THE IMPACT OF NEW MOBILITY CONCEPTS

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VISION – NEW MOBILITY

- In 2030 we can have a better living environment for society and individuals
- New Mobility can potentially solve problems → preconditions need to be set now
- How to scope with uncertainties? → investment decisions are long term and large
  - Explore scenarios & reduce uncertainty

_TNO has an integral, future oriented, multidisciplinary focus (technologies and social innovation) and a neutral precompetitive role_
FOCUS AREAS

- Strategy
- Impacts
- Governance
DIGITALIZATION: IMPROVING DECISION MAKING IN CITIES

using worldwide knowledge

fact-based using different data sources

an integral approach avoid sub-optima

adaptive, use experience to improve

in collaboration with stakeholders
MARKET COMPETITIVENESS

Strategy | Impacts | Governance

## DRIVERS AND BARRIERS

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<th>Strategy</th>
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**Drivers**
- Efficiency en Reliability
- Usability
- Receptive Public
- Fragmented Market
- Worldwide Competition
- NL Government involvement

**Barriers**
- Fear for change
- Lack of knowledge
- NL not ideal market
- OV chipcard
- Path towards integrated platform
SCENARIO PLANNING

Strategy

Impacts

Governance

Level 3/4 automation

High sharing

Level 5 automation

Low sharing

Multimodal and shared automation

Mobility as a service: any time, any place

Letting go on highways

Fully automated private luxury

TNO/ Arcadis (2018)

TRANSPORT IMPACTS

Strategy | Impacts | Governance

Dramatic increase in the use of automated vehicles due to convenience. Mass congestion as a result.

Car | Train | Bicycle | Private autonomous car | Automated shared taxi
Car passenger | Bus / light rail / metro | Walking | Automated taxi | Automated shared van

TRANSPORT IMPACTS

Strategy  Impacts  Governance

AVs = Congestion X 2.5
SPATIAL PLANNING – URBAN STRATEGY

Strategy

Impacts

Governance

There is a need for:
- Strategic spatial planning
- Traffic & Environmental impacts
- Urban (re)development
- Solutions for Bottlenecks

- Use of various data sources and simulation models
- Need to cooperate between various departments and levels of decision making
KNOWLEDGE CHAIN OF NEW MOBILITY

**Strategy**
- Understand New Mobility
- Activity Patterns

**Impacts**
- Modal Split
- Impacts on Network

**Governance**
- Broad Societal Impacts
- Policy and Management

**Activity Based Modelling**
- Choice Behaviour
- New Mobility Modeller
  - Scenario studies
- Artificial Intelligence
  - Choice Behaviour

**Urban Strategy**
- Impacts on a (road) network
  - Urban Strategy
    - Impacts on accessibility and liveability (CO₂, noise, air quality)
  - Urban Innovation Framework
    - Increase learning capacity, integral perspective and adaptivity

**Pilots**
- U(x₁,…,xn)

**Fountain Intervention Modelling**
- U(x₁,…,xn)
- Fountain Intervention modelling

**Urban Strategy**
- Real time management with dashboarding

Accelerating insight in scenarios, decision making and implementation
GOVERNANCE

- Adaptive Policy Making
- Implementation of Pilots & Strategies for scaling-up
- Decision-making structures
TNO NEW MOBILITY STRATEGY

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THANK YOU FOR YOUR ATTENTION

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