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How should the platform economy be promoted in the mobility sector?

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Abstract

Can Finland take its place in the global growth market of smart mobility? The platform economy offers mobility sector companies a significant new opportunity for growth, internationalisation and finding solutions to the societal and environmental challenges of mobility. The political intent of the Finnish mobility sector should now be translated into action and policy measures that support it. In this report, we present three recommendations related to innovation policy that support the development and growth of the platform economy in the mobility sector.

Challenges and recommendations

Challenges

Challenge 1. A limited number of digital goods for common use

Challenge 2. Data are unavailable or unsuitable for use cases

Challenge 3. Scalable platform solutions are not created in the mobility sector

Policy recommendations

Recommendation 1. Ecosystem growth should be accelerated through initial investments and functional interfaces

Recommendation 2. Common standards should be created, and customer needs should be made transparent

Recommendation 3. Common rules and preconditions should be created for scalable solutions

Keywords: Platform economy, innovation policy, mobility, digital platforms
Jel: O38, R40; L17; L91; L50

Introduction

Digital services, the sharing economy and smart mobility systems will revolutionise the operating models in the mobility sector. The platform economy allows for a new type of value creation in the mobility sector by gathering different parties into ecosystems that form around the platform (Aalto, Gustafsson & Lipiäinen, 2020; Ailisto et al. 2016). The benefits of platform-type solutions for smart traffic include individualised and customised business and service models as well as resource-effective, optimised and safe operation. New mobility management models, such as emissions trading, help to respond to societal challenges brought about by pollution. Some well-known digital platforms for mobility services already exist, such as Uber and Lyft.

However, mobility is a large sector, and digital service solutions are still being developed separately in its various areas. Smart traffic solutions and multi-modal integration models for digital mobility services (such as MaaS) are about to be launched. New mobility services and smart systems can radically transform urban environments and possibly grow into a market worth more than 600 billion (USD) by 2030 [1]. The largest investments and cooperation projects in the sector have focused on autonomous and smart mobility technologies (McKinsey 2019).

Finland has a large number of active mobility sector operators (companies, the public sector, cooperation forums) and a comprehensive, common situational picture (MEAE 2017). Along with the establishment of Fintraffic, some areas of digital infrastructure, including data platforms, have been actively developed (e.g. more than 100 open interfaces; Digitraffic, Digitrans). Finnish digital solutions (e.g. logistics, travel) and mobility service concepts (e.g. MaaS) are also on the leading edge of international development. However, developing an ecosystem that supports growth and internationalisation is a challenge. This is why promoting the platform economy is closely linked to innovation and industrial policy (MEAE 2017).

Material and methods

This report is based on the results of the Policy Rationales in the Shift to Digital Platform Economy research project funded by Business Finland. The innovation and growth challenges for the platform economy identified in the report are based on a synthesis of a comprehensive literature analysis of over 100 research articles, books and policy reports (Aalto, Gustafsson & Lipiäinen, 2020). The identified challenges and recommendations in the mobility sector are derived from the results of an expert workshop that focused on this sector. A preliminary survey was conducted and a background document analysing the challenges was produced for the workshop. Top Finnish experts in the areas of platform economy, digital mobility solutions and smart mobility in the private and public sector were represented in the workshop.

1 https://www.mckinsey.com/features/mckinsey-center-for-future-mobility/overview

Results

Challenge 1. A limited number of digital goods for common use

There are not enough digital goods necessary for the development of new solutions and growth on mobility platforms.

- **The amount of open data, source code and model interfaces is limited.** Shared digital goods are needed for launching platform business, developing it and accelerating innovations. Examples of shared digital goods include a jointly developed open-source code, model interfaces and joint investments in data services (travel data and consignment notes, data on traffic conditions and traffic situations, and real-time vehicle data). This deficiency slows down development, for instance in route planning and traffic optimisation.

- **Insufficient quality of interfaces.** Slow de facto standardisation, technical challenges and lack of competence result in interfaces that do not support the functionalities needed for the growth of the ecosystem. Since data have no value without a use case, the interface functionalities should support the purposes and solutions to problems for which they are needed.

Recommendation 1. Ecosystem growth should be accelerated through initial investments and functional interfaces

- **Initial investments should be targeted at shared digital goods and collaboration projects.** The Ministry of Transport and Communications, Fintraffic, the Ministry of Economic Affairs and Employment, and Business Finland are needed to facilitate initial investments in shared digital goods in the mobility sector and in cooperation projects that support the development and growth of platform-based corporate solutions. The aim of the cooperation projects should be to form a digital infrastructure that develops the platform economy and to trigger network impacts to enable corporate growth. Innovation funding in the mobility sector (e.g. the development of technology and service models) should aim for large-scale experiments, the creation of new market-based service models as a result of corporate strategic choices, and support for the commercialisation of internationally vital companies close to the market.

- **Functional interfaces should be created.** Innovation funding is needed for developing functional interfaces. We also recommend that in connection with facilitating the creation of rules in the sector, a neutral operator (such as Fintraffic or ITS Finland) promotes the definition of model interfaces and their functionalities. The functionalities will contribute shared digital tools to the development of platforms and the integration of service solutions between different operators. Through dialogue between the operators, a common understanding should be reached of what is produced at the ecosystem level and what should be market based.

Challenge 2. Data are unavailable or unsuitable for use cases

In the mobility sector, the data required for the development of platforms and concrete use cases are not yet shared sufficiently, or based on a common agreement. For example, data on real-time traffic conditions and situations are not used for the same purposes as data for customer needs and ticket sales interfaces.

- **Access to data is limited.** Data are unevenly divided between the information systems of different companies and organisations. Rather than being a transparent system, demand and supply for mobility needs have been siloed into various mobility service solutions. Companies are not willing to share critical data with competitors. The value of mobility data and demand and supply data is difficult to determine. The ownership of data also remains unclear (e.g. real-time vehicle data). Reaching a joint agreement on interfaces and other data-sharing practices requires resources.

- **Data quality is not suitable for use cases.** The quality and type of data should be suitable for the use cases under development. Open general data are rarely beneficial right away. The data have been collected within the framework of existing operators' information systems. The quality of the data varies, and there are no criteria for evaluating their quality. Those using data must be familiar with many different operators' interfaces and the premises for their data systems. The operators are not committed to sharing and using data based on a common agreement (e.g. public transport route data in several different formats).

Recommendation 2. Common standards should be created, and customer needs should be made transparent

- **Jointly agreed standards should be created to support data sharing.** Parties working together in the mobility sector (such as Fintraffic, ITS Finland) should promote reaching an agreement on the standards and practices for sharing data, data ownership and the safe use of data (e.g. agreement models, compatibility, data types, interfaces, data security). The Ministry of Transport and Communications is needed to promote regulatory development which ensures that individuals own the mobility and vehicle data concerning them (e.g. MyData; Gaia-x). At the European level, fair and reciprocal regulation is needed on sharing data (e.g. COM/2020/767; Gaia-x; model interfaces; transparency of data) to ensure that different operators can participate in the development and production of platform services in the European mobility market (e.g. ISO15118 standard; the consumer's freedom of choice is preserved).

- **Demand and supply should be made transparent throughout the ecosystem.** The rules and collaboration practices for data sharing should be developed with the principle of reciprocity in mind. We recommend that various operators aim to share demand and supply data related to mobility needs with the entire ecosystem across their service interfaces and data systems to support the development and growth of new services in the mobility sector. Public innovation funding (such as funding by Business Finland) should be based on openness and data use on the basis of a joint agreement. We also recommend ensuring the establishment of market-based data sharing operators (such as data brokers) in the long term to solve the challenges of data quality and access to data.

Challenge 3. Scalable platform solutions are not created in the mobility sector

The business objectives and incentives of operators in the mobility sector (public funding and market-based incentives) are difficult to reconcile when building platform-based mobility service solutions. Consequently, the operators strive to develop cooperation from their own technical and financial perspectives (e.g. service obligation, revenue models, interfaces). This restricts the scalability of the platform services and solutions to be developed.

- **Public transport operators focus on their statutory obligations and the tasks assigned to them.** This strongly influences their willingness to participate in the development of shared platforms.
- **Lack of scalable and profitable business models.** The difficulties of finding a business model have a negative effect on operators' willingness to participate in the joint development of platform-based solutions. Transport operators develop platform-based solutions responding to existing customer needs (e.g. VR, Matkahuolto). Customers have established mobility habits, and they are not prepared to pay for new services. MaaS platforms, which integrate different modes of mobility, have not yet fulfilled their market potential. Public transport subvention models complicate the creation of market-based platforms.
- **A fragmented field of operators does not add up to a critical number of users and producers for the platforms.** The cost benefits and network impacts achieved through platform-type solutions require major initial investments. Finland's small and fragmented market reduces the profitability of initial investments. There is a large number of minor operators (companies and municipalities) with limited resources for investing and organising services in the mobility sector. The public procurements of the central government and municipalities are often based on municipal and urban structures and consequently fragmented.

Recommendation 3. Common rules and preconditions should be created for scalable solutions

- **Common rules should be created.** A neutral operator (such as Fintraffic, the Ministry of Transport and Communications or ITS Finland) is needed to facilitate the discussion between operators to establish common rules. In this discussion, we recommend results-based thinking in which the operators' different needs and capabilities are taken into account (e.g. concrete benefits for business and the consumer). The aim of common rules and a shared understanding of the benefits is transitioning to new operating models (e.g. investments, cooperation projects). Cooperation can, for instance, take place through joint model interfaces and collaboration agreements concerning integration, data and digital infrastructure.
- **Co-development should be based on international market conditions.** For example, cooperation projects should aim at accessing a mobility market that is common to all Europeans. National advocacy is needed to ensure fair market conditions at a European level (e.g. ITS Directive, AFi Directive; Gaia-x project; market requirements, VAT practices).
- **Preconditions should be created for developing scalable regional, national and international mobility service platforms.** In this respect, it would be essential to create incentives that promote the involvement of an increasing number of parties in the development of platforms and services, making it possible to reach the necessary number of users and producers. We recommend that public procurements aim for the scaling of services across municipal and urban boundaries to achieve the critical level of demand and supply for the operation of platforms in cities and rural mobility services. We encourage public operators to engage in joint procurements, for example for service applications. We also recommend that public transport should be developed towards a model where all operators have the opportunity to participate in the innovation of services and the development of platform solutions on different levels of mobility (such as infrastructure, operation and service provision). However, the exact conditions for participation, such as decisions to finance public transport, are the domain of the competent authorities (e.g. the regulation on public passenger transport services).

Conclusions

The platform economy will revolutionise the mobility services of the future. It will also increasingly define the competitiveness, growth and internationalisation of companies in the mobility sector. New platform-based, resource-efficient and optimised systems for smart mobility will help solve societal challenges of urbanisation and air pollution. It is now time for Finland to grasp the new growth opportunities for smart mobility. The development and growth potential of innovative companies in the sector and the national political intent should be translated into action aimed for finding new solutions.

In this report, we make three recommendations helping to accelerate the development and growth of the platform economy in the mobility sector. Not understanding the needs and capabilities of many operators slows down the development of new platform-based solutions and the creation of a mobility sector ecosystem. Our recommendations aim to reduce these challenges to building an ecosystem. Instead of simple mobility policies, the development proposals should be implemented across all administrative sectors, with a key role assigned to innovation, industrial and information policies. The aim should be to reach the international growth market, where the opportunities of the common European mobility market should be seized, in particular, and their fair development should be promoted.

We recognise that mobility is a large sector in which services are developed and produced by private and public operators. This report does not take a stand on the division of labour between the operators or on the decisions to produce and finance public transport.

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