

| Inspiring Innovation in Parking and Transport |

The Future of Transport



Peter Damen
Managing Director

Tuesday 19 November 2019



Our cities will transform...













Imagine the future ...rapid evolution



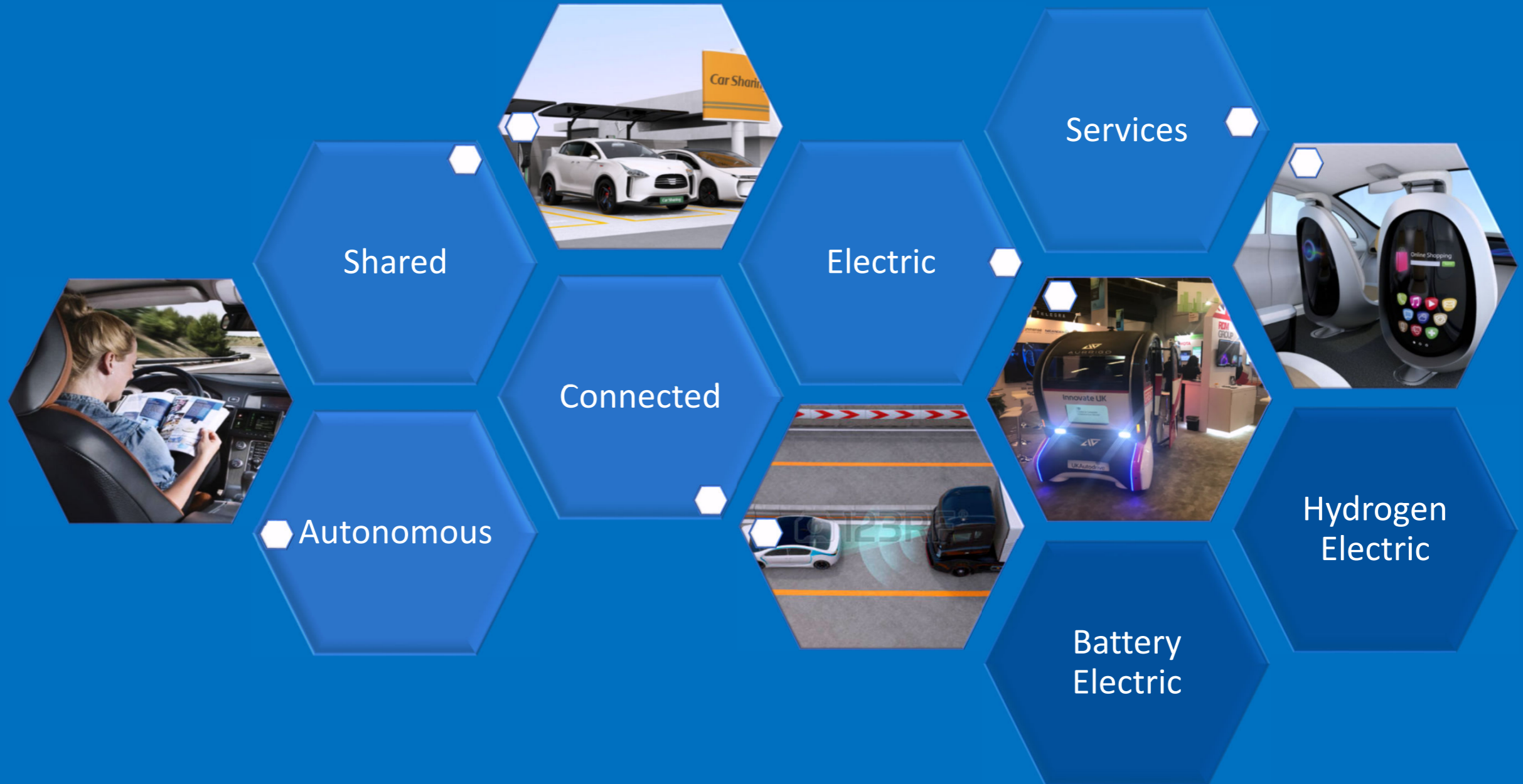
Navigating the Hype

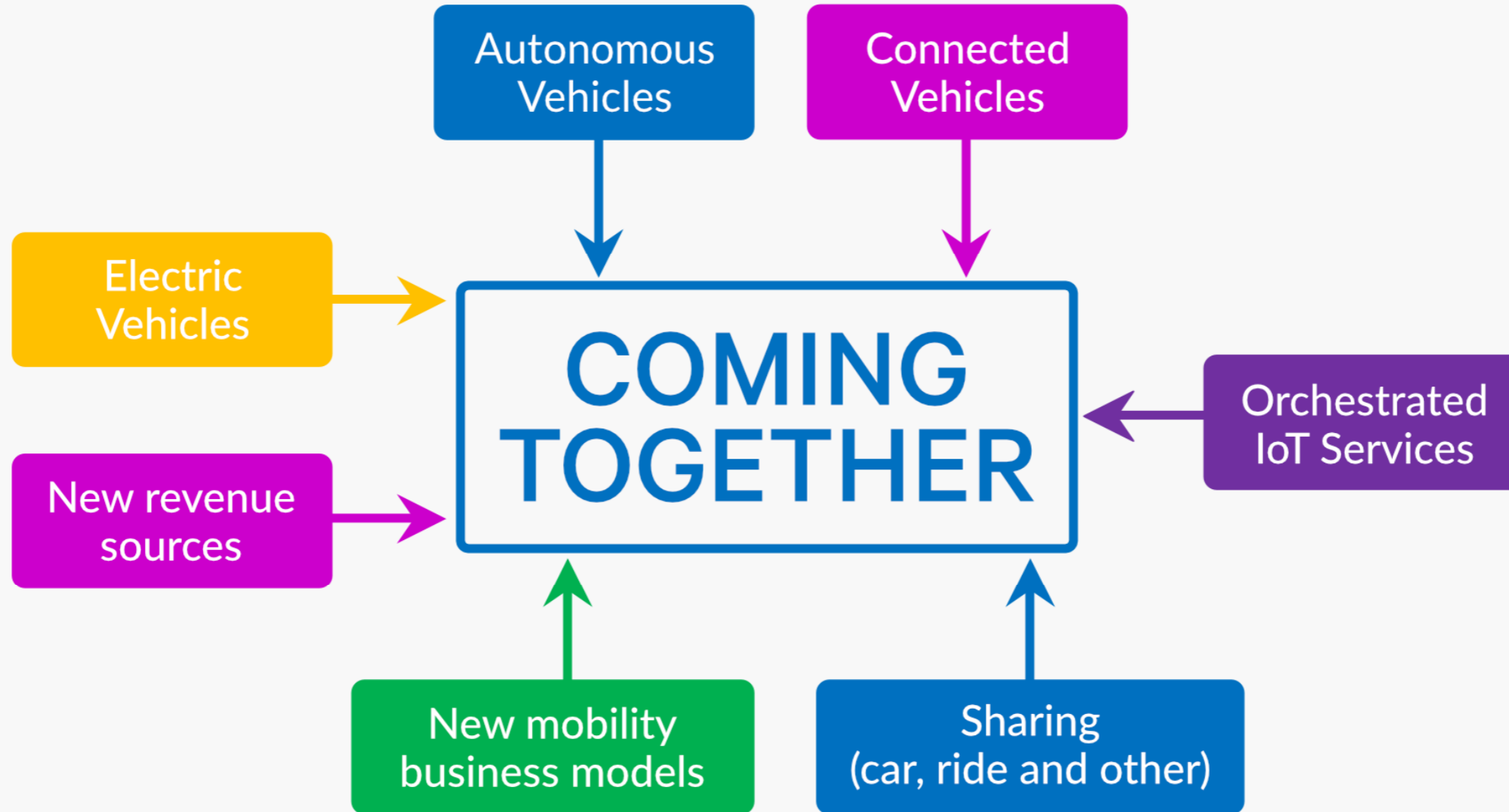


Complimentary technologies...



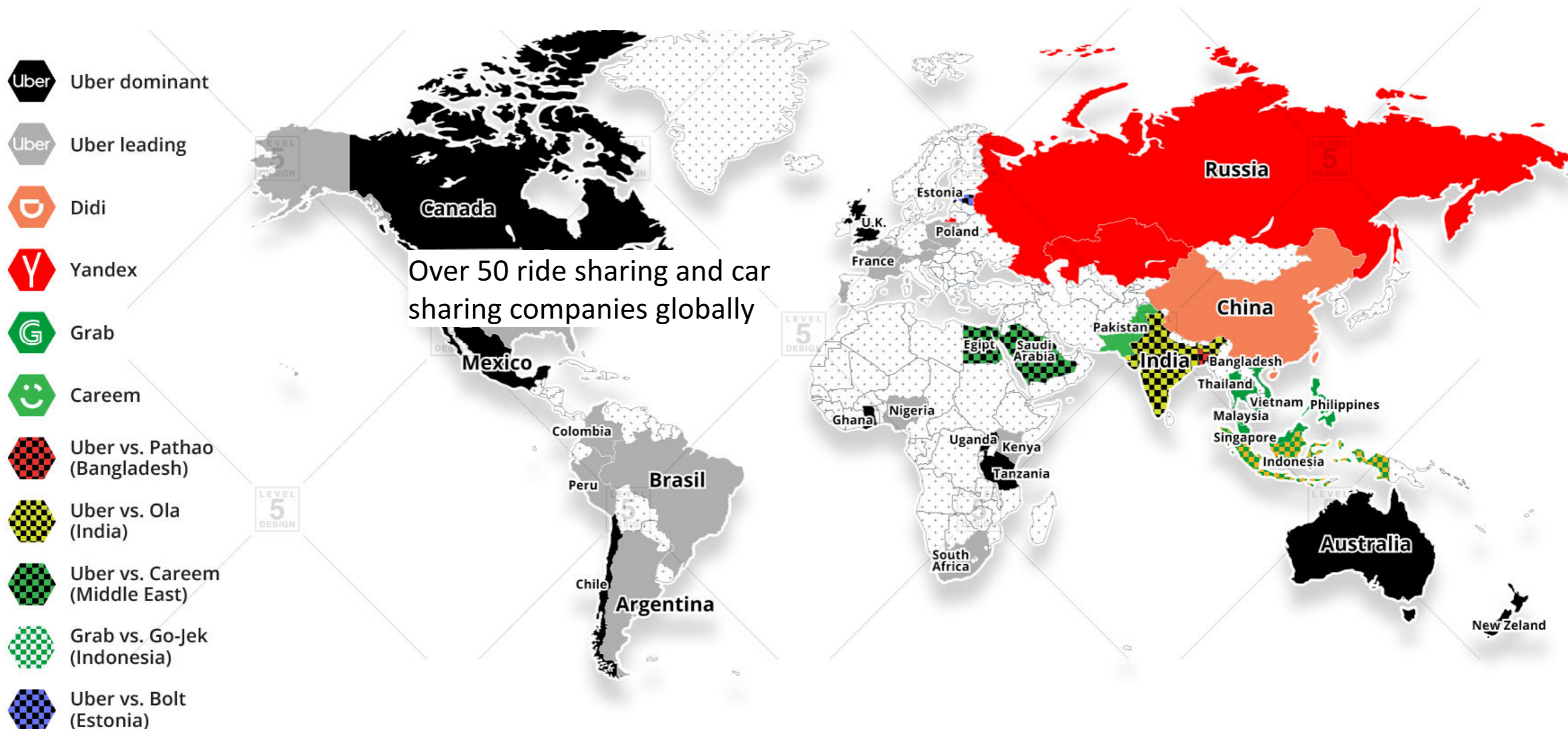
Complimentary technologies...







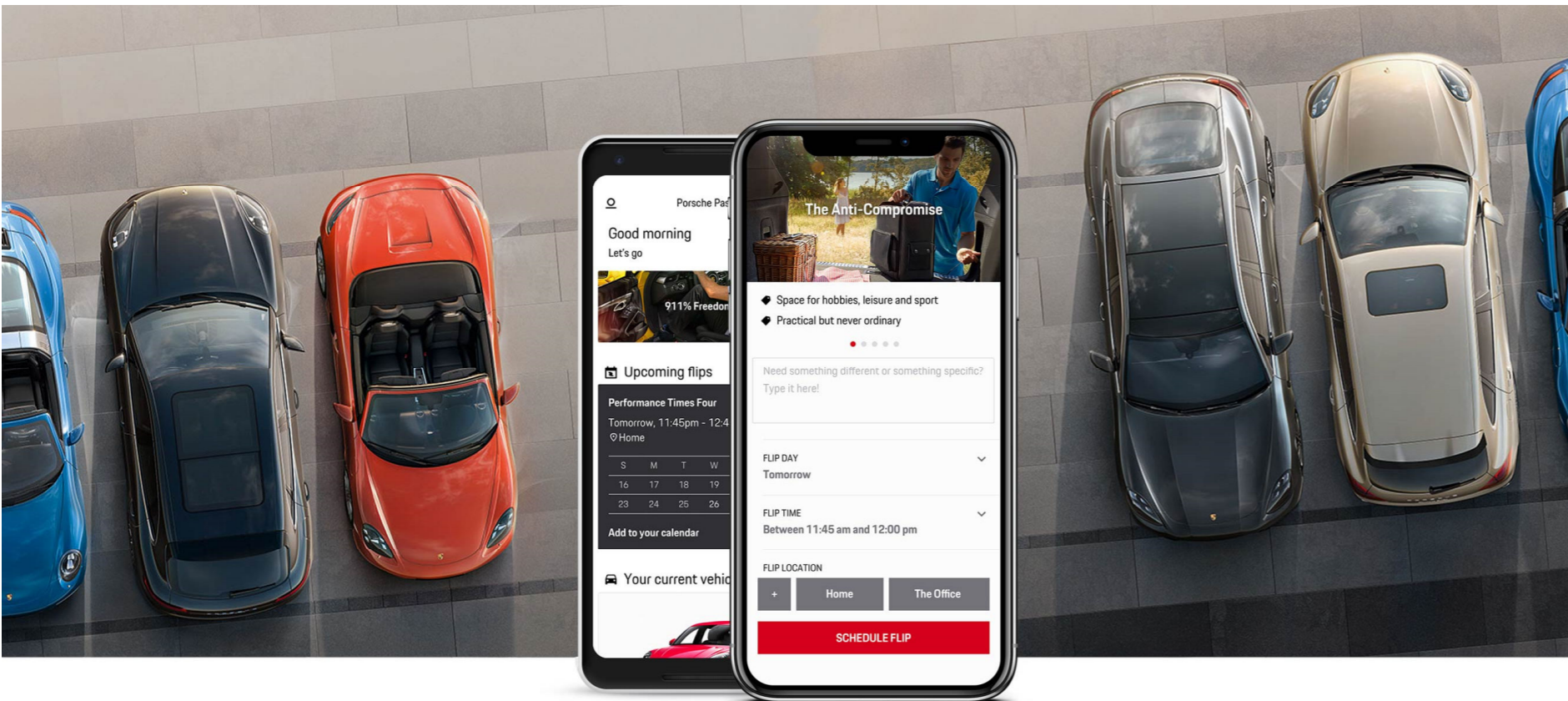
LEVEL
5
DESIGN



Sharing on demand



Accessing vehicles differently



LAUNCH

\$2,000 / month

with \$500 joining fee

- \$1 million liability insurance policy
- \$1,000 deductible for drivers
- Roadside assistance and maintenance
- Personal concierge
- Full detail washes with every flip
- Includes base and S models



Cayman



Boxster



Macan



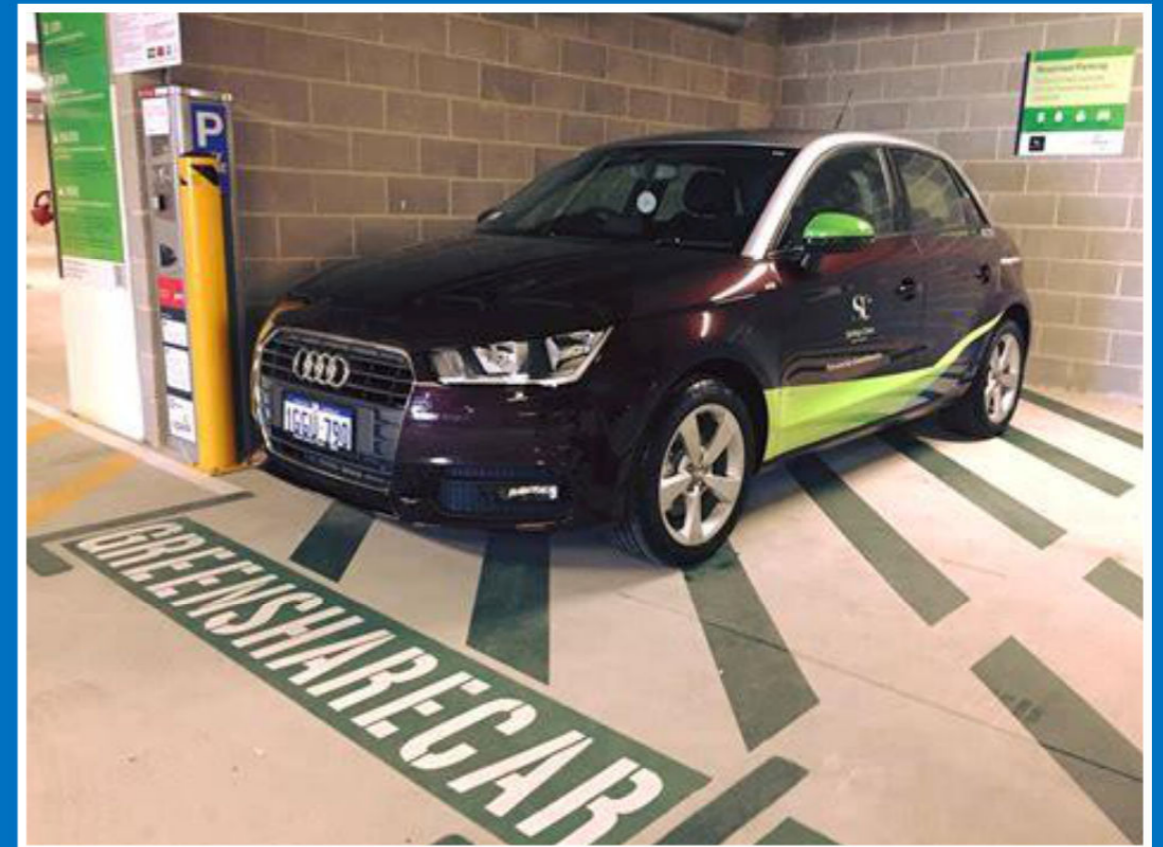
Cayenne



CURTIN UNIVERSITY - AN INTRODUCTION TO CAR SHARE

Reduce the demand by between
5 and 15 times saving \$\$\$\$

Supportive local government policies
Increase drop off/pick up space
Eliminate parking minimums



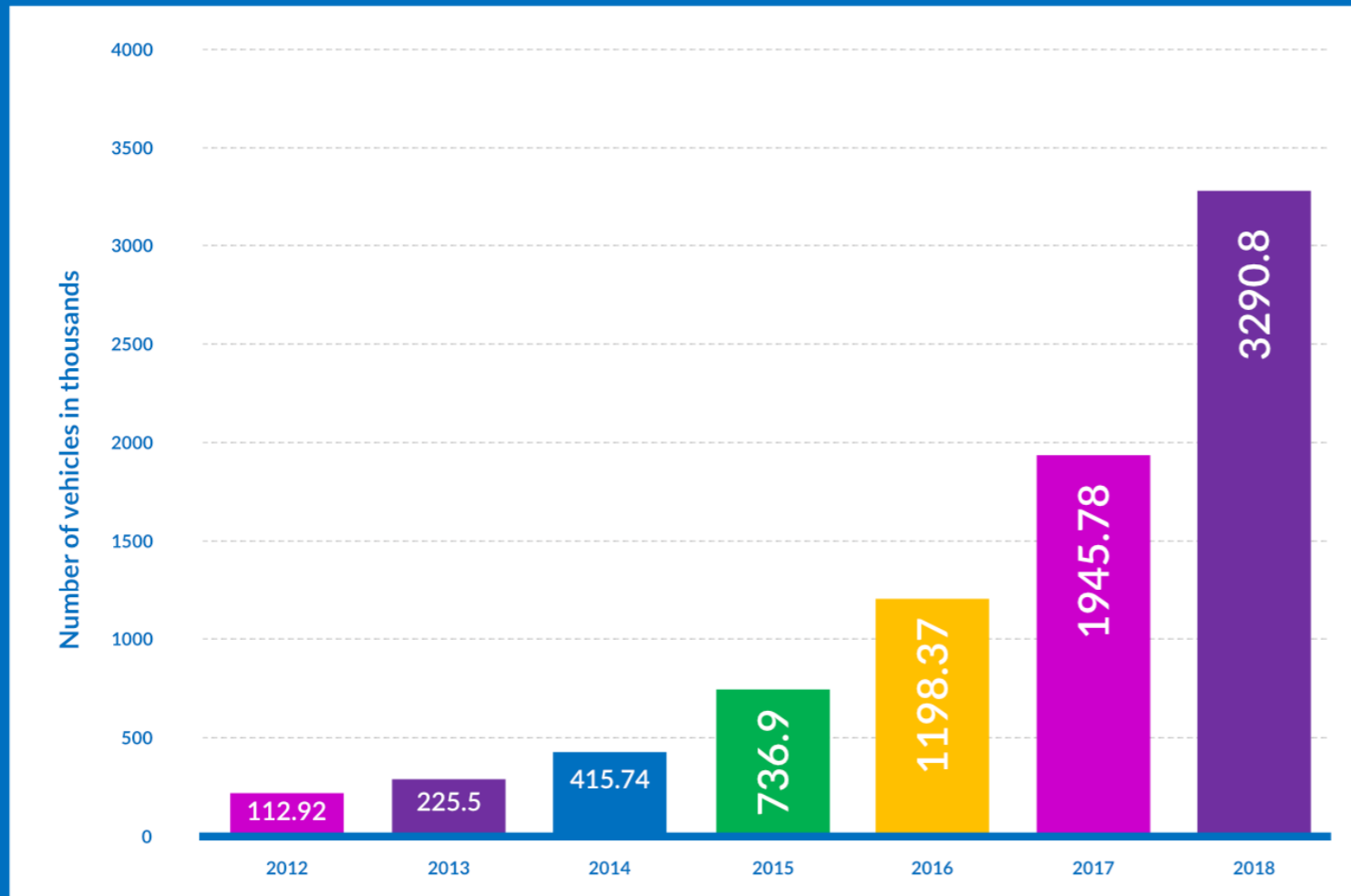
“Transport is Australia’s third largest source of greenhouse gas emissions, with emissions from transport increasing nearly 60% since 1990, more than any other sector.”

- Climate Council 28.09.17



Electric Uptake has been slow in Australia

Worldwide number of battery electric vehicles in use:



1.42
billion cars
in operation worldwide

1.06
billion passenger cars

363
million commercial vehicles

3.3
million EVs

7.5
thousand
FCEVs

EVs in Australia in 2019



Mitsubishi iMiEV



Nissan Leaf



BMW i3



Renault ZOE



Tesla Model S



Tesla Model X



Tesla Model 3



Tesla Roadster



Jaguar I-Pace



Renault Kangoo

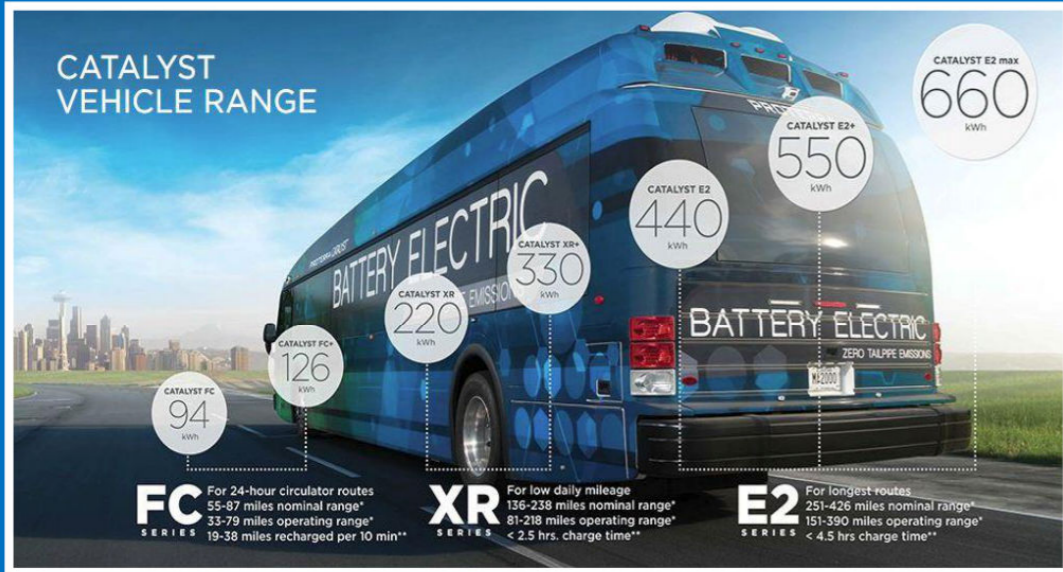


Hyundai Ioniq



Hyundai Kona

Electric Trucks and Buses



Proterra Hypermiling
Record 2017
1770 km
on single charge



Nikola Two
up to
1,200 km
range fuel cell



Tesla Semi
800 km
range



SEA
Electric
Garbage
Truck

Commercial Fast Chargers

Veefil 350kW & 475kW



XCharge C6EU Smart DC Charger 60-160kW



250kW V3 Supercharger

Raption 250kW Charging Station



EV Charging Stations: How Do We Compare?



Battery prices have dropped from \$US290/kWh
two years ago to just \$US180/kWh on average

BNEF – May 2019



Hydrogen Refueling Stations



Zero Emission Highway



$$\frac{\text{H}_2\text{e}}{\text{Zero Emission Highway}}$$





GB USA MEX

**ONE SIZE
DOES NOT
FIT ALL**



Von links bügeln/iron inside out
repasser sur l'envers (只熨反面)

The Sweet Spot





Automated long-haul trucking



Automated drone distribution





FUNCTION.

- Observes all traffic rules.
- Speed 0 – 80 mph (130 km/h).
- Remains in the lane.
- Overtakes slower vehicles.
- Cooperative characteristics at merging entrances to the motorway.
- Highly automated changes between motorways.
- In appropriate situations the driver can delegate all driving tasks to the car.



A new experience

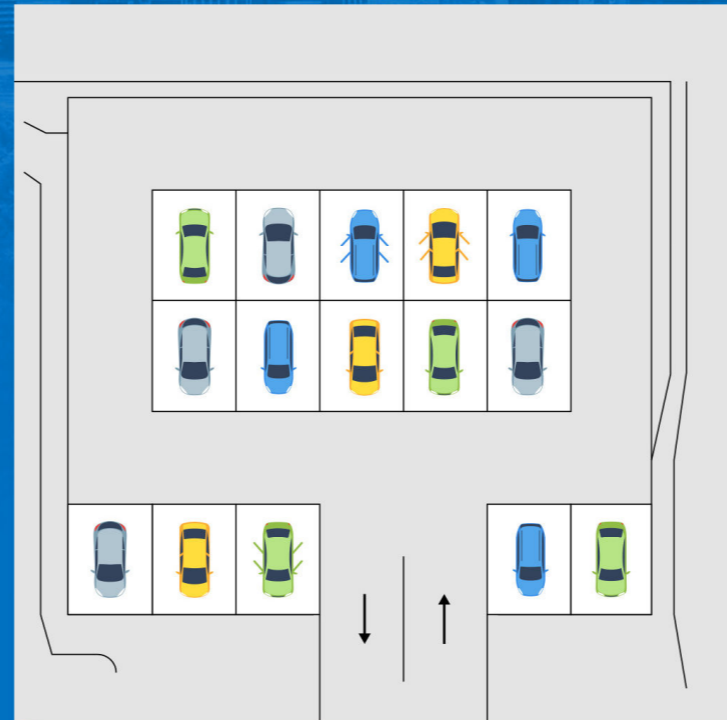


Automated self-parking

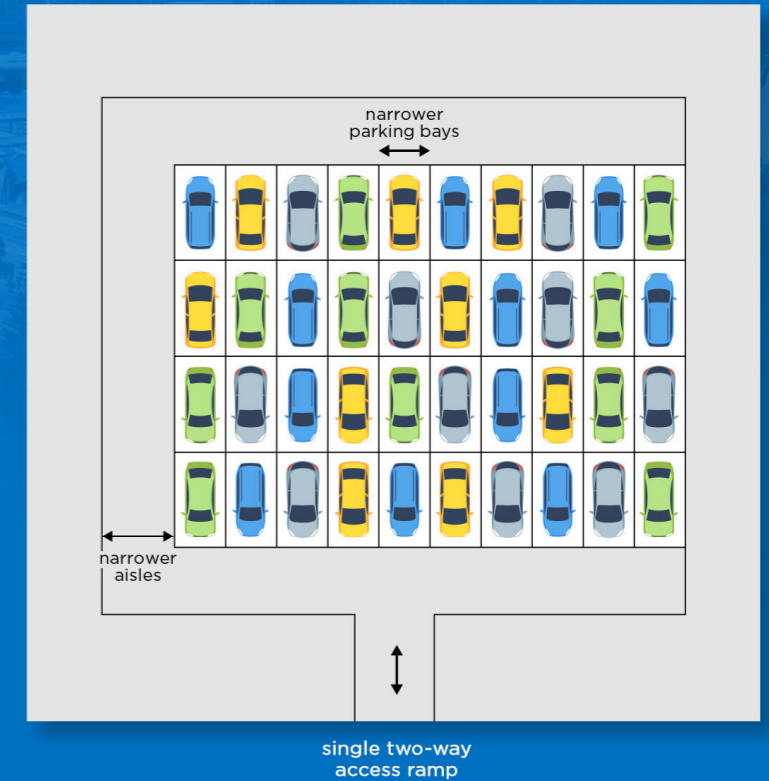
- Parking garages specifically designed for self-parking cars can take **up 60% less space** than traditional lots
- Savings on footprint, ceiling heights, finishes, stairs, elevators, lighting, security, boomgates



CONVENTIONAL
CAR-PARKS

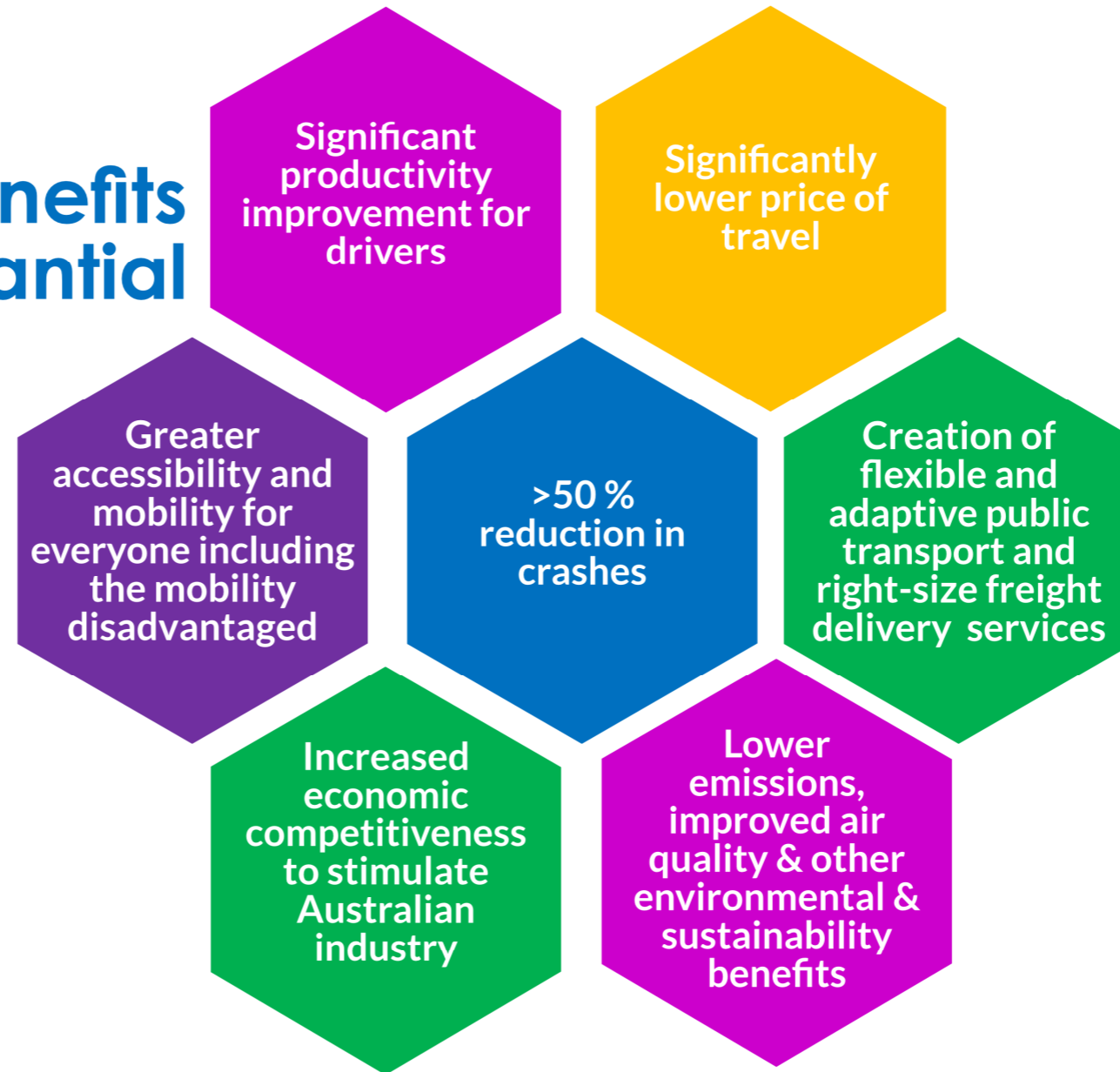


AUTONOMOUS VEHICLE
CAR-PARKS



Why embrace these emerging transport technologies?

The benefits are substantial



So what should local government do about it all?



Local government getting prepared

- Establish active policies
 - Proactive electric vehicle fleet procurement policy
 - Electric vehicle charging / refueling policy
 - Consider incentives scheme
 - Car sharing and ride sharing policy
 - Alter parking policies to reduce the supply of parking
 - Explore regional hubs / service centres
- Change the approach to development approvals
 - More drop off and pick up space
 - Less dedicated parking on site
 - Encourage active transport options
 - All parking bays capable of electric charging and self-parking
 - Design for re-purposing / to be futureproof



Local government getting prepared



- Sponsor / support a refuelling station and superfast battery charger using solar
- Assumptions, parameters and goals built into regional and town planning schemes must be updated
- Identify long term needs and then develop and act on infrastructure plans that are smart, adaptable and resilient
- Linemarking: centre lines and edge lines
- Support projects like the Zero Emissions Highway
- Start planning for it now

Thank you

LEVEL DESIGN

Inspiring Innovation in Parking and Transport

www.level5design.com.au

Peter Damen (0410 438 084)
peterd@level5design.com.au