The mobility disruption is changing how we travel, purchase, and consume

**Public health/environmental policy**

2019 deployment of the Ultra Low Emission Zone in central London through to 2021

**Decline in aftermarket**

~60% lower repair and maintenance costs over an EV’s lifetime compared to ICE

**Changing data infrastructure for smarter vehicles**

4TB amount of data generated by an autonomous vehicle per second

**‘Aggregator’ business models will impact downstream value**

15x increase in downstream value pools due to services such as entertainment and retail

**New supply chains emerge to support EV, AV and MaaS**

50+% decline in battery costs expected from now until 2030

**Fleet operating costs will be optimised**

29% of heavy goods vehicles are currently running empty

**On-demand mobility driving the rise of fleets**

30-40% decline in per-mile cost for MaaS vehicles

Sources: Intel, Waymo, Bloomberg New Energy Finance, KPMG Mobility 2030 analysis, UBS electric car teardown
Acceleration of EV, AV and MaaS adoption expected from the mid-2020s

2017-2040 passenger vehicles in UK

**EV penetration**
- % of new car sales
- % of parc

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of new car sales</td>
<td>2%</td>
<td>8%</td>
<td>27%</td>
<td>69%</td>
<td>94%</td>
</tr>
<tr>
<td>% of parc</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
<td>20%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**AV penetration**
- % of new car sales
- % of parc

<table>
<thead>
<tr>
<th>Year</th>
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<td>% of new car sales</td>
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<td>26%</td>
<td>40%</td>
</tr>
<tr>
<td>% of parc</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

**MaaS penetration**
- % of new car sales
- % of parc

<table>
<thead>
<tr>
<th>Year</th>
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<th>2025</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of new car sales</td>
<td>3%</td>
<td>3%</td>
<td>11%</td>
<td>25%</td>
<td>42%</td>
</tr>
<tr>
<td>% of parc</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
<td>6%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Source: KPMG Mobility 2030 analysis
The mobility disruption is connecting historically disparate value chains.

Source: KPMG Mobility 2030 analysis
Indeed, OEMs are starting to gather the key ingredients

Source: KPMG Mobility 2030 analysis
The scale of the investment opportunity has increased exponentially

**Historic**

A new $10 trillion industry is attracting significant investment

- Smart mobility has attached investment of **$111 billion** since 2010
- The top five ride hailing firms are worth **$150 billion**
- **$90 billion** carmakers in Electric Vehicles according to Reuters

**The investment opportunity and benefits are significant:**

- **$9 trillion** – potential global market for mobility and related services
- **$900 billion** – 10% annual global market share of mobility market that Britain could secure within a decade by leading the way...
- **$50-100 billion** per year of additional estimated social and economic benefits in UK by 2030...

Source: KPMG Mobility 2030 analysis
Investment opportunities exist across the mobility ecosystem

The future mobility ecosystem will consist of…

**Businesses**
- e.g. Mobility as a Service platforms
- e.g. Commercial logistics businesses

&

**Assets**
- Vehicle fleets ‘Cars’
- EV charging stations ‘Plugs’

… supported by …

**Infrastructure**
- Road infrastructure ‘Tarmac’
- Real estate, parking and servicing
- Electricity grid ‘Wires’
- Telecoms infrastructure ‘Pipes’
- Manufacturing infrastructure ‘Tools’

… all underpinned by …

**Financial ecosystem**
- Payments ‘enabling transactions’
- Data sharing platforms ‘insight aggregation’

Example mobility investment types
- Emerging business models
- Fleet hubs and depots
- Batteries and alternative fuels
- Autonomy
- Data & Connectivity
- EV/AF infrastructure
- Physical infrastructure
- Cybersecurity

Key
- Companies and technology
- Infrastructure and assets

Source: KPMG Mobility 2030 analysis
Investments vary by risk and reward appealing to different investor types

Illustrative investment opportunities

- EV/AF Infrastructure
- Physical Infrastructure
- Data and connectivity
- New business models
- Vehicle & manufacturing
- EV charging infrastructure
- Integrated mobility platforms
- Traffic coordination technologies
- Cyber/Security systems
- Battery manufacturing
- High resolution maps
- Repair/garages for AV/EV
- Fleet financing
- Cloud/data centres
- V2V/V2I Sensors
- Smart road infrastructure
- Upgraded roads
- Distributed generation and storage
- AV software
- AV Lanes
- 5G
- MaaS platforms

Source: KPMG Mobility 2030 analysis
Investment strategies and key challenges

Investment strategies

- Growth opportunities
  - New business models
  - Attracting growth (innovation, assets)
- Portfolio optimisation
  - Value-adding portfolio adjustments
  - Stronger governance and monitoring

Financial benefit

- Upside
- Loss avoidance

Investment considerations

- New Capabilities
- New investment thresholds
- Technology obsolescence
- Shorter planning horizons
- Increased linkages
- Increased Uncertainty

Source: KPMG Mobility 2030 analysis
Do your investments include any of these ‘winning ingredients’?

<table>
<thead>
<tr>
<th>Think</th>
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</thead>
<tbody>
<tr>
<td><strong>1 Decode disruption</strong> (action paralysis)</td>
</tr>
<tr>
<td><strong>Enable experimentation</strong></td>
</tr>
<tr>
<td>— When and how big is the Mobility disruption?</td>
</tr>
<tr>
<td>— How do value pools change as a result?</td>
</tr>
<tr>
<td>— What are traditional and non-traditional competitors doing?</td>
</tr>
<tr>
<td>— How does the disruption impact my portfolio?</td>
</tr>
<tr>
<td>— What are my response hypotheses?</td>
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<table>
<thead>
<tr>
<th>Design</th>
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<tbody>
<tr>
<td><strong>2 Fight for the customer</strong></td>
</tr>
<tr>
<td><strong>Getting closer to the customer</strong></td>
</tr>
<tr>
<td>— Where should I play in the future value chain?</td>
</tr>
<tr>
<td>— How do I retain access to my customer?</td>
</tr>
<tr>
<td>— What will my future customer value?</td>
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<table>
<thead>
<tr>
<th>Un-strand assets</th>
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</thead>
<tbody>
<tr>
<td><strong>Enable pivot and transition</strong></td>
</tr>
<tr>
<td>— How do I build agility and resilience (future-proof) in my assets?</td>
</tr>
<tr>
<td>— In what adjacent markets do my existing capabilities give me a right to play?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Monetise data</th>
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<tbody>
<tr>
<td><strong>Understanding data</strong></td>
</tr>
<tr>
<td>— What do I do with all the data I am collecting?</td>
</tr>
<tr>
<td>— How can I leverage my data as a first mover?</td>
</tr>
<tr>
<td>— How do I ensure data ownership?</td>
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<table>
<thead>
<tr>
<th>Execute</th>
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<tbody>
<tr>
<td><strong>5 Search for scale</strong></td>
</tr>
<tr>
<td><strong>Developing scale</strong></td>
</tr>
<tr>
<td>— How do I scale new business models and/or investment?</td>
</tr>
<tr>
<td>— How can I invest in scale alongside ongoing operations?</td>
</tr>
<tr>
<td>— How do I agility and flexibility in my operating model?</td>
</tr>
<tr>
<td>— How do I create the platform of the future?</td>
</tr>
</tbody>
</table>

Source: KPMG Mobility 2030 analysis
Our Mobility 2030 leadership team can help you navigate these changes

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kpmg.com/uk/mobility2030

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Designed by CREATE | CRT107766A | April 2019