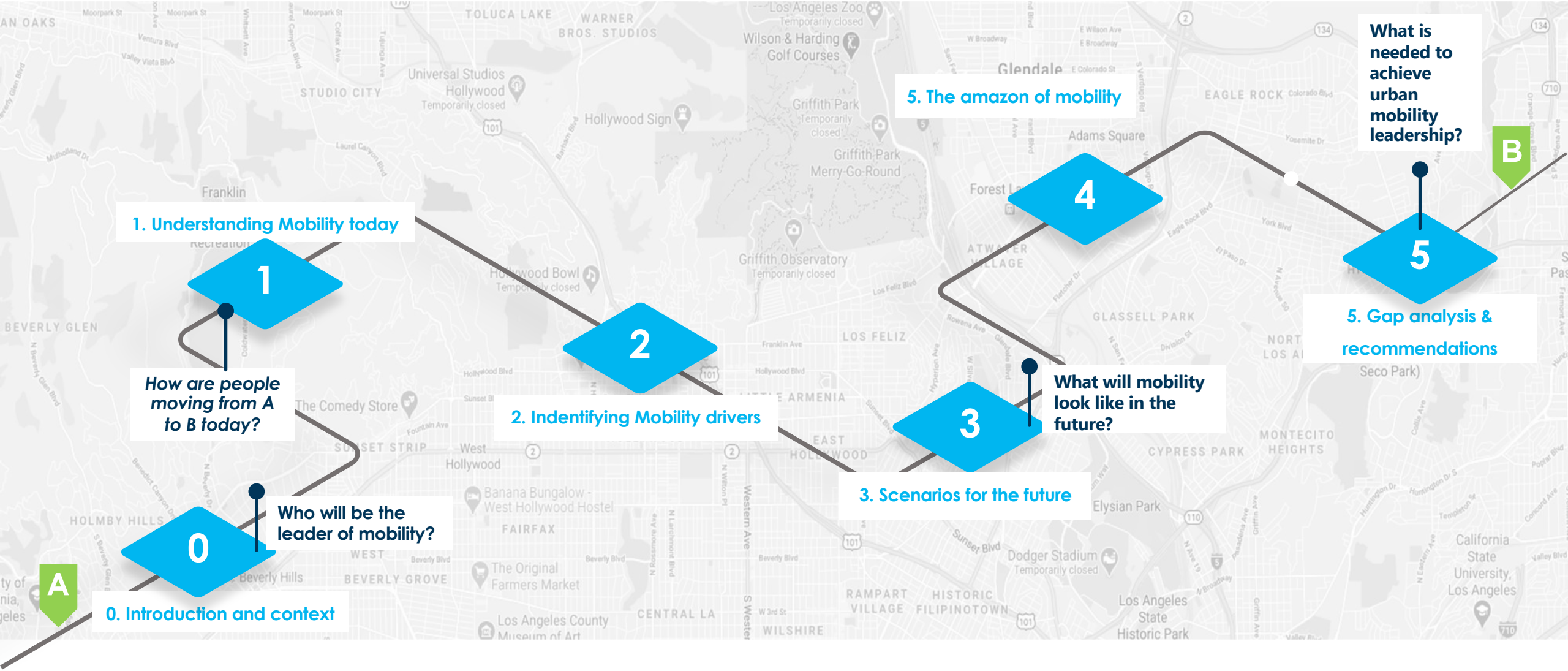
The future Amazon of mobility

EUROGROUP CONSULTING | ESCP BUSINESS SCHOOL

Road map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Eurogroup Consulting and mobility

Eurogroup Consulting

- Established in **1982**
- **3700** consultants worldwide
- **400** employees in France
- **38** countries

Mobility Team

Bertrand de la VILLÉON
Partner

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Partner
Board of directors member

Luc MESLIN
Senior Manager

Eurogroup Sectors

- Food industry
- Health
- Welfare protection
- Telecommunications
- Aeronautics & defense
- Transport, Mobility & Logistics
- Automotive
- Tourism, travel, Leisure & Catering
- Aeronautics & Defense
- Luxury
- Environment
- Energy
- Banks & Financial Services
- Distribution & Retailing

Urban mobility

is a huge promising market that faces diverse and extreme disruption

Revenue of Over $4 trillion dollars

Urban mobility today

Used by 56% of the world population in over 10000 cities

MOBILITY IS CHANGING

Autonomous cars

12.4%
Compound annual growth rate (CAGR) in 2021

Automotive market

3.71%
Expected compound annual growth rate (CAGR) in 2030

Urban mobility platforms

24%
Expected market penetration for 2035

Shared mobility market

15.4%
Expected compound annual growth rate (CAGR) from 2019 to 2026.

Sustainability 100%

Of new cars will produce zero emission by 2035 in EU

CONSIDERING THIS:

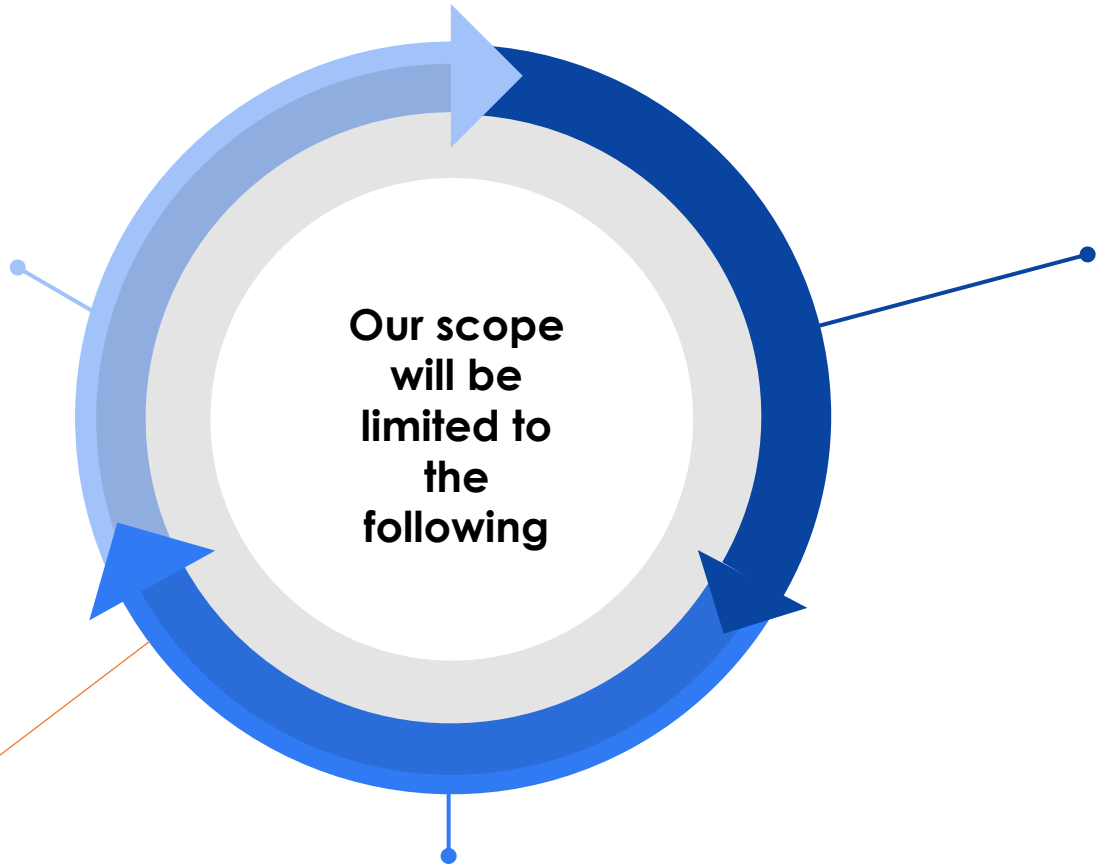
Who will be the market leader in the short distance urban mobility and how will he achieve his leadership?

Our mission

is to identify the future amazon of mobility and the key success factors that players require to become the leader

MOBILITY PLAYERS

- Car Manufacturers
- Digital & Software
- Car sharing/Leasing
- Public transport
- New Players



MOBILITY TYPE

Daily transit for individuals in urban areas

REGULATORS

GEOGRAPHIC SCOPE

- U.S.
- ASIA (China, India)
- Europe

To answer this question

we followed a coherent method

UNDERSTANDING THE MOBILITY MARKET

Current state of mobility market in the selected regions

IDENTIFY ASSUMPTIONS

Drivers identification and classification in different regions.

CHOICE OF SCENARIOS

Creation of plausible scenarios
Selection of one scenario per region

THE AMAZON OF MOBILITY

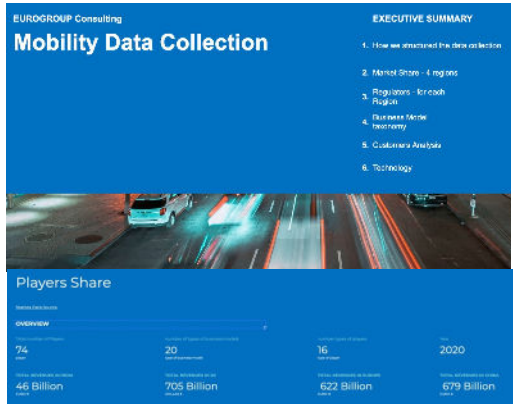
Future leader identification

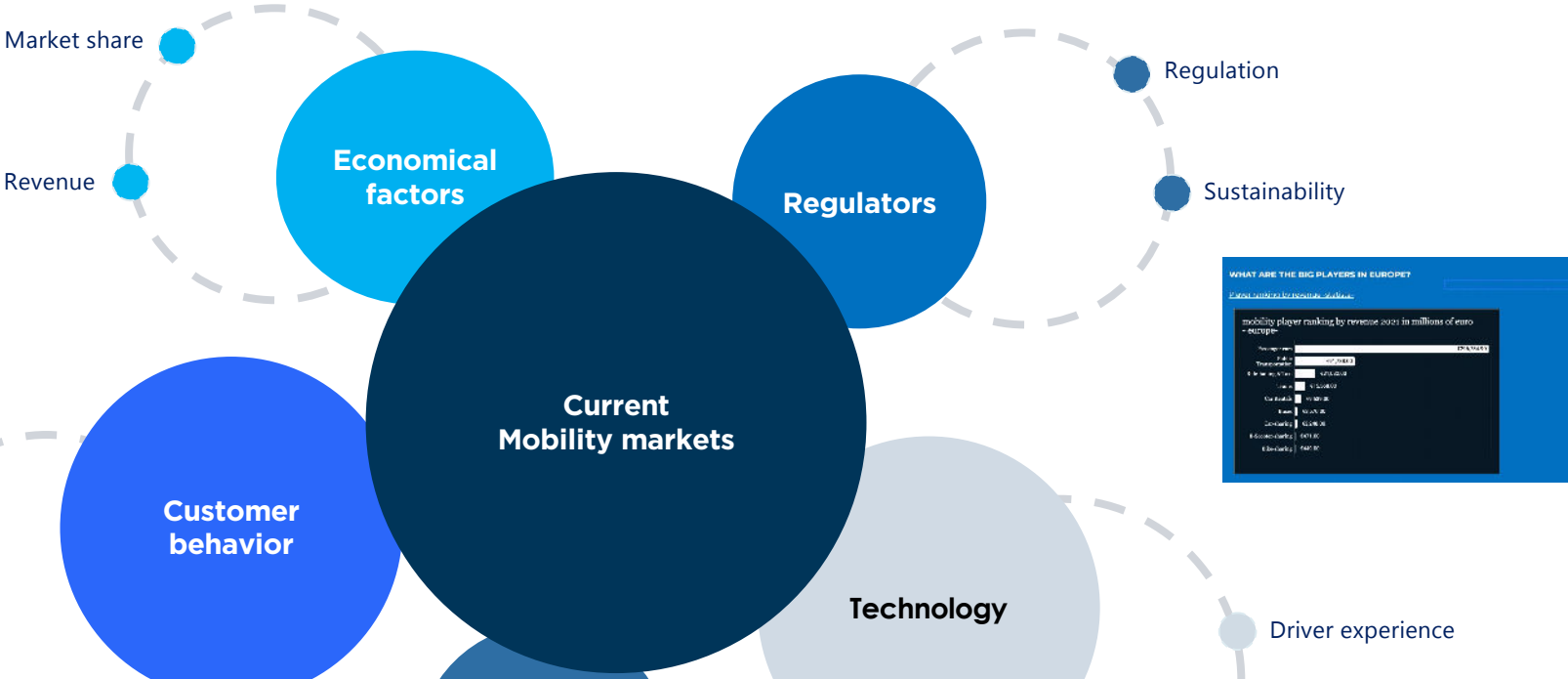
RECOMMENDATIONS

Gap Analysis

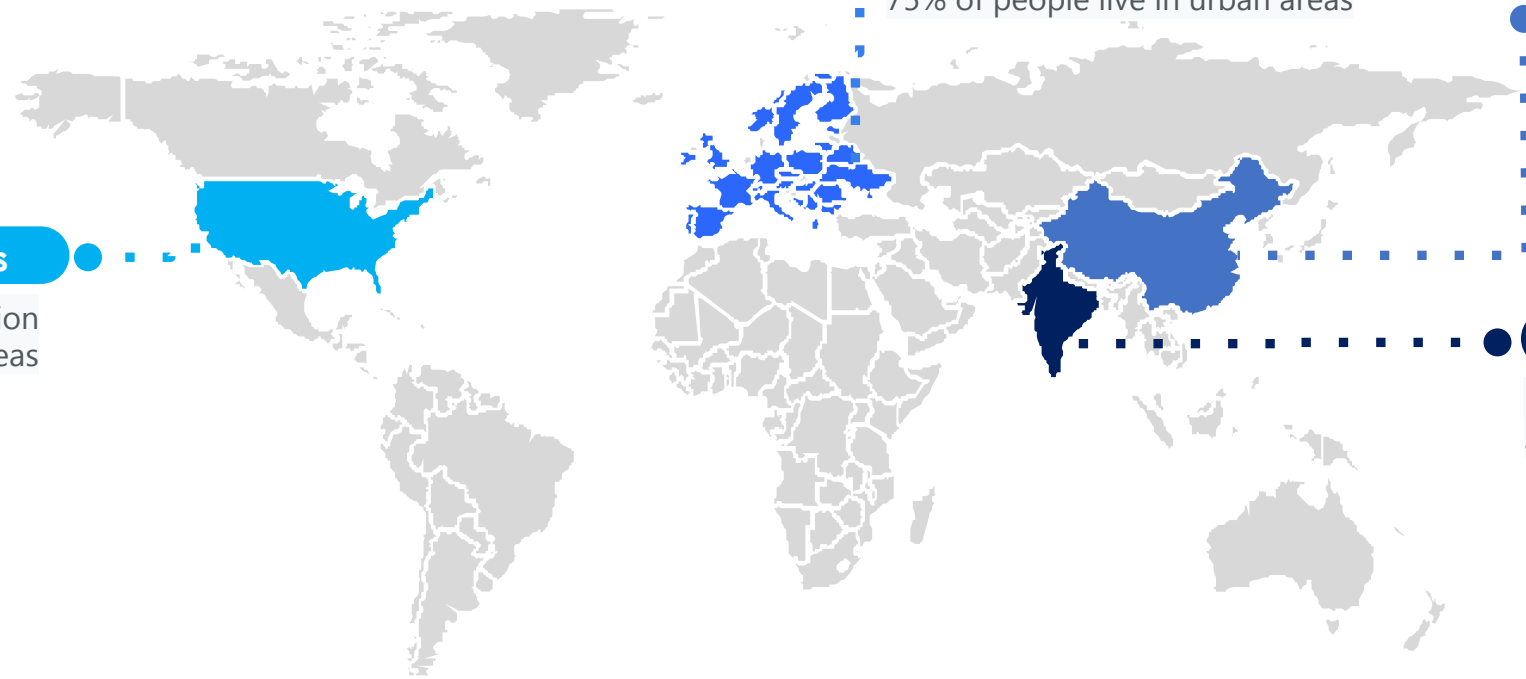
How is urban mobility today?

We created a dashboard where we collected information about the current state of urban mobility.





General F&F about mobility



Europe

Population: 0.75 billion
75% of people live in urban areas

China

Population: 1.4 billion
61% of people live in urban areas

United States

Population: 0.3 billion
82% of people live in urban areas

India

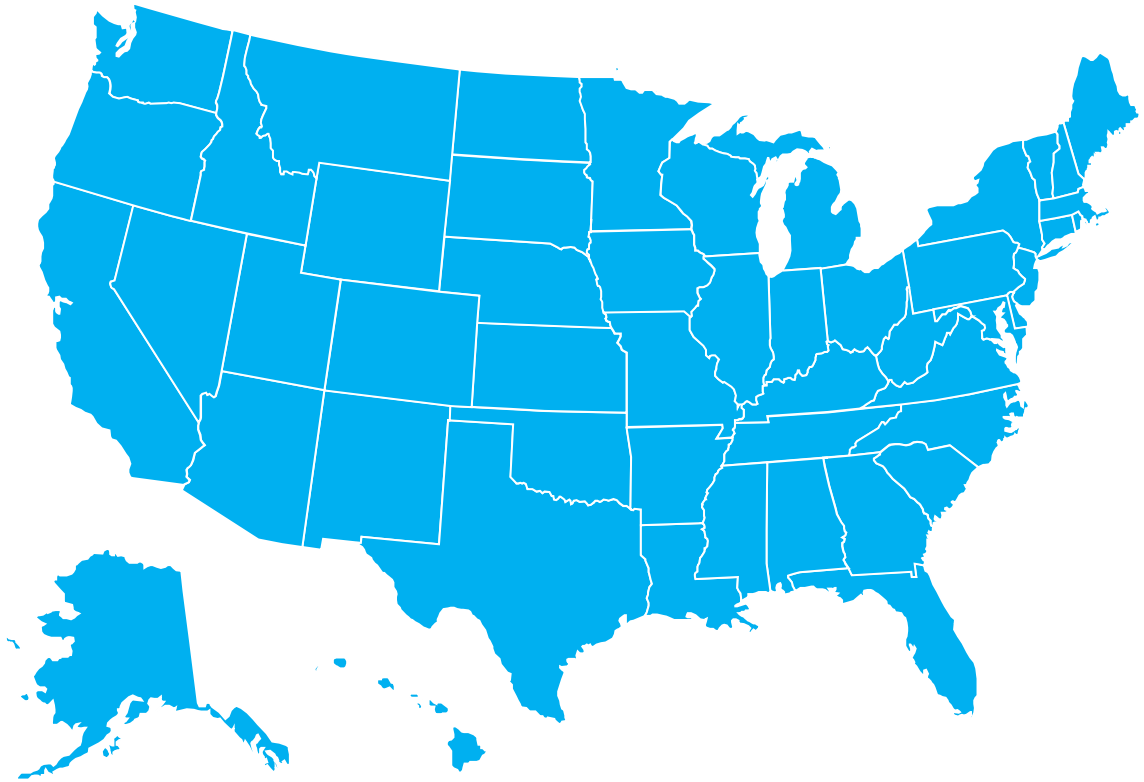
Population: 1.38 billion
35% of people live in urban areas

Mobility revenues

United States	Europe	India	China
705 Billion USD in 2021	622 Billion USD in 2021	46 billion USD in 2021	679 Billion USD in 2021

US

Car ownership remains important with a growing market of car leasing and public transport



Personal car vs leasing

Car ownership is still the first solution in most of the cities, but it has decreased 21% in younger generations.

28%

Of increase in ridership of public transportation. Mainly in the top metropolitan cities.

54%

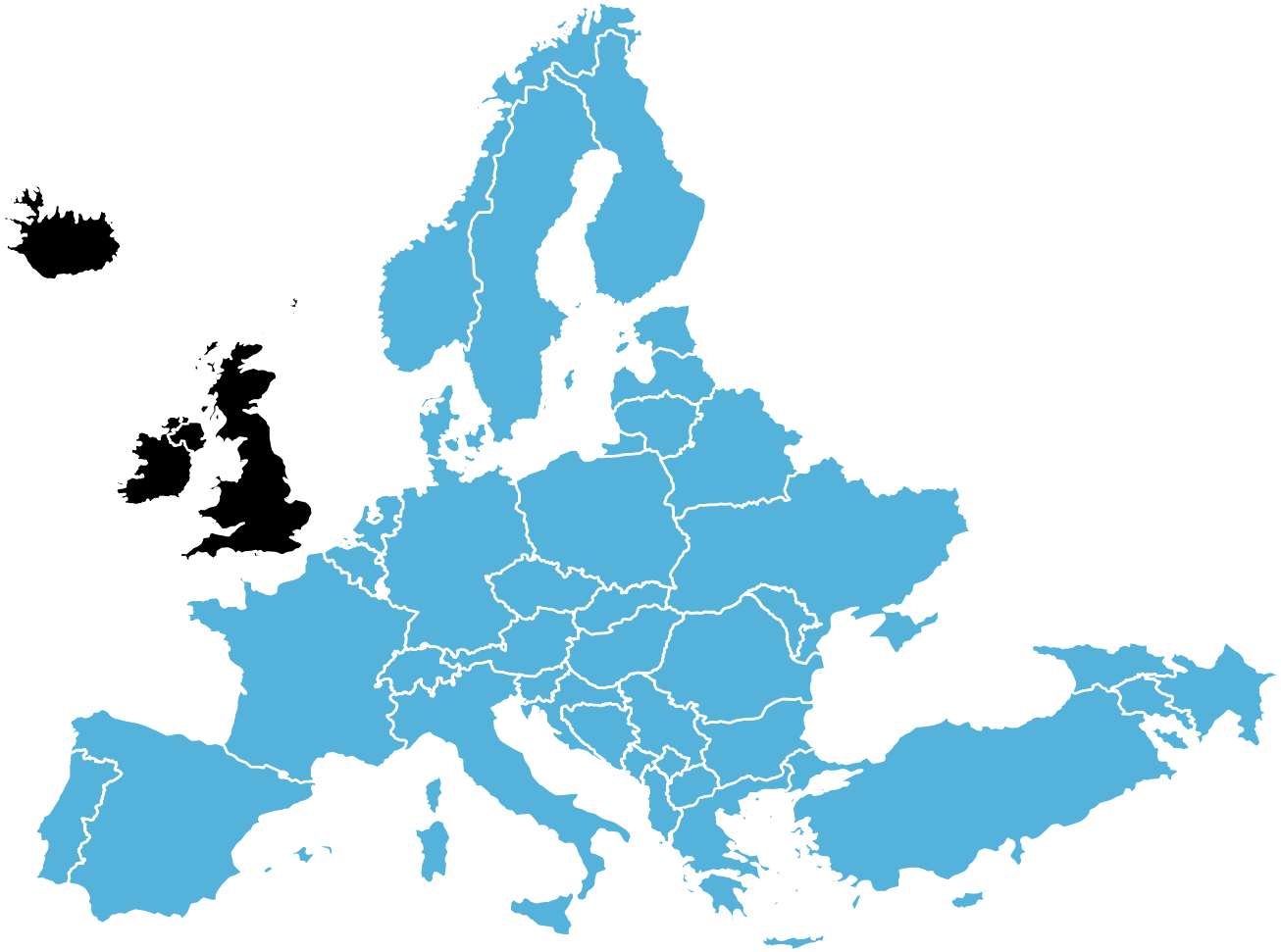
Of smartphones have installed and use Google Maps as an enabler of mobility services.

1.8%

Revenue growth of car hailing, which is expected to continue at the same rate.

Europe

While more prone to using public transport, cars remain at the top



466b $

Is the **revenue** generated by **car manufacturer** in europe in 2022. The 3 top firms represent 25% of the industry

10%

Of **cars sold** in europe in 2021 are **electrical or hybrid** recording an increase of **40%** compared with 2020

57%

Penetration rate of **public transport** in europe in 2021, the **4%** reduction from previous years is mainly due to Covid-19

-11%

Revenue growth for **rental and leasing** in 2021, but this figure is expected to turn to nearly a **94%** increase in 2022

India

Due to a combination of scale, technology, and market maturity, electric vehicles will overtake the existing family-sized car as the preferred mode of transportation

Family sized car

Household cars/ family sized cars remains the largest choice of mobility

18%

2 wheeler personal motorcycle is the second largest market segment.
E - scooter sharing holds **11 Billion $** in revenue

65%

User penetration rate of Mobility Services of India in 2022.

82M $

Is the projected amount of revenue of the **Mobility service segment in 2022**

China

New energy car manufacturing will remain the leading role as car ownership and sharing is growing

679b $

Revenue of mobility (excludes flight) in 2021

20%

Of Chinese population owns car (281 million). 21.45 million passenger cars were sold in 2021, increased by 6.5%,

40%

China has 40% EV car market share in 2020.
3m new energy car was sold in 2021, and increased by 14.8%.

High-tech Player

AI, autonomous are starting applied in car manufacturing and will be used massively.

Interviews with mobility experts

Highlights and expectations:

- Safer and more comfortable mobility

- Technological improvement

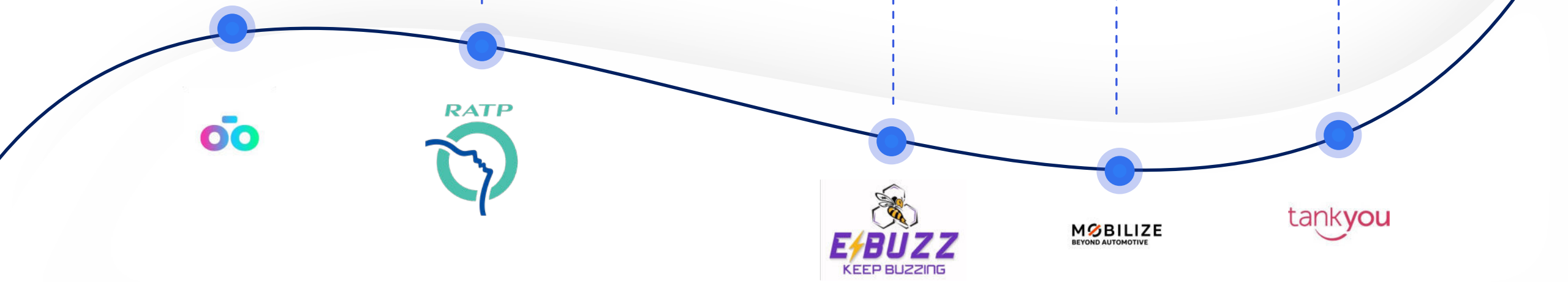
"You can only think about mobility as complimentary and intermodal solution"

"AV while inevitable is not a solution to the complexe mobility problem"

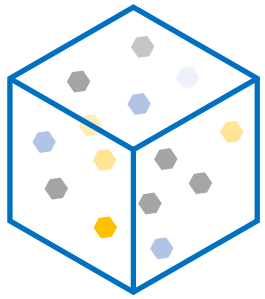
"60% of all the vehicles on the road will be either running on electric power or any other kind of renewable source of energy"

"Our intention is not to do Maas, our intention is to have a Netflix approach"

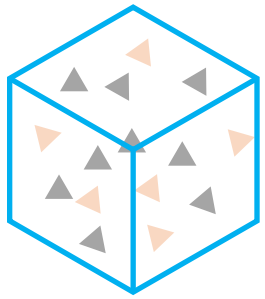
"Future of Mobility is going to be a mix between EV and hydrogen"



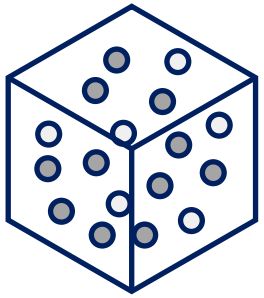
Using pestel to identify the market drivers



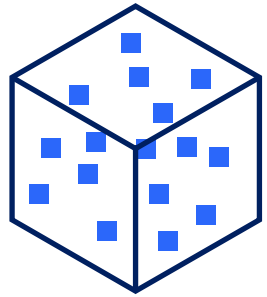
Political



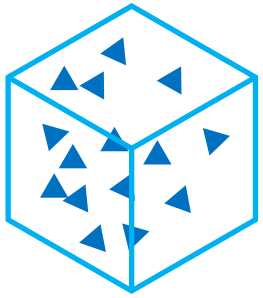
Economical



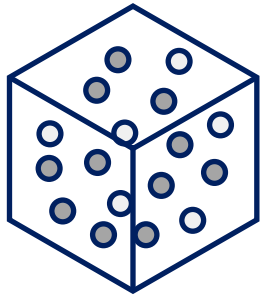
Social



Technological

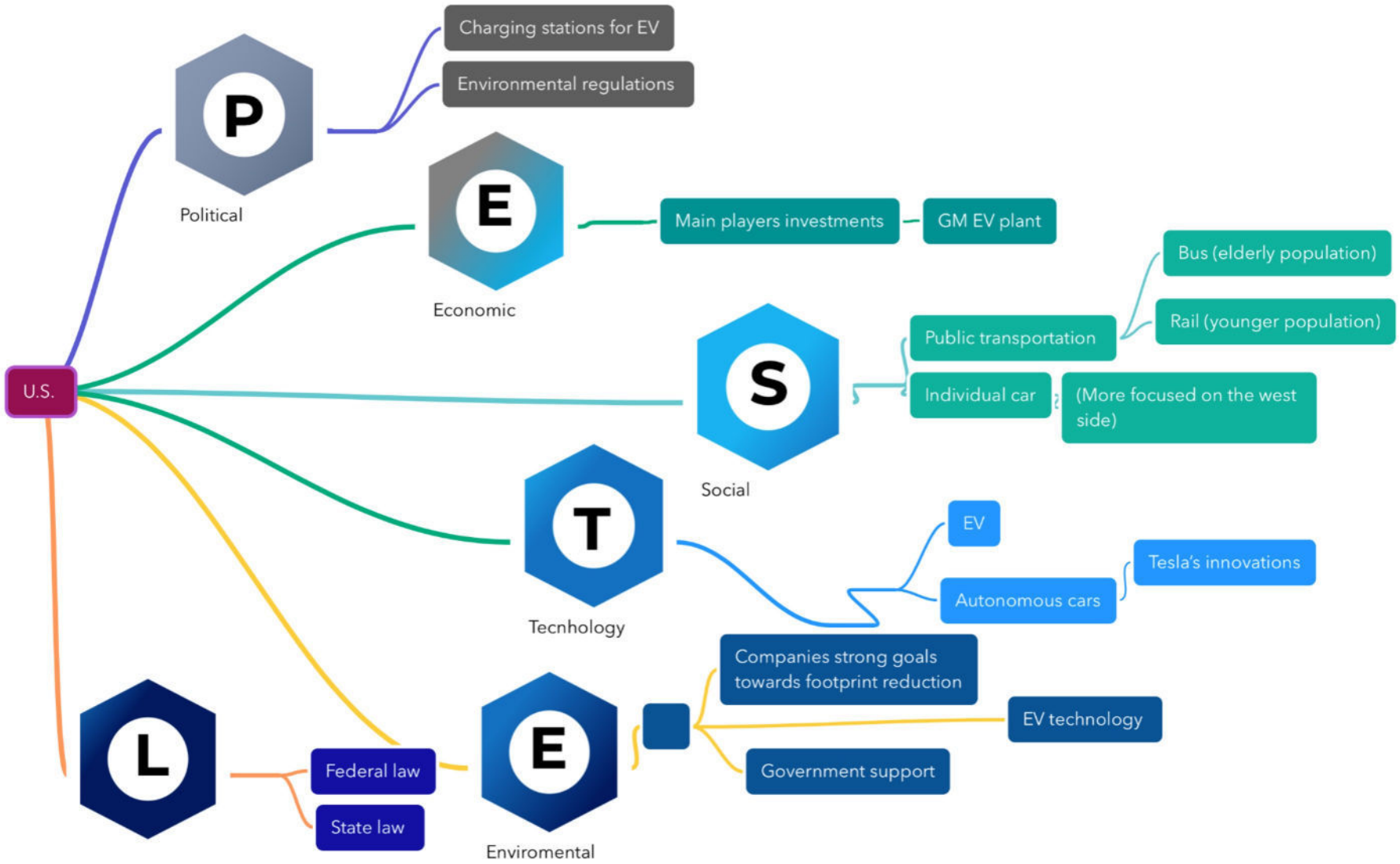


Environmental

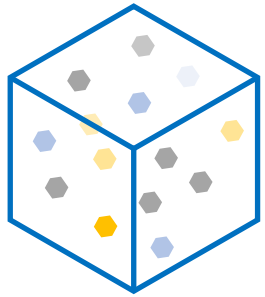


Legal

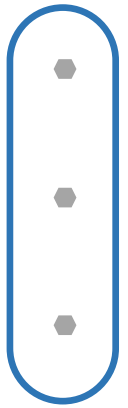
USA



Government support towards technology and sustainability



Main drivers

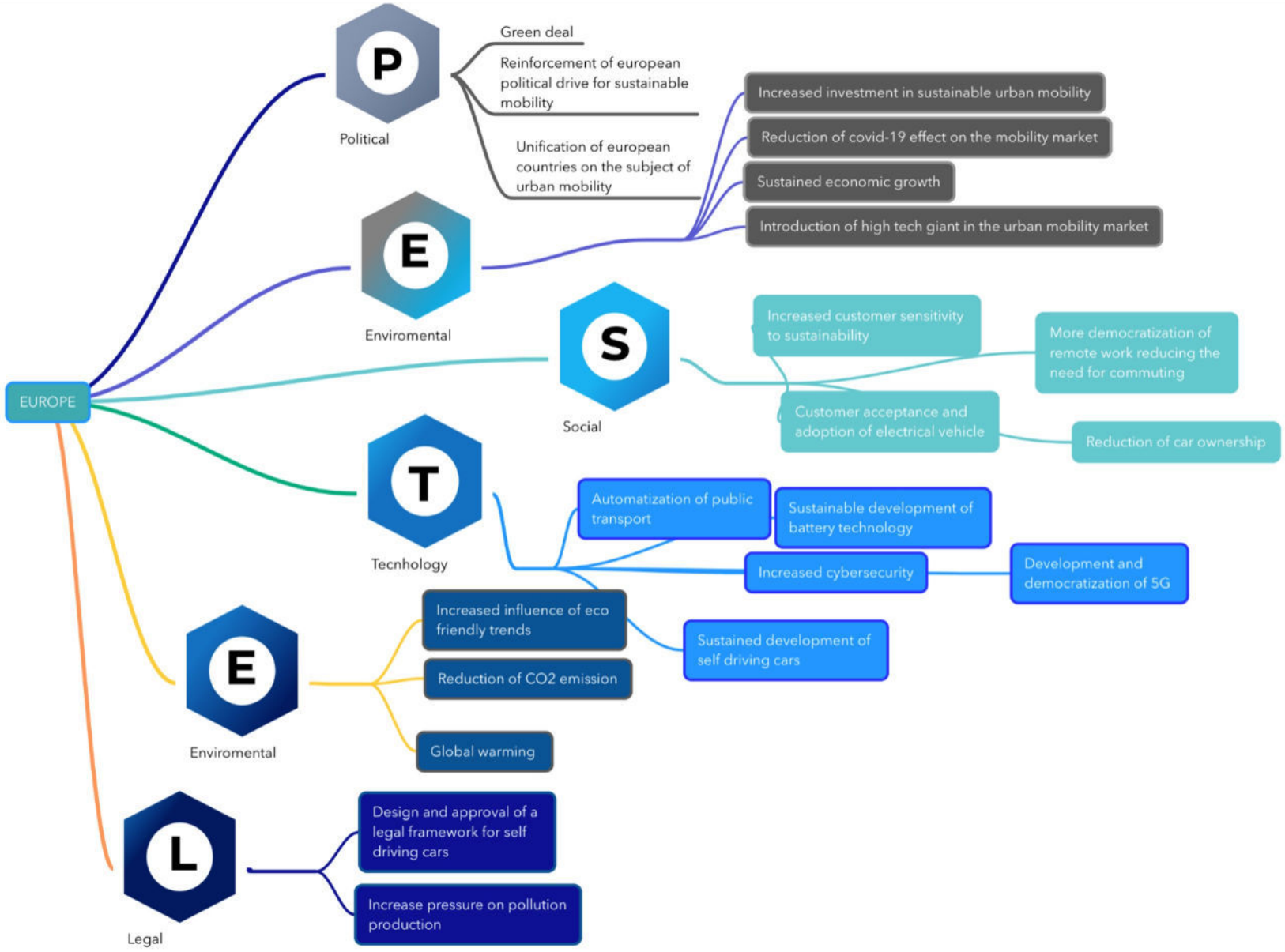


Technology

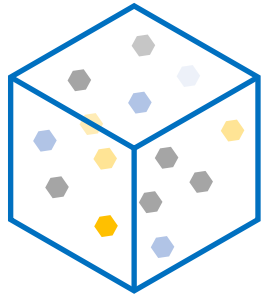
Economical

Environmental

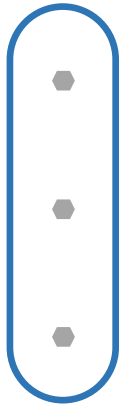
Europe



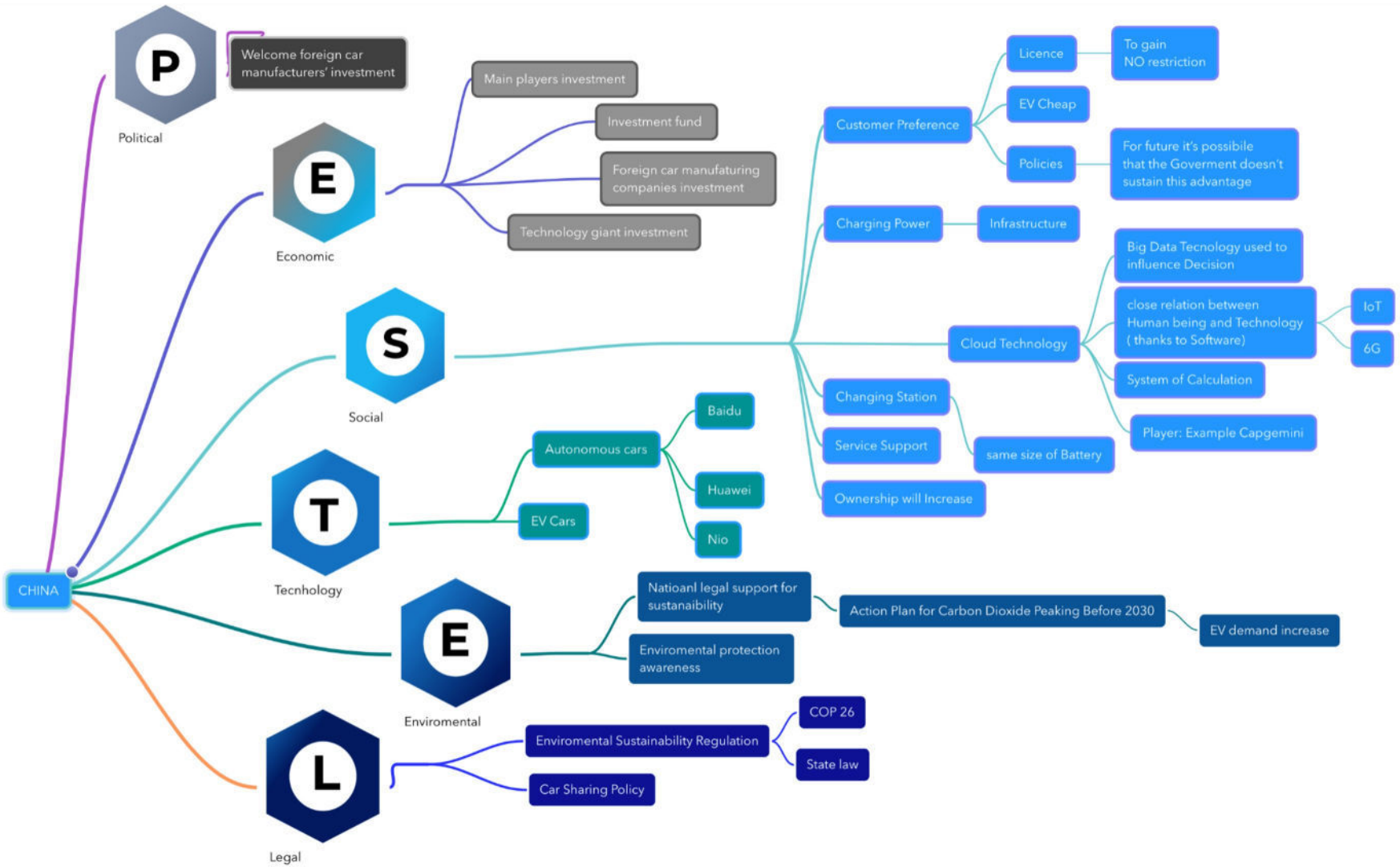
Technological advancements associated with political drive and an environmentally conscious customer base will be the main driving force of mobility in Europe.



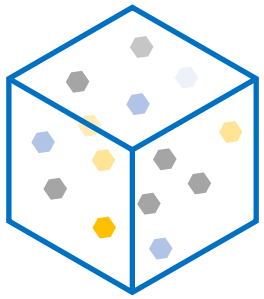
Main drivers



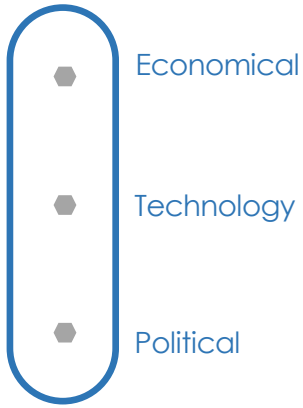
China



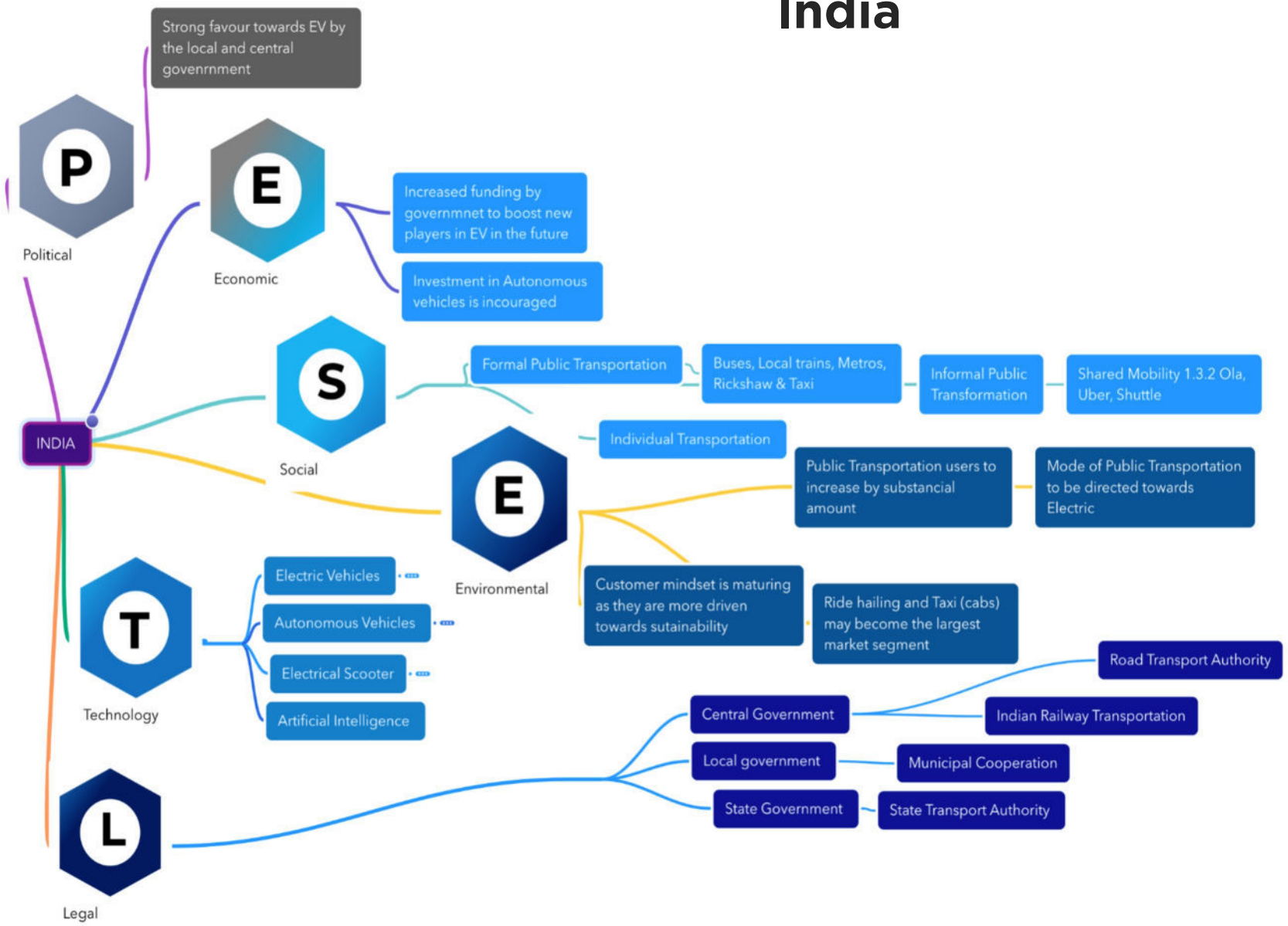
Increasing of middle-income class, rapid development of technology and clear policy support are becoming main drivers for China



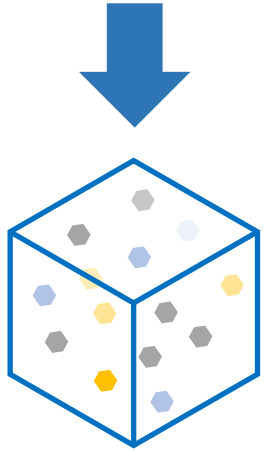
Main drivers



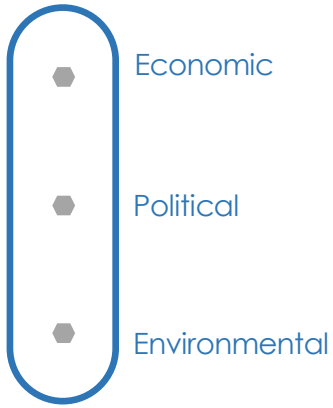
India



High government support for EV industry as sustainability is the main focus



Main drivers



Scenario construction and process

Using the data collection, main driver analysis and the different interviews, we managed to construct a detailed scenario for the future of mobility per region. The scenarios are declined in short, medium and long term.

Market trend

Access the current trends future

+

SME interviews

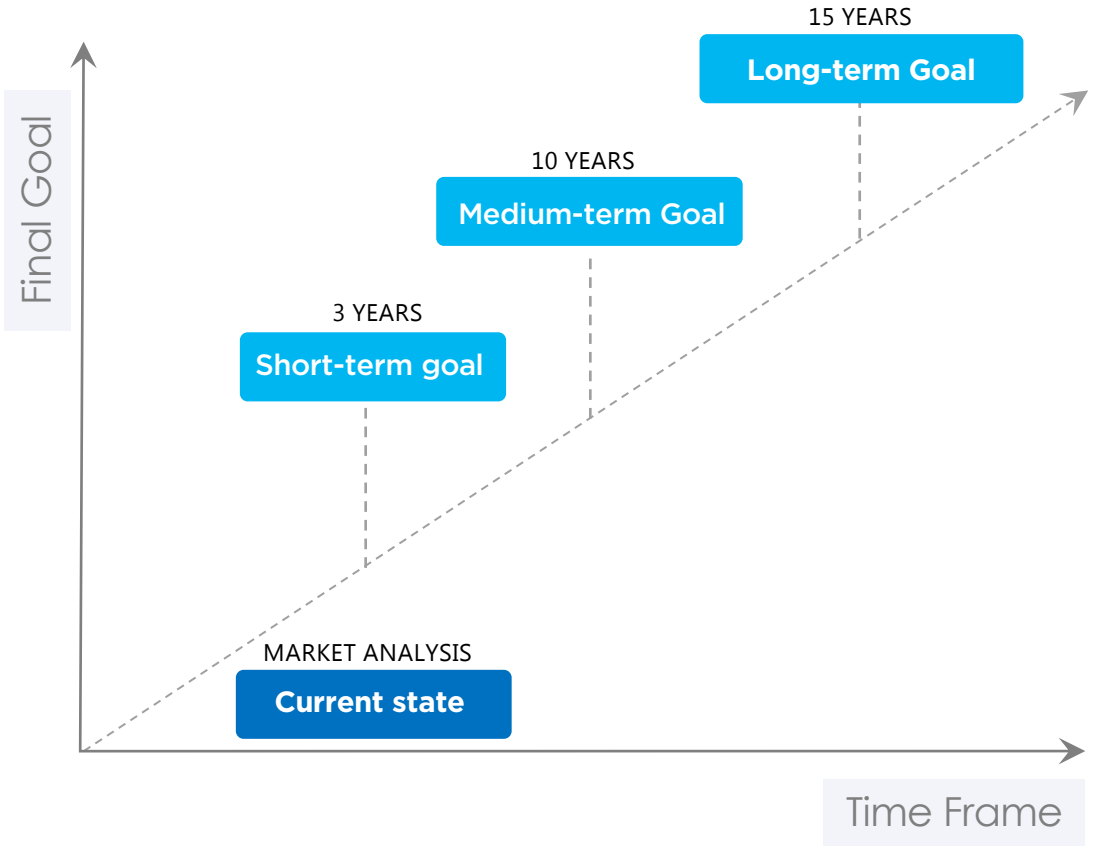
Interviews with **6 subject matter experts.** Collect insight about the present and the future

+

Key market drivers

Use the selected uncertainties and drivers, market trends and interviews to rank the scenarios. Select the most suitable scenarios

4 mobility scenarios
(One per region)



Smart and sustainable US

Technology and government support towards sustainability will increase car ownership and leasing for EV, and ridership in public transport, with digital map platforms as key enablers.

TYPE OF PLAYERS

	3 years	10 years	15 years
Car manufactures →	Car ownership decrease in main cities and stable in the rest. Increase in charging stations availability.	Decrease in car ownership in main cities. Rest: EV cars	Affordable offer of EV Sustainable technology and autonomous.
Maas-Public transportation →	Slow increase of use because of pandemic. EV buses and technology investment.	Ridership return to the pre pandemic levels. Infrastructure for metropolitan cities.	In main cities, substantially increase, specially in young generations.
New Player →	Alliance with car manufacturers for EV.	Security controls and user experience. More affordable hailing rides.	Car hailing as the first choice. Self-driving car hailing services and technology.
Maas -Car sharing/ Leasing (Buyer-side vision) →	Gain market share as the pandemic decreases.	Increase of stations for leasing. Trend among young people.	Merge with car manufacturers. Leasing leads on market share.
Digital and software →	Reluctant to share cars. Leasing increase market share. Machine learning. All in one app.	Increase on digital maps utilization.	Real time actualizations and interactions. Investment in virtual reality.
Regulators →	Reduce traffic congestion, sustainability and riders demand. Support to EV.	Regulations increase. Investment in EV infrastructure.	Regulations on autonomous cars and focus on Maas.

Accelerated green Europe

Mobility in Europe achieves and goes beyond set goals supported by sustainable technology, political and social will to change.

TYPE OF PLAYERS

	3 years	10 years	15 years
Car manufactures	Slight reduction of car ownership Major investment in EV development. Development and commercialization of AI and autonomous cars level 4	Clear reduction of car sales, increase of % of EV sold to 60% of sales Commercialization of cars capable of autonomous driving level 5	High reduction of car ownership, EV representing 100% of sales. First deployment of LV5 autonomous urban mobility solutions
Maas-Public transportation	Slow increase of use, with renovation of infrastructure , electrification and automation Slight Increase in efficiency and speed for users	Increase of use, high rate of electrification and automation. High increase in efficiency and speed for users, with a slight increase in ride comfort	Addition of autonomous cars and buses to public transport solution. High increase in comfort, speed and coverage.
New Player	Car hailing market share to increase , with increased pressure from new entrants	Car hailing market share to keep increase, with rise of competition from other actors' solutions	Autonomous cars increase the vehicles available to hailing solutions, but compatibility issues are rising
Maas -Car sharing/ Leasing	High increase in market share for both leasing and sharing. Conversion of the fleet to EV and first use of Maas dedicated vehicle	Market share for both leasing and sharing growth slows following car ownership. Addition of first autonomous driving cars level 4 to fleet.	High Increase of market share, driven by alliances with public transport and car manufacturers. Cars capable of autonomous driving level 4 to make up 40% of the fleet
Digital and software	Low integration in vehicles, high investment in AI and Autonomous driving. Development of autonomous driving level 5 software	Increased integration of software in vehicles and user experience. Development of swarm-based technology to manage autonomous car fleets	Software to make up more than 40% of vehicle value. Partnerships with other actors to deploy cloud based city-wide urban mobility solution
Regulators	Push for sustainability and safety		Decrease of pressure and incentives as the green switch is done.

More green, intelligent and customised China

Driven by technology, led by policy, with the efficiency at the core.

TYPE OF PLAYERS	3 years	10 years	15 years
Car manufactures →	Increased car ownership. EV accounts for 8% of car sales. 85% of cars sold using autonomouss. between LV 01 and LV3, LV4 appears.	Car ownership keeps increasing. EV sales accounts for 20%. LV4 launch and implement in some area in big cities.	Car ownerships remain stable EV becomes mainstream (80%) Large scale usage of autonomous LV4
Maas-Public transportation →	As urbanization progresses, the construction of public transport, especially the metro, will accelerate Automation & Electricity are the trend	Efficiency improvements will boost public transportation usage. More transportation HUB will appear in major areas of a city.	Technology will be fully used with public transport, like maglev, auto and real-time road planning based on big data and 5G.
New Player →	Startups will be the mainstay.	Traditional car manufactures focusing on new business lines will be the mainstay.	Digital players will be the mainstay.
Maas -Car sharing/ Leasing →	Will eat some sharing from public transportation. People are more willing to hailing a car with acceptable cost.	Sharing's market will grow along with EVs' purchasing, as they all take a share from public transport and fuel cars market.	Real sharing will appear under AI and big data. Hailing will be replaced by sharing (more demand in an area, more respond drivers to lift people)
Digital and software →	Digital players make their voice in terms of autonomous, OTA system loaded in the car, autopilot etc.	Digital will be the main battlefield for mobility players competition. Interface between car and smartphone gives car owners more fun and flexibility.	Besides transport, digital makes a car a management platform for work and life. Digital players may become the winner just like Windows system for all PCs.
Regulators →	Very strong support for EVs sale. Licensee barrier continues for fuel cars, to reduce the number of them on road.	For security purposes, the construction of the transport data center will be led and managed by the government.	Encourage private cars and public transport to convert to electric. Achieving the 2035 carbon neutrality and carbon emissions targets

Sustainable and technologically transformed India

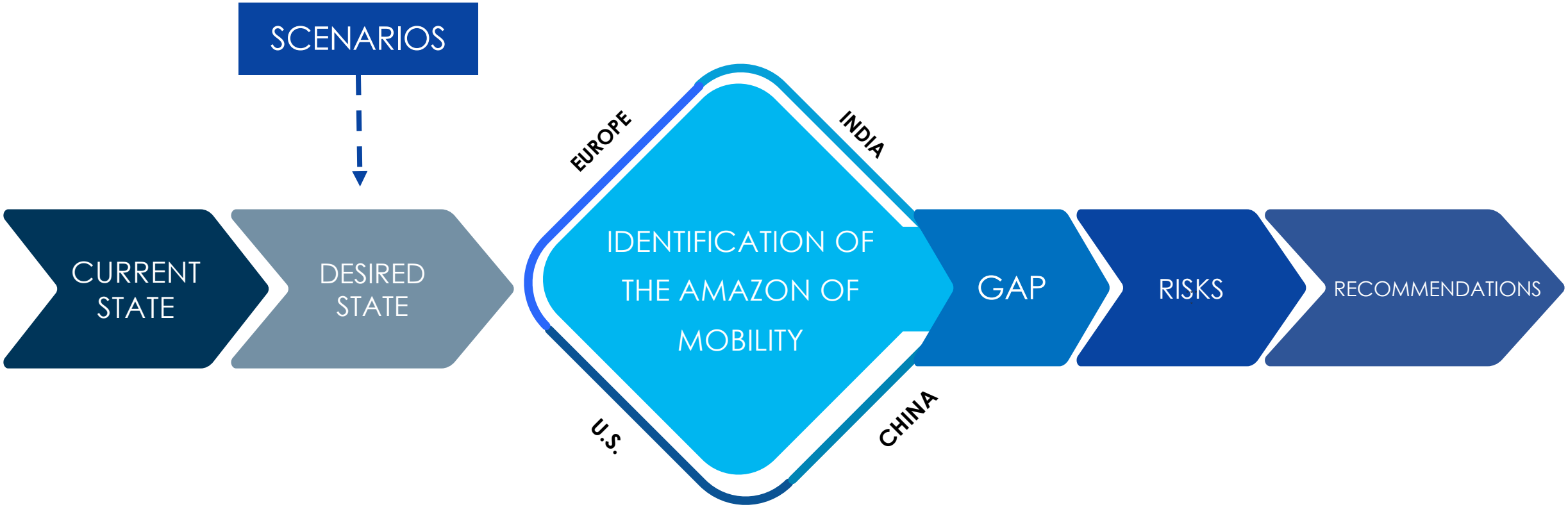
Demand for shared mobility is expected to increase in the next decade. Passenger mobility will be the greatest demand driver, expected YoY growth of 40 to 50 %

TYPE OF PLAYERS

	3 years	10 years	15 years
Car manufactures →	EV Manufacturing is booming and highly Promoted. Regulators are supporting this move on priority	Shift towards hybrid cars over petrol and diesel. Complete shift towards hybrid passenger vehicles	Sustainable technology to be heavily supported. EV market will be well established in the Indian market
Maas-Public transportation →	Modes (IFT) such as Vikrams, cycle-rickshaw, Tata Magics etc. The IFTs are deeply ingrained into the Indian transportation structure. Large part of of Indian users rely on this segment.	As MaaS is an integral part of the Indian market, other metro and urban city will willnes smetro construction and accesability	A streamline connection between public and private mode of transportation will be established. EV with the help of technology will take over Vikram, auto rickshaw and other modes .
New Player →	New players highly encouraged by regulators to start manufacturing companies. New EV manufacturing set ups being established	Affordability to increase to combat rapid increase in gas prices. Better infrastructure to support new players	Significant market share to be captured by new players. New players will target the EV space in completely.
Maas -Car sharing/ Leasing (Buyer-side vision) →	Car sharing or car hailing is the 2nd most preferred mode of transportation in the Indian mobility market. Youngsters and middle class section will continue to prefer this and this segment is likely to grow even more	Youth would rather lease the most recent model than own a car and be tied to a tradeoff.	Sharing will take the role of hailing . The more the demand in an area, more will be the supply in terms of uber etc
Digital and software →	Focus on reduce traffic congestion, sustainability and meet riders demand. Support to MaaS - Public transportation and EV	Navigation for a better overall customer experience will be adapted across country	Real time response and predictions to enhance the experience of Maas - Public transportation and EV
Regulators →	Local government will in courage the municipal authorities to implement the laws in order to accommodate EV	Firm laws and regulations will be in place to increase the infrastructure to support EV	

The next Amazon's profile

Based on the current state of the players and future scenarios, we find the future amazon of mobility and provide recommendations to reduce this gap.



Identifying the leader of mobility

To define the amazon of mobility in an objective way, we created a framework that assigns scores to each player, basing on the key success factors that the leader of the future must have.

01 Selection of key success factors of the amazon of mobility

02 Assign weight to each factor, based on the priority

03 Score each region based on the collected data

04 Average of all regions

05 The player with more score is defined as "the winner"

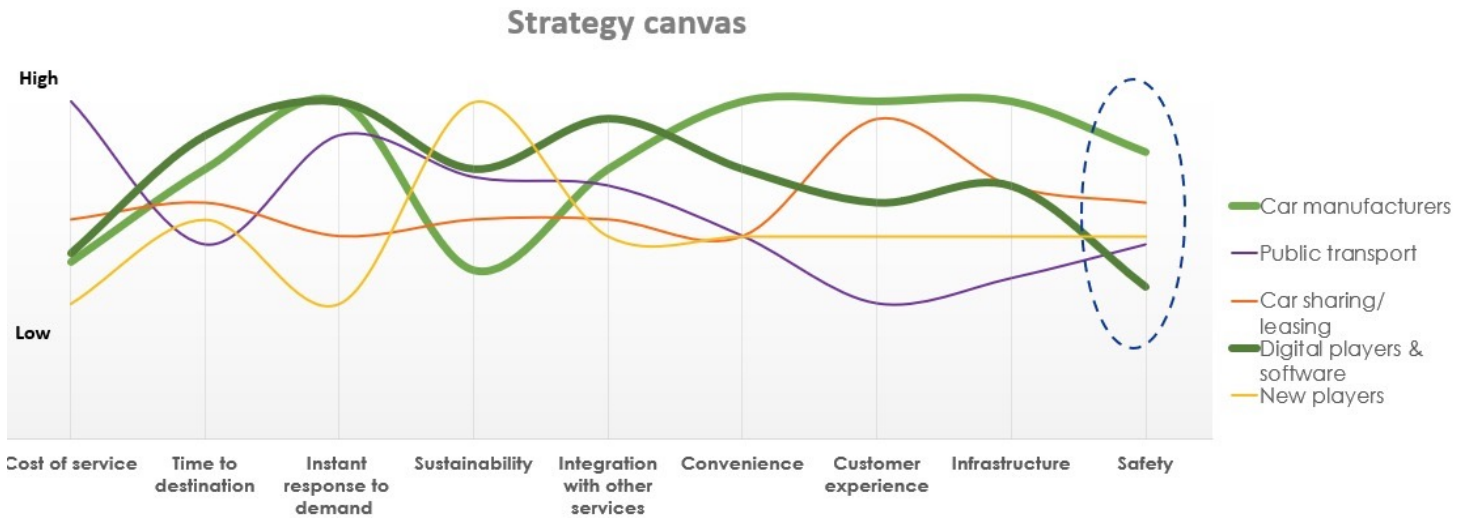
Key success factor	Description	%
Cost of service	How low is operating and using the service costs (low being the best)	20
Time to destination	How fast can the use of the mobility solution get you to your destination	20
Safety	How safe is the means of transport in terms of accidents risk and personal security	15
Instant response to demand	Quantifies the availability of the mobility solution. Ie: how easily and fast it responds to users need to move	10
Sustainability	How sustainable is the option offered by the player or much it helps minimizing environmental impact	10
Convenience	How convenient are the solutions offered by the player for the user needs	10
Integration with other services	How integrated the solution is others. Ie: the ability to switch	5
Customer experience	How customized is the user experience offered by the player	5
Infrastructure	Estimates the availability of the infrastructure as well as how easy it is to install more of it	5

The future of mobility

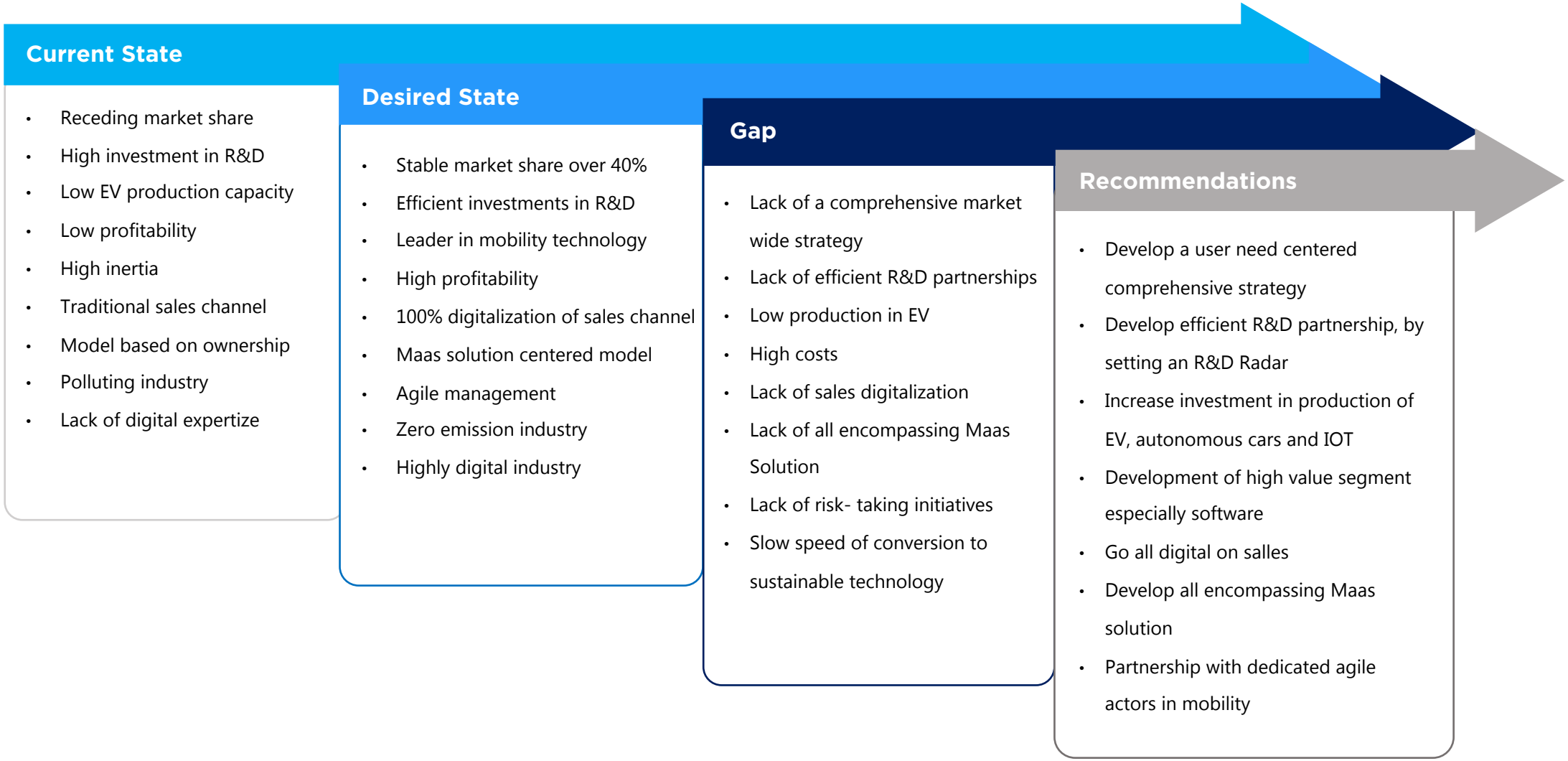
will be mostly lead by car manufacturers

Car manufacturers obtained the highest score, followed by public transport and Digital & software players.

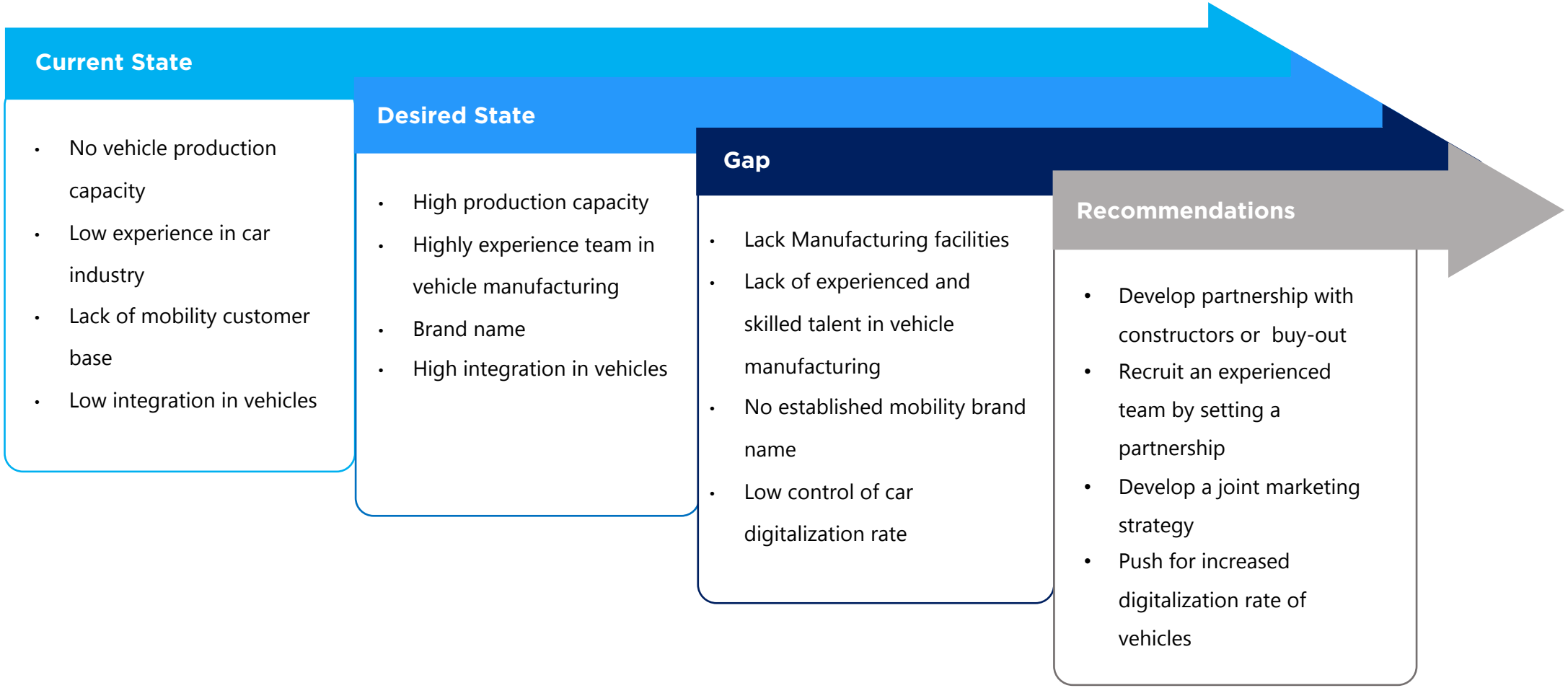
Mobility player	Cost of service 20%	Time to destination 20%	Safety 15%	Instant response to demand 10%	Sustainability 10%	Integration with other services 10%	Convenience 5%	Customer experience 5%	Infrastructure 5%	Total
Car manufacturers	2.6	4	4.3	5	2.5	4	5	5	5	3.8
Digital players & software	2.8	4.5	2.3	5	4	4.8	4	3.5	3.8	3.7
Public transport	5	2.9	2.9	4.5	3.9	3.8	3	2	2.4	3.6
Car sharing/ leasing	3.3	3.5	3.5	3	3.3	3.3	3	4.8	3.8	3.4
New players (bike, motor, e-bike, e-moped)	2	3.3	3	2	5	3	3	3	3	2.9



Car manufacturers global gap analysis



Digital & software global gap analysis

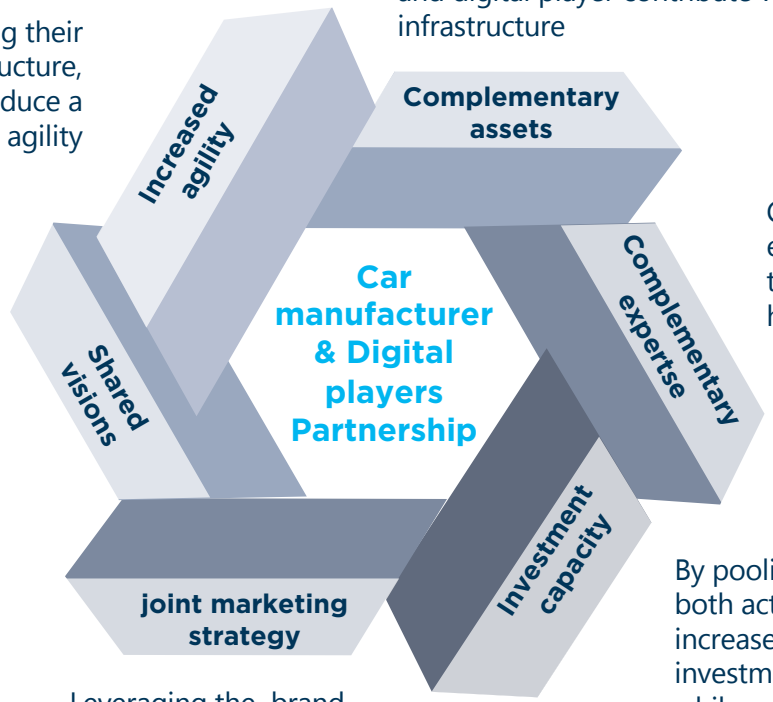


Car manufacturer & digital player partnership

Is crucial for mobility leadership

Car manufacturers have manufacturing sites and digital player contribute with their IT infrastructure

By mixing their organizational structure, both actor can produce a player with high agility



Car manufacturing experts and high-tech gurus working hand in hand

Instead of competing on different view of evolution this partnership will produce a more hybrid and more synergic vision of mobility

By pooling their funds both actors can increase the investments raised while reducing risks

Leveraging the brand recognition of both companies they can better acquire customer trust

Ford | Google

mobileye An Intel Company | Volkswagen

HONDA

QUALCOMM

ARCFOX

HUAWEI

“Multimodal Mobility is the future of mobility”

Digital player

car manufacturer partnership mobility offering

Customer interaction

The digital player will be the main player when it come to customer interaction in the beginning of his journey. Mainly through an app in their phone

Choice

The integration with other, means of transport means that the choice of the best transport mean will be done by the customer based on their preferred criteria (price, speed, comfort etc)

Movement

In the case where the car, is chosen, the customer will be using a highly digital car. The car will be powered by software developed by both partners and by hardware made mainly by the car manufacturer but with the help of the digital players especially when it comes to sensors.

Infrastructure

Data infrastructure will be mainly driven by the digital player. The offering will be based on data collection. So an investment in vehicles adapted to IOT will be necessary.

Leveraging data

Continuous improvement and testing of new features will be necessary for the survival and scaling of the partnership. The development and increase of digitalization of the car will make testing of new features to improve customer experience easier.

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Thank you

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