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# **Rethinking Transportation 2020 – 2030**

**Rob Bailey  
APSE**



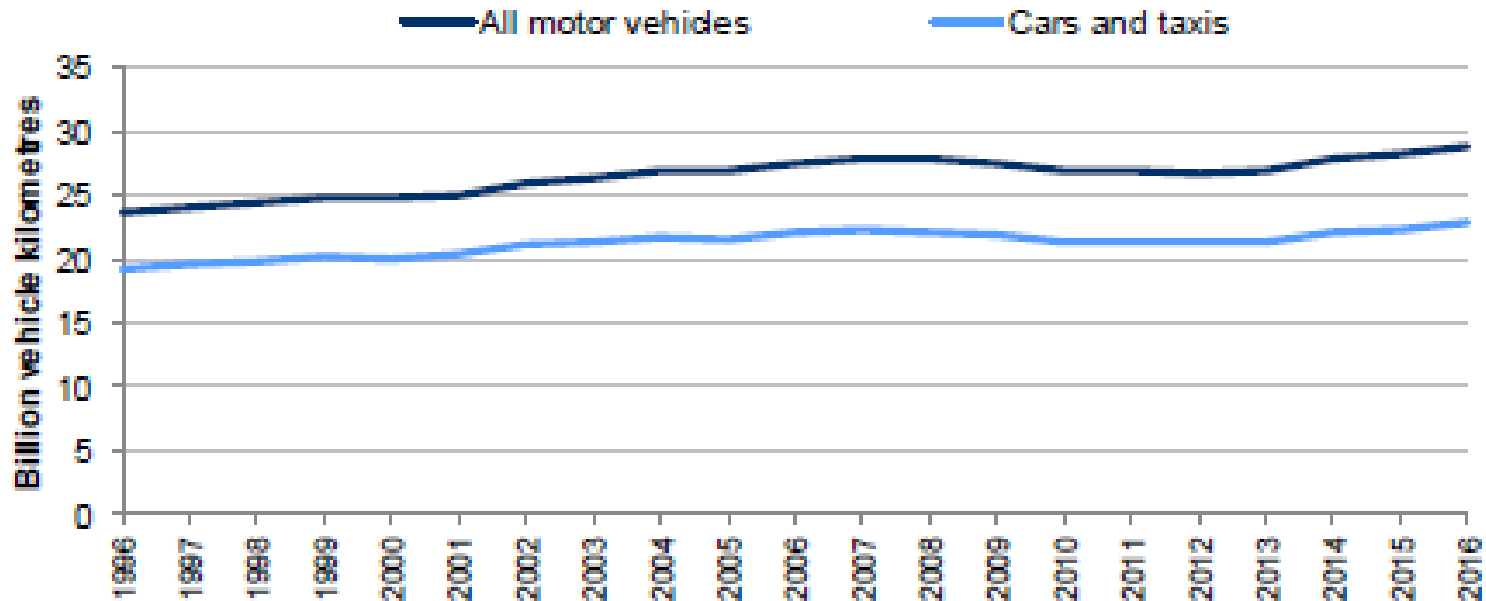
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**Rob Bailey**  
**APSE**



# Volume Traffic - Wales



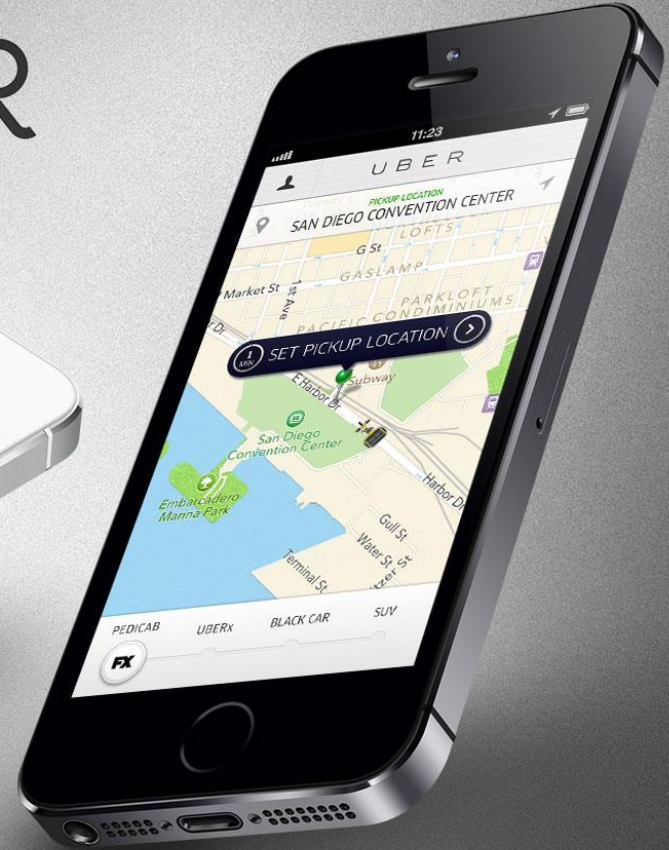
Source: WG analysis of AADF data



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# UBER



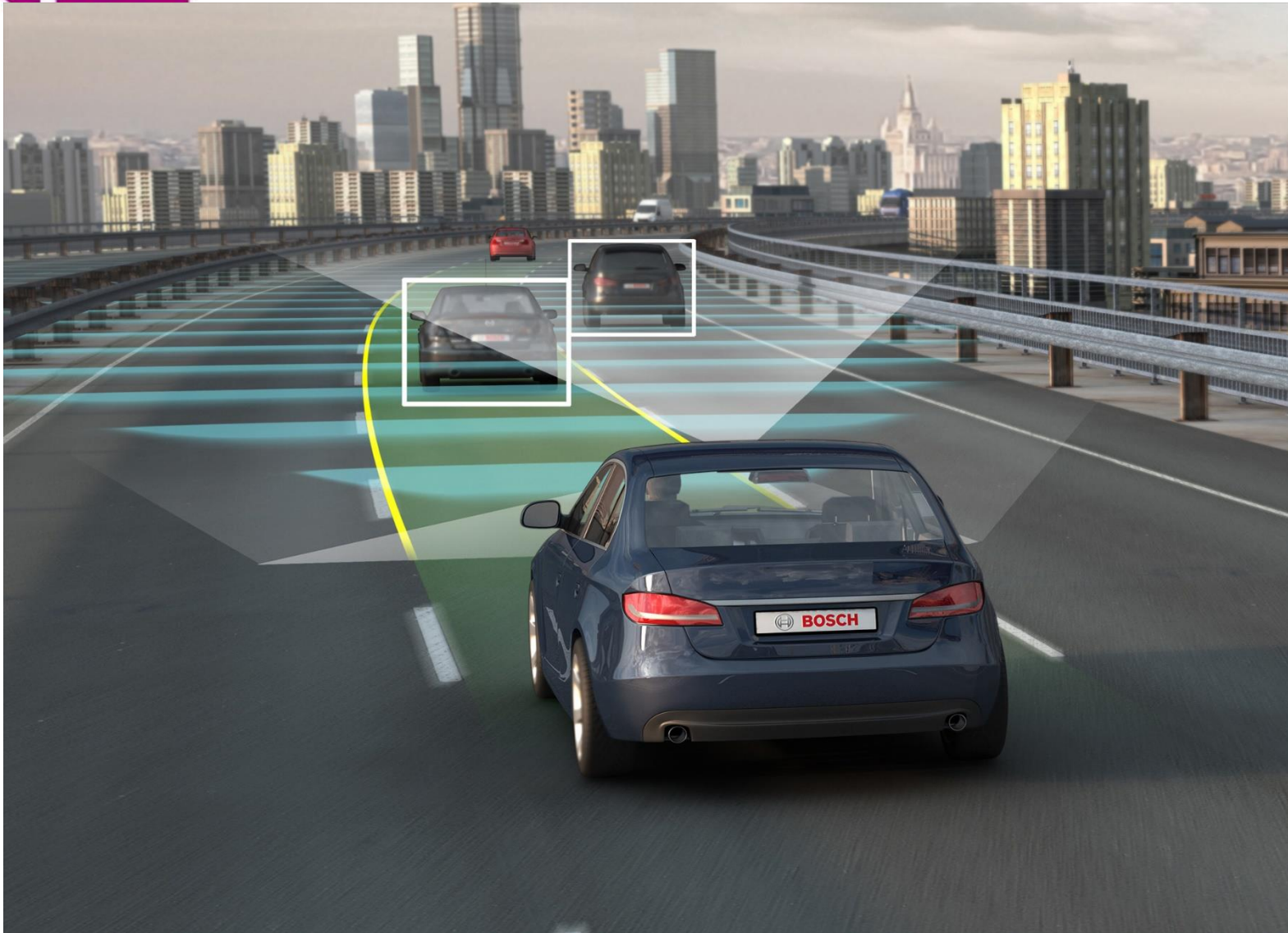


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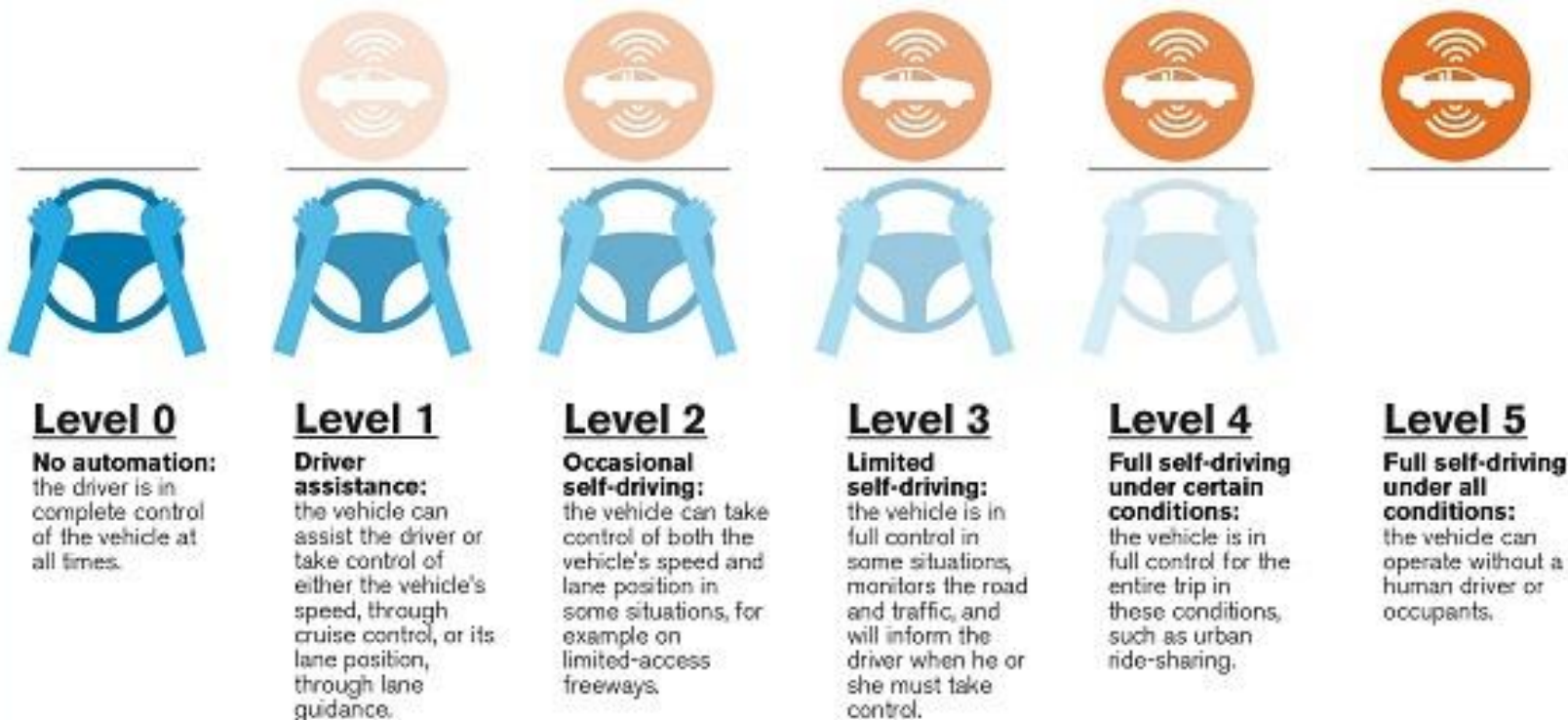




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## Five Levels of Vehicle Autonomy







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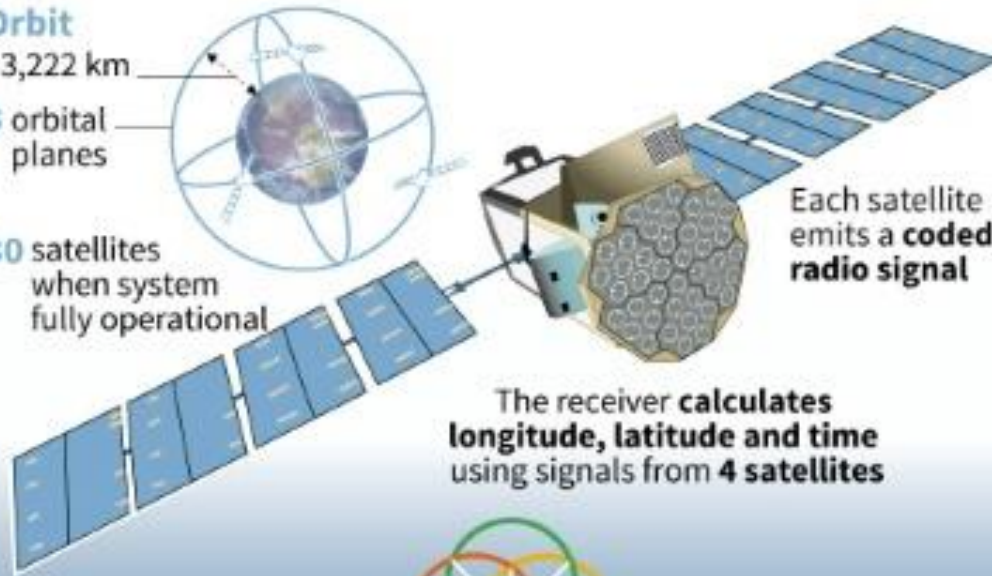
# The Galileo satellite navigation system

## Orbit

23,222 km

3 orbital planes

30 satellites when system fully operational



Each satellite emits a **coded radio signal**

The receiver **calculates longitude, latitude and time** using signals from **4 satellites**



**Angle to the equator**



56°

## Accuracy

**Within 1 metre** for professionals  
**Within 5 metres** for general public

**Communications centre**

Synchronises the signals



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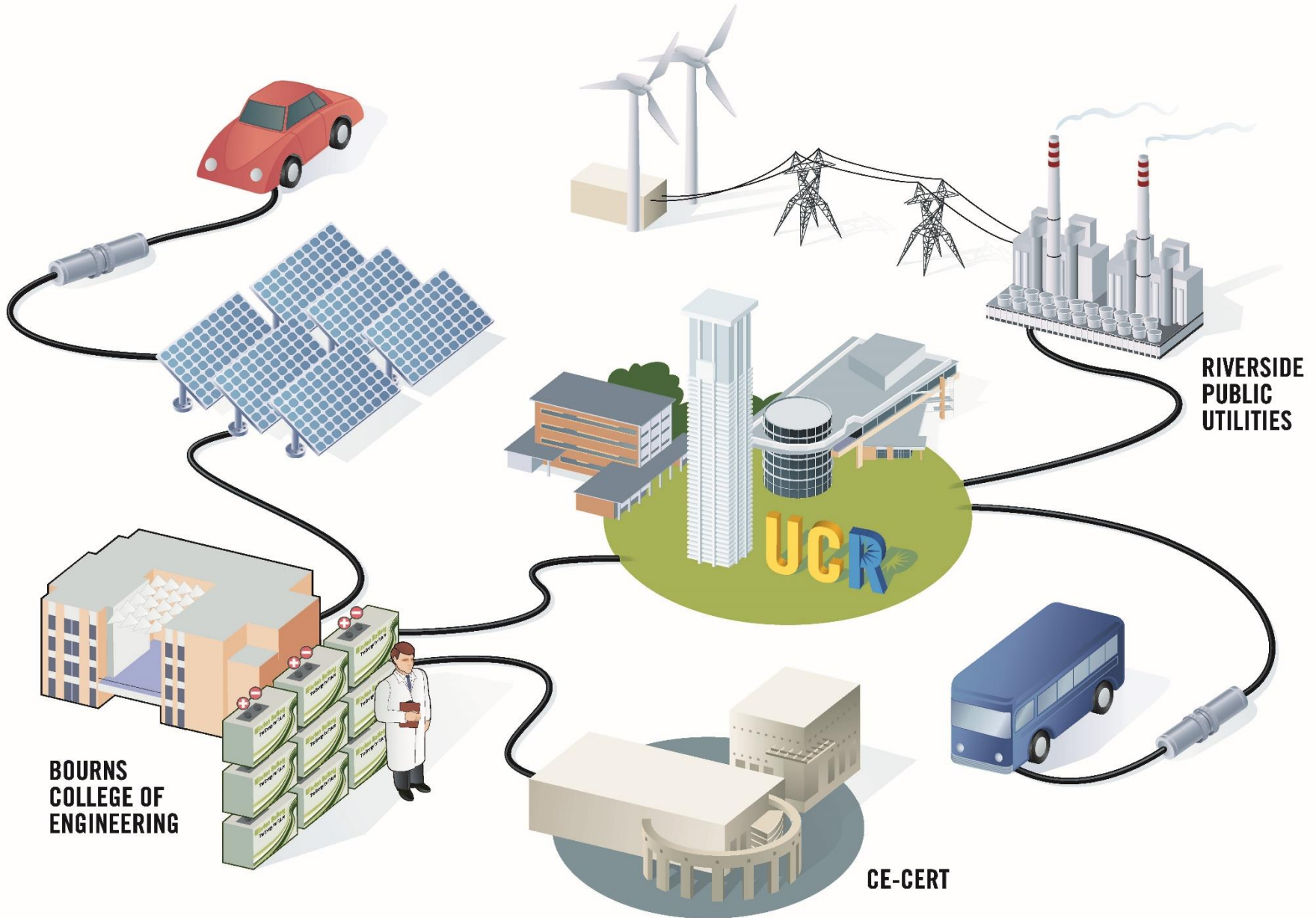


Richard B.  
2024





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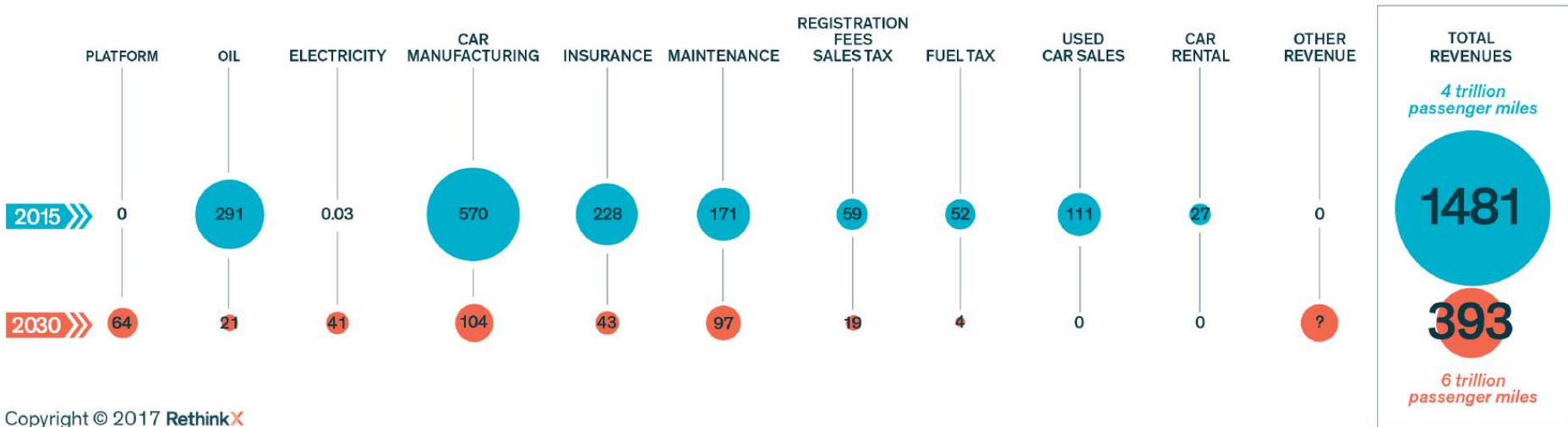
# S-Curve Adoption Model





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» Revenue distribution along the car value chain in billions of U.S. dollars



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## » *Potential impacts*



### POSITIVE IMPACTS

- Significant consumer savings and productivity gains
- Increased mobility and accessibility for those who cannot drive
- Fewer road accidents, fatalities and hospitalizations due to human error
- Lighter and less material-intensive vehicles
- Improved air quality and public health
- Decoupling of energy and geopolitics
- Potentially less military spending overseas
- Lower infrastructure costs
- Less traffic congestion
- Reclaiming parking spaces and infrastructure for productive uses
- Lower CO<sub>2</sub> emissions

### NEGATIVE IMPACTS

- Formation of oligopolies/monopolies among TaaS providers
- Job losses
- Shrinking of government revenues from oil and parking





# Oil Demand

- 40% decline in Oil demand
- Huge decrease in \$ price
- Instability in petro nations – Middle east



# Disruption

- Number of passenger miles will increase from 4 trillion miles in 2015 to 6 trillion in 2030.
- Cost of delivering these miles will drop from \$1,481 billion in 2015 to \$393 billion
- The size of the U.S. vehicle fleet will drop from 247 million in 2020 to 44 million in 2030.
- Annual manufacturing of new cars will drop by 70% during the same period.
- Annual manufacturing of new ICE mainstream cars sold to individuals will drop to zero. Car dealers will cease to exist.
- Huge opportunities will emerge in vehicle operating systems, computing platforms and TaaS fleet platforms.
- Global oil demand will drop from 100 million barrels per day in 2020 to around 70 million barrels per day in 2030.
- The price of oil will drop to around \$25 per barrel. Oil prices might collapse as soon as 2021.
- High-cost oil fields will be completely stranded. North Sea – Shale oil

**LOCAL SERVICES**

**LOCAL SOLUTIONS**



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# Contact details

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