Strategy Development for Connected and Automated Road Transport

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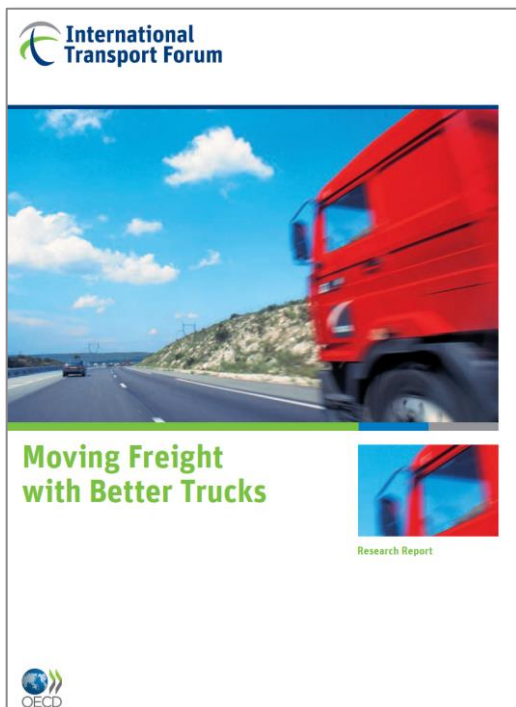
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Background and Introduction

- 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

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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

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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

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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

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Thank you for your attention!

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