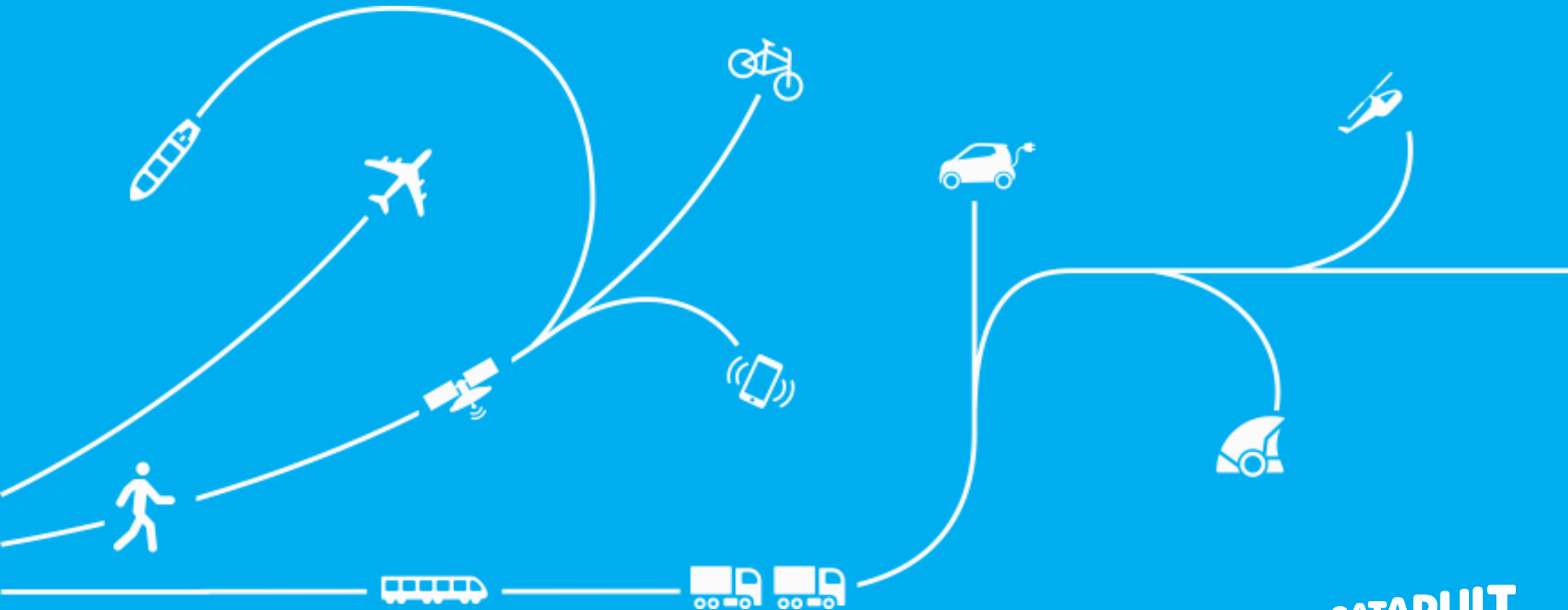


Connected and Autonomous Vehicles: What is the UK doing?

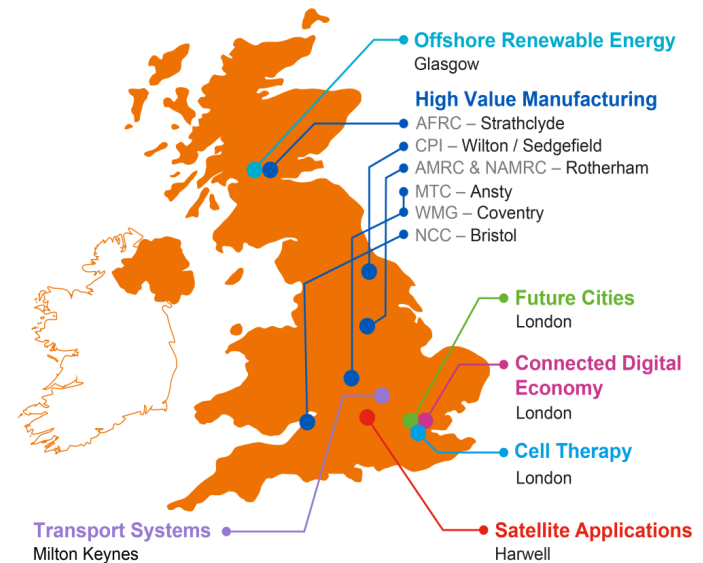
Andrew Everett

CSO, Transport Systems Catapult, UK



The UK Catapult programme

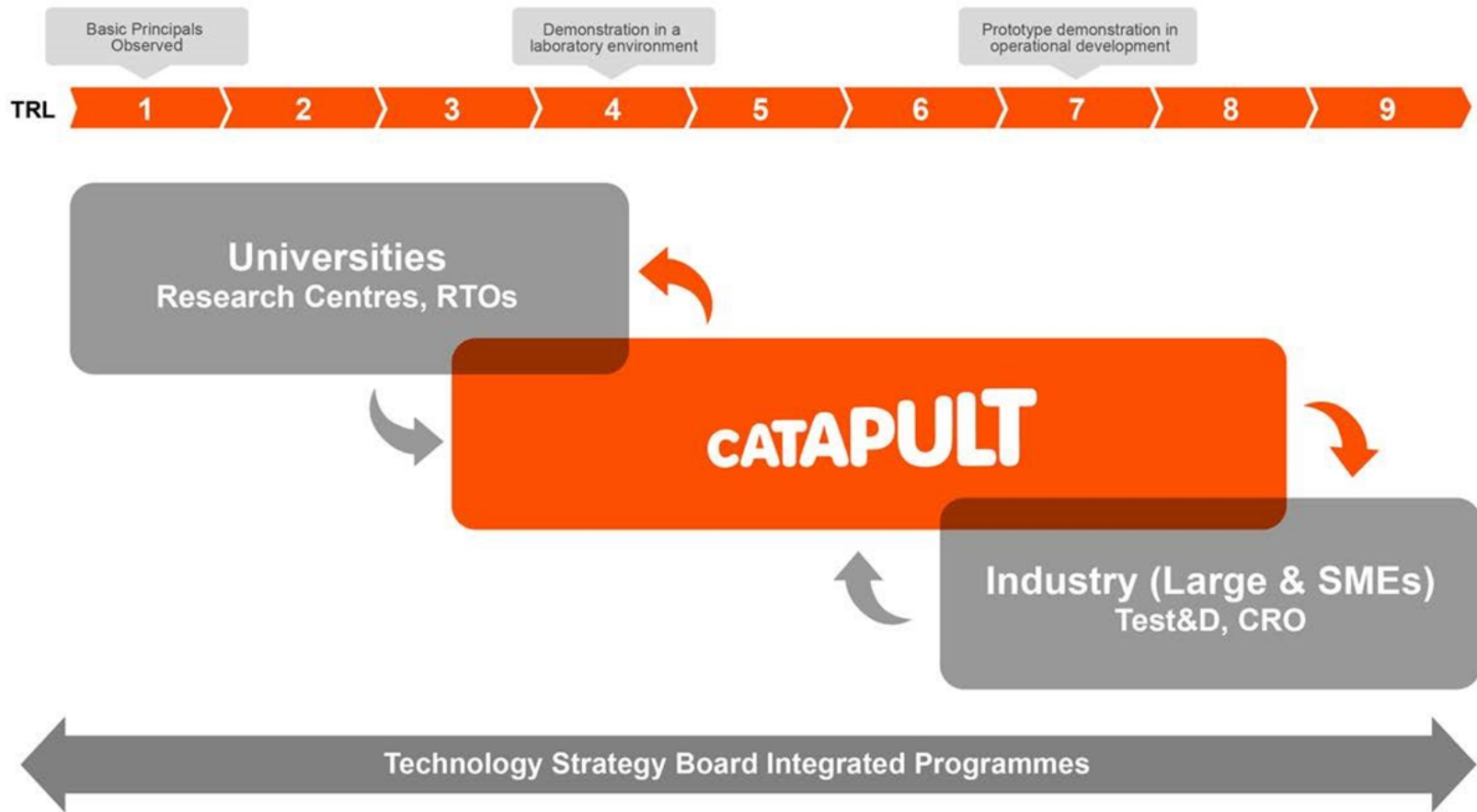
- Part of a **world-leading network** of technology and innovation centres
- **Bridge the gap** between businesses, academia, research and government
- A long-term investment to **transform** the UK's ability to create new products and services
- Open up global opportunities for the UK and **generate sustained economic growth** for the future
- Established and overseen by the **Innovate UK**



> £1.4bn

Private & public
sector investment

The UK Catapult programme



The UK Catapult programme - funding

Core Projects

Key challenges and barriers

A unique technical capability

Industry & research advisory groups

Demonstration projects

Disseminate to industry

Industry R&D

Access to unique facilities & expertise

Develop & demonstrate at scale

Reduce risk of implementation

Direct contracts for projects

Easy access for SMEs

CR&D

Innovation in collaborations

Bring together customers, SMEs & blue-chip companies

Technical & management resource

Partners in Projects (IUK & EU)

Expertise at unlocking funding

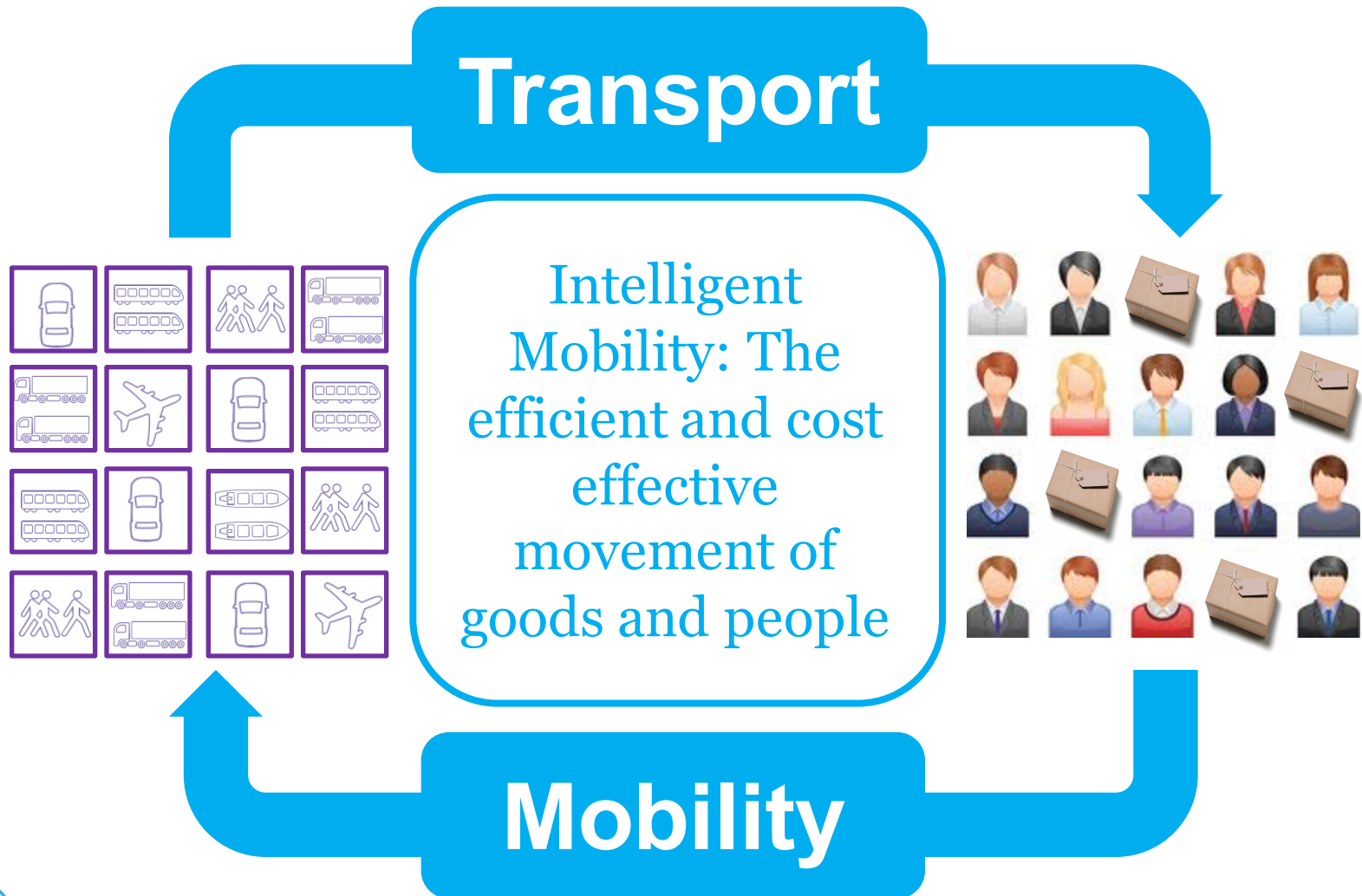
Transport Systems Catapult



*‘Drive UK global leadership in **intelligent mobility**, promoting sustained economic growth and wellbeing, through integrated, efficient and sustainable transport systems’.*

‘Create an environment that will make the UK a World Leader in Transport Innovation.’

Transport Systems Catapult

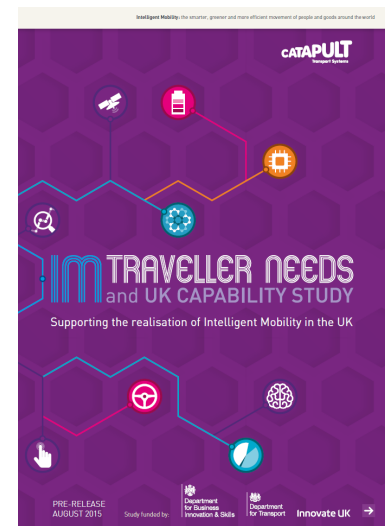


Our Capabilities

- 1 Automated Transport Systems
- 2 Modelling & Visualisation
- 3 Customer Experience
- 4 Information Exploitation

Traveller Needs - Overview

- £1.2m study supported by industry, InnovateUK and UK Government departments for Business and Transport
- Extensive multi-modal Intelligent Mobility study
- 10,000 on line respondents and 100 detailed interviews with industry experts
- Traveller research data has been weighted against the National Travel Survey (NTS)
- Study explored multi-modal pain points & explored opportunities to target investment in order to accelerate progress to IM
- Identified hierarchy of Removing pain-points; Enhancing End to End Journeys; Enabling Lifestyles



The UK is ready for IM

✓ Connected Traveller



72% smartphone penetration

54% of those consider it essential to their travel experience



✓ Progressive Attitudes

32% would share their possessions



57% don't mind sharing their data for better services

✓ Opportunity for Improvement



57% always look for ways to optimise their journeys

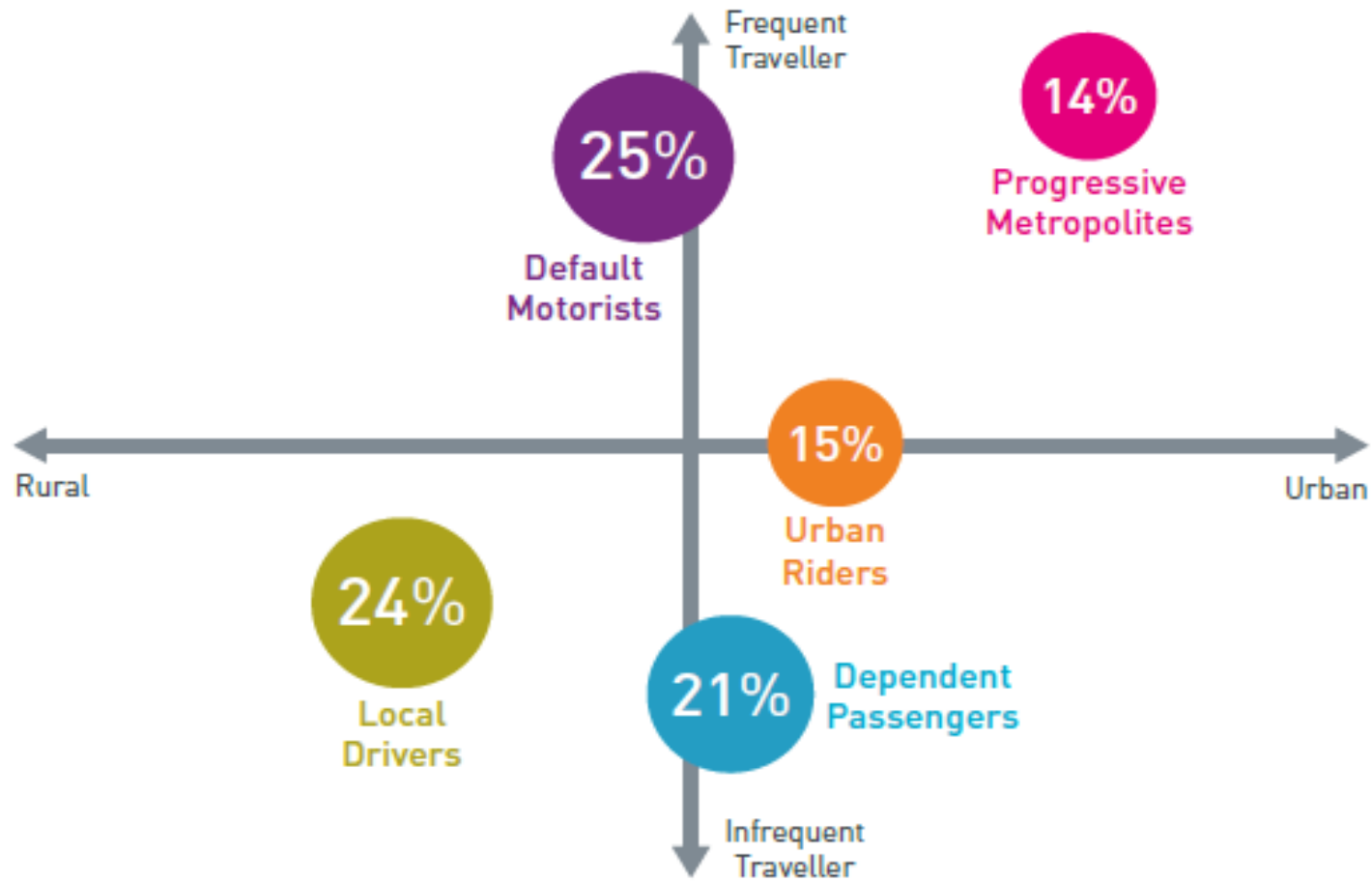


75% encountered pain-points on their journeys

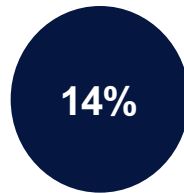
39% would currently consider driverless cars



The Five Traveller Segments



Progressive Metropolites



(14% of UK journeys)



They aspire to live an social beneficial, asset light lifestyle – yet still rely heavily on the private car

55% try to optimise their travel for the good of society (30% avg.)

53% try to use modes that are good for the environment (29% avg.)

66% agree that 'asset-light' services improve their lifestyles (33% avg.)

but

48% of their journeys are made by the private car (this is 33% in London)

They are engaged with new developments in transport

64% are excited by new developments in transport (37% avg.)

62% would use driverless cars (37% avg.)

They have a significant desire to make 'not travelling' possible

60% would rather have used virtual mobility (36% avg.)

Default Motorists

25%



(39% of UK journeys)

(46% of UK car journeys)



16% choose functionally

- 80% use their car every day
- 97% at least weekly
- ... but 69% can imagine giving up their car

Do not identify with their mode of transport and would consider sharing rather than owning

There is a need to enable more productive time on their drives



Make 28% more journeys for work than other employed people

42% would consider autonomous vehicles

An opportunity to reduce the financial and time burden of their travel with new mobility solutions?

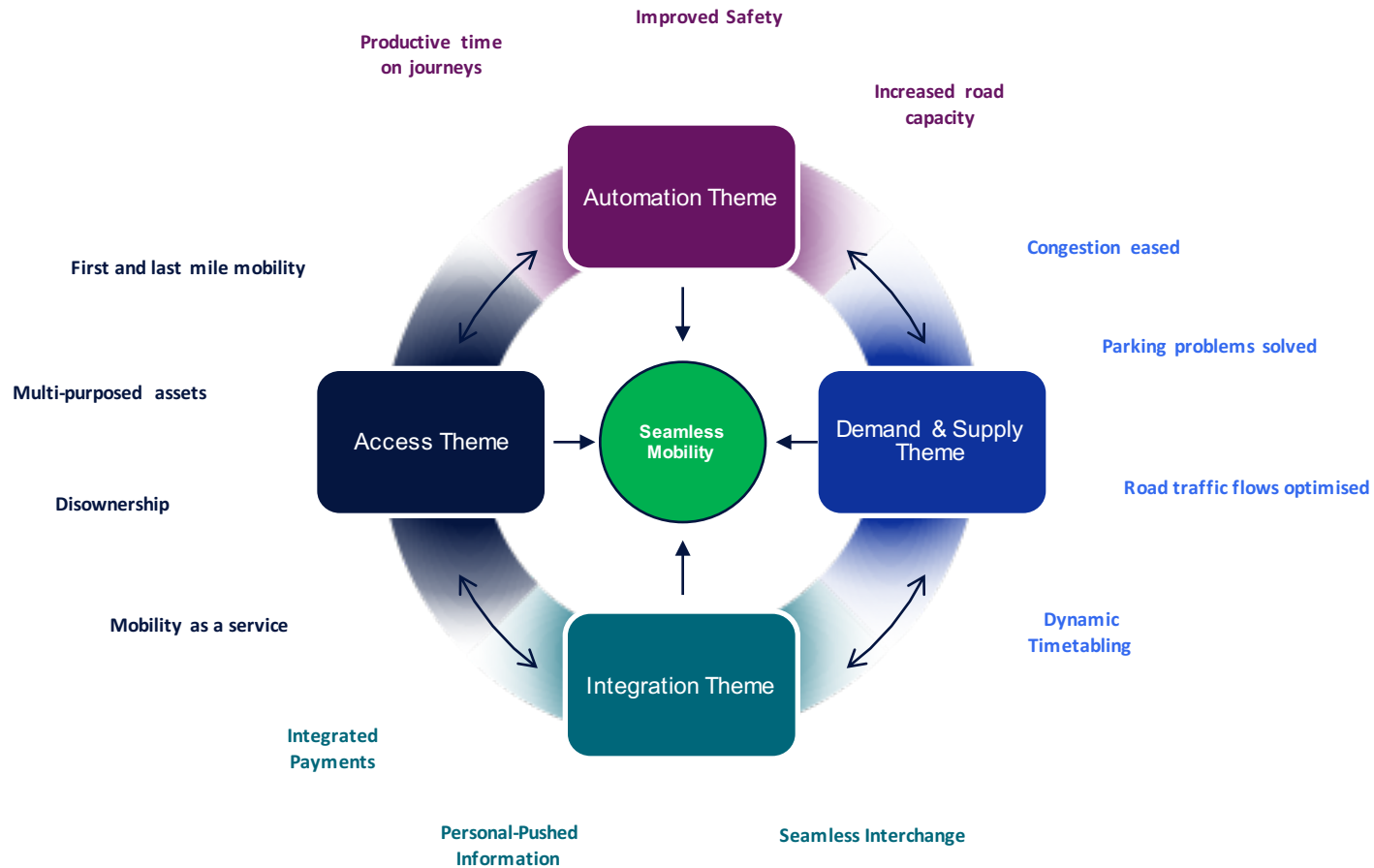
9% are 'Petrol Heads'

Enjoy driving

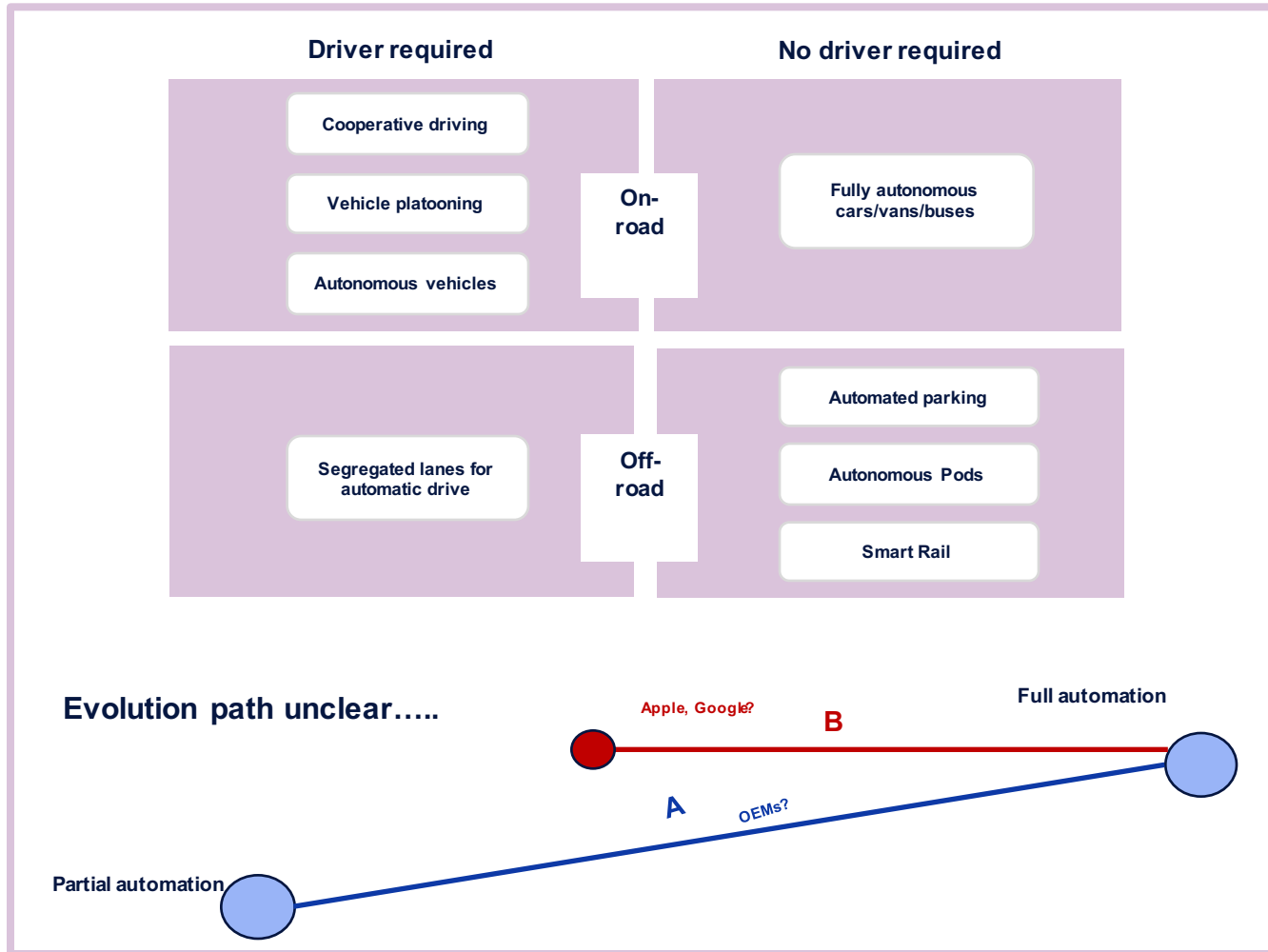
Would not give up car

Ownership is important

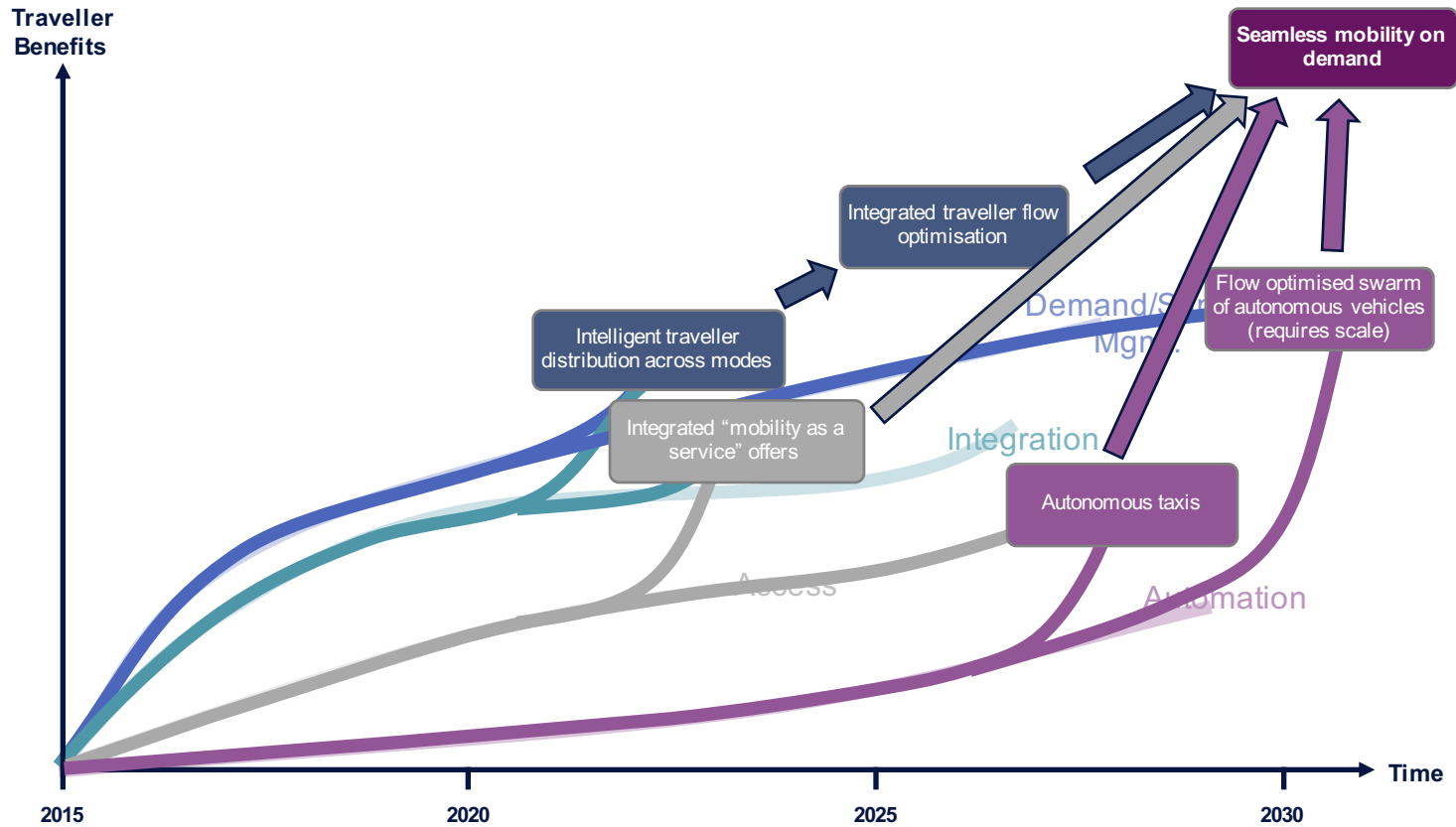
4 Revolutions in Intelligent Mobility



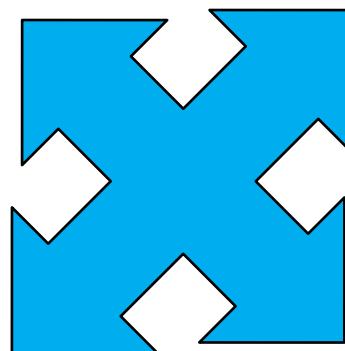
Automation Revolution



Integrating across the Revolutions



Autonomous or Connected?





Why its important !

‘UK to lead development of driverless car technology’

JPY 153 tn global annual market
in Intelligent Mobility

JPY 14 tn global annual market in Automated Transport

What is happening in the UK

Safety Case
Code of Practice
LUTZ Pathfinder
Three driverless vehicle trials
Test Bed
Investment (JPY 17 tn)

Three ongoing driverless connected vehicle trials



Greenwich, London	Coventry and Milton Keynes	Bristol
2 years	3 years	3 years
JPY 1.3 bn	JPY 3.2 bn	JPY 0.8 bn
10 partners	16 partners	10 partners
<ul style="list-style-type: none"> Electric shuttle vehicles M1 vehicles Tele-operated driving Simulated 3D model of the Greenwich peninsula Protocols and standards guidance Understanding engagement and interaction with automated vehicles V2I/SCOOT integration Pedestrian interactions with automated vehicles Autonomous valet parking 	<ul style="list-style-type: none"> Twin-city programme delivering two field-based demonstration projects Technical/social/economic papers Multiple M1 vehicles - mixed vehicle test fleets A novel Low-Speed Autonomous Transport System (L-SATS) – 40 Pods Development of business models for new services Direct involvement of legislators and insurers Public awareness surveys in at least four different cities beyond Milton Keynes and Coventry 	<ul style="list-style-type: none"> Realistic simulation environment Pathfinder pod Investigate attitudes to a bus equipped with innovative sensing technology Understanding of insurance and legal implications Leverage Bristol's gigabit wireless network Detailed research of opinions of drivers, passengers, other road users AV systems for different types of vehicle

Think big, take small steps, learn fast



Thank you.

andrew.everett@ts.catapult.org.uk

07940 064998

