Strategy Development for Connected and Automated Road Transport

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Moving Freight with Better Trucks
Background and Introduction

• Vehicle automation a clear trend

• But varying experts opinions on:
  ▪ Projected time scales
  ▪ Technology options
  ▪ Use cases/ services

• Necessary for policy makers to prepare their responses to this development

• Positive and negative are scenarios possible
Positive View on Vehicle Automation

- Many potential benefits of vehicle automation are being quoted:
  - Improved road safety levels
  - Decreased emissions
  - Increased network capacity

- Emergence of related mobility services also holds the promise for even larger benefits:
  - For society as a whole
  - On the city level
Negative View on Vehicle Automation

• But at the same time some negative effects could also be envisaged:

  ▪ Network capacity gains leading to induced traffic
  ▪ Ability of using travel time more productively leading to longer trips as people move further away from centres
  ▪ This in turn then leads to further urban sprawl
  ▪ Potentially huge fleets of empty vehicles running errands and generating much larger congestion levels
  ▪ Wider labour market effects
Perspectives of Government vs. Industry

• Governments investing in R&D & demonstration of near market-ready systems, showcasing their ambitions for leadership in this space

• Emerging companies with much stronger IT focus in technical background and leadership mentality aggressively pushing into the market

• Vehicle automation thus part of the concepts of:
  ▪ Sharing economy
  ▪ Disrupting technologies
The Question of Government Intervention

• Policy makers to manage the transition period
• Lock-in benefits while avoiding potential risks
• Considerations for R&D funding and Piloting
• Key tools are legal and regulatory frameworks
• Regulation as a barrier to wider implementation
• Technology-led discussion overly optimistic
• Technology mature for many types of use cases
• Leadership from policy makers is essential
Regulatory Frameworks for Automated Vehicles

• Discussion about regulation in the context of AV typically centres on the vehicles

• Work is on-going on many levels here nationally and internationally:
  ▪ Updates to the texts of the agreements under UNECE WP.29
  ▪ Concepts of “driving tests” for automated vehicles
  ▪ Test tracks simulating various real-life scenarios
  ▪ Governments amending their legal frameworks in order to allow testing on public roads
Government Actions and Impact on Society

• Regulation will be necessary, as benefits are public goods not naturally protected by markets
  ▪ Road safety improvements
  ▪ Accessibility improvements
  ▪ Reduced congestion levels

• Uncertainty around AV sees current AV regulation stretch existing frameworks

• Existing frameworks can only stretch so far, they will need to be updated shortly

• Key issue to resolve in the short term: how safe must an AV be to obtain approval for operation?
Regulatory Frameworks for Transport Services

• Regulating the automotive aspect of automated vehicles of course is key
• But likely implementation of this technology as enabler for shared mobility concepts
• Therefore regulation of mobility services needs to be considered in parallel
• Direct competition with legacy transport services, which are often heavily regulated and protected
• Automated trucks on motorways another key example with related regulatory schemes
Current Issues surrounding AV Regulation

• Disrupting effects of technologies and services are already very visible
  
  ▪ In the case of Transportation Network Companies (TNCs) such as Uber, Lyft, Didi, BlaBlaCar, etc.
  
  ▪ But also with functionalities of automated vehicles on public roads, e.g. the Tesla Autopilot

• This is because of increasing time gap between innovation and the related necessary regulatory responses
Big Data in Transport - A Way Forward?

• Policy makers under increasing pressure to strike a balance between administrative oversights and enabling innovation

• The advent of big data and its application to the transport sector can solve this dilemma through flexible data-led regulatory approaches

• Key policy objectives to cover here include:
  - Vehicle/ traffic safety
  - Personal security (driver)
  - Minimum mobility levels
Geographical, Societal, Cultural Factors

• Social, societal, and demographic factors
• Economic level and income distributions
• Car ownership levels and car culture
• Existing layout, size, and density of urban form
• Specific requirements for mega-cities
• New cities, green-field/ brown-field developments
• Current modal provision and share
• Cultural aspects relating to e.g.:
  • IT and technology literacy,
  • Perception of safety and trust,
  • Driver behaviour,
  • Environmental awareness,
  • Views on privacy, etc.
Potential Labour Market Effects

• Substantial labour impacts likely to arise as a result of advanced AV technology

• Substantial job losses amongst drivers, within a decade, job losses in the order of 1 million

• Unlike other circumstances, drivers displaced may struggle to find alternative employment

• Industry specific support consistent with good practice for general unemployment support

• To be funded by the main beneficiaries of the advanced AV technologies implemented
Thank you for your attention!

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