Drivers & Barriers of MaaS

Authors: Y. Araghi¹, N. Larco^{1,2}, C. Doll³, G. Bouma¹, D. Vonk Noordegraaf¹, K. Krauss³

- 1. TNO, the Netherlands
- 2. Urbanism Next Center, University of Oregon, United States
- 3. Fraunhofer ISI, Germany







- We determine drivers & barriers of MaaS using existing literature, extensive expert opinions and in-house knowledge
- We have designed a conceptual framework, displaying the confrontation of MaaS drivers and barriers
- We provide input for decision makers on policies implementation for MaaS and how to prepare the market for this radical innovation

Current situation





1. Public sector

- Less congestion due to decreasing car usage in the crowded metropolitan areas
- Better air quality by utilizing more public transport (PT) and reducing the private car
- Reduced parking demand by reducing the need to travel to crowded areas
- Efficiently using PT by increasing the occupancy rate
- Reducing car ownership by making PT more attractive and more accessible
- Providing transport to suburban dense areas

2. Private sector

- Open access data stimulating new business ideas
- Opening new markets for current PT
- Synchronizing with complementary transit providers yielding more clients
- Auto makers offer expensive products (e.g. electric, automated vehicles)

3. User demand

- Appetite among young users to use alternative modes + services
- Faster, Cheaper, environmentally cleaner transport services are always highly valued





1. Public sector

- Monopolistic behaviour of PT, blocking entry to market
- Resisting data delivery to MaaS platforms
- Lack of infrastructure for new modes (e.g. dedicated parking) areas for car sharing or bike sharing, e-scooters)
- Conflicting local authority regulations and national laws
- Resisting entry to market by providing favorable contracts to current transport providers
- Publicly funded pilots are not allowed to grow further than a certain level





2. Private sector

- TNCs may cancel or cut services if not profitable, acting strategically and profit maximization
- TNCs might increase car share in urban areas
- Monopolistic behaviour by large TNCs may block the entry for start ups
- Private travel data leak by TNCs allowing for unwelcome commercial purposes





3. User demand

- Lack of demand due to lack of knowledge or resistance to new modes
- Facilities and infrastructure or software may be incomplete or not user-friendly or expensive
- New modes in MaaS raise safety concerns





Level 2 Integration of booking and payment (Current Situation)

Level 3 Integration of service offers

Level 4 Integration of societal goal policies & incentives (Fully functioning MaaS)

Successful MaaS:

- 1. Must have integrated routing, planning and ticketing systems in apps
- 2. Must have economic feasibility and found a sustainable business model competing with current transport providers
- 3. Must overcome these barriers: Resisting Data, Lack of Space and Infrastructure, Monopolistic Behavior
- 4. Stimulate the willingness to cooperate among competing transport providers to offer their services on a common platform

Key Take-Away:

The large-scale implementation and deployment of MaaS requires an integral strategy, monitoring and management which must include how public and private parties are going to cooperate in the realization of MaaS platforms.