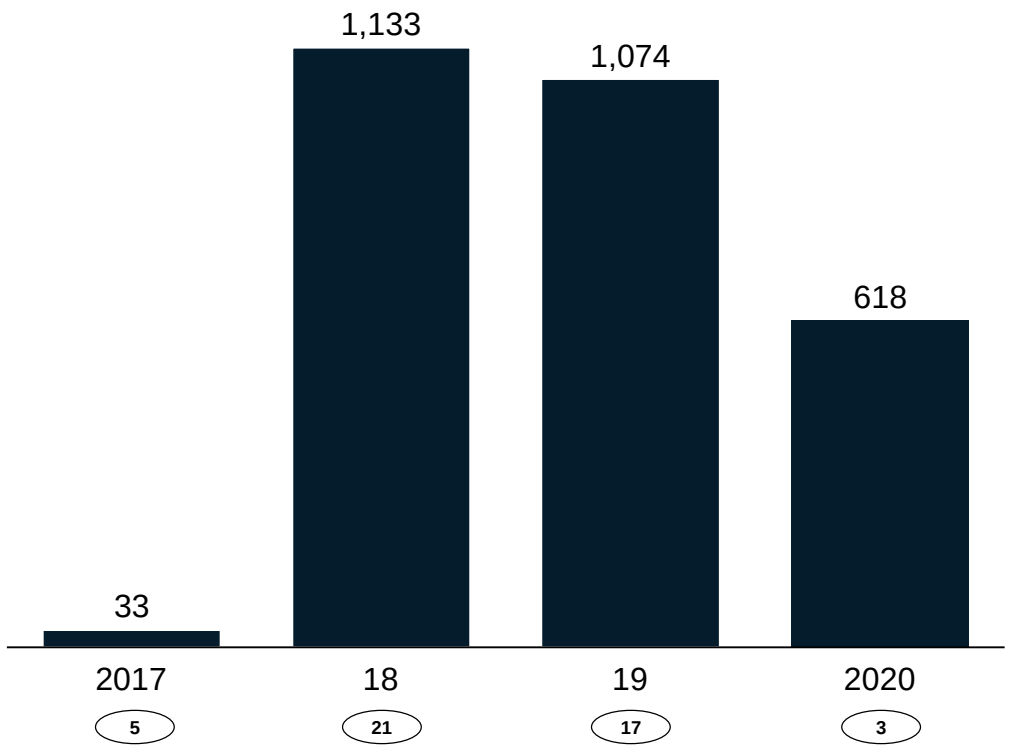
After a sharp increase in 2018, investments into shared e-scooter startups decelerated, also due to COVID-19

Investments into shared e-scooter operators between 2017 – 2020[1]

Annual disclosed investment amount, in USD mn

Number of companies (xxx)



Insights

- Total investments into shared e-scooter companies experienced a **~30 fold increase in 2018 as compared to 2017,** mainly due to the hype and cash needed for the mass scale-up of vehicles
- With increasing market maturity, providers are rather focusing on improving their unit economics in existing markets than tapping into new ones, leading to a **deceleration of investment activities after 2018**
- With COVID-19 and the declines in ridership and revenues, **investments into shared e-scooter companies dropped heavily in 2020**

1 As of November 2020

Source: McKinsey Growth Analytics – Horizon Scan; CapitalIQ; Pitchbook

Why micromobility has an even more positive business case now - potential impact on economics in "next normal"

Estimated potential economics per ride of a shared free-floating e-scooter, in percent

Main assumptions

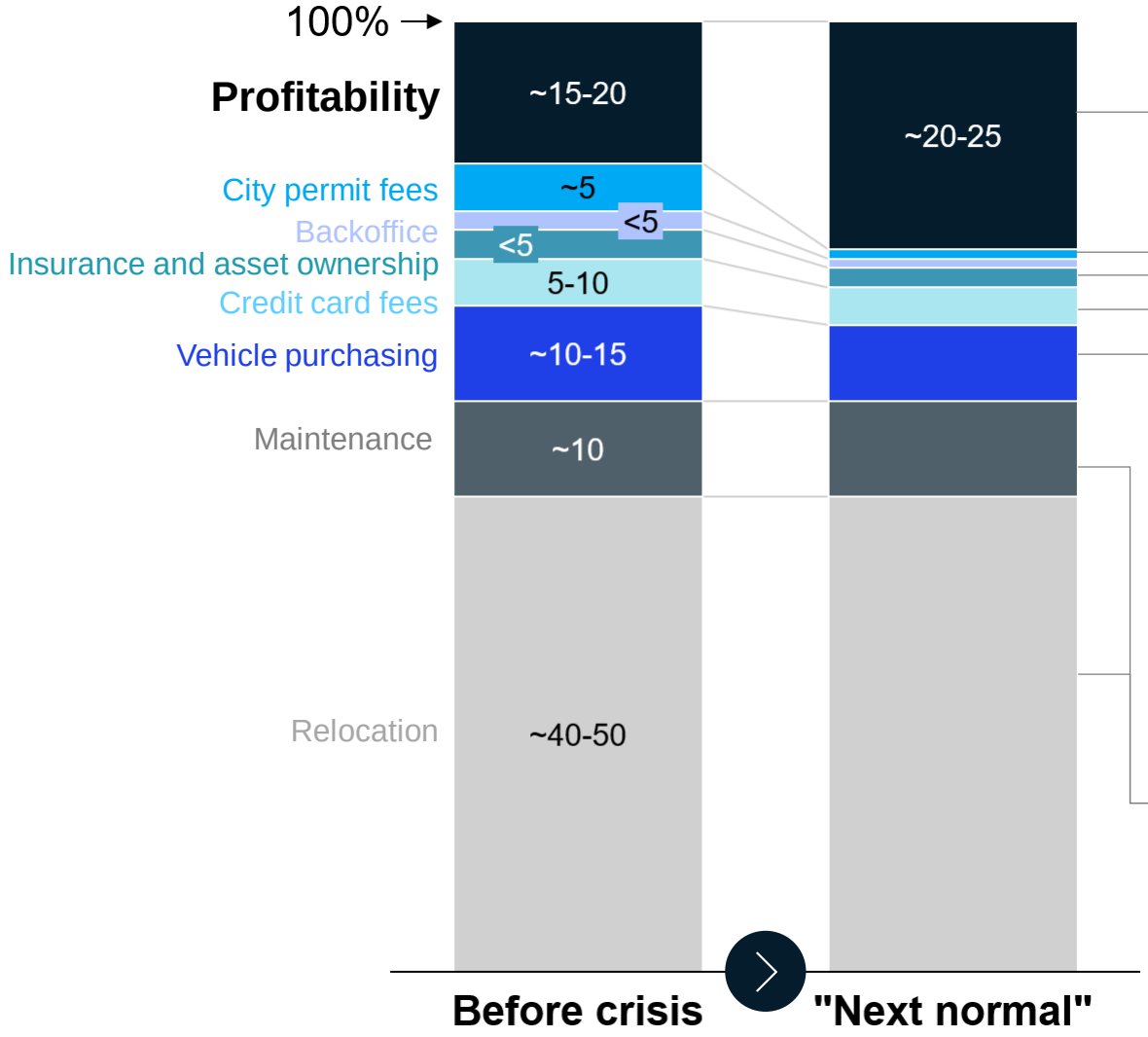
Scooter purchasing price: 300-400 USD

Scooter lifetime: >3 months

Utilization: 5 trips per day with average trip duration of 15-20 minutes

Costs per minute: 0.15-0.20 USD

Fixed fee per ride: 1 USD



Increase of up to 5 p.p. assuming no change in pricing as compared to today

Cities might incentivize shared micromobility providers as alternative offering to increasing private car usage after Covid-19 pandemic

Cost reduction due to accelerated industry consolidation after Covid-19 pandemic

No significant effect expected

Source: McKinsey Center for Future Mobility; web and press research; expert interviews; expert estimates

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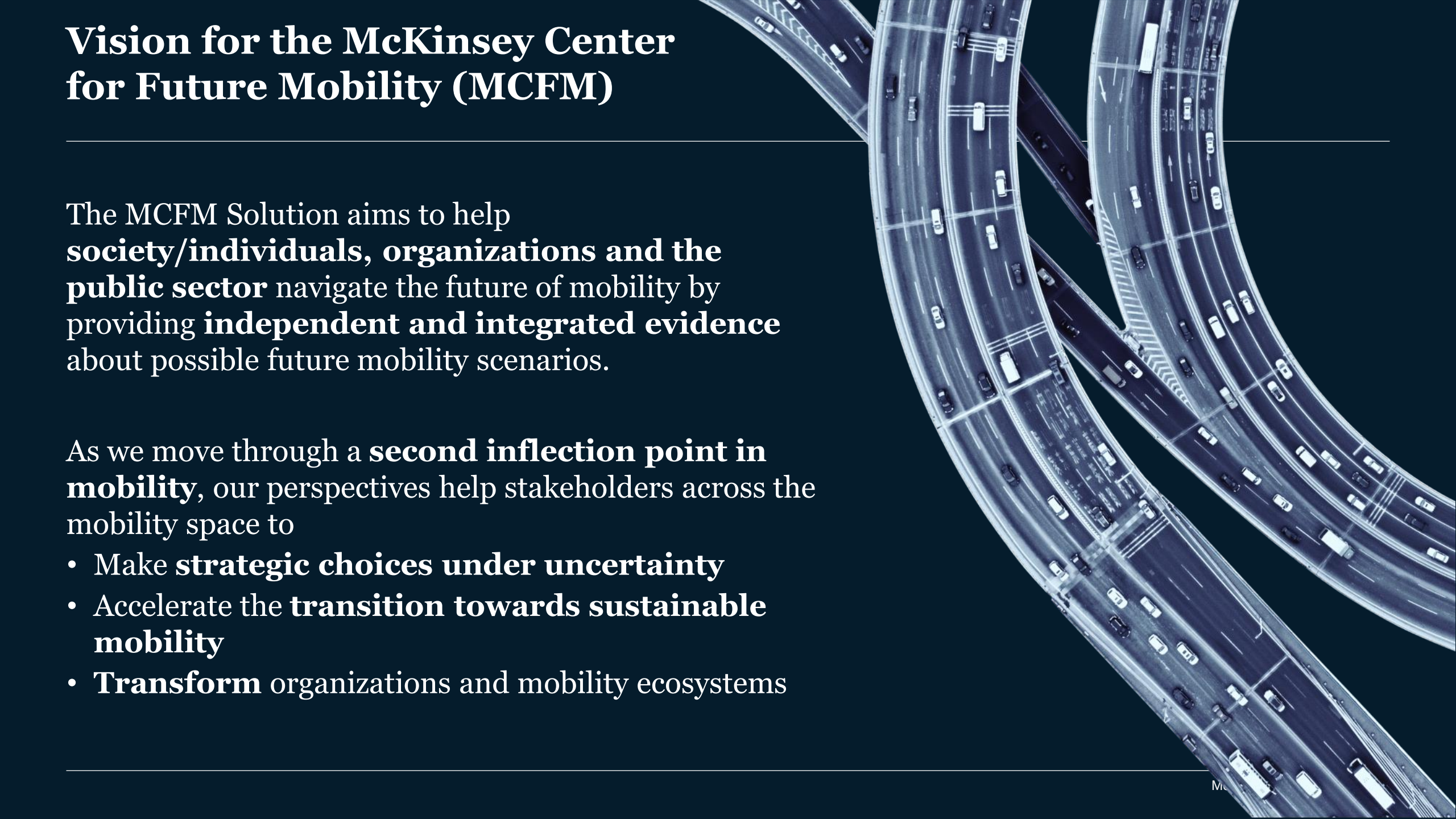
Vision for the McKinsey Center for Future Mobility (MCFM)



The MCFM Solution aims to help **society/individuals, organizations and the public sector** navigate the future of mobility by providing **independent and integrated evidence** about possible future mobility scenarios.

As we move through a **second inflection point in mobility**, our perspectives help stakeholders across the mobility space to

- Make **strategic choices under uncertainty**
- Accelerate the **transition towards sustainable mobility**
- **Transform** organizations and mobility ecosystems

The current and future shared mobility space can be segmented into 10 mobility verticals

Overview of shared mobility verticals

Focus of this document

	Micromobility	Urban mobility					Long-haul mobility			
										
	Micromobility	**Taxi/ licensed driver services**	**E-hailing**	**Autonomous taxi**	**Dynamic shuttle services/ pooled e-hailing**	**Car sharing (station-based and free-floating)**	**Peer-to-peer car sharing**	**Ride sharing**	**Car rental**	**Urban aerial mobility**
Definition	Shared light vehicles incl. bicycles, kick scooters and scooters with a GVW <500 kg, both motorized and non-motorized	Traditional car-based chauffeur service with licensed drivers	Mostly app-based chauffeur service with occasionally unlicensed drivers (depending on region)	Autonomous vehicle (SAE level 4 or 5) either used as non-pooled (robo taxi) or pooled shared vehicle (robo shuttle), which pick up is typically ordered via app	Mostly app-based chauffeur service with licensed drivers which simultaneously carries several "paying parties" (pooling), typically using LCVs	Shared vehicles owned by car sharing companies and shared for shorter period of time than car rental and for a limited geographic perimeter	Person-to-person vehicle lending for limited period of time	Arrangement in which paying passenger travels in private car driven by owner for a trip, typically arranged through a website or app	Vehicles rented for limited period of time with fixed pickup and drop-off locations; car rental companies as legal car owners	Flying (electric) taxis to move people by air within a constrained area between dedicated stations
Market evolution until 2030	Sharp increase due to high trip distance addressability (60% of trips being <8km) and ability to solve major city pain points (congestion, emissions); low vehicle price allowing for rapid asset scale-up	Strong decline due to cannibalization by cheaper e-hailing services and further downside potential after 2025 with emergence of yet again cheaper and more convenient robo taxis	Slight market decline due to potential market consolidation (mostly unprofitable); cannibalization by robo taxis after 2025, being cheaper yet offering the same customer experience	Sharply increasing market due to its favorable economics as compared to taxi/ e-hailing services with a potentially high customer acceptance in US and EU; regulatory hurdles as main barrier	Small and declining market due to unfavorable economics (low utilization) and low use case suitability; potential as public transport feeder, however expensive	Decreasing market since pain points of owning a car are not solved (first/last mile gap, no freed up time in congestion) and unfavorable economics (low utilization and asset heavy business)	Globally stagnating market due to high pricing as compared to ride sharing; in urban transit not able to solve pain points of owning a car (first/last mile gap, no freed up time in congestion)	Slightly increasing due to higher availability in rural areas than public transport and being cheaper than P2P car sharing; however, not able to close first/last mile gap and only suitable for leisure use case	Increasing market in Asia and Latam due to growing domestic tourism and high popularity of self-drive trips; declining in EU and USA due to cheaper alternatives such as P2P car sharing or ride sharing	Growing market allowing for reliable (no congestion) niche use cases; solving for city pain points being fully electric and quiet; however, emergence heavily dependent on regulation
Example players	Lime, emmy, mobike	BLACKLANE, METRO TAXI	Uber, Lyft, DiDi	WAYMO, Baidu 百度	MOIA, VIA VAN	SHARE NOW, zipcar, GoFun 首汽共享汽车	TURO, drivy	BlaBlaCar	Hertz, CAR 神州租车, SIXT	EHANG, VOLOCOPTER, LILIUM
Typical trip distance	0 – 8 km	5 - 15 km	5 - 15 km	5 – 30 km	5 - 30 km	5 – 30 km	20 – 100 km	50 – 300 km	50 – 300 km	70 – 300 km

Source: McKinsey Center for Future Mobility

We discussed with 60+ companies in talks, breakout sessions, and a live poll about the Future of Micromobility

Overview of participants

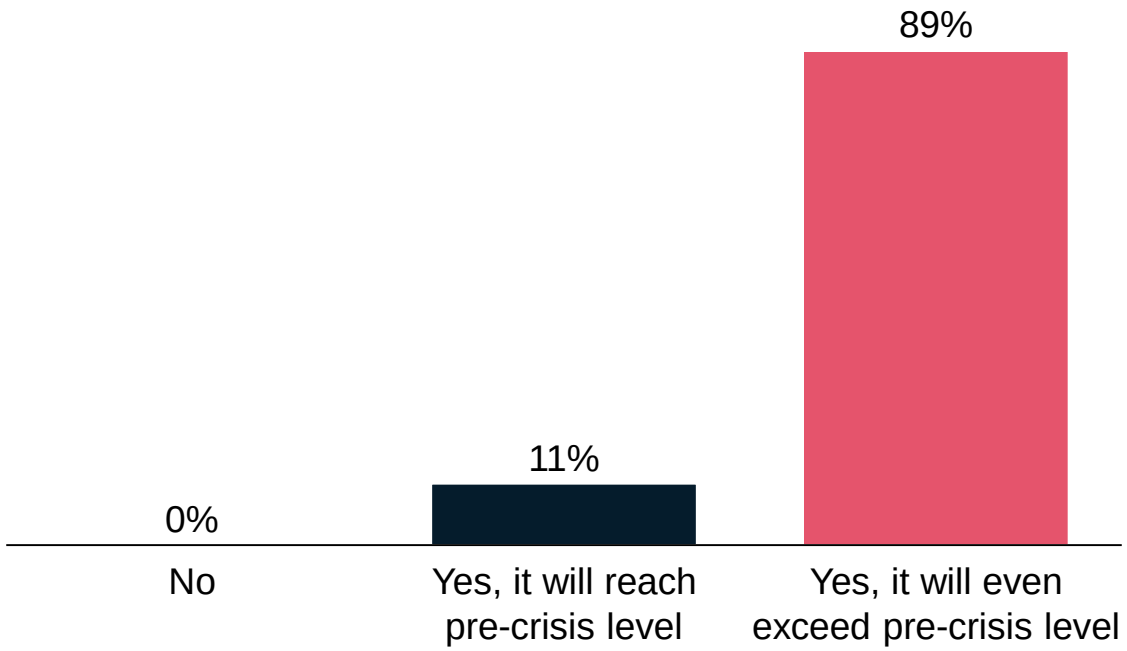
Results of our live poll in the following

Source: McKinsey Center for Future Mobility

~90% of participating experts believe in a full recovery of micromobility after COVID-19 while even exceeding pre-crisis level

Results of live poll

Will shared micromobility ridership recover fully after the COVID-19 pandemic? (n=38)

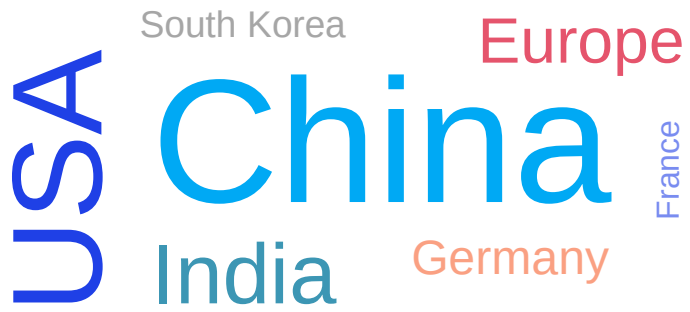


Source: McKinsey Center for Future Mobility

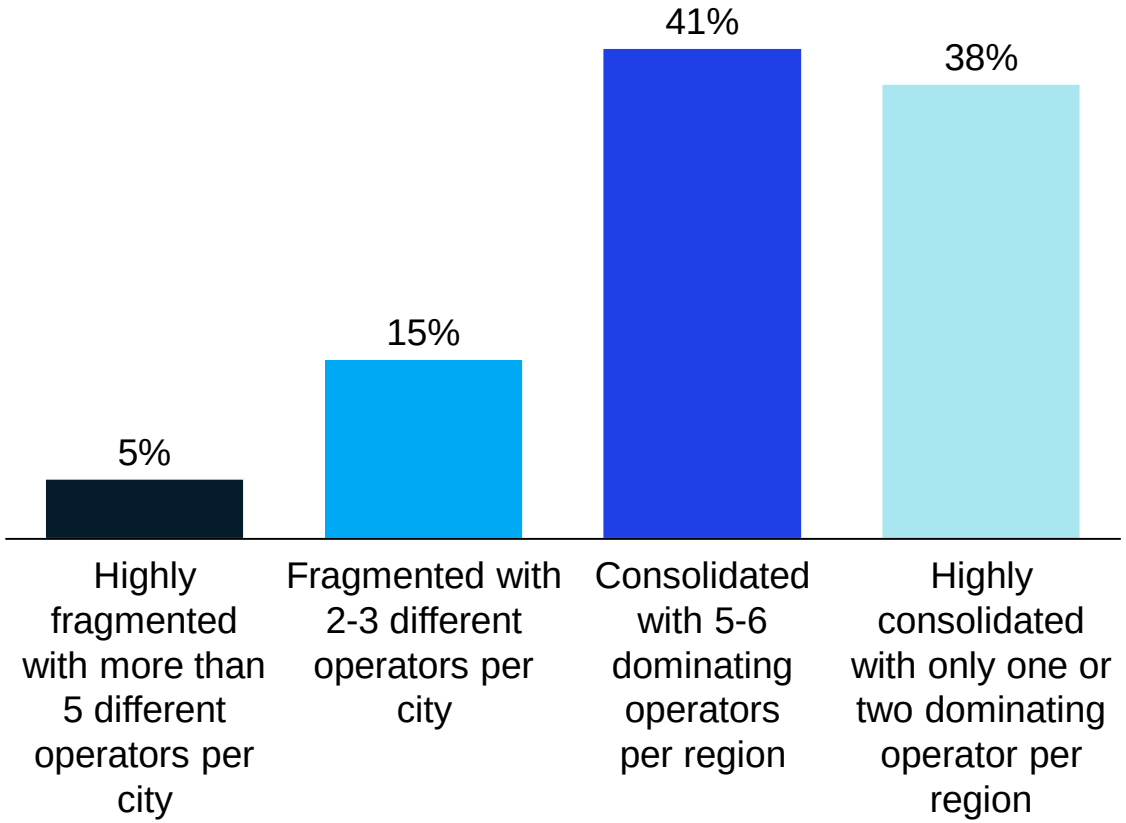
Experts say that China is the most promising micromobility market while the competitive landscape will consolidate in the future

Results of live poll

Which country do you think will be most promising micromobility market in the next 10 years? (n=39)



How will the micromobility landscape in 2030 look like? (n=39)



Source: McKinsey Center for Future Mobility