

Professional Delphi on Automated Vehicles #3

Questions

January 2020

In Round two, participants highlighted a range of potential undesirable effects – where people and goods might travel further, in larger quantities – as a result of vehicle automation. Potential risks included increased road-based travel at the expense of rail or water-borne modes, a shift away from public transport and cycling/walking, and more vehicles on the road.

- 1. What types of actions do you think are needed to limit potential undesirable effects in passenger and/or freight transport?**
- 2. Who or what do you think should be responsible for developing the innovations, including algorithms and regulations, to prevent these potential undesirable effects from occurring?**

Entrenched patterns of passenger vehicle ownership were highlighted in Round Two as a potential barrier to fundamental change of the transport system associated with vehicle automation.

- 3. In your opinion, what needs to happen to ensure the transition from private ownership to shared use takes place?**
- 4. Who do you think should be responsible for the actions, strategies and/or programmes you have identified?**

Automation of various aspects of the driving task has been occurring over a long period of time, and is likely to continue. This manifests by way of automated features in vehicles (both passenger and freight). Examples include: adaptive cruise control - vehicle controls speed and automatically adapts to surrounding traffic, lane assist - alarm is activated when the vehicle crosses a white lane line, automatic parking – sensors park the car in a designated space without human intervention. This is just a small number of automated features which already exist in commercially available freight and passenger vehicles. SAE level 2-5 automated vehicles are fundamentally amalgamations of driver assistance features.

- 5. Which driver assistance technologies, or combination of technologies (including but also beyond those listed above), do you think will be most effective for reducing fuel consumption and energy demand of vehicles (per vehicle, per vehicle-km, or per passenger/tonne-km)?**

Infrastructures to facilitate connected-and-autonomous-vehicles include widespread deployment of 5G internet, the improvement of lane markings (for sensors), and regulatory frameworks. The development/improvement of these infrastructures are all taking place at the moment, at varying speeds and in limited spaces.

- 6. What infrastructures do you think are most important for enabling the uptake of automated vehicles?**
- 7. How can provision of these infrastructures occur faster and across all parts (countries/regions, urban and rural) of the UK?**

Potential opportunities for the freight sector were identified in Round 2, including assuring more efficient driving styles, logistical efficiencies, and ensuring return loads (preventing empty miles). Given the fragmented nature of the freight sector, and the expected higher cost of fully-automated freight vehicles compared to traditional vehicles, it follows that only some of the sector will be able to purchase these vehicles, and achieve the (potential) benefits from vehicle automation – including reduced costs.

- 8. In your opinion, how can the potential benefits of vehicle automation be brought to all operators in the freight sector and especially to organisations with fewer than five vehicles?**