

Mobility-as-a-Service Ecosystem: Insights to policy makers

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Extended Abstract

Traffic congestion, pollution from automobile exhaust and noise pollution are some of the negative externalities generated by the increased use of individual cars in many urban areas. Nevertheless, citizens will not give up individual cars and shift to greener transport modes unless they are offered a service which guarantees seamless mobility and easy access to different transport modes based on their needs. Mobility as a Service (MaaS) is a mobility concept in which transport services from public and private transport providers are combined via a single platform and are offered by a single service provider, the MaaS operator (Hietanen, 2016; Kamargianni et al., 2015). MaaS offers travelers flexible, reliable and seamless door-to-door mobility based on their travel needs (Kamargianni et al., 2016; Hensher, 2017) and has the potential to decrease dependence on private vehicles.

To ensure MaaS success and gain its full potential, it is important to identify the key actors of the MaaS ecosystem, their needs and requirements and specify the challenges that policy makers may face while promoting MaaS. To properly design MaaS services/products and determine the policy interventions that could be used for its successful deployment, some key questions arise: “*What type of MaaS does the ecosystem want?*”, “*What are the concerns of the demand side regarding MaaS?*”, “*What are the potential barriers and benefits of MaaS for the society, the economy etc.?*”. This paper aims to reply to the above questions by applying a mixed approach consisting of quantitative and qualitative data collection methods, such as workshops, personal interviews, focus groups and an online questionnaire survey, in three European areas in the context of the EU-H2020 funded project “MaaS4EU”¹. These areas are Budapest (HU), Luxembourg-Aachen area (LUX-DE) and Greater Manchester (UK) and share different socio-economic characteristics, data availability, and maturity in transportation and technological systems. In particular, three workshops were organized to collect data from 118 stakeholders in the three areas. The participated stakeholders covered a wide range of sectors related to MaaS, such as public authorities, public and private transport operators, car manufacturers, data providers, IT companies, ticketing and payment service providers, telecommunication, insurance and financing companies, and passenger associations. During the workshops, questionnaires were distributed to the stakeholders so as to collect their views regarding financing and funding sources for MaaS, the most appropriate revenue distribution models for MaaS, payment and ticketing issues for MaaS, and institutional, regulatory and operational barriers for the

¹ MaaS4EU is an ongoing project funded by the European Union’s Horizon 2020 research and innovation programme (<http://www.maas4eu.eu>).

implementation of MaaS. The participants were organized in roundtables where they discussed and exchanged opinions on the given topics of the questionnaires. Following the workshops, in-depth personal interviews with the transport operators and the public authorities took place. The interviews addressed a wide range of topics regarding the requirements of these stakeholders, including the development of pricing models for MaaS, ticketing and booking issues and the stakeholders' interest in acquiring data from the end users. From the end users' perspective, five focus groups were held in the above areas, with more than eight participants each, aiming to acquire their opinion with regards to the products that a MaaS scheme should offer, their concerns regarding MaaS, their perceptions regarding MaaS potential benefits and their views on potential payment and ticketing methods for MaaS. Finally, the research conducted through the focus groups was supplemented by a questionnaire survey distributed to the end-users via an online platform. The questionnaire was designed so that it covered user profile data (demographic data, current travel habits, use of travel-related applications, car ownership etc.), end user's requirements about MaaS, user attitudes towards MaaS, while best-worst" scaling experiments were also included aiming to obtain the importance scores for different features for a MaaS mobile app.

Indicative conclusions of our analysis are summarized below. Based on the stakeholders and end users, a high-priority requirement for MaaS is to provide services towards the optimization of existing public transport options, the increase of citizens' travel satisfaction and the minimization of the overall journey time. In addition, the results indicate that it is highly important to include all transport means available in the city within a MaaS scheme. Privacy issues regarding sharing personal data was found to be one of the major concerns of the end users regarding MaaS deployment. Thus, it is of outmost importance that the platform designed to accommodate MaaS ensures that the privacy policy is clearly provided. With regards to the services offered via MaaS, end users agreed that personalized support and recommendations should be provided to them while selecting the MaaS plans based on their needs and current mobility habits. A significant finding of our analysis is the existence of strong regulatory barriers which could delay full implementation of MaaS. Overall, our analysis could provide sound insights to policy makers who can have the opportunity to shape how MaaS solutions are implemented so as to satisfy the needs and requirements of MaaS stakeholders and end users, while potential MaaS actors could consider our findings when planning to participate in a MaaS partnership.

Keywords: Mobility as a Service, requirements, stakeholders, end users, questionnaire survey, workshops, focus groups, interviews, policy makers.

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