THE FUTURE OF TRANSPORT

GATEway

Exploring how people respond to, engage with and accept automated vehicles in a challenging urban environment

Shaun Helman

GATEway

Greenwich Automated Transport Environment

- £8m project funded by industry and Innovate UK
- Understand and overcome technical, legal and societal challenges of using CAVs in urban areas
- Vehicle trials, simulation and public engagement
- October 2015 – March 2018

GATEway

TRL

Led by TRL The UK's Transport Research Laboratory

ROYAL borough of GREENWICH

UNIVERSITY of GREENWICH

Royal College of Art

Imperial College London

Commonplace

RSA

O2

dg:Cities

Heathrow
Making every journey better

Fusion Processing

GOBOTiX LTD

OXBOTICA
robotics & autonomous systems

Supported by Innovate UK

Centre for Connected & Autonomous Vehicles

the future of transport.

GATEway

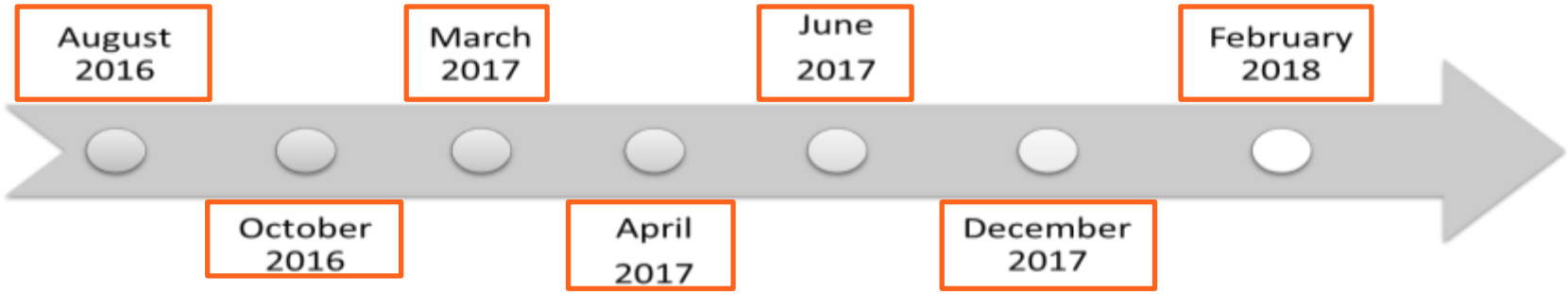
- *Demonstrate* the safe and efficient integration of sophisticated automated transport systems into complex real world smart city environments
- *Create* a validated test bed in the heart of London for the evaluation of next generation automated transport systems

Trial 1: Micro-transit

Trial 2: Automated valet parking

Trial 3: Last mile delivery

Activity timeline



Public workshops

Activity timeline

August 2016

October 2016

1st public trials

March 2017

April 2017

June 2017

December 2017

February 2018

Activity timeline

August 2016

October 2016

March 2017

April 2017

June 2017

December 2017

February 2018

Simulator Trials

Activity timeline

August 2016

October 2016

March 2017

April 2017

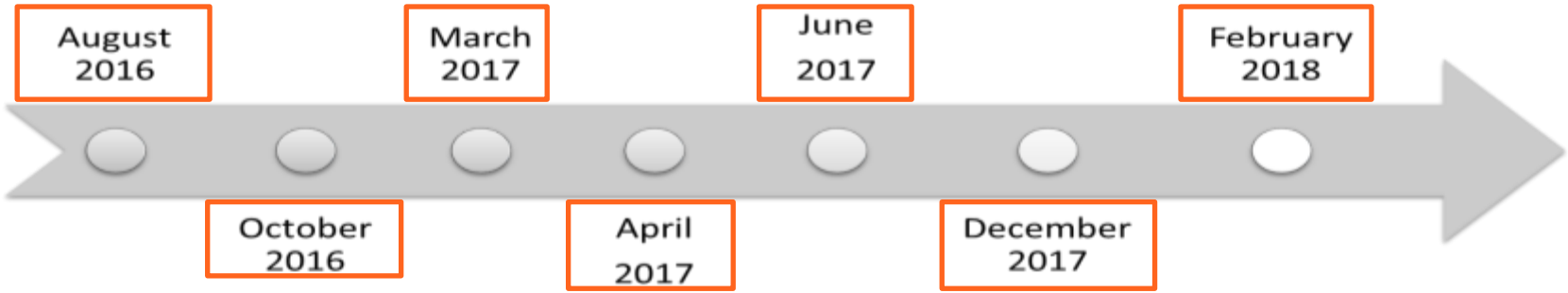
June 2017

December 2017

February 2018

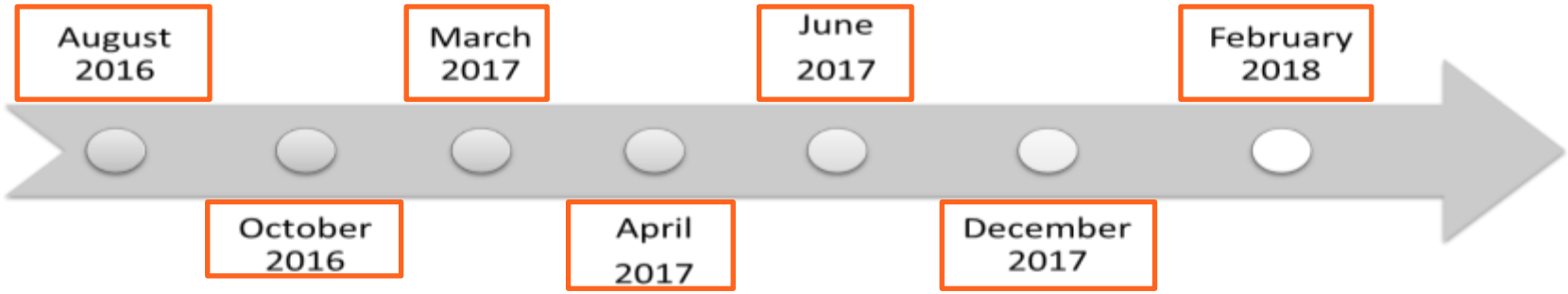
Teleoperations demo

Activity timeline



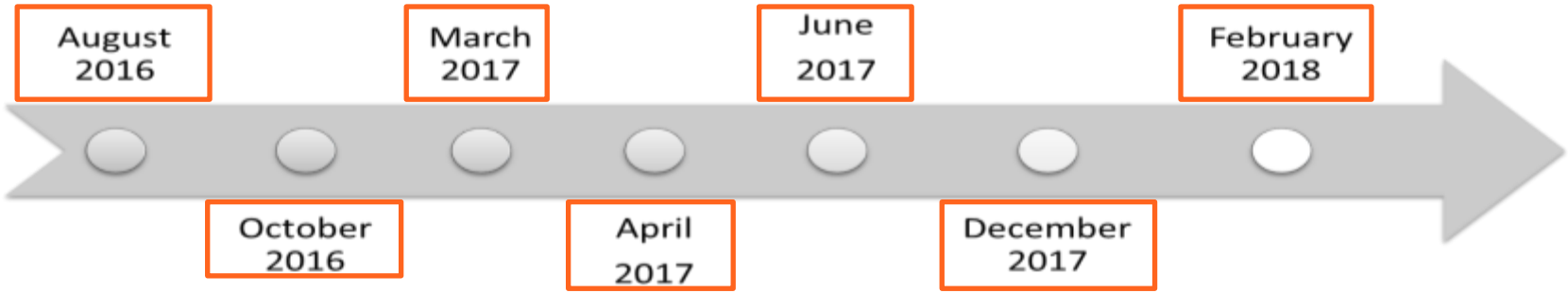
Driverless deliveries

Activity timeline



Valet parking

Activity timeline



Last mile transit

Trial 3: Last mile delivery

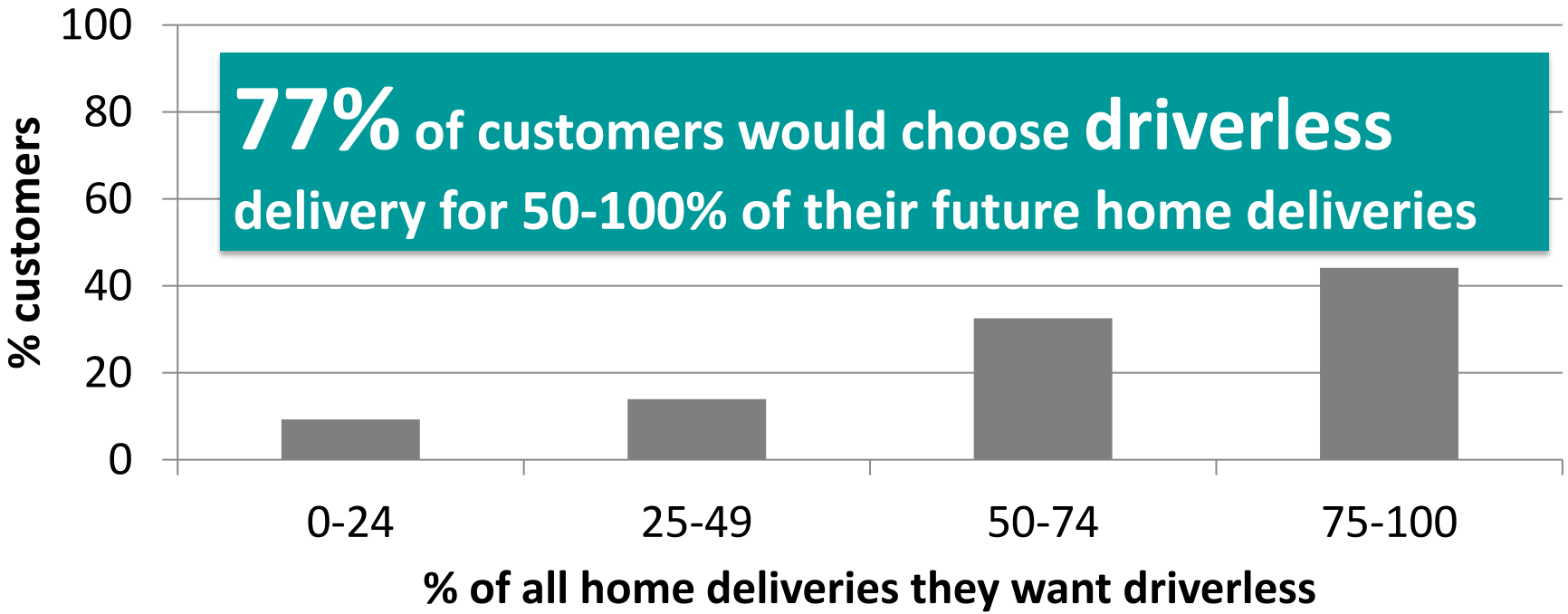
Aim

- *To explore public perception and experience of driverless deliveries to inform future deployments of services*

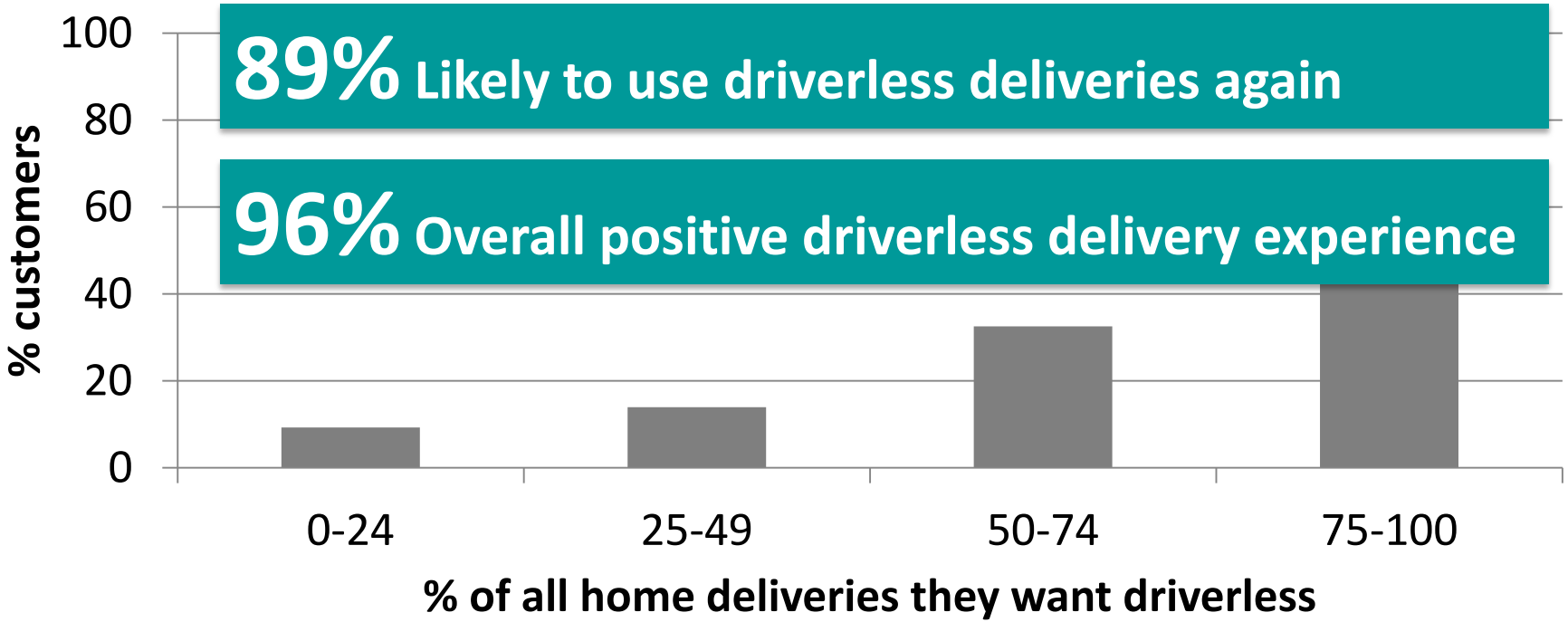
Research

- *2 week trial with CargoPod and Ocado*
- *Over 100 customers*
- *TRL surveyed recipients*
- *Commonplace local sentiment mapping*

Last mile delivery: Willingness to use



Last mile delivery: Willingness to use



Trial 2: Automated valet parking

Aim

- *To provide members of the public with direct experience of an automated ("drop-off") valet parking service and gain feedback on their experience*

Findings

- *Auto valet parking was seen as a service that would improve the quality of travel and save time*
- *Increasing safety within vehicles and in public spaces*
- *Provide more inclusive personal transport*
- *Some challenges identified*
  - *Increased congestion*
  - *Management of drop-off and pick up points*

Trial 1: Micro-transit

Aim

- *To assess public perceptions of autonomous vehicles as a result of a direct experience with an AV, particularly in a last mile service*

Research

- *Online surveys (passengers)*
- *Sentiment mapping (anyone who has seen the vehicles)*
- *Structured observations (cyclists and pedestrians)*

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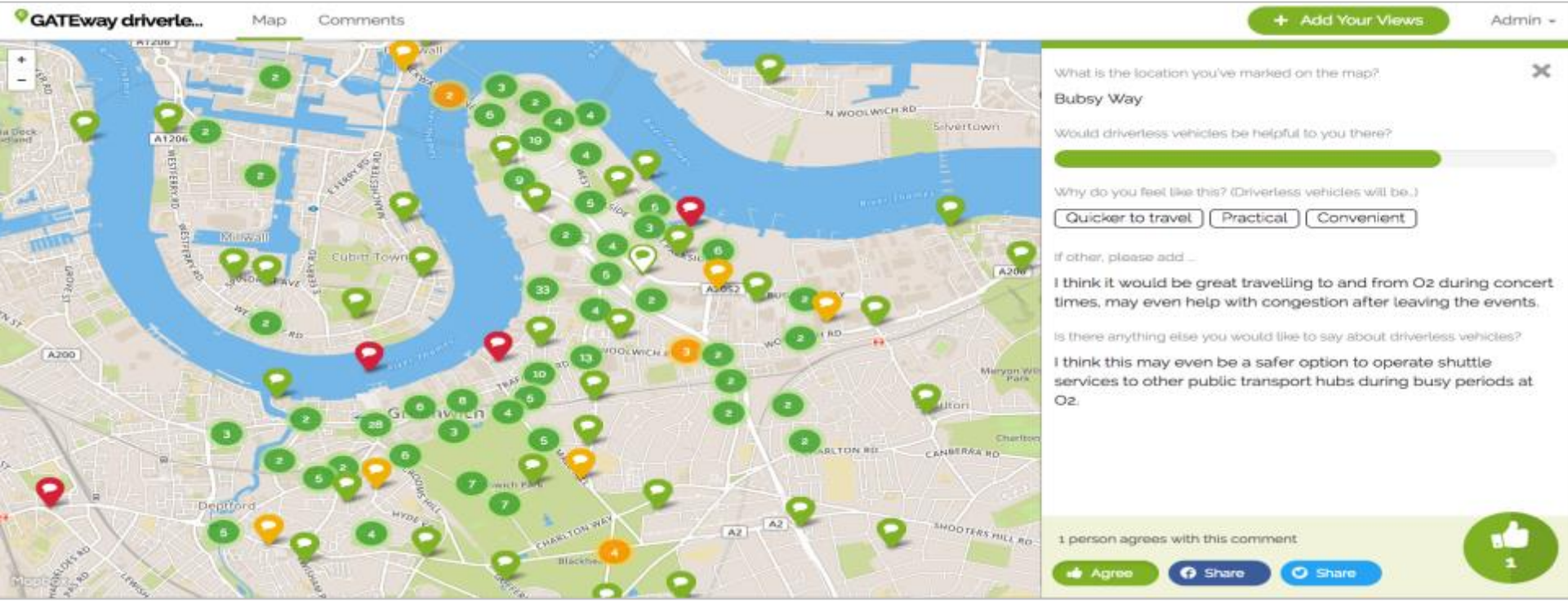

Commonplace

the future of transport.

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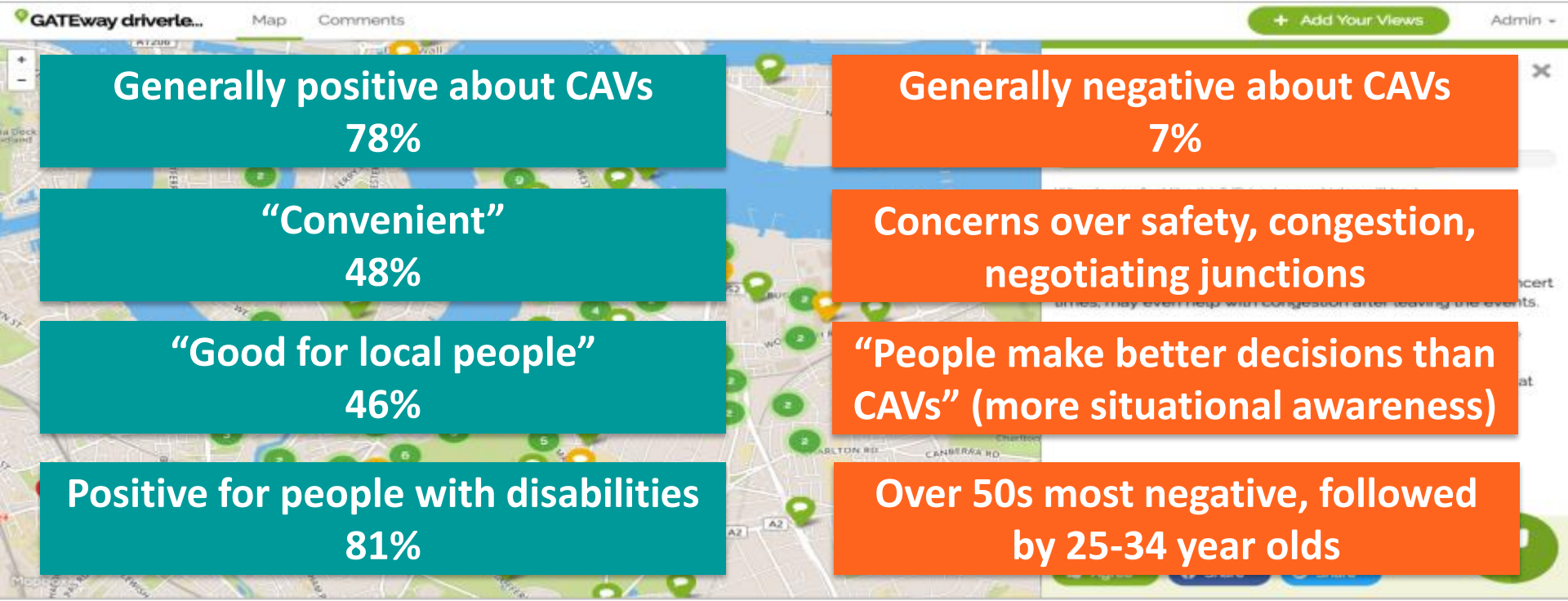
TRL



Generally positive about CAVs
78%

Generally negative about CAVs
7%

"Convenient"
48%

Concerns over safety, congestion, negotiating junctions

"Good for local people"
46%

"People make better decisions than CAVs" (more situational awareness)

Positive for people with disabilities
81%

Over 50s most negative, followed by 25-34 year olds

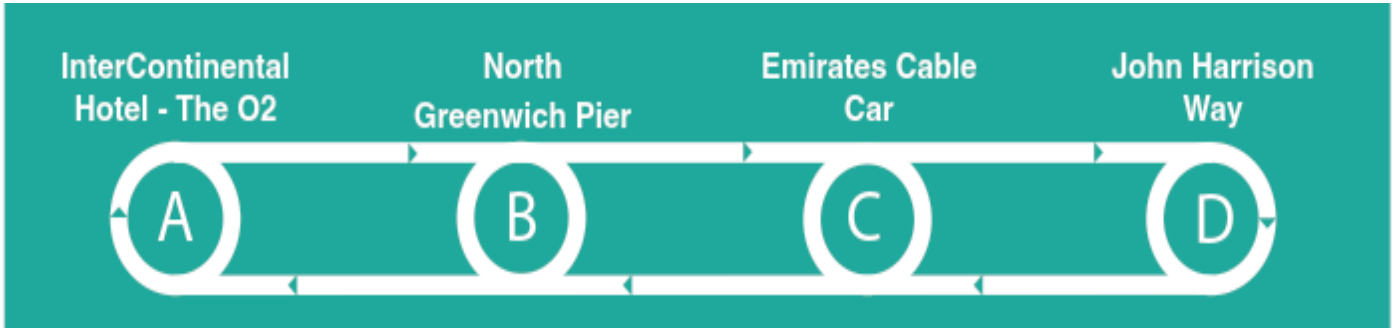
Commonplace

Our passengers

- 118 respondents
- More males than females (males, n=75)
- 78% own a car

Journey experience

- 43% spend between 21-30 mins on board
- 59% travelled with friends or family
- 73% reported they were satisfied with their overall journey experience



A use case for last-mile services

- 63% of participants reported they would be likely to use a driverless pod to make this type of journey
- 41% of respondents reported they did not believe the introduction of this type of service would have any effect on their mobility
- WTP - £1 - £3 for a similar journey

Ownership models

- Slightly more interest in owning/leasing fully driverless than partial automation
- When asked specifically to consider alternatives to private ownership, only 8% reported they were not at all interested in considering alternatives

- Trials as a tool for building trust

"The pod stopped appropriately when pedestrians and cyclists were in proximity." Male, 45-54 (March 2017)

"I think probably what I like the most was, a couple of cases [where] *someone came too close to the car and it just stops. I think that's quite reassuring from a safety perspective." Female, 30-39* (April 2018)

- Trials as a tool for understanding research ethics and safety cases

- Sensor capabilities
  - Very small dogs
  - Toddlers crawling

- Automation capabilities
  - Learning versus static

Putting people at the heart of future urban mobility

This is just the beginning …..

www.gateway-project.org.uk

Smart Mobility Living Lab: London

www.smartmobility.london

Shaun Helman
Chief Scientist, Transportation Division
Email: shelman@trl.co.uk

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www.smartmobility.london