

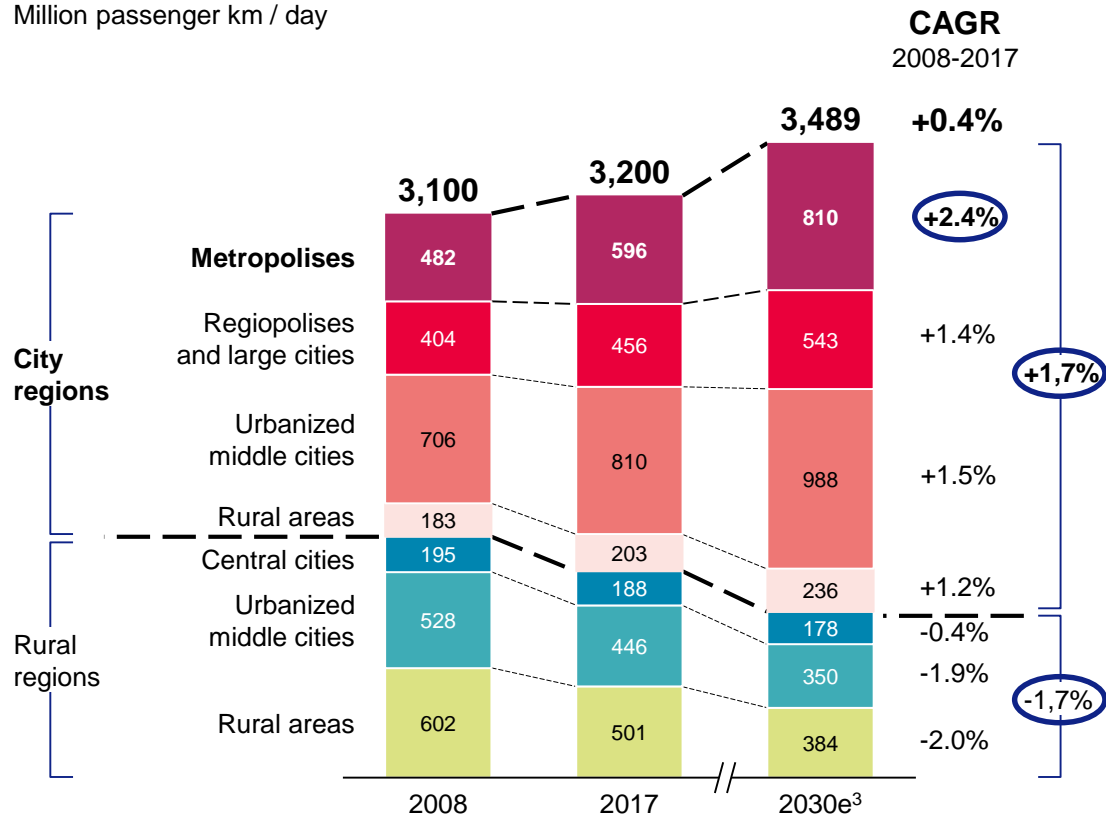


# Traffic volume and level of urbanization in Germany

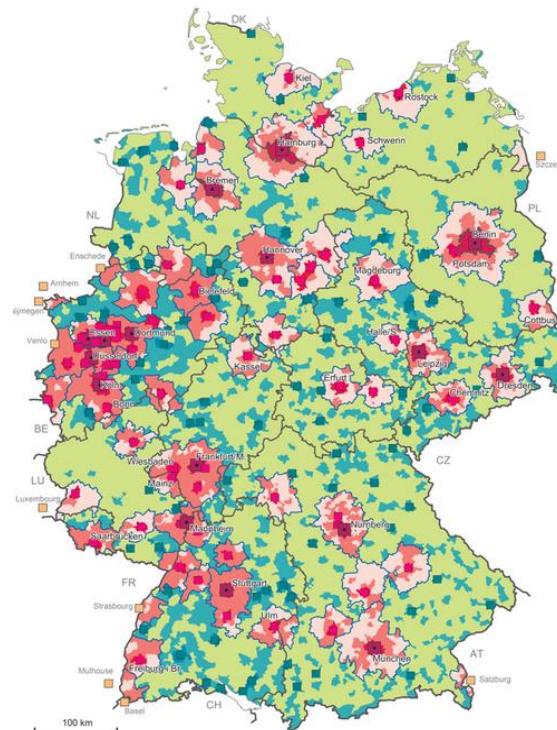
## Passenger km have increased and will increase further in city regions, esp. metropolises

### Development of daily passenger km by residential areas<sup>1</sup>

Million passenger km / day



### Map of residential areas<sup>2</sup>



### Key Insights

- Total passenger miles increasing
- Shift from rural to city regions
- Largest increase in passenger km in metropolises adding up to a total growth of 36.9% from 2017 to 2030
- Resulting traffic density facilitates alternative modes of transport
- City regions will play the leading role in future mobility

1) Based on a survey with 316,361 participants in Germany in the period from May 2016 to September 2017, taking into account all modes of transport 2) see BBSR 2018

3) Development under the assumption of a constant annual growth rate

Source: Infas & DLR "Mobilität in Deutschland" 2018, BBSR "Regionalstatistische Raumtypen" 2018, mm customer strategy

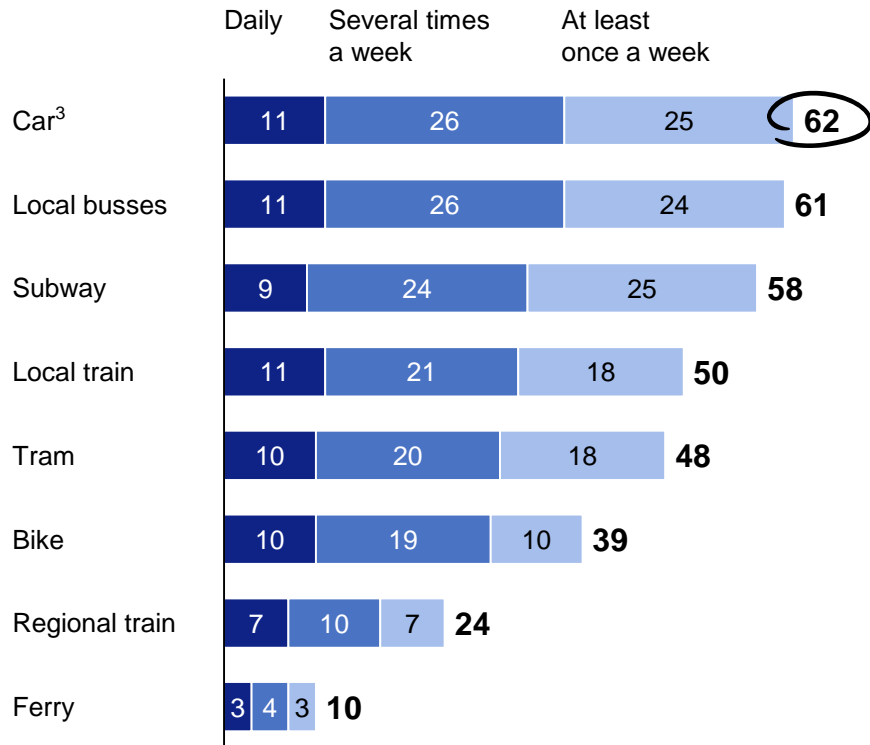


# Usage frequency of transport modes and attitudes towards motoring

Cars, local busses and subways are used most frequently in Germany's biggest cities; in general, Germans are still very car-affine, but attitudes are changing over time in society

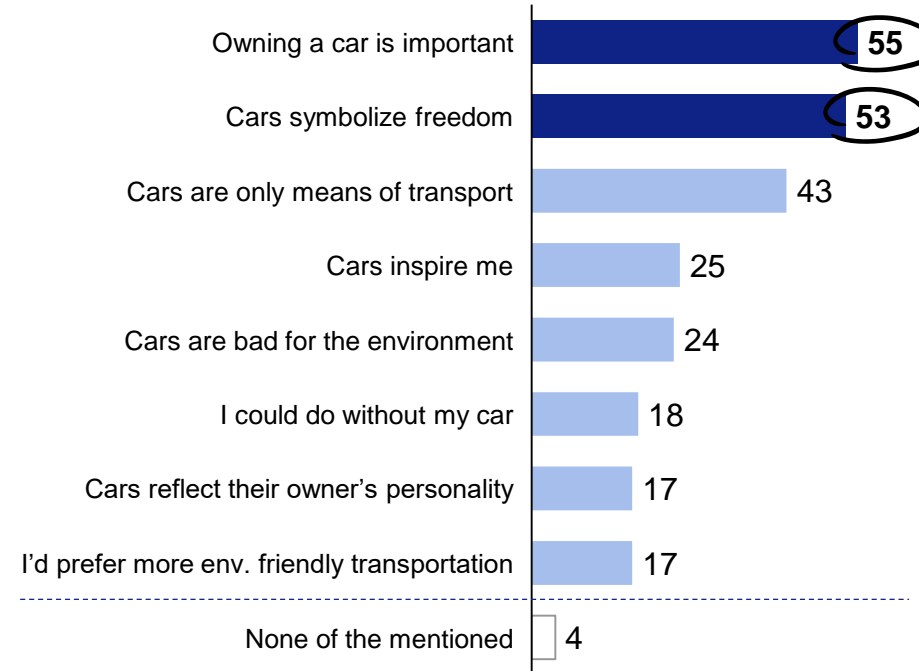
## Usage frequency of transport modes

% of participants



## Attitudes towards motoring<sup>2</sup>

% of participants agreed



## Remarks

- Cars used most often
- Individual transportation stays important and more than 50% of the population still see cars as symbols for freedom
- Individual transportation is generally important source for future premium services
- Importance and emotional relatedness to own car differ between groups: decline among younger and urban population

1) Based on a survey with 2,106 participants, living in the area of the 10 largest cities in Germany in the period from February 17th to March 6th 2017

2) Based on survey with 2,080 participants, representative for the population in Germany, in the period from November to December 2017 3) 2017 value including car sharing

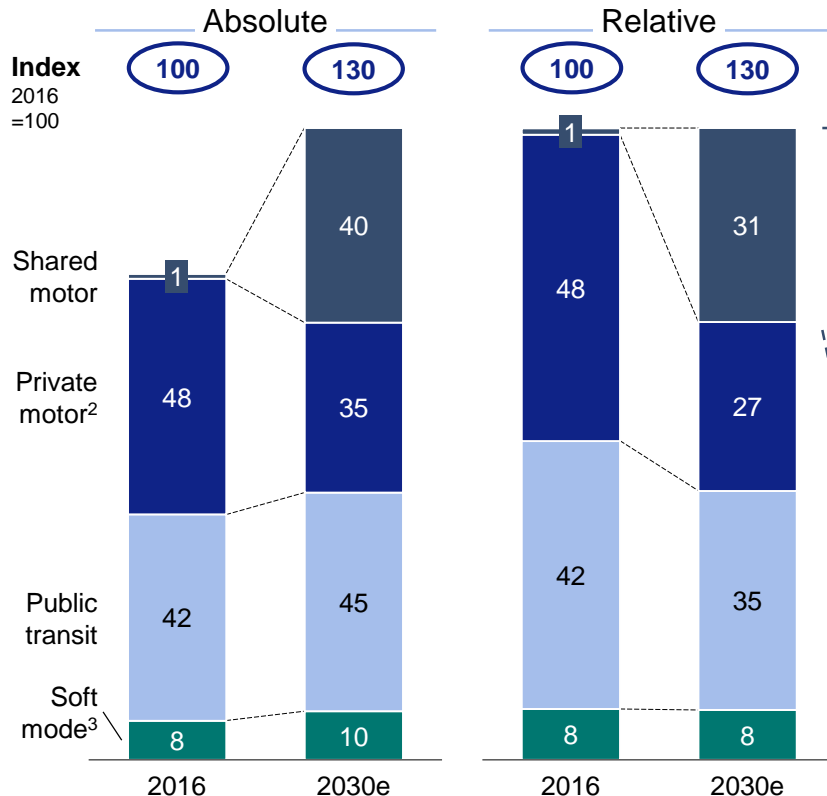
Source: Infas & DLR "Mobilität in Deutschland" 2018, Statista "Global consumer survey 2018" 2017, mm customer strategy

# Mobility development: Example travel in high-income metropolises

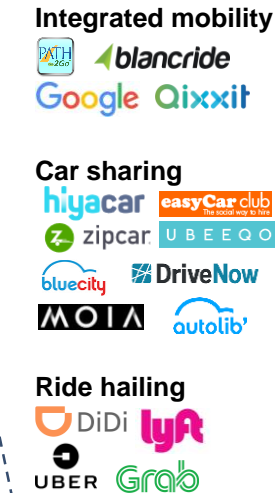
Metropolises like London: traffic to increase especially at the benefit of shared motoring concepts; beyond this, new transportation modes must be taken into account in the future

## Modal split in high-income metropolises<sup>1</sup>

Modal share of passenger miles



## Transport players



## Change drivers in metropolises

### Environmental footprint

- Higher immediate impact from pollution
- Low emission-zones incentivise electrification

### Space restrictions

- Autonomous driving reduces need for parking facilities
- Air and underground offer additional space for intracity transportation

### Existing infrastructure

- Higher need for a unified solution for intermodal transportation (integration)
- Better first / last mile solutions for new modes of transport

## Remarks






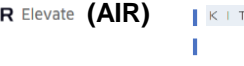










- Importance of non-car modes of transport much higher in metropolises like London
- Traffic density already expels transportation from the road to alternative spaces, effect will be amplified in the future
- Competitors for new modes of transport in metropolises are not only cars but also public transportation services

1) e.g. London, Singapore, Shanghai 2) Including two-wheel 3) Walking and bicycles  
 Source: McKinsey "An integrated perspective on future mobility" 2016, mm customer strategy

# Vertical take-off and landing (VTOL): Existing concepts

Diverse market with a variety of concepts, mostly fully electric (eVTOL)

## Attributes Concepts<sup>1</sup>

Name	 AIRBUS Pop.Up Next	 VOLOCOPTER 2X	 WORKHORSE SureFly	 AIRBUS Vahana	 EHANG 84	 UBER Elevate (AIR)	 KITTY HAWK Cora	 LILIUM Jet
								
<b>Max. altitude</b>	n/a	1,650 m	1,200 m	n/a	500 m	305 m	900 m	n/a
<b>Max. speed</b>	100 kph	100 kph	120 kph	175 kph	60 kph	241 kph	180 kph	300 kph
<b>Range</b>	100 km	27 km	60 min	100 km	25 min	96 km	100 km	300 km
<b>Propulsion</b>	Fully electric	Fully electric	Gas with range ext.	Fully electric	Fully electric	Fully electric	Fully electric	Fully electric
<b>Charge time</b>	15 min.	40 min.	n/a	n/a	60 min.	5-15 min.	n/a	n/a
<b>Capacity</b>	2 passengers	2 passengers	2 passengers (180 kg)	1 passenger	1 passenger (100 kg)	4-5 passengers	2 passengers	2 or 5 passengers
<b>Costs</b>	n/a	n/a	\$200,000	n/a	\$200,000 - \$300,000	n/a	n/a	\$350,000
<b>Status</b>	n/a	Manned test flight, int.national safety conditions fulfilled	Manned test flight	Prototype	Manned test flight	Still in planning stage, demo flights in 2020, launch planned in 2023	Prototype	Prototype

1) Exemplary, without multi-modular and long-distance concepts

Source: Developer websites (Airbus & Italdesign, Volocopter, Workhorse Group, A<sup>3</sup> by Airbus, Ehang, Uber Technologies, Kitty Hawk) last accessed August 6th 2018, mm customer strategy

# mm customer strategy – At a glance

Leading global strategic research in automotive, telecommunication, finance & insurance

## TOPICS

- Marketing, brand (portfolio) strategy, positioning
- Market entry / go-to-market strategy
- Market structure & migration; market sizing / forecasts, business cases / business planning
- Strategic segmentations, potentials, personas
- Digital / innovation / co-creation
- Customer experience / journey / touchpoints
- Satisfaction, loyalty, NPS
- B2B, B2C, B2D, B2E<sup>1</sup>

## SOURCES

- Primary market research (own studies)
  - Quant: Online, CATI, face2face
  - Qual: Focus groups, scrum groups, IDIs, online communities, (C-level) expert interviews
  - All continents / global coverage
  - Renown & specialised field partners
- Customer / CRM data
- Desk research

## OUR MANAGEMENT

### Yvonne Martini

Managing Partner



- 17 ys top-mgt. strategy consulting
- 14 ys int. market research
- Formerly Roland Berger Strategy Consultants (project manager)



Leading global strategic market research

- Market / customer segmentation
- Regression, factor, cluster, discriminant analyses
- Structural equation models (PLS), driver analyses, FiMix models
- Advanced conjoint analyses, e.g. menu-based conjoint, ACBC
- Behavioural economics

### Dr. Markus Müller-Martini

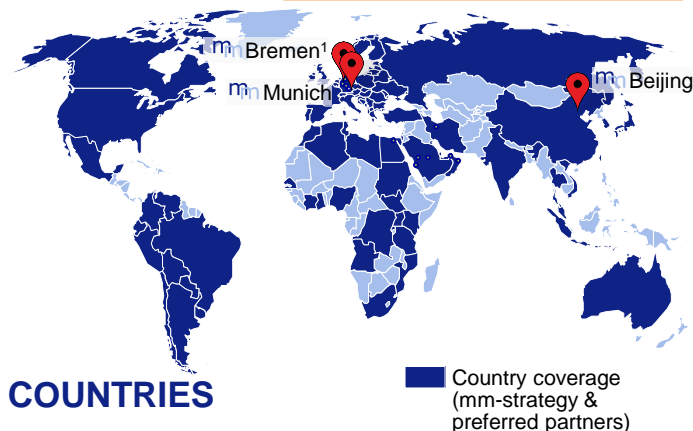
Managing Partner



- 17 ys top-mgt. strategy consulting
- 14 ys int. market research
- Formerly Oliver Wyman Consulting (project manager)



## METHODOLOGIES



1) Q1/2019

Source: mm customer strategy

mm-strategy\_Outlook Mobilität\_PM\_Charts\_Vfinal\_201809124.pptx




CUSTOMER SCIENCE MEETS STRATEGY


B2B: Business-to-Business, B2C: Business-to-Consumer, B2D: Business-to-Dealers, B2E: Business-to-Employees



CUSTOMER  
SCIENCE  
■ MEETS  
STRATEGY

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