Driverless Cars – The future of road transport and the implications for insurance

David Williams, Technical Director, AXA Insurance

Chartered Insurance Institute

Standards. Professionalism. Trust.

@AXADavidW

Learning Objectives - What will we cover today?

At the end of this event, you will:

- Have gained an understanding of some of the Government backed consortia and why AXA & other insurers are involved in these
- Seen how the UK Insurance industry is responding and the workings of the ABI ADIG
- Understand details of the governments work with regard to making **Connected & Autonomous Vehicles** (CAV's) a reality for the UK
- Be aware of Possible Timelines for the various stages of Driver assistance systems moving through to fully autonomous driving
- Discussed possible impacts of CAV's on the current insurance market, including changes to Motor and Public/Products Liability

Autonomous Driving Insurance Group (ADIG)

Aioi Nissay Dowa Insurance Europe
MS&AD INSURANCE GROUP

CLEAR ▸ CONCISE ▸ CONNECTED

LLOYD'S MARKET ASSOCIATION

Why are Insurers Involved?

35 Million Vehicles
licensed on the road

This figure has increased every year since the end of the Second World War (except 1991)

90%
of all accidents are caused by driver error

1,700+
people died in vehicle collisions in the UK in 2013

Road traffic injuries are the leading cause of death among young people, aged 15–29 years

2,500
lives saved in the UK by 2030

£2,767
average cost claimed for car insurance

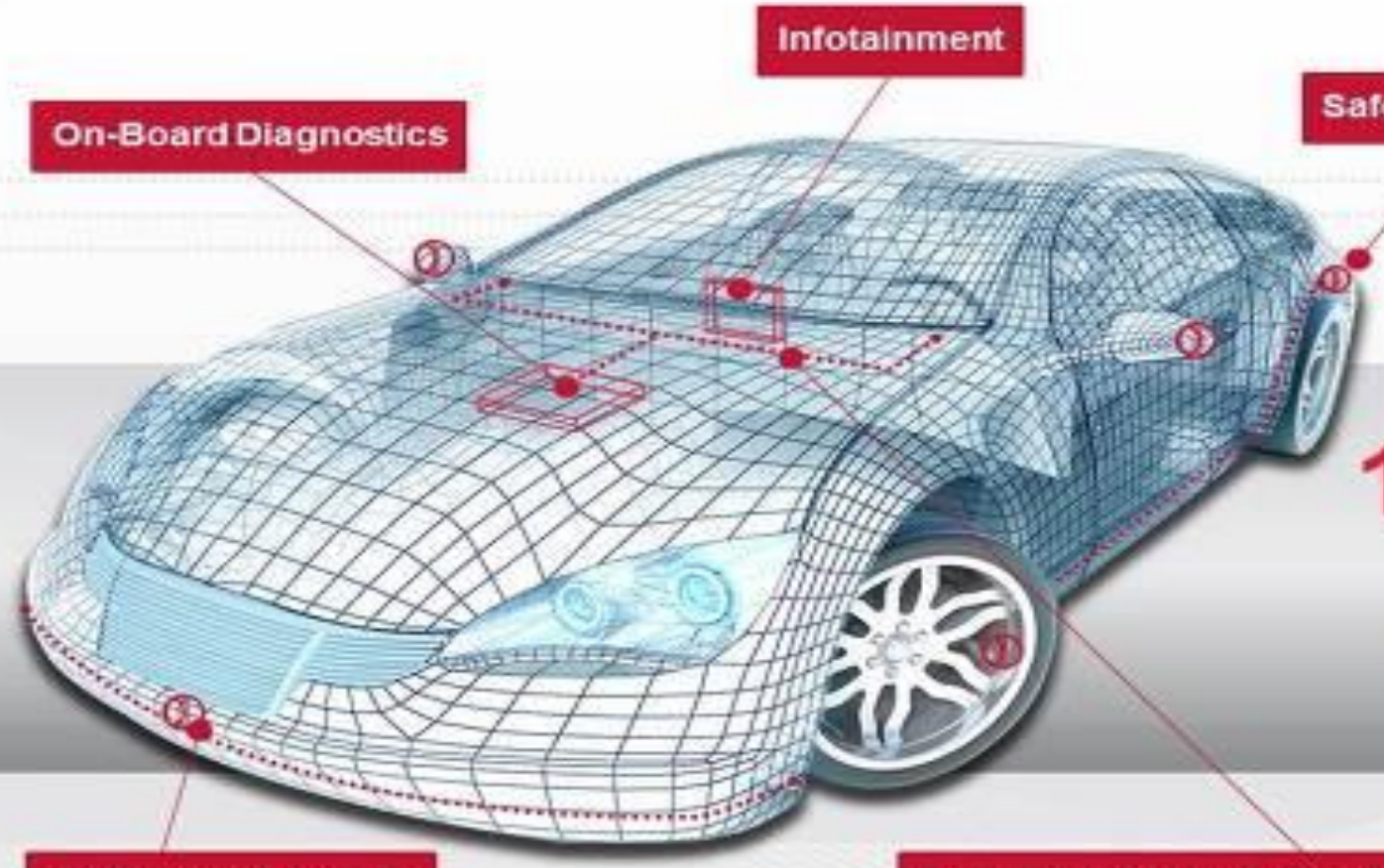
£11,292
average cost claimed for bodily injury

£16bn
annual cost to GB econonmy

46% 17-30 year olds do not hold a full driving licence

Connected & Autonomous Vehicles (CAV's)

THE CONNECTED CAR



"DRIVERLESS CARS"

100% Of cars will be connected by 2025[1]

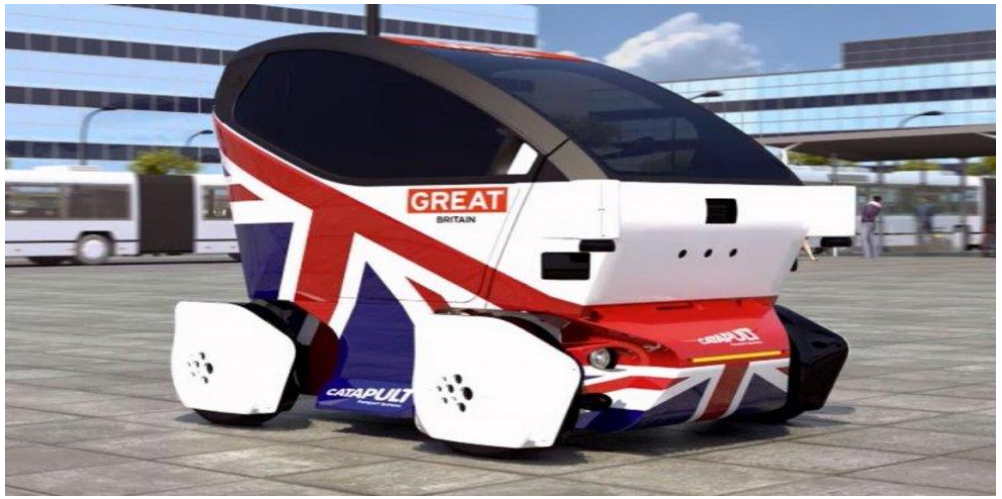
75% Of cars on the road will be autonomous by 2035[2]

Source: [1]GSMA 2013, [2]Navigant Research 2013

Bristol - Venturer

Testing technology plus a focus on legal and insurance implications

Milton Keynes – UK Autodrive



Vehicle Technologies and looking at integrating vehicles into urban environments

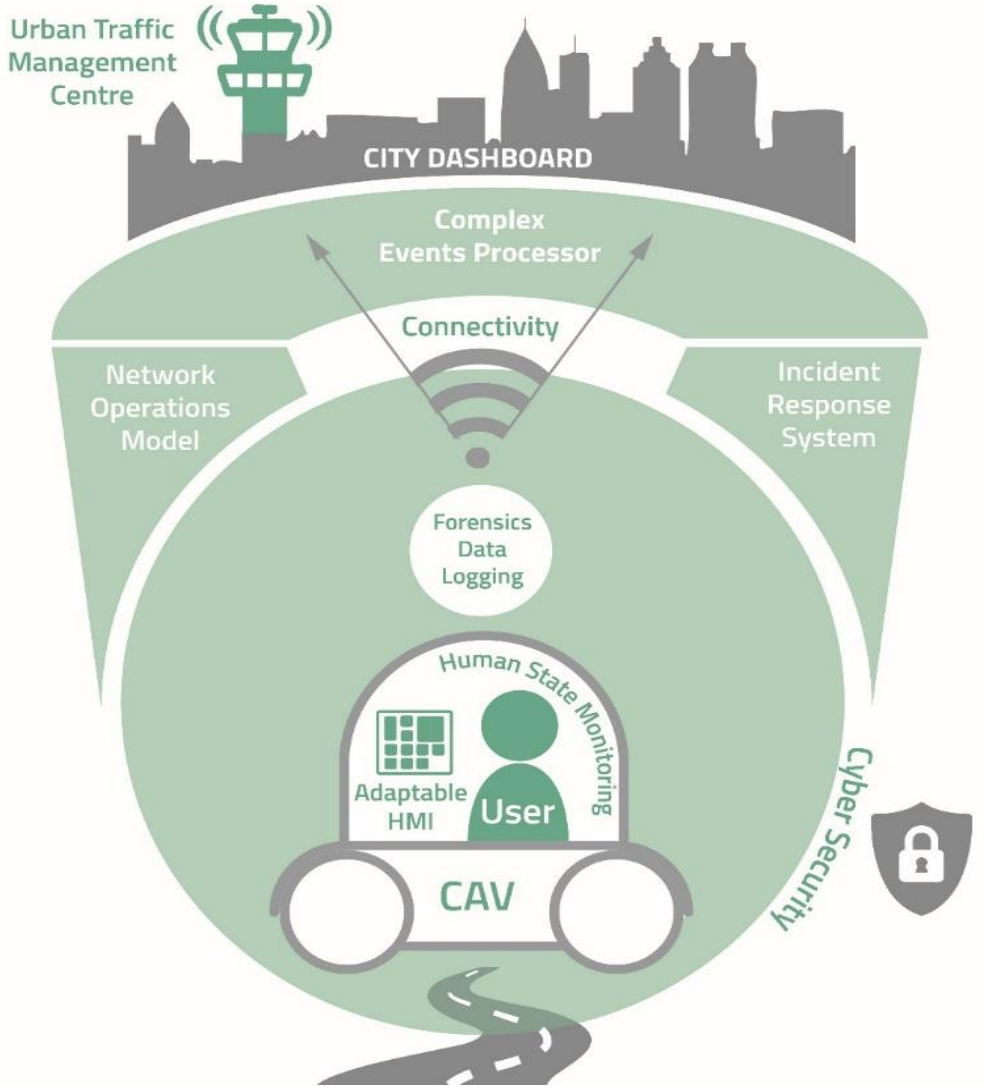
flourish
empowerment through trusted secure mobility

1. To develop an understanding and articulation of user needs and expectations of CAVs in order to maximise the mobility potential they pose.

2. To develop usable adaptive interfaces, performance certification processes and products and services that enable secure, trustworthy and private technology within CAVs.

3. To capture the data created by CAVs to develop innovative new tools and products.

4. To leverage existing investment to expand validation and test capabilities in both urban and interurban networked environments and enhance the commercial opportunities this will deliver.



Flourish, CAPRI & others followed the initial round of investment

CAPRI - Connected & Autonomous POD on-Road Implementation

Project will trial POD mobility service at Queen Elizabeth Olympic Park

Pilot could pave the way for the use of autonomous and connected vehicles in airports, hospitals, business parks and shopping centres

About CAPRI

CAPRI (Connected & Autonomous POD on-Road Implementation) is a large consortium comprising 20 partnering organisations.

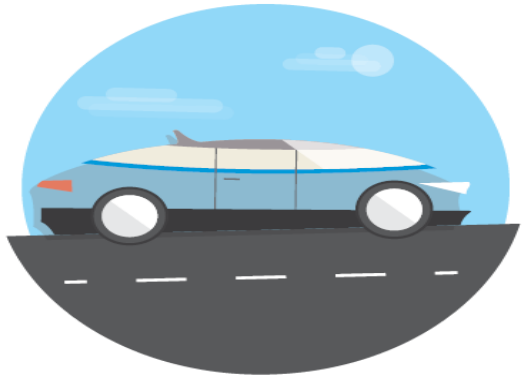
With a strong mix of academia, business and public sector authorities, each member will play an important role in the delivery of the CAPRI mobility service pilot scheme. The 20 CAPRI partners are: AECOM, AXA, Burges Salmon, Conigital, dynniq, ESP Group, Fusion Processing, Heathrow, Loughborough University, NEXOR, Queen Elizabeth Olympic Park, South Gloucestershire Council, Transport Simulation Systems, University of Warwick, University of Bristol, thingful, TVS, University of the West of England, Westfield and YTL.

Back to Bristol & Venturer….

https://youtu.be/k1JRmMA7NqU


BFGoodrich
All-Terrain T/A KO

Consortium Project Prospectus - The 4 'T's!



Transport

The deployment of CAV capability has considerable ramifications on the wider transport sector and cities/communities in general. Key questions that must be addressed relate to the infrastructure investment needed, the data intelligence that can be garnered for a transport operator, and how CAV is one piece of the Smart City puzzle.

Time

CAV deployment is a question of 'when' rather than 'if'. For the UK to create a competitive advantage it is necessary to continue to invest in this area. Significant growth potential exists as well as growing global competition. The UK must maximise the opportunities that regulation currently provides and aggressively target market growth in the areas of testing and validation.

Testing

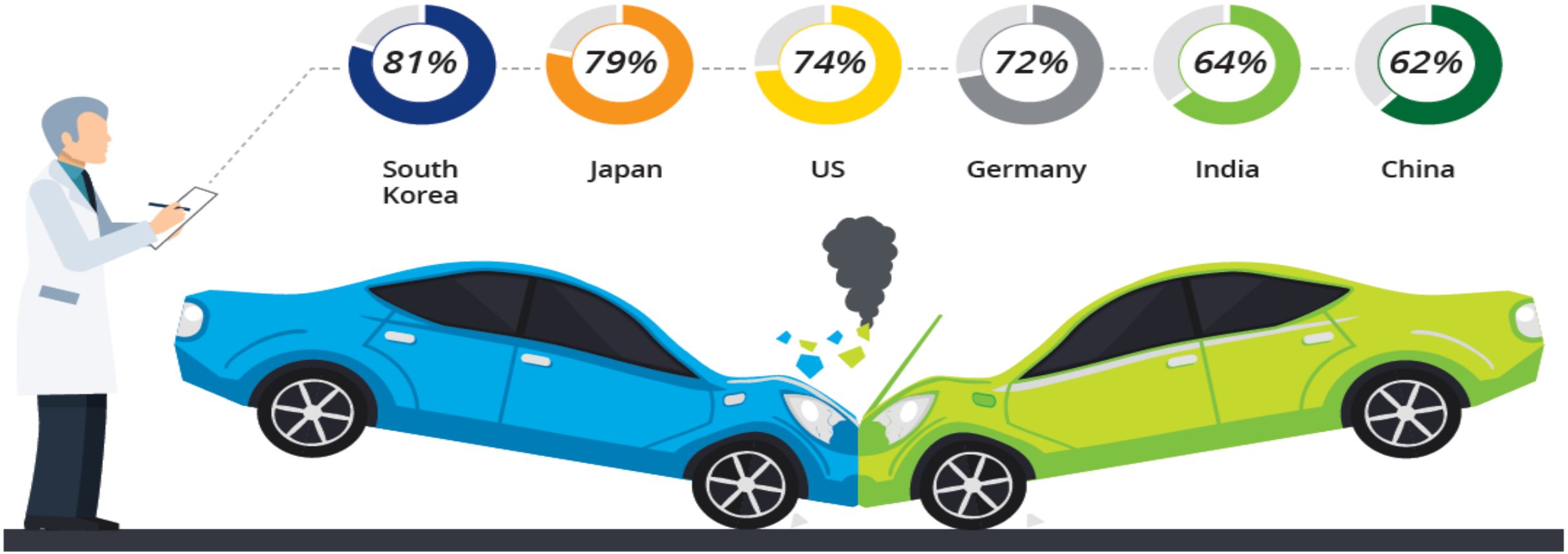
Independent validation is fundamental to emphasise the capability and safety of any solution in the CAV space. It is vital that appropriate and audited testing takes place in a controlled environment before any deployment takes place in. As the software and hardware components come from multiple vendors and integrated numerous ways, the various levels of testing required must be fully understood and integration with primary and secondary parts must be considered. The communications backbone must be robust and secure with a realistic urban backdrop. This is necessary to fully understand real life deployment issues.

Trust

People must believe and trust the technology they are using. They must feel safe and want to use/buy new services that CAV open up to them rather than being sold solutions that are not fit for purpose or for person. CAV must be safe, secure and valued by the consumer and understanding the behaviour and emotions around CAV is an important step towards deployment.

TRUST?

Percentage of consumers who feel full self-driving vehicles will not be safe



Source: Deloitte Global Automotive Consumer Study

Do people actually want ‘Driverless Cars’?

1. Overall, consumers are skeptical about driverless cars:

nerdwallet

76% Would not put a child into a driverless car for a trip alone

50% would not pay extra for a driverless car

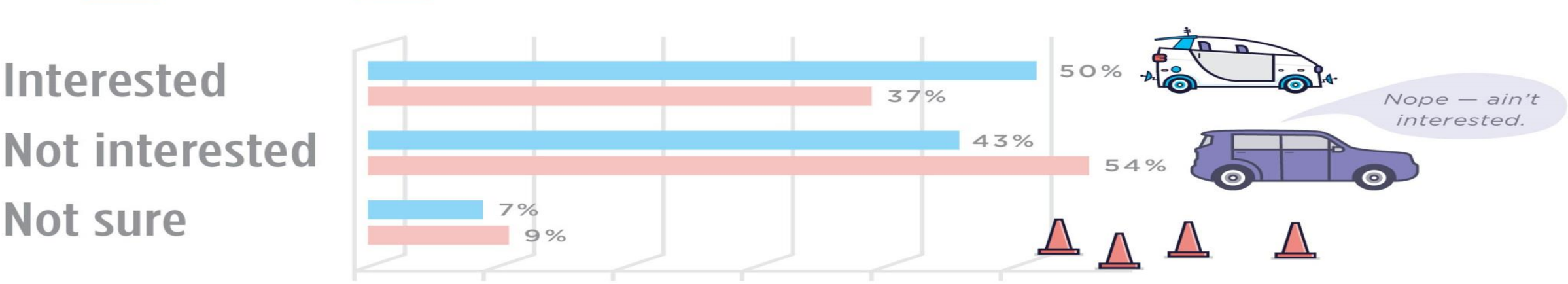
49% Are not interested in owning a driverless car

46% Think driverless cars will not be safe

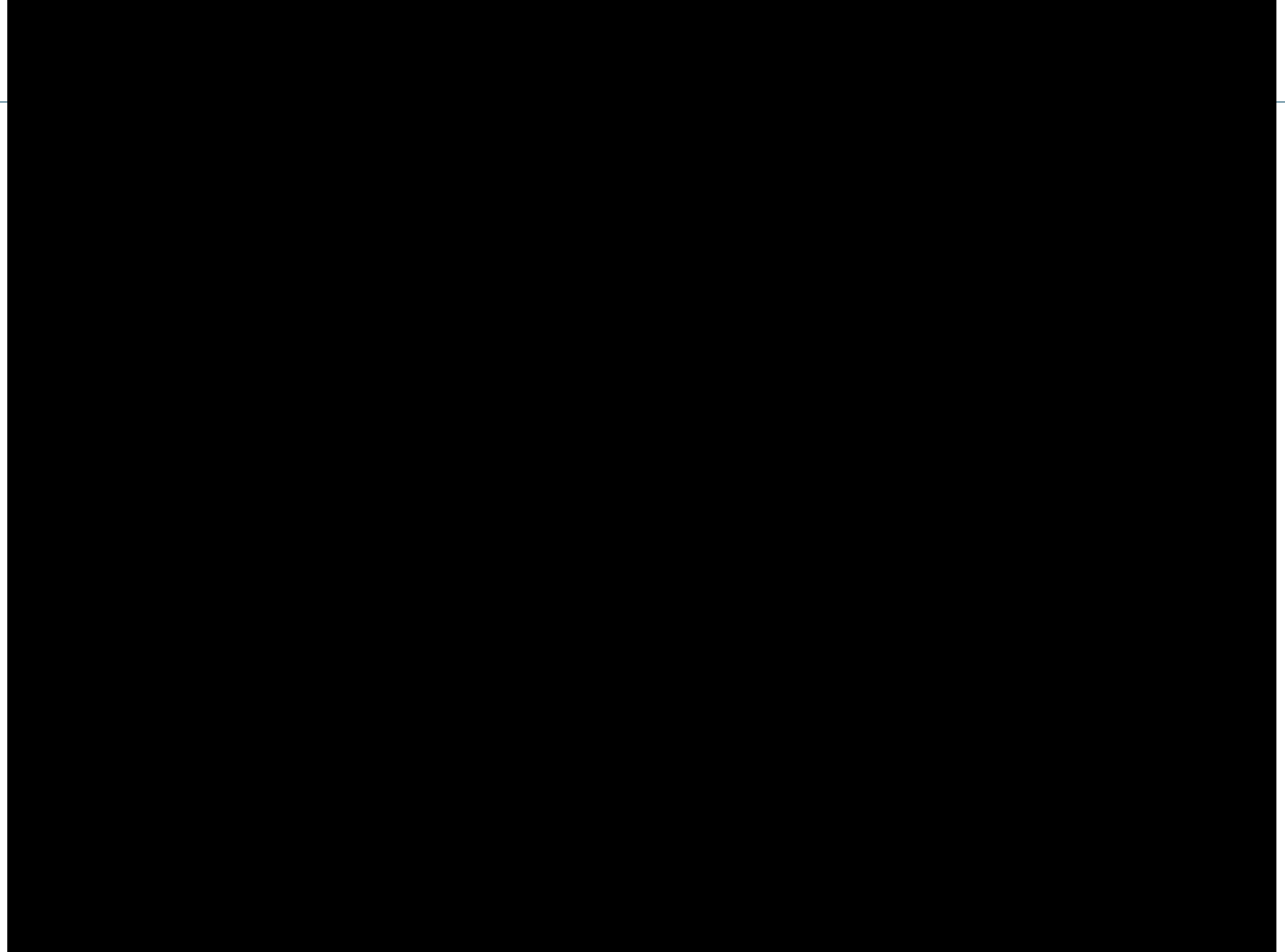
36% Say nothing appeals to them about a driverless car

2. Interest in owning a driverless car:

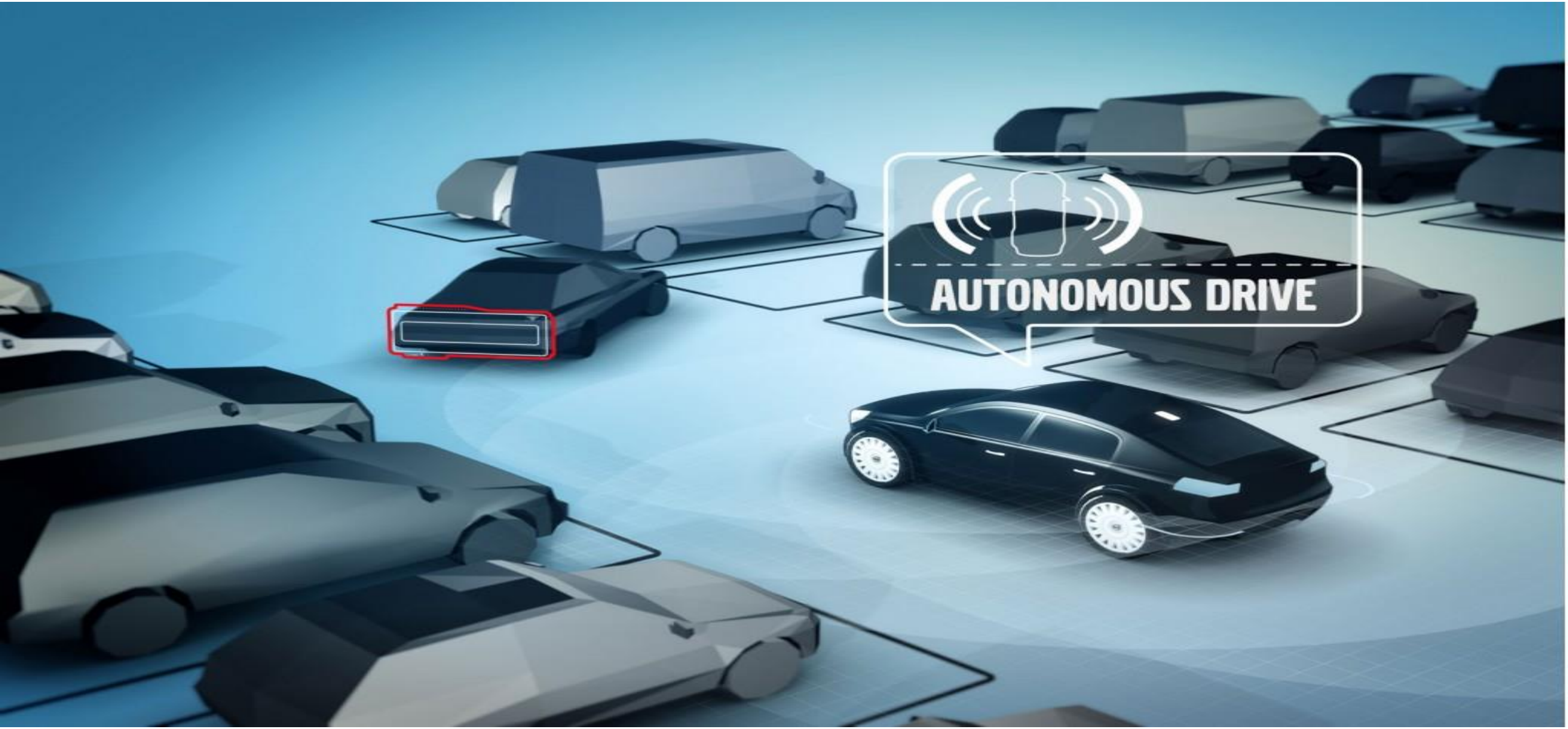
nerdwallet



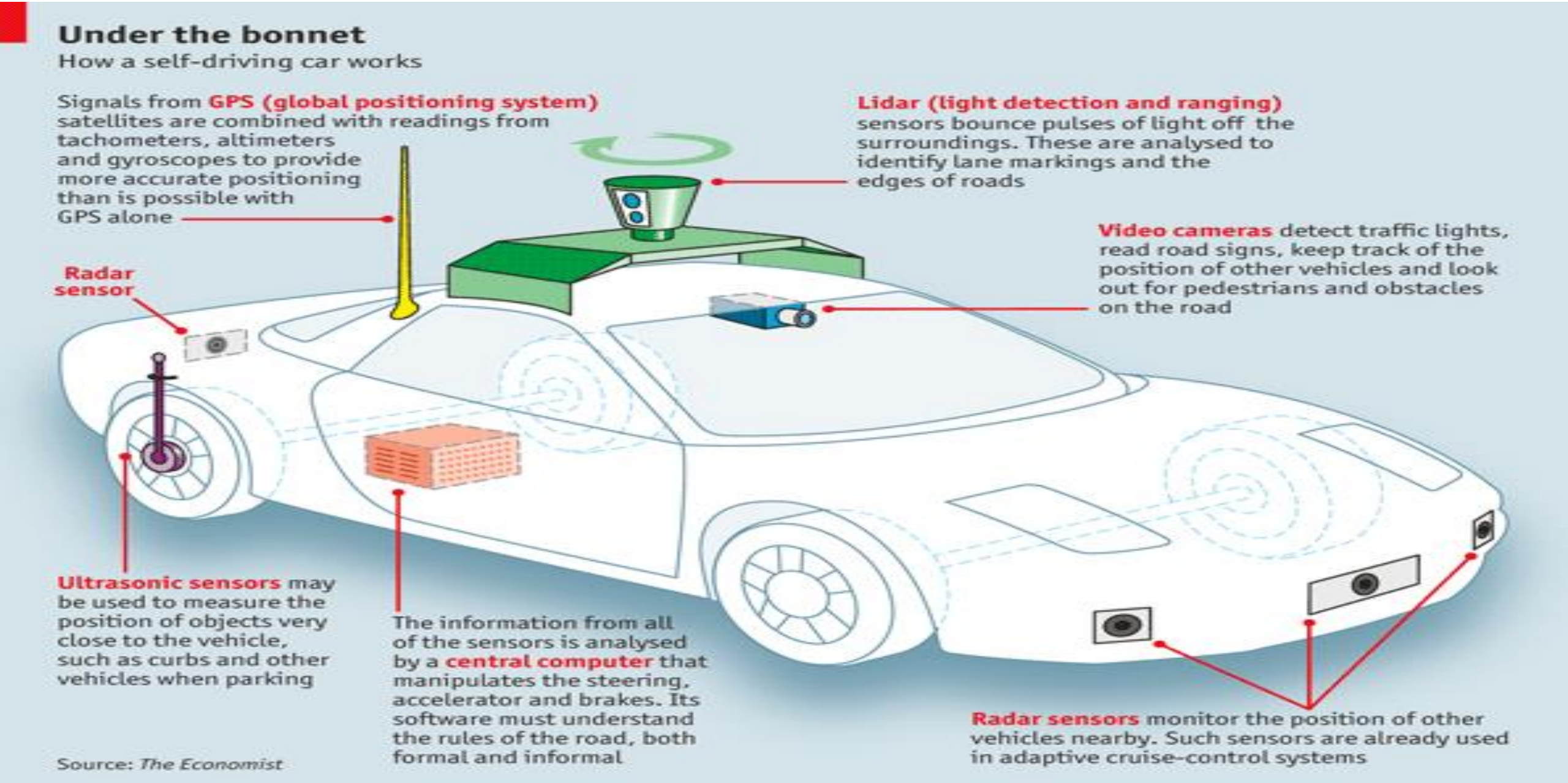
Public Perception – A History of Distrust & Fear



TRANSPORT - Integrated Solutions & Wider Implications



TESTING – Understanding the Technology



AUTOMATION LEVELS OF AUTONOMOUS CARS

LEVEL 0

There are no autonomous features.

LEVEL 1

These cars can handle one task at a time, like automatic braking.

LEVEL 2

These cars would have at least two automated functions.

LEVEL 3

These cars handle “dynamic driving tasks” but might still need intervention.

LEVEL 4

These cars are officially driverless in certain environments.

LEVEL 5

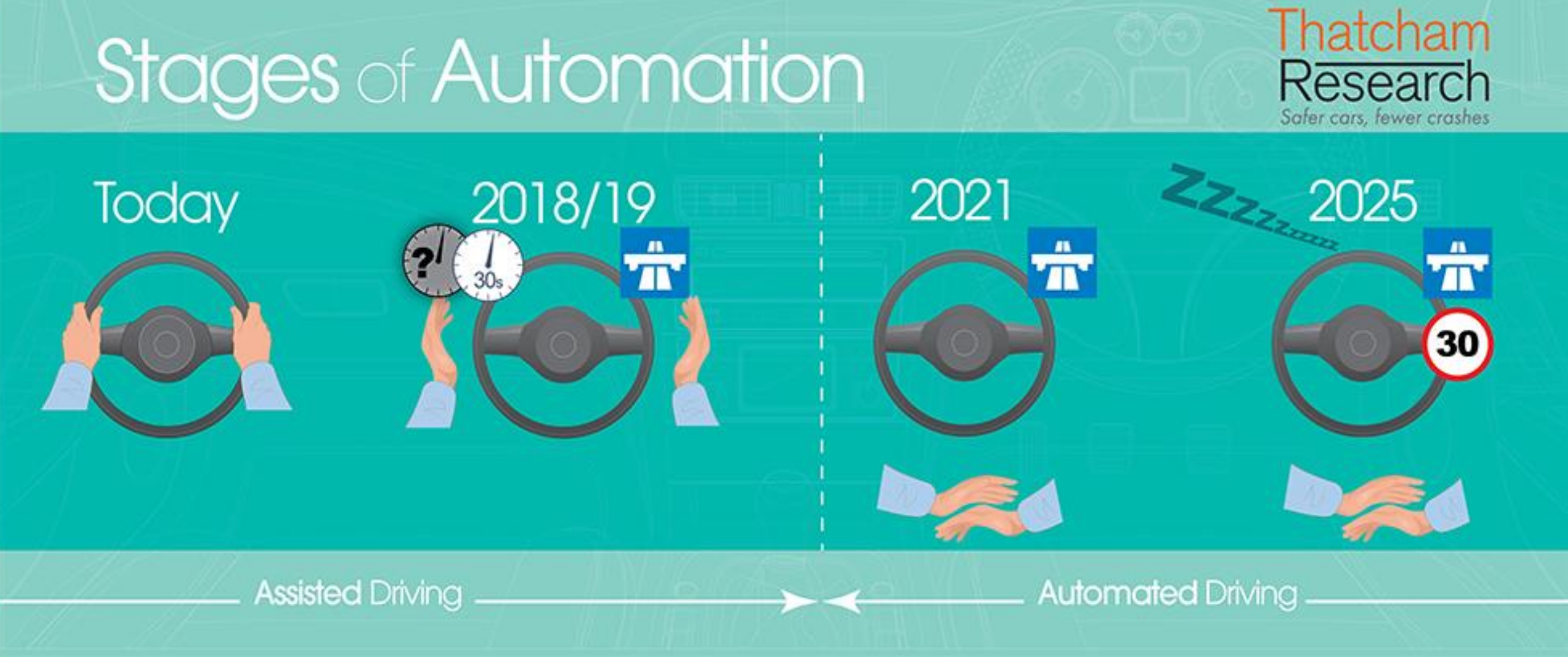
These cars can operate entirely on their own without any driver presence.

From ADAS to Automated Driving

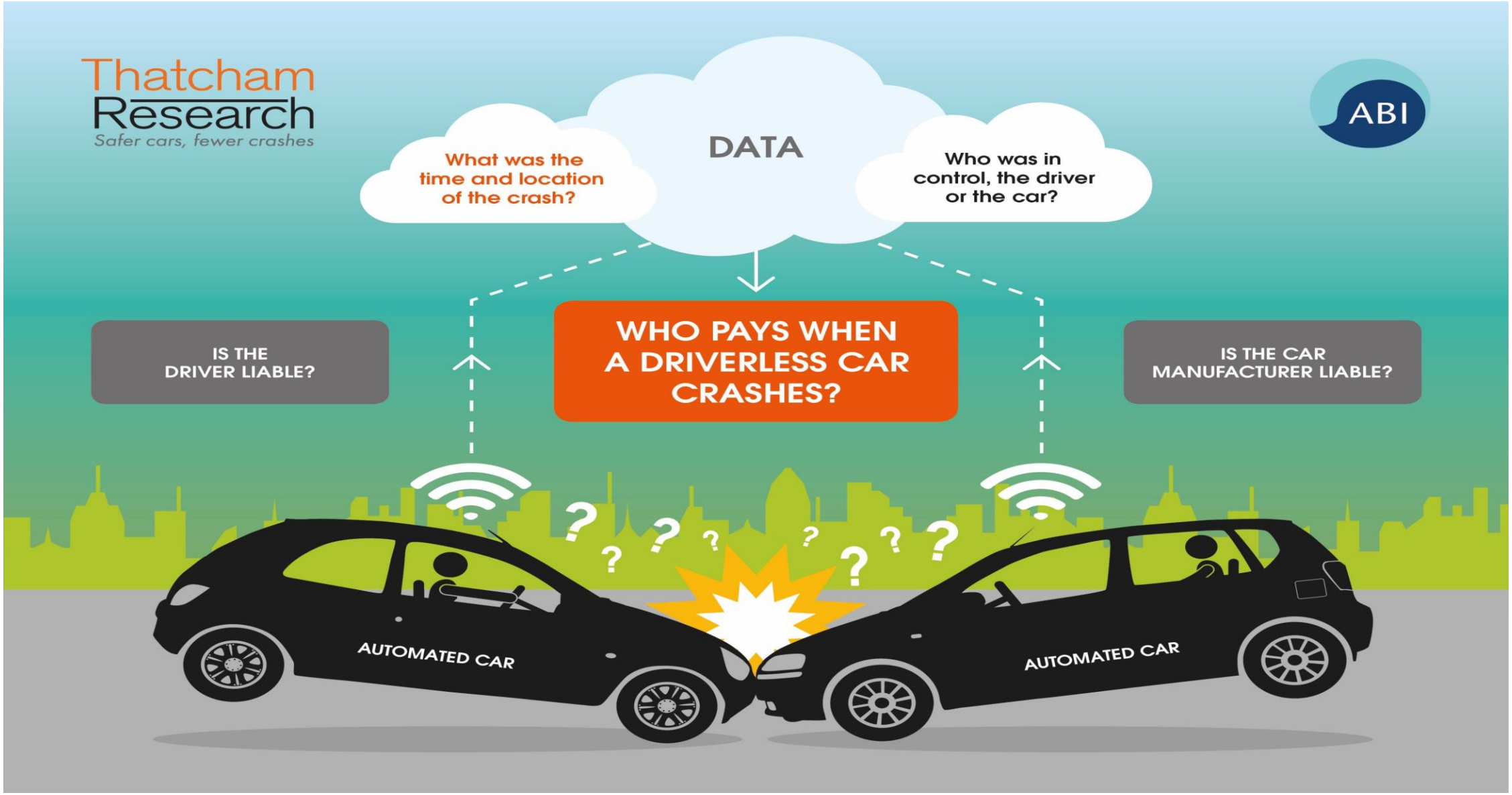
SAE Level	0	1	2	3	4
	None	Assisted	Partial	Conditional	High
Estimated Timeline	Current	Current	2016	2018	2021
Control of steering, throttle, brakes	Driver	Driver & Vehicle	Vehicle	Vehicle	Vehicle
Monitoring of driving environment	Driver	Driver	Driver	Vehicle	Vehicle
Responsibility if driver fails to take control when requested	Driver	Driver	Driver	Driver	Vehicle
System capable in…	No capability	Some driving modes	Some driving modes	Some driving modes	Some driving modes

- Driver perception could be that vehicle is responsible…
- But vehicle is not responsible yet

TIME – Crystal Balls at the ready!



Modern Transport / Vehicle Technology & Aviation Bill / Automated and Electric vehicles Bill - The Big Question - Who Pays?



UK Department for Transport proposal

UK Government's policy aim:

- Ensure there is compulsory insurance requirement to protect victims in collisions involving a highly automated vehicle; and
- The process for the victim to make a claim is not significantly different from claims arising from conventional crashes.

Their proposed solution:

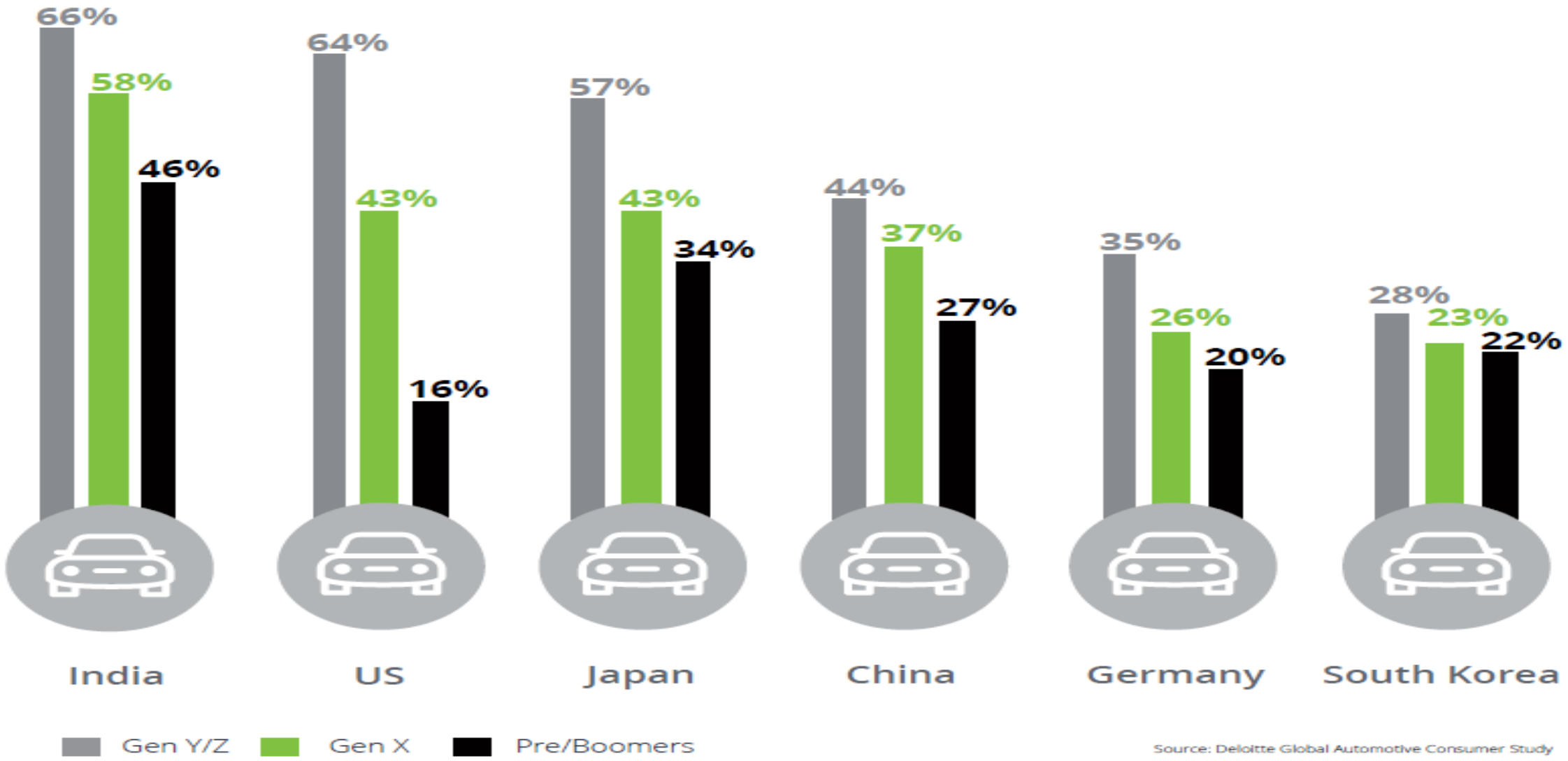
- Don't change the civil liability regime;
- First route for the victim is via the driver/policy holder of the highly automated vehicle
- but… ***require that the owner has legal responsibility for making sure there is in place an insurance policy that includes cover for the manufacturer's and any other entities' liability***.

AXA Report on Commercial Vehicle Impact

Estimated Savings over 10 years

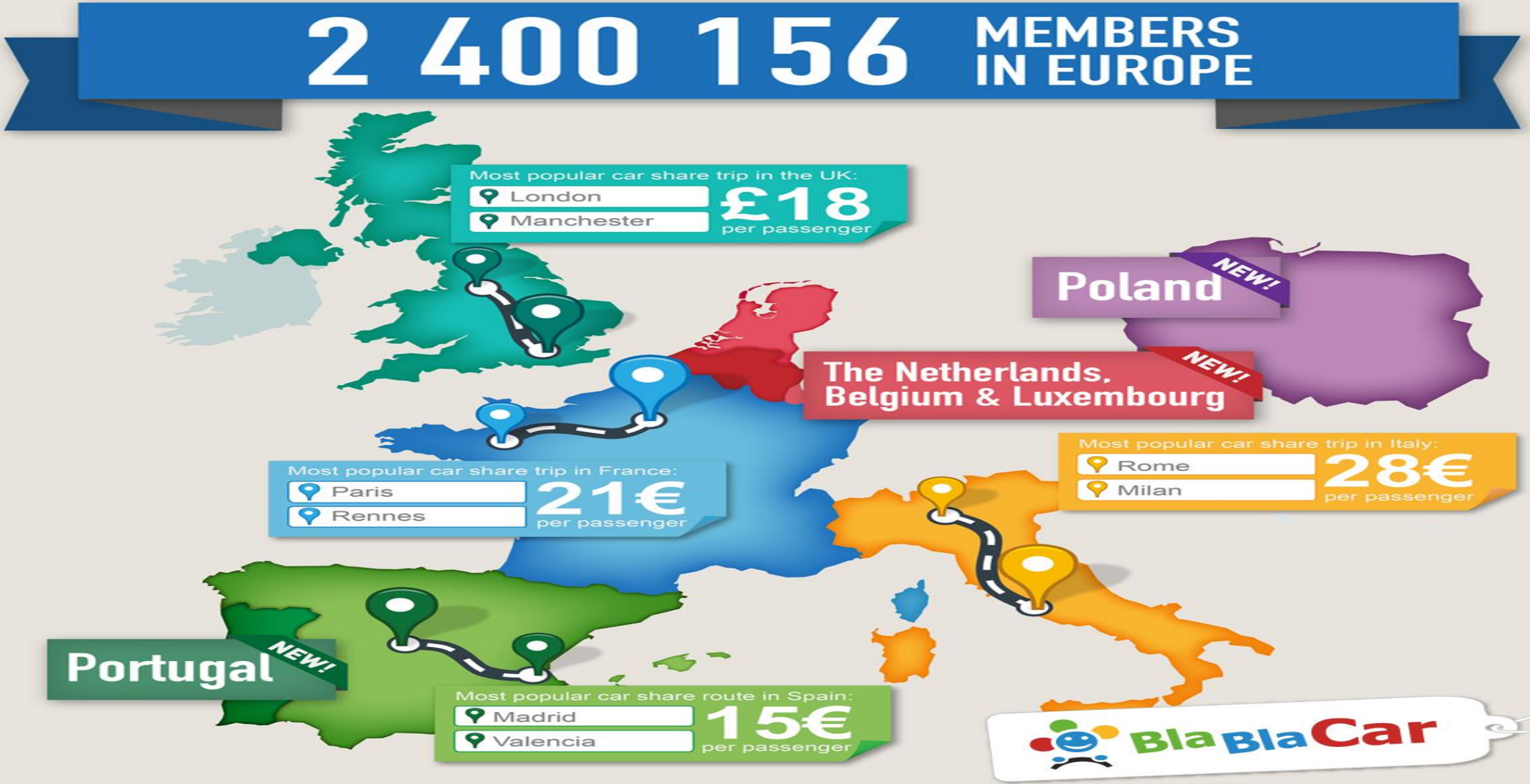
Society - Sharing and The Uber Effect?

Percentage of consumers who use ride-hailing services that question whether they need to own a vehicle in the future, by generation



Source: Deloitte Global Automotive Consumer Study

Sharing Society

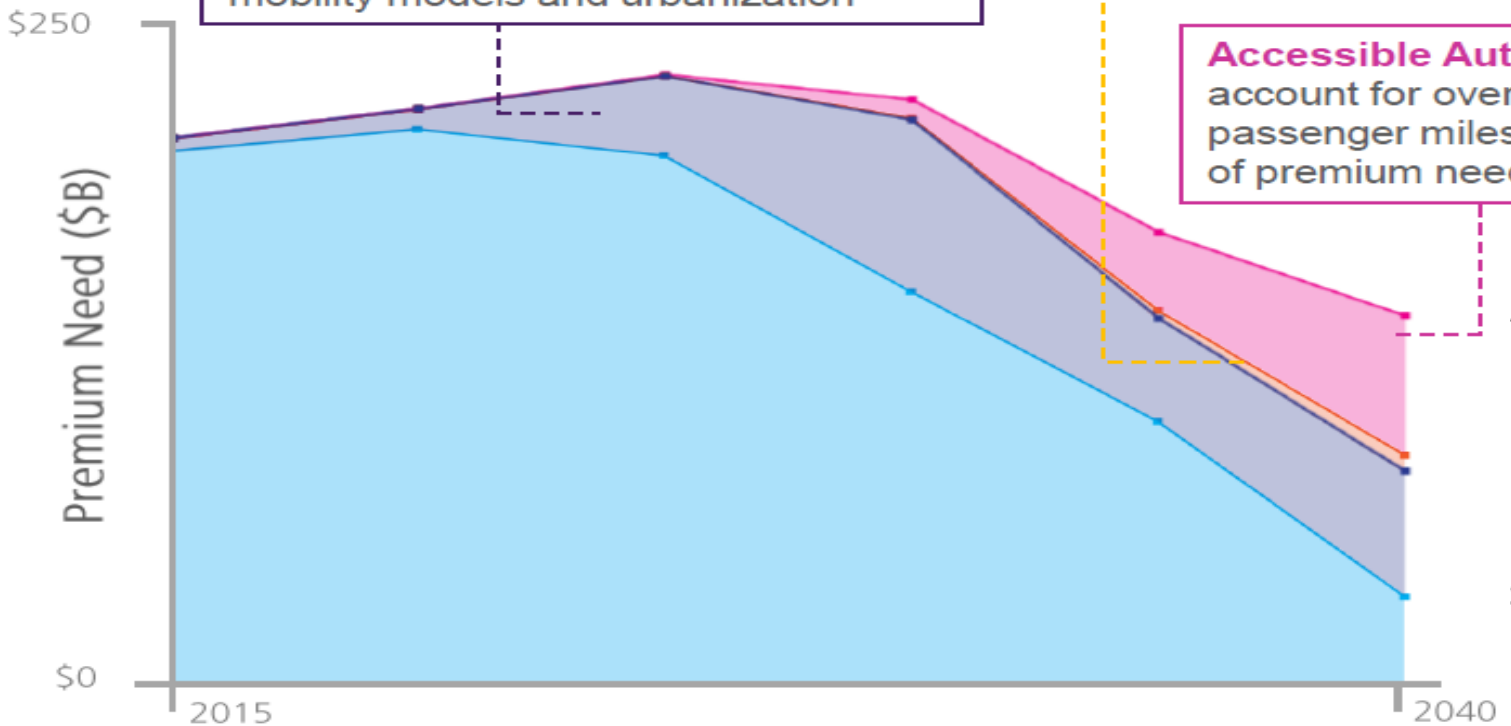


The premium mix will move away from traditional auto policies and decline overall

A World of Carsharing emerges in the mid-2020's as a significant market segment due to emergence of new mobility models and urbanization

The Driverless Revolution does not project to be a significant portion of the total market in the near future

Accessible Autonomy will account for over 60% of passenger miles and 25% of premium need by 2040



Innovator View:

As much as 80% of premium need in the future will be for new models of insurance

1 Incremental Change

2 A World of Carsharing

3 The Driverless Revolution

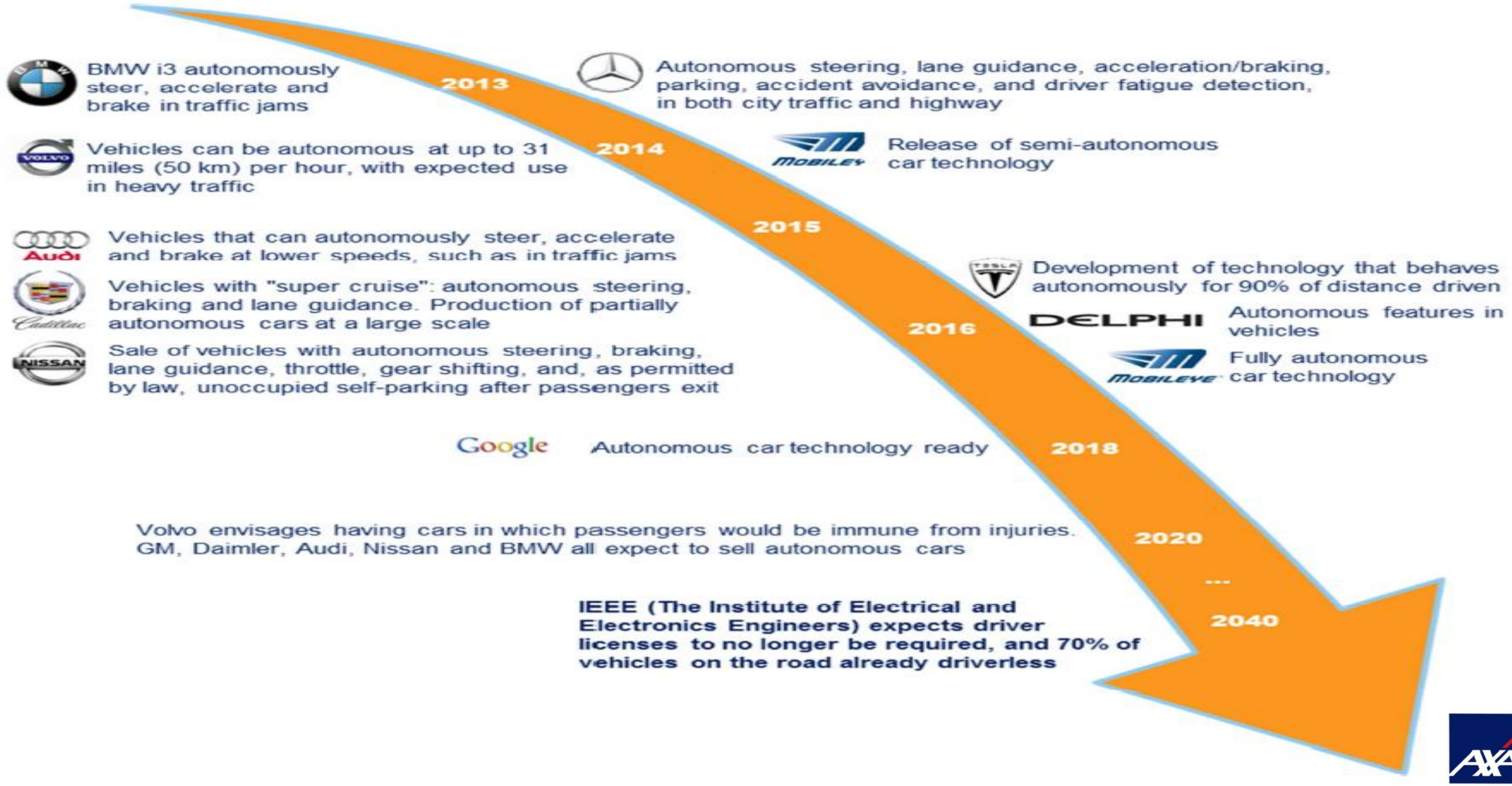
4 Accessible Autonomy

Source: Deloitte analysis

Note: *This model was developed by Deloitte's actuarial practice and is based on assumptions around distribution of passenger miles, frequency, and severity of loss events in each Future State*

Deloitte.

Not *if* but *when!*



Thankyou for Listening

@AXADavidW


AXA
Imagine technology that saves over 1m lives a year
AXA is a partner in the development of driverless car technology, helping to create a future with safer roads.
See for yourself at axa.co.uk/xxxx
We're restless for a reason
1m lives worldwide