How to support the development of MaaS: Implications for public governance

Author: Steven Sarasini, WP2 Shift

Mobility as a Service (MaaS), sometimes referred to as Combined Mobility, Mobility on Demand, and Integrated Mobility, is considered to have the potential to bring about sustainability gains within passenger transportation. Billed as an alternative to private car ownership and use, with public transport as a 'backbone', MaaS can promote more sustainable travel behaviour through, among other things, modal shifts towards shared and active modes.

In studies funded by the Nordic Energy Research project SHIFT and the Vinnova project IRIMS, researchers at RISE and several other Swedish research organisations have investigated the dynamics of MaaS developments in Sweden, Finland and other locations across Europe. These studies have examined a set of drivers and barriers to innovation as a means to derive implications for the governance of sustainable MaaS developments.

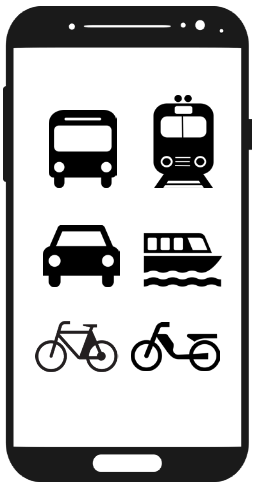
Key findings

- Support is needed to coordinate public and private organisations given the prevalence of barriers to collaboration in MaaS ecosystem. Publicly funded activities that provide support for business modelling and coaching should be given priority.

- If public transport is to act as a MaaS operator, existing laws and governing directives must be modified and clearly emphasise the possibility for public transport to be able to assume new roles in the future MaaS ecosystem. Alternatively, if MaaS is to develop along a more commercial path where private sector entrepreneurs act as MaaS operators, directives are needed to mandate third-party sales of public transport tickets.

- Ticketing systems within public transportation must be digitalised according to standardised protocols to enable MaaS operators to develop services that are attractive to travellers.

- It is critical that MaaS contributes to a sustainable reorientation of the transport system. Ongoing pilots must be assessed and evaluated according to their sustainability credentials. R&I funding should be a priority within the Nordic region given its international reputation as a pioneer of MaaS developments.



- Uncertainties linked to the market potential and willingness to pay for MaaS are a persistent barrier to investments in MaaS. National and Nordic visions should be coupled to existing transport policies and outline pathways and stepping stones for sustainable MaaS developments.

- In addition to issues related to tax legislation the use of existing instruments such as public procurement and subsidies for different transport services should be investigated and revised as a means to support sustainable MaaS developments within the Nordic region.

- Cities and municipalities should take a more active role in MaaS developments at the local level where they should both enable and ensure that MaaS developments are guided towards sustainability.

Nordic Energy Research

Research findings

Drivers, barriers and uncertainties related to MaaS

At present there is significant interest in the Nordic region, within Europe and in other locations across the globe for intermodal mobility services that bundle and repackage existing transport modes into a single offer.

In what follows, we outline research outputs from studies that examine the dynamics of innovation vis-à-vis intermodal MaaS services.

Drivers of MaaS developments

- There are a number of societal trends driving MaaS developments, including digitalisation, servitisation, the sharing economy, urban densification and an increased focus on positive experiences in connection with different types of consumption.

- An increasing number of people prefer not to own a car and instead utilise different services. Cars are increasingly seen as an expensive and complicated burden. There is also a growing interest in sustainability and health through active modes among individual travellers.

- A high level of digital maturity means that many traveller segments can be considered 'ready' for MaaS services, especially in Nordic metropolitan areas.

- Sweden and Finland are considered pioneers of the MaaS concept. However, Finland has a stronger and more coherent vision for the transport system and MaaS in particular, which is anchored among a number of key organisations via individual 'MaaS champions' within public authorities, industrial associations and individual companies. By comparison, Sweden has been slower in creating a common MaaS vision and in building interorganisational networks.

- Finland launched a pilot programme at an early stage to test different types of MaaS in real-world settings. Sweden followed suit, launching a pilot programme of its own. Today, there are a number of start-ups in both Sweden and Finland, some of which have managed to attract significant amounts of venture capital.

- A more sustainable transport system and the goal of doubling the number of travellers using public transport are driving forces for MaaS in Sweden.

- Finland is in the process of deregulating the transport system and legislation is currently forcing transport providers, especially public transport, to allow third-party sales of services and tickets. This is crucial for commercial operators who want to develop MaaS services whereby public transport constitutes a 'backbone'. There is no corresponding change or legislative process in Sweden. Instead, the government has prioritised informal instruments and some public transport authorities have created directives for public transport operators to allow third-party ticket sales.

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Uncertainties regarding existing regulative frameworks and taxation laws

- In both Sweden and Finland, national and EU legislation are interpreted to imply that public transport authorities and operators cannot adopt the role of MaaS operator. In Sweden, it has taken several years to clarify this interpretation, creating uncertainties and slowing investment. Ongoing disparities between countries within and beyond the Nordic region create uncertainties regarding the size of the international MaaS market within the private sector.

- There is uncertainty as to whether public procurement can support innovation within the MaaS field. Also, MaaS does not currently exist as a service category within procurement criteria in the public sector. Clarification of the rules related to public procurement and organisational learning are essential to the mobilisation of public funds as a support to MaaS developments via procurement activities, regardless of the role/s adopted by public transport organisations in the MaaS value chain.

- In both Sweden and Finland, there is uncertainty about and different perceptions regarding the way in which subsidies for public transport should be used or redistributed via MaaS services where commercial operators are key partners. This is important in cases where commercial operators assume the role of MaaS operator, as it can be difficult to create viable business models, even in cases where public transport tickets are subsidised within MaaS services.

- Car sharing is likely to play a crucial role for MaaS. In Sweden, there is currently no legal definition of car clubs, which makes it difficult for different types of car sharing services to grow. Other barriers to growth include administrative burdens when locating parking spaces and vehicle recharging within urban areas.

- There are differing levels of value added tax for different mobility services such as taxis, car clubs and public transport, creating an uneven playing field for individual mobility service providers.

Uncertainties regarding sustainability impacts

- There is a lack of knowledge regarding the sustainability of MaaS. Hence some key organisations, particularly within the public sector, are concerned that MaaS will lead to increased (rather than reduced) travel and that travellers will opt for less sustainable modes resulting in a net transfer from walking, bicycling and public transport to taxis, rental cars and car clubs.

Barriers to ecosystem collaboration and the renegotiation of roles

- The need for new and redistributed roles in the MaaS ecosystem is typically faced with reluctance from existing customer-facing organisations who must be repositioned further upstream in the value chain. Such organisations typically perceive three types of associated risks: damage to existing brands, the loss of customer relationships, and the risk of cannibalisation within the MaaS ecosystem. Uncertainties regarding the type of actors who take on integrator/operator roles serve to compound these risks.

- Swedish public transport sees its own role as decisive for the sustainable development of the transport system and is carefully considering its role in MaaS developments. Public transport has the opportunity to significantly inhibit developments as MaaS operators are dependent on public transport to create commercially viable services.

Uncertainties regarding the MaaS business case and the business model

- There are currently no well-documented cases of viable business models for MaaS, or of commercially viable MaaS services.

- Many commercial MaaS players perceive public transport as inertial and lethargic organisations who are inflexible and unclear in terms of their role and mandate. This slows MaaS developments and is an obstacle for the entrepreneurial firms that aim to develop MaaS services in an agile fashion, and inhibits private sector investment.

- Even in cases where pilot projects demonstrate significant potential, the lack of a licence to operate inhibits MaaS developments vis-à-vis the deployment of new business models within entrepreneurial firms.

Uncertainties regarding the role and engagement of city administrations and municipalities

- Cities and municipalities have hitherto not been strongly engaged in formal discussions and debates about MaaS developments, neither in Sweden nor in Finland. There is a general lack of knowledge and awareness of the MaaS concept within these types of public organisations. Greater involvement from cities and municipalities is required to ensure that MaaS contributes to urban development, improved accessibility and access to transport, more attractive cities, more efficient land use, etc.

Uncertainties related to market demand and willingness to pay

- There is a lack of knowledge regarding what motivates travellers to trial or purchase MaaS services, willingness to pay and what influences sustainable travel behaviour.

- There is a similar lack of knowledge about how travellers' needs and preferences vary between segments and different geographical areas, such as cities, suburbs and sparsely populated areas.

- These uncertainties create difficulties in mapping out a pathway for MaaS developments, and in creating socially inclusive services.

Uncertainties regarding the need for regulatory and legislative changes

- There is a lack of knowledge about what regulatory and legislative changes are required to support the diffusion of MaaS among different customer and user segments, and on the types of policy instruments that are needed to encourage sustainable travel behaviour. Existing regulatory frameworks and policies require careful investigation given the existence of policy interactions and the tendency towards regulatory lock-ins.

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Contact

Steven Sarasini
RISE Viktoria
e-mail:steven.sarasini@ri.se
phone: +46 730 20 56 42