

## Insurance industry emerging opportunities fueled by new mobility trends

*Autonomous Driving*

Round table

Rome, December 15<sup>th</sup> 2017



# ADL Global Mobility Study has developed a 360° perspective on automotive megatrends and their impact

## About the Study\*

### Interviews

#### A Drivers

6,500 End  
Customers

Updated  
perspective on  
customers  
acceptance

#### B Industry players

100+ Industry  
leaders  
25+ Global players

Holistic and sound  
picture of market  
development  
scenarios

10 Countries

## Investigated new automotive trends

1

Autonomous Driving



2

Car Sharing / Peer to Peer



3

Electric Mobility



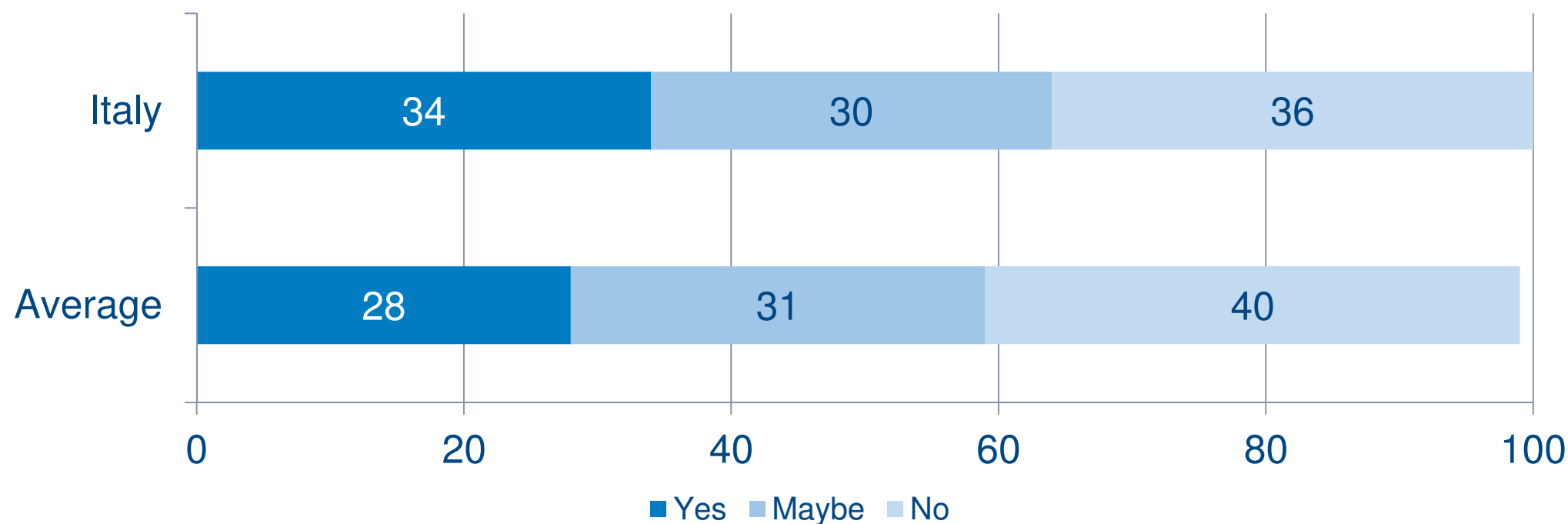
New automotive trends will require  
Insurance Providers to develop new  
business models

\* 6,500 drivers, 100+ industry leaders, 25+ global players. Countries: USA, China, France, Germany, Italy, Japan, South Korea, Spain, Sweden, UK

# Autonomous vehicles show high acceptance by one third of drivers

## Acceptance: Fully autonomous cars (%)

Question: Would you use cars that were fully autonomous?

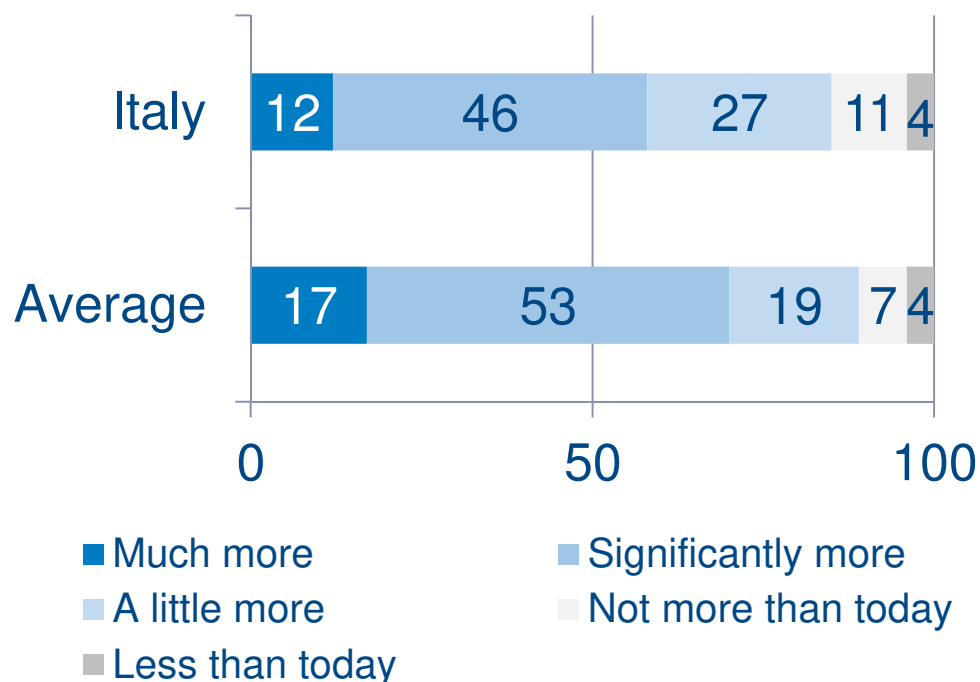


▶ Without having seen or tested any autonomous vehicle, one third of current car users clearly accepts autonomous driving

## Autonomous driving is expected to lead to an increase in driven kilometers and replacement of public transportation

### Driven kilometers (%)

Question: How much more would you use your own vehicle if fully or partly autonomous driving was available?



### Transport replaced by fully autonomous vehicles

Question: if you used an autonomous vehicle, what form of transport would it replace?

Long distance

30%

Train

Short distance

53%

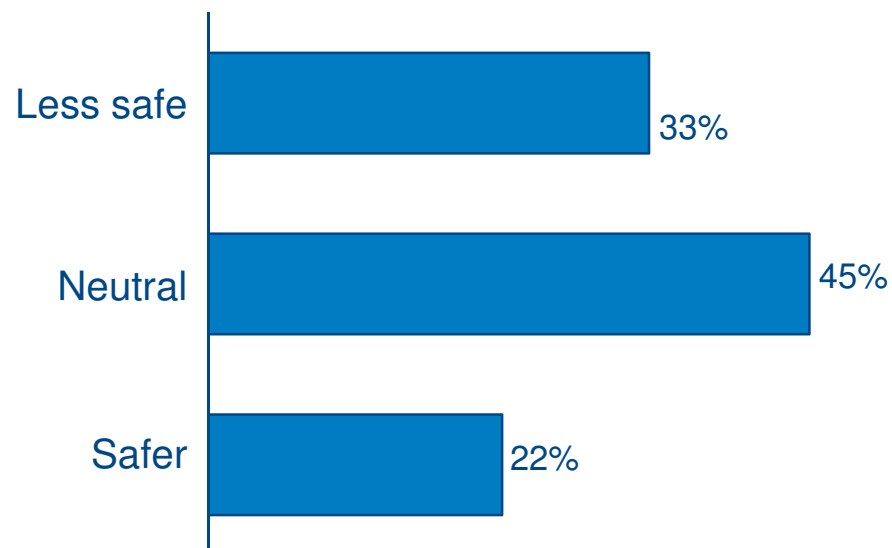
Public Transportation and Taxi

More driven kilometers and public transportation replacement would turn into increasing risks under the insurance perspective

## Half of the people are neutral toward safety of autonomous vehicles and most of the people concern on data security

### Safety vs. conventional vehicle

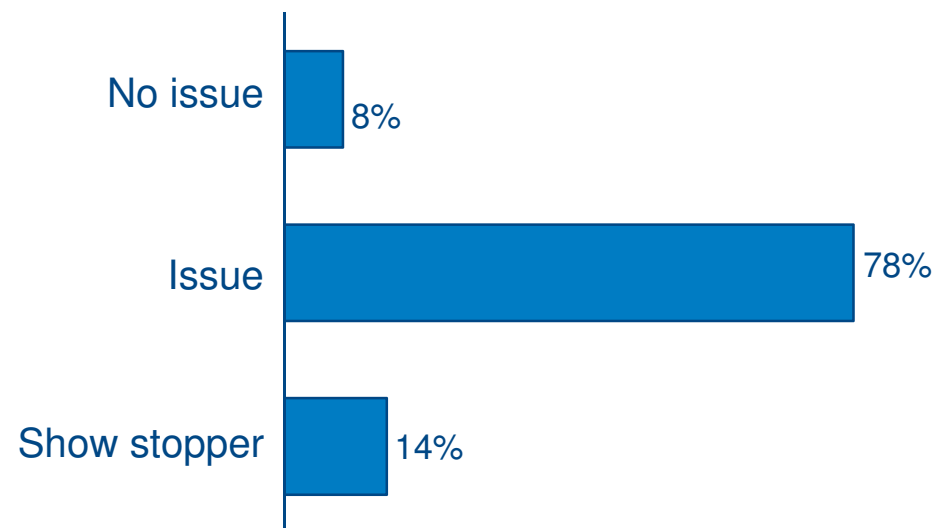
Question: How much do you trust the safety of autonomously operating vehicles?



▶ Only one third of respondents (33%) claim that the autonomous vehicle is less safe than traditional one

### Data security

Question: How concerned are you about security of your personal and private data with regard to autonomous driving?



▶ Most of the people included in the sample (92%), concern about their data security

## Autonomous driving can be disruptive for current insurance business model, starting with two notable effects

### Shift in liability

- Driver less responsible vs enhanced product liability
- Car manufacturer potentially assuming product liability

### Shift in data

- Large amount of recorder data to be analyzed
- Punctually recorded data per journey vs messy processes of subjective reminiscences in case of accident
- Successful insurers will be those engaging with this data rich environment so that insurance products mirror the coming changes in the mobility

▶ The twin shift of data and liability will require Insurance Operators to reconsider their product offering

# Autonomous driving requires considering heavy changes in the future potential scenario for insurance providers

## Potential scenario

Scenario	Impacts and risks	Potential insurance impact
Mid-long term (10-15 years)	<ul style="list-style-type: none"><li>▪ Fewer / no human errors allowed anymore</li><li>▪ Decrease in driver skills due to increasing reliance on automated systems</li><li>▪ Potential for complex litigation to assign liabilities in case of losses</li><li>▪ Potential for accident or business interruption due to system mishandling or software error</li></ul>	<ul style="list-style-type: none"><li>▪ Underwriting focus on systems vs drivers</li><li>▪ Impacts on pricing models, mixing product and driver liability, depending on who is driving and for how long</li><li>▪ Preliminary changes in primary distribution (customers will be few automakers worldwide)</li><li>▪ Global insurance coverage required (each global automaker could require max two / three insurance providers worldwide)</li></ul>

► Insurance Companies should assess the potential evolution scenario in the Autonomous Driving market and related insurance business opportunities



# 5 levels of autonomous driving

## 5 Levels of autonomous driving

Level 0	<ul style="list-style-type: none"><li>Basic. The driver (human) controls it all: steering, brakes, throttle, power</li></ul>
Level 1	<ul style="list-style-type: none"><li>Most functions are still controlled by the driver, but a specific function (like steering or accelerating) can be done automatically by the car</li></ul>
Level 2	<ul style="list-style-type: none"><li>Both steering and acceleration/ deceleration using information about the driving environment is automated, like cruise control and lane-centering. It means that the "driver is disengaged from physically operating the vehicle by having his or her hands off the steering wheel AND foot off pedal at the same time</li></ul>
Level 3	<ul style="list-style-type: none"><li>Drivers are still necessary in level 3, but are able to completely shift "safety-critical functions" to the vehicle, under certain traffic/environmental conditions. The driver is still present and will intervene if necessary, but is not required to monitor the situation in the same way it does for the previous levels</li></ul>
Level 4	<ul style="list-style-type: none"><li>Fully autonomous. Level 4 vehicles are designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip. However, it's important to note that this is limited to the operational design domain (ODD) of the vehicle—meaning it does not cover every driving scenario</li></ul>
Level 5	<ul style="list-style-type: none"><li>This refers to a fully-autonomous system that expects the vehicle's performance to equal that of a human driver, in every driving scenario—including extreme environments like dirt roads</li></ul>





# Technology is not the only development driver of the autonomous car, other factors impact on the speed along the road to the robot car

## Autonomous driving accelerator

Accelerator	Description
Regulatory authorities	Some authorities, such as Singapore, Gothenburg and California, are acting as early adopters of the autonomous car, encouraging the development of autonomous technology on their roads
Pressures of urbanization	Autonomous car technology could be seen as particularly attractive to those urban areas suffering chronic congestion
Consumer preference	Different consumer groups may benefit from greater vehicular autonomy: the elderly and the disabled, in the first place, as well as time-poor workers and long-distance commuters
Generation shifts	Whether younger generations strive to own their own car is long debated. A number of countries already have car sharing schemes, which may appeal more to younger drivers, particularly when education and housing costs are rising faster than potential incomes
Cost	Partially and fully autonomous car prices will gradually fall, so that they will become part of the standard product offer very quickly

## Insurance industry emerging opportunities fueled by new mobility trends *Car Sharing and Peer to Peer*

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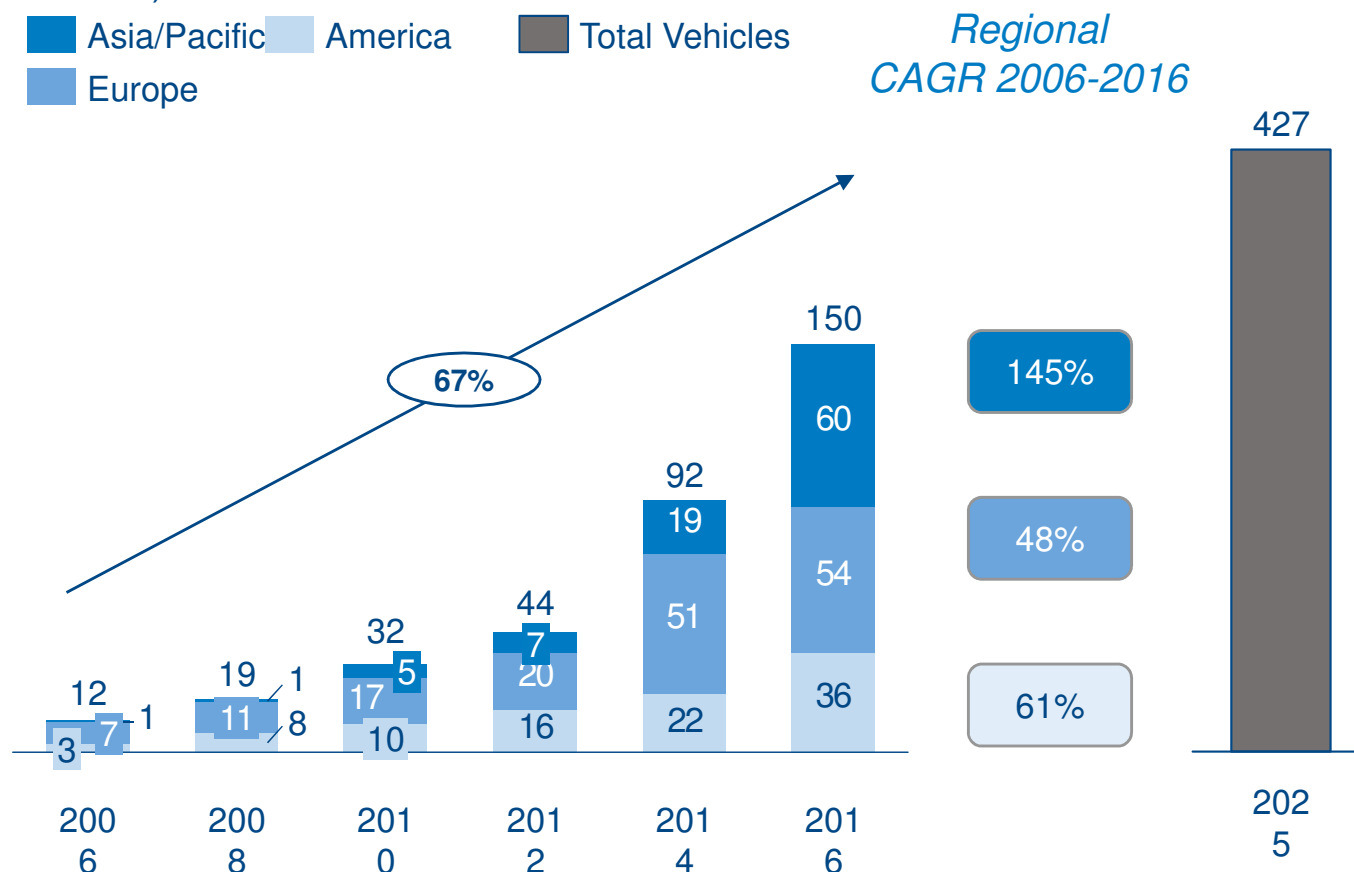


## 427 thousand shared vehicles are expected globally by 2025

### Global car sharing market – # vehicles, 2006-2025 [units]

### Comments

(units '000)



- Global Vehicles base as of 2016: ~150 thousand
- 2006-16 Vehicles CAGR: ~67%
- By 2025 427 thousands units expected to be running
- Asia is the market with the fastest growing dedicated vehicles: 145% p.a.

Source: Arthur D. Little analysis on market data

# Car sharing enabling criteria were identified that would definitely help drivers consider new mobility services instead of owning a car

## Criteria to increase car sharing

Question: What would encourage you to use shared cars more often?

Better pricing

53%

Higher  
availability of  
cars

30%

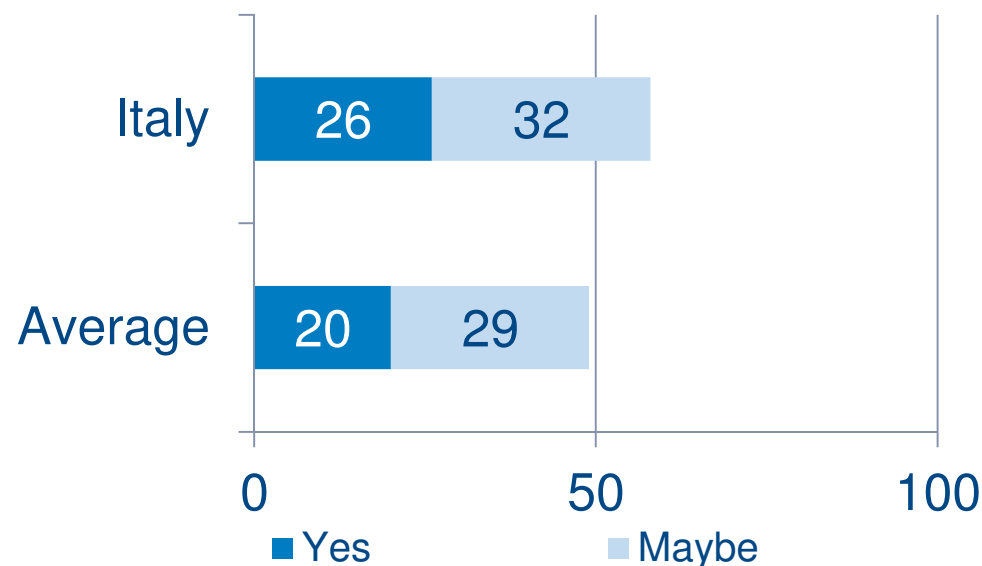
More pick-up /  
drop-off  
stations

26%

Lower prices are the most important enabling driver for customers

## Importance of car sharing vs own car (%)

Question: If there were appropriate car sharing and new mobility services, would you consider to get rid of your own car?

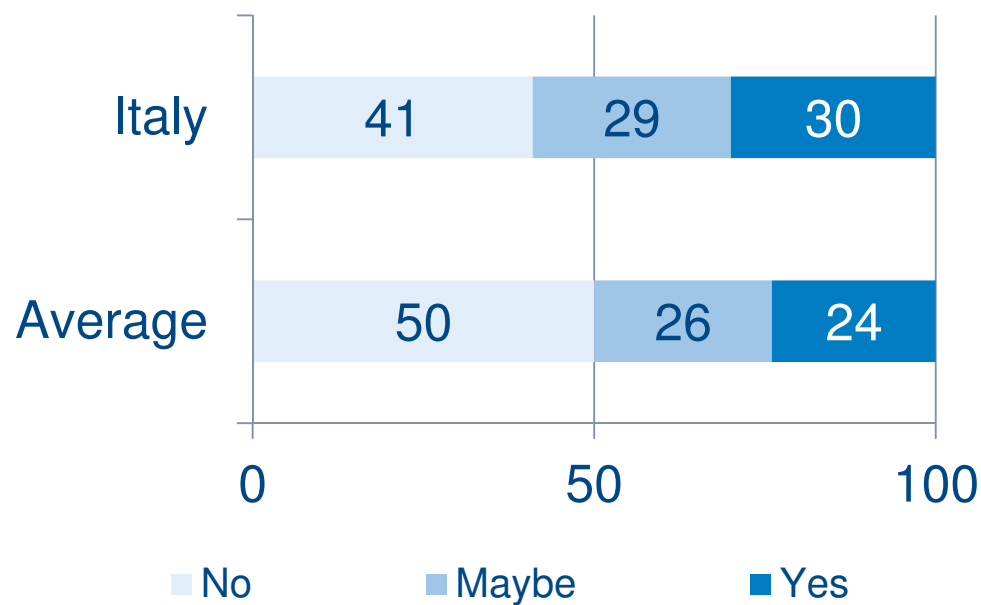


Half of end customers would use shared car

## Many people would consider to share their private car though key responsibility and rules requirements need being clear before

### Openness to share the private car (%)

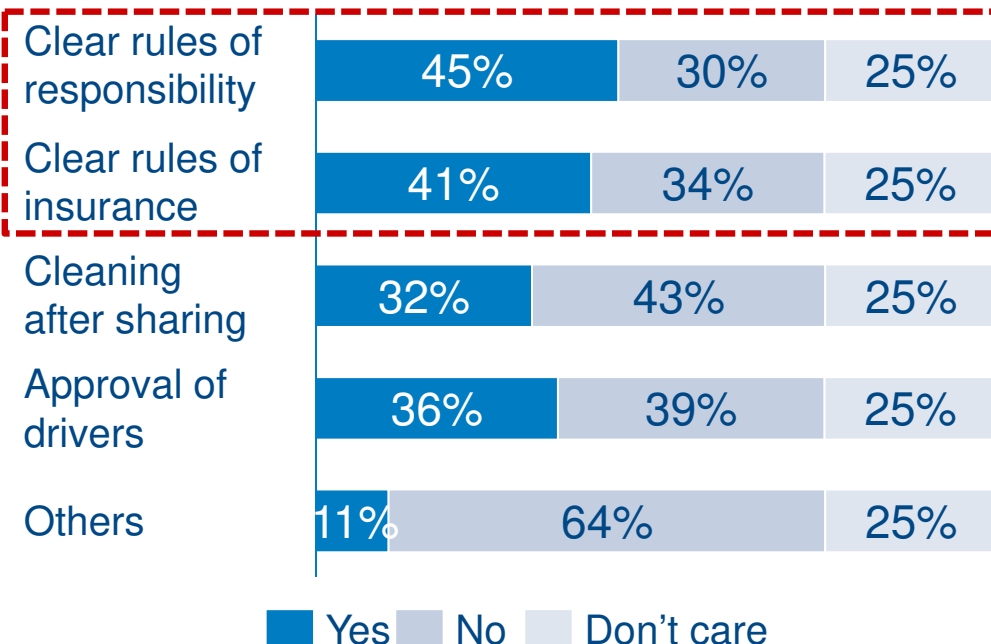
Question: Do you expect to share your car in the future?



▶ Around half of owners would consider sharing their private car – opening room for a new shared car business model

### Car owners requirements to share their car

Question: What would encourage you to consider sharing your private car?



▶ Responsibility and clear insurance rules are key requirements for a peer-to-peer car share business model

## Car sharing and peer to peer look like additional transportation means but not substituting and still have challenges ahead

### Car Sharing

### Peer to Peer

#### Market growth considerations

- Growing trend but little volumes impact
- Additional transportation mode but not substituting
- Not disruptive

- Emerging trend
- Growth capabilities to be investigated

#### Challenges

- Potential reduction of private cars stock with impacts on:
  - RC premium collection
  - Cross-selling opportunities

- Regulation side, related to e.g. private car registration purpose (not commercial), private drivers acting as rentals, multiple insurance on the same vehicle
- Insurance side: risk definition related to a driver that is not owner and to the commercial use of the vehicle

► Insurance Companies should deepen regulation and insurance challenges in the perspective of potential business growth opportunities

# Arthur D Little

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