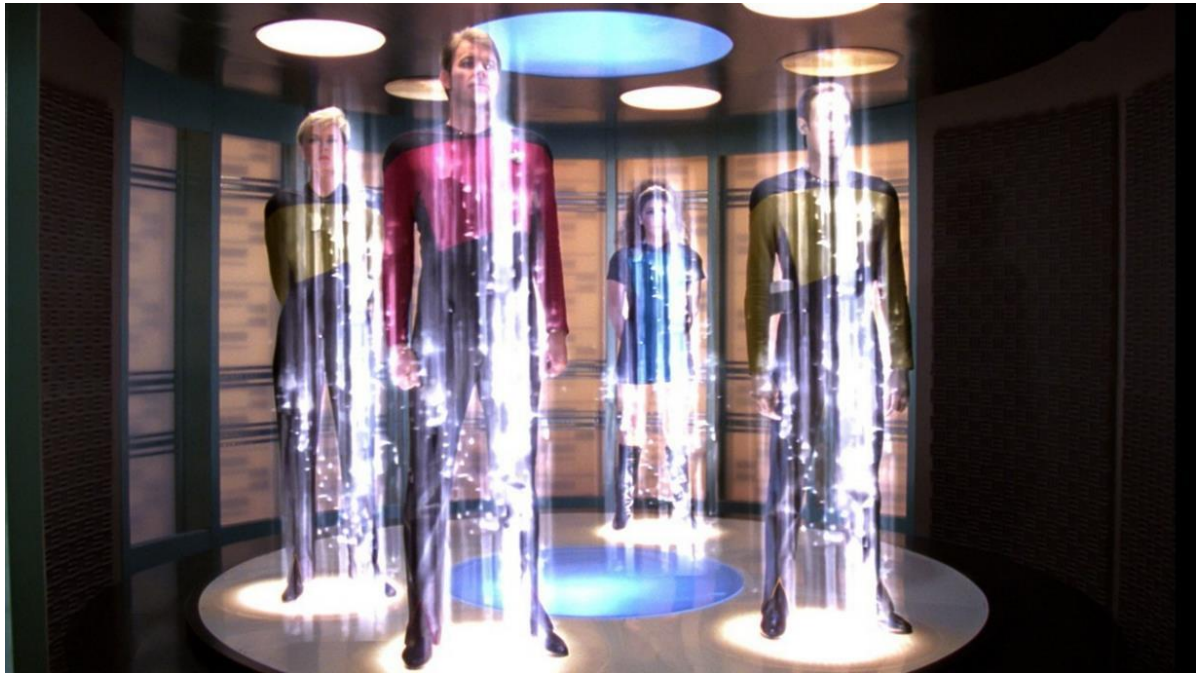
U3A, Avon, 25th Feb 2019



Future transport in Christchurch

Prof Simon Kingham

Tari Mātai Matawhenua | Dept of Geography, Te Whare Wānanga o Waitaha | University of Canterbury

Kaitohutohu Matua Pūtaiao | Chief Science Advisor, Te Manatū Waka | Ministry of Transport

What are our major transport challenges?

- Safety
- Climate Change
- Congestion
- Obesity
- Social equity

How do we travel today?

How will we travel in 15 years?

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What about travel in 40 years?

What can we learn from movies?


Tomorrowland

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Fifth Element

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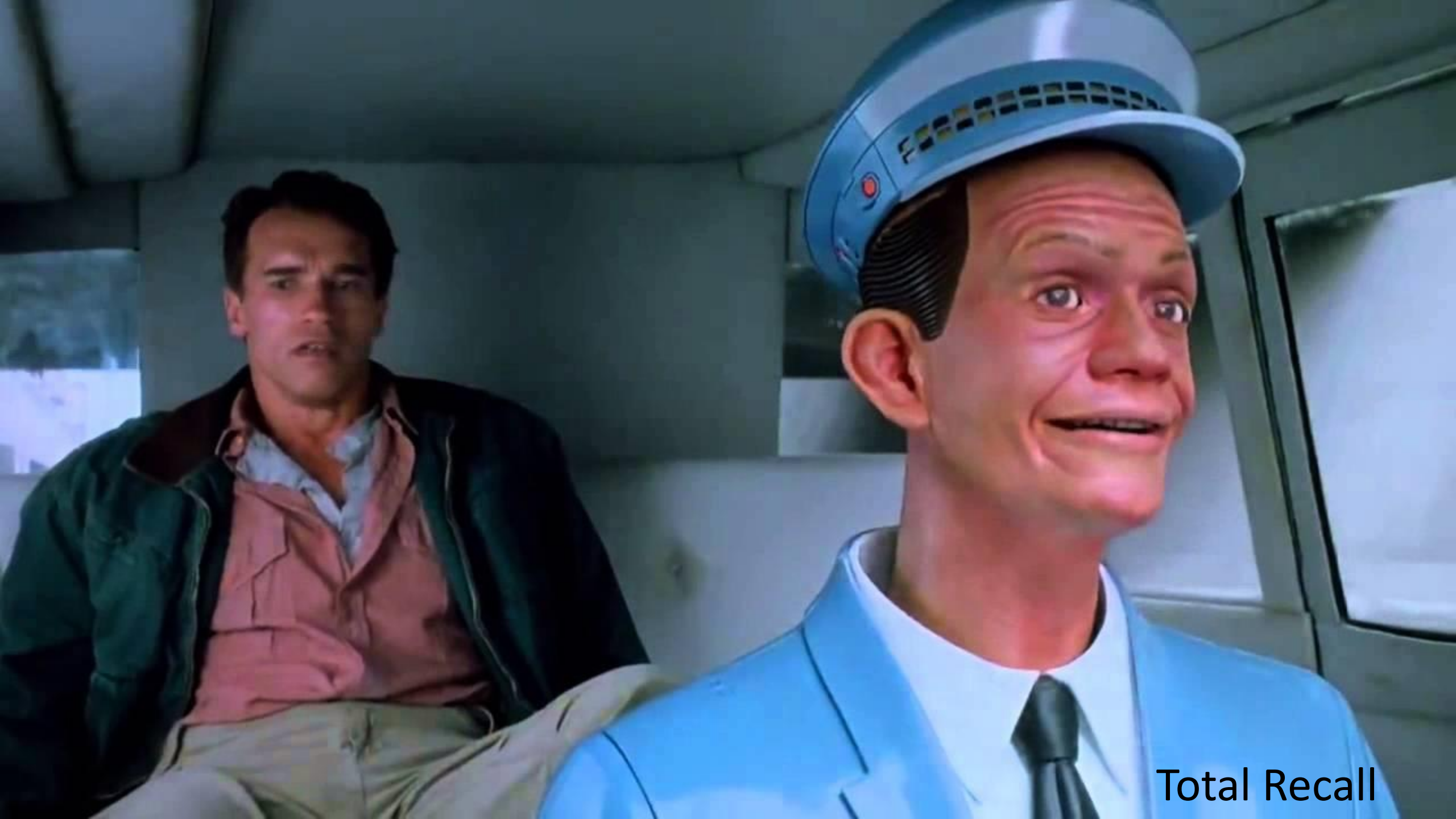
Total Recall

I am Legend

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Turbo Kid

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Black Panther

Future ‘things’ that will shape transport

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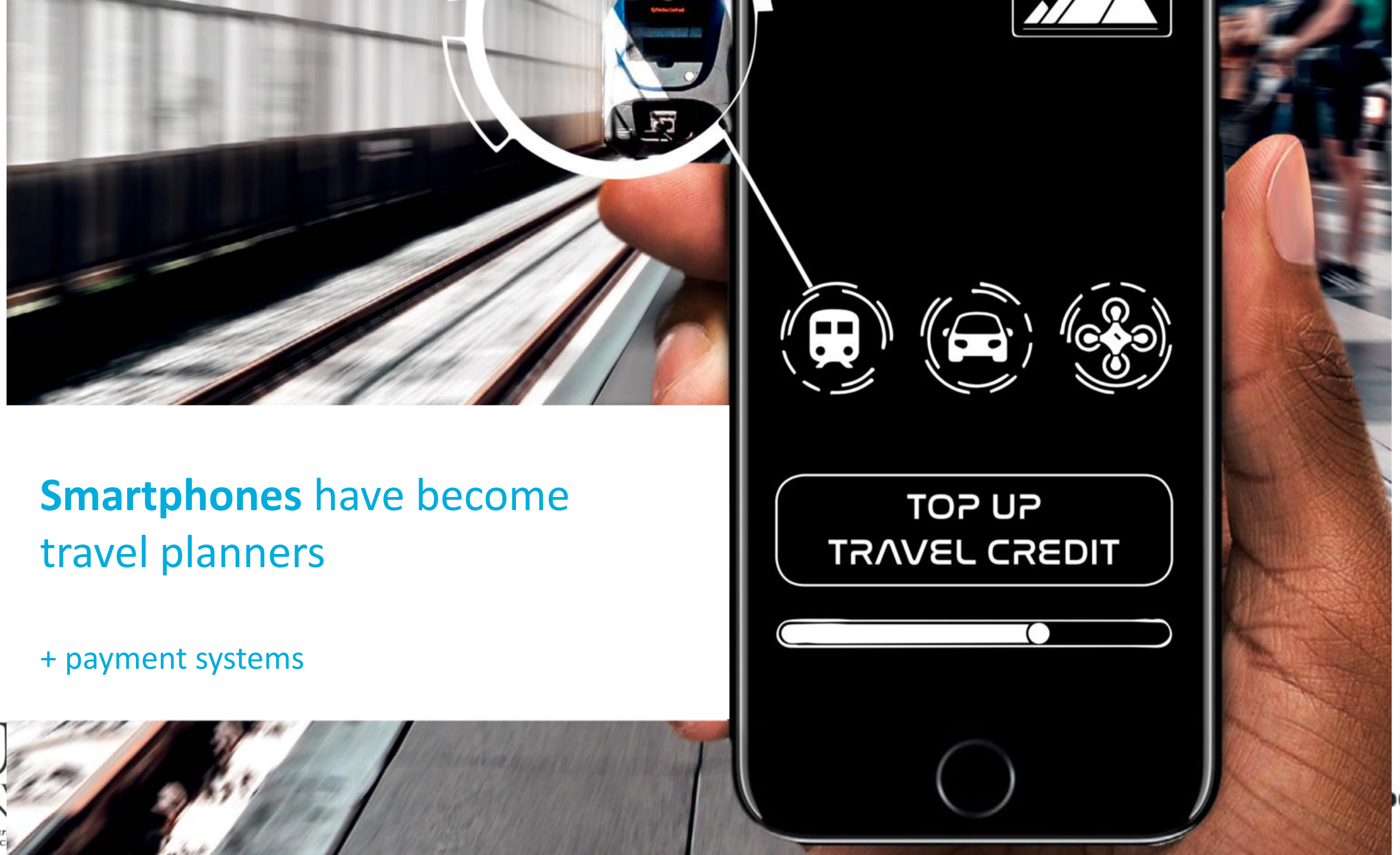
Smartphones



Smartphones have become travel planners

+ payment systems

Ride hailing and sharing services have become common

Electric Vehicles (EVs)

https://www.stuff.co.nz/motoring/news/107259055/new-zealand-now-has-10000-electric-cars

Started

stuff ☰ motoring

New Zealand now has 10,000 electric cars

Adele Redmond Colin Williscroft • 12:35, Sep 21 2018

36

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https://www.interest.co.nz/news/96697/boosted-strong-demand-%C2%A0rental-cars-and-tourism-mark

Boosted by strong demand for rental cars and the tourism market, new vehicle sales leap to a new record high in October, with sales of electric vehicles nowhere in sight

Posted in News November 03, 2018 - 07:19am, **David Chaston** Tweet

Forward this page

There are records all round for new vehicle sale in October.

Firstly there were 11,767 new cars sold, the most of any month in any year on record. And that is +6% higher than October 2017 which was the previous record.

Sixty percent of these were SUVs. This is the first month more than 7,000 SUVs have been sold in a month, with a record 2,221 compact SUVs sold, 3,004 medium SUVs were also sold and that was also a record for that category.

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What do EVs solve?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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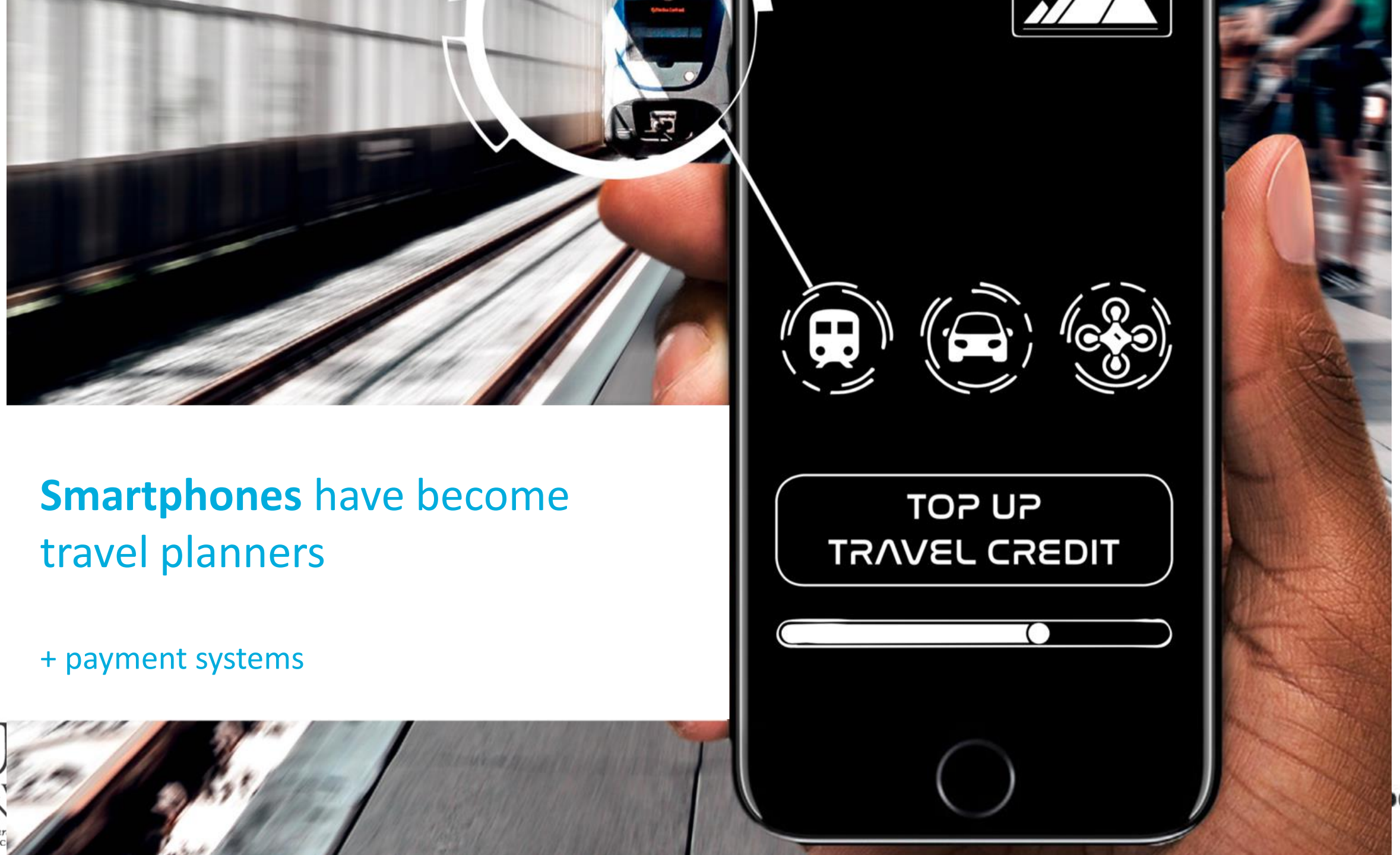
Smartphones



Smartphones have become travel planners

+ payment systems

Ride hailing and sharing services have become common

Mobility as a service (Maas)

Mobility as a service (Maas)

a shift away from personally-owned modes of transportation and towards mobility solutions that are consumed as a service.

- - wikipedia

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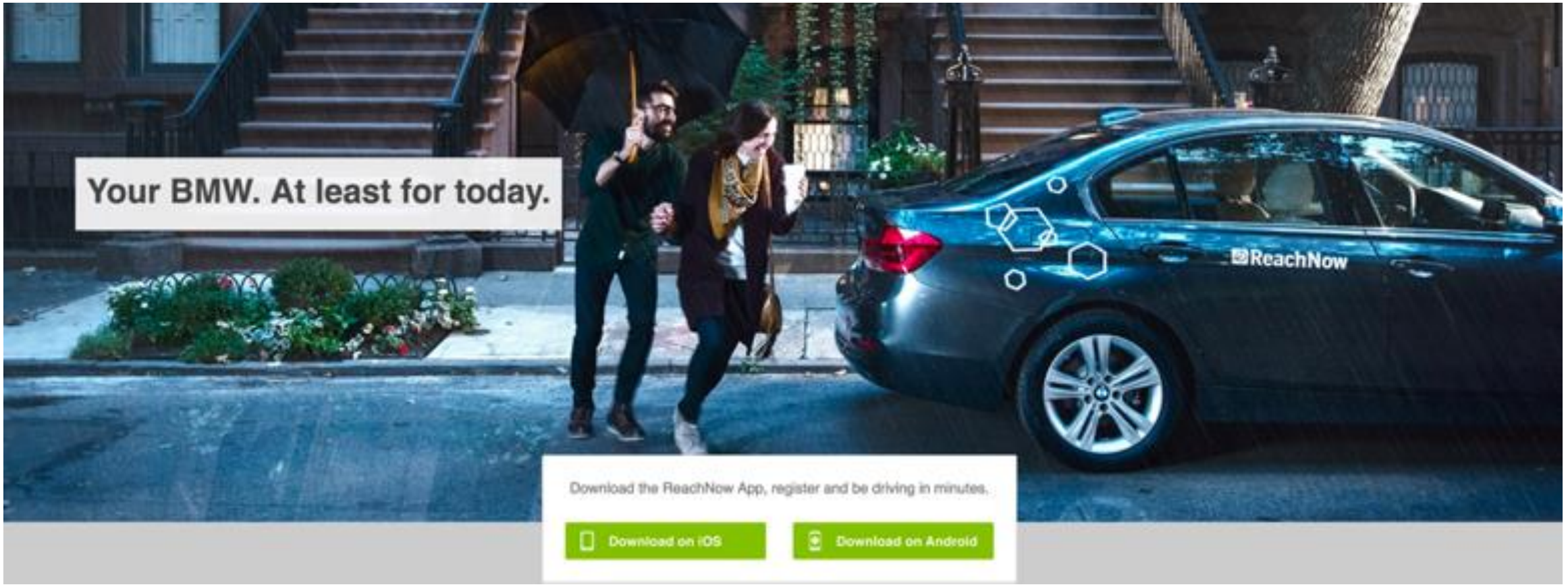
Other **shared transport options** have become a focus of debate

Many companies, include big auto makers, are aiming to sell mobility, rather than just vehicles



- Screenshot from BMW's ReachNow car-sharing service

Potential Impacts of Maas

- Newer vehicles
  - Less pollution (inc Evs)
  - Safer
- Decision for ‘every’ trip
  - More ‘cheaper’ greener trips
- Network efficiency/manage congestion
  - Potential for variable trip cost
- But “*it may happen that MaaS increases inequality where premium levels of service are on offer to those who pay more*”
  - https://www.polisnetwork.eu/uploads/Modules/PublicDocuments/polis-maas-discussion-paper-2017---final_.pdf

What do MaaS solve?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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Shared demand-led transport

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Timaruvians reconsider what public transport looks like

Date: 15 Feb 2019
CATEGORY: NEWS | Public Transport | Transport

After a two-month engagement study, Environment Canterbury says the response from the Timaru public to the possible introduction of an on-demand public transport service has been cautiously optimistic.

The project has progressed to its prototype testing stage, where aspects of the service such as functionality, hours, cost of operation and service coverage are being tested with individuals and focus groups, recruited from across Timaru, and

Related content

Community consulted on future of Timaru's public transport

What do shared demand led transport solve?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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Autonomous vehicles

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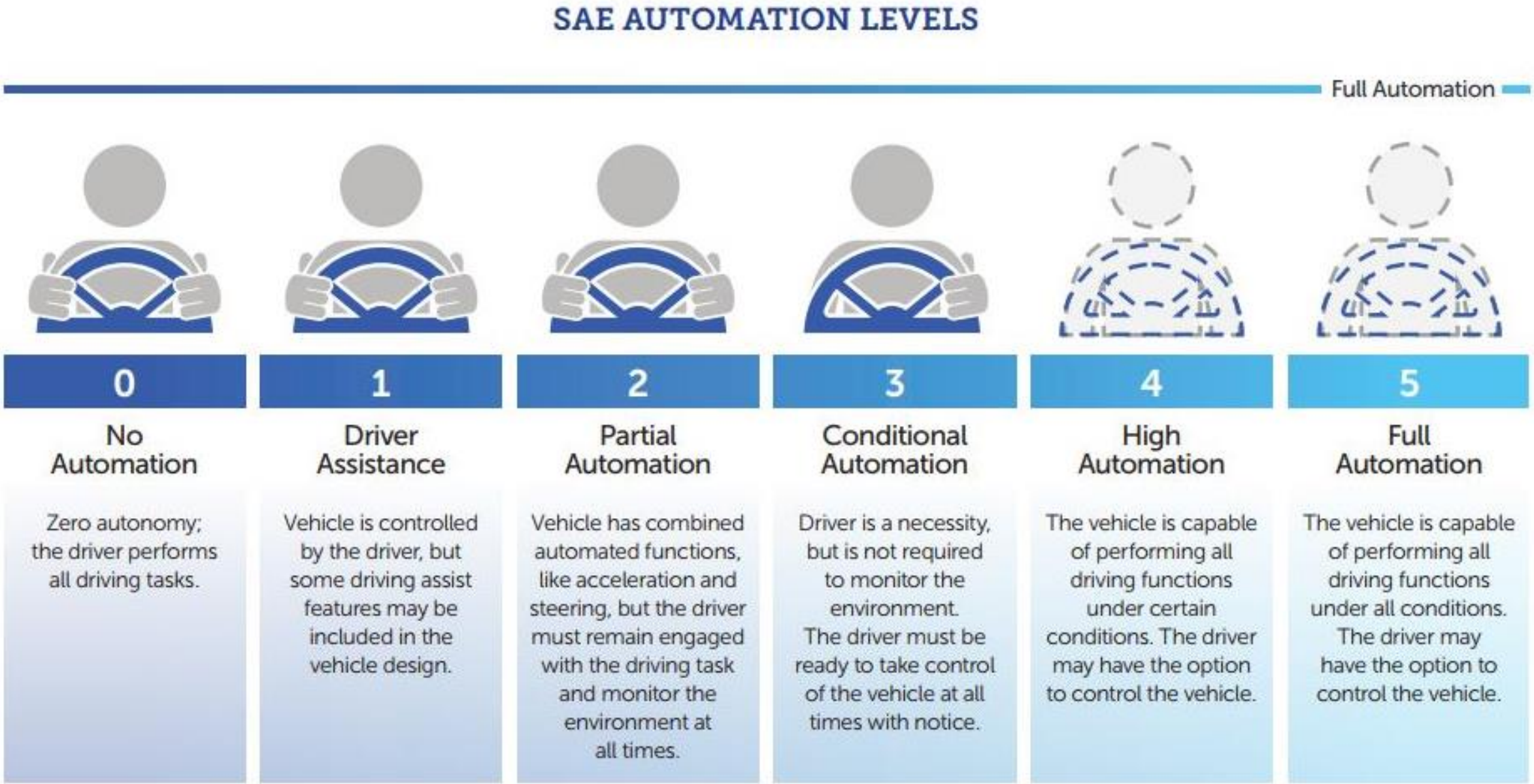
Autonomous vehicles



NHTSA AUTONOMY LEVELS

HUMAN

LEVEL 0

Human driver is in complete control. Maybe the car shifts its own gears, if you, you know, hate fun.

LEVEL 1

Individual controls are automated, like automatic braking, stability control, or throttle/cruise control.

A human is still running the show.

LEVEL 2

At least two functions automated in unison, like adaptive cruise control and automatic lane keeping.

You could not touch the controls, but don't do that.

TESLA MODEL S IS AT THIS LEVEL

LEVEL 3

The car is in control, but the human needs to be on standby to take control if needed.

All major functions automated; car can ask for help from human.

LEVEL 4

Humans are cargo! Car is in total control, and there may not even be human-usable controls installed.

Hopefully, humans will still tell the car where to go.

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CITY TOUR
TRAMWAYS.
152
ROLLICKIN dessert cafe
open 7 days
11AM to 10PM
ohmio
HOP
PROUDLY DESIGNED IN AOTEAROA

Fully autonomous vehicles

With the potential for human error removed, self-driving cars will reduce instances of accidents caused by driver error, drunk driving or distracted drivers.

Once driverless cars become commonplace on our streets, it is expected that accidents are likely to fall by a whopping 90%.

- https://onlinemasters.ohio.edu/blog/the-future-of-driving/

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Dozens of companies are competing to offer the first **shared automated vehicle fleets**

Public tests of **autonomous taxi services** started in Singapore and Pittsburgh in 2016

Waymo (Google) is about to launch a fully autonomous taxi service and has ordered 82,000 cars

We could be entering a new **shared mobility era** for urban transport

NZ TODAY

2045?

Private car era

- 90% households own a car
- Most own 2 or 3 (among highest rate globally)
- 70%+ trips by car
- <5% urban trips by public transport

Shared mobility era

- Access doesn't depend on ownership
- **Sharing cars, bikes, vans, scooters etc**
- Fleets of fully autonomous cars
- *Where could public transport fit?*

What could this mean for **public transport?**

There are divergent views of the future….

or

- PT could play a crucial role

PT could cease to exist

What do AVs solve?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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Other vehicles

CORA

Hyperloop

Hyperloop

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Active travel

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Living Streets Aotearoa

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What does ‘active travel’ solve?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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electronic Road User Charges (eRUC)

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electronic Road User Charges (eRUC)

Currently 50% fuel excise/ 50% RUC

Distance

Road Space?

electronic Road User Charges (eRUC)

- Network efficiency/manage congestion
  - Potential for variable trip cost by time and space
  - Could encourage PT
- ‘Track’ dangerous driving (e.g. speed)

What do e-road user charges?

- Safety 
- Climate Change 
- Congestion 
- Obesity 
- Social equity 

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A future vision?

… and the role of transport

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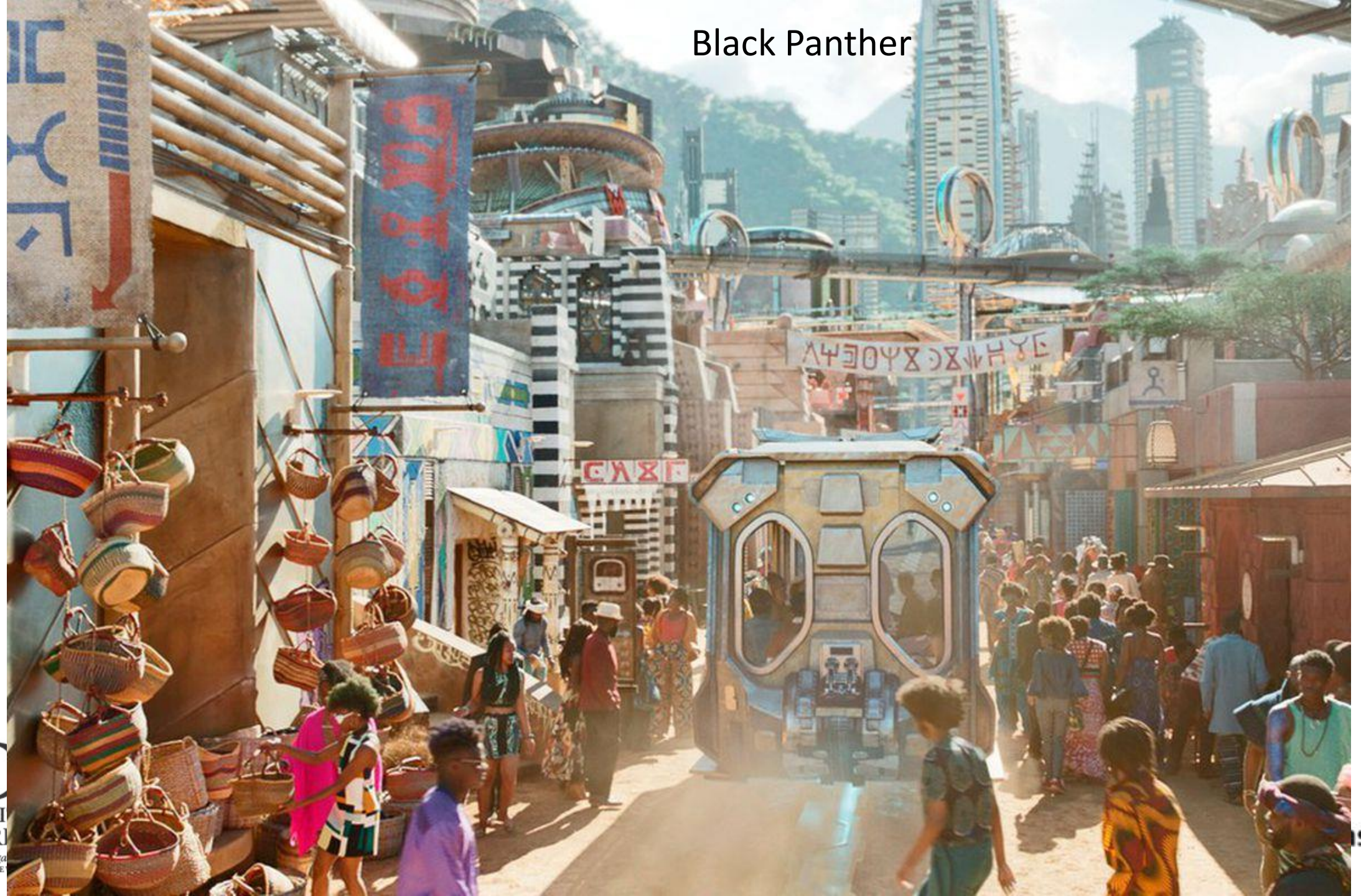


Freiburg, Germany


Freiburg, Germany

Freiburg, Germany

Vathorst, Netherlands


fietsstraat
auto te gast
Groot Wezenland

If you plan cities for cars & traffic, you get cars & traffic. If you plan for people & places, you get people & places - Fred Kent

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Thanks

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