Understanding institutional enablers and barriers to the dissemination of MaaS: A tentative framework

MARIANNE KARLSSON Chalmers University of Technology, Sweden
TILL KOGLIN, ANNICA KRONSELL & DALIA MUKHTAR-LANDGREN Lund University, Sweden
EMMA LUND & BJÖRN WENDLE Trivector, Sweden
STEVEN SARASINI RISE Viktoria, Sweden
GÖRAN SMITH Chalmers University of Technology, Sweden, Västra Götalandsregionen (VGR), Sweden,
K2 - The Swedish Knowledge Centre for Public Transport, Sweden
JANA SOCHOR Chalmers University of Technology, Sweden, RISE Viktoria, Sweden

KEYWORDS Mobility-as-a-Service; framework; institutions; barriers

1. Introduction

With a continued global urbanisation trend and increasing demand for transportation with consequences in terms of, for example, congestion, emissions, and noise, urban mobility is a major challenge for the future. Mobility-as-a-Service (MaaS) has been argued as part of the solution by contributing to reducing the use of private cars and increasing the use of public transport and ride sharing services: “MaaS has the potential to fundamentally change the behaviour of people in and beyond cities, hence it is regarded as the biggest paradigm change in transport since affordable cars came into the market” (maas-alliance.eu). However, even though a number of initiatives have been taken, including pilots which have shown positive outcomes (see e.g., Karlsson et al., 2016), the implementation of MaaS has been slow.

Different sources refer to different challenges. The purpose of the project ‘Institutional Frameworks for Integrated Mobility Services in Future Cities’ (IRIMS) is to determine how, and to what extent, existing institutional factors affect the further development of MaaS. The project aims to provide suggestions for how institutions can be modified to enable the implementation of MaaS to contribute to sustainable mobility. This paper presents part of the work: a tentative framework, intended to support the analysis of the institutional factors that facilitate or create barriers to the further development and dissemination of MaaS (see also Mukhtar-Landgren et al., 2016).

2. Theoretical basis

The framework draws upon institutional theory. Institutions can be understood as “… a relatively stable collection of rules and practices, embedded in structures of resources that make action possible” (March and Olsen, 1989). Scott (2014) suggested that institutions comprise “… regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life” (p. 56). Regulative refers in this case to rules and sanctioning activities that are formal and explicit; normative elements include values and norms; and cognitive aspects are those categories and conceptualisations through which identities and meanings are constantly interpreted and re-interpreted (Thornton et al., 2012; Scott, 2014). Institutional obstacles and opportunities are thus not restricted to formal aspects but also informal aspects must be taken into consideration, including for example perceived roles, daily habits and practices (March and Olsen, 2006; Niemann, 2013).
3. The framework

3.1. Accomplishment

The development of the framework is based on the following key activities:

- literature reviews (see also Lund et al., 2017);
- a series of workshops with project partners who represent different competencies and experience; and
- interviews with stakeholders (public as well as private, entrepreneurs as well as customers) who have been or who are presently involved in the development of MaaS services (in Finland, Germany and Sweden) (see also Smith et al., 2017a; 2017b).

3.2. A three levels model

The proposed framework is based on the notion of institutions. Regulative aspects are here referred to as formal features while normative and cognitive features are described as informal features embedded in the institutions. The institutions are then related to three different levels: macro, meso, and micro.

3.2.1. Macro level

The macro level includes broader social and political factors, including both formal rules and more informal social norms and perceptions.

A frequently mentioned macro level issue concerns who can sell (subsidised) public transport tickets and who cannot. Taxation is another key factor where current models is considered a possible barrier as these rules have not (yet) accommodated to the ideas of a sharing economy.

Referring to more informal aspects, Lund et al. (2017) argue that many policy makers consider MaaS to be an important part of the solution to present transport related problems but that there are also those who are concerned that MaaS will create increased access to transport services and hence result in an increase in the number of trips made. This concern may create a barrier for policy makers to support the development of MaaS.

3.2.2. Meso level

The meso level refers to organisations (private, public, private/public hybrids as well as non-profit organisations) and communities, including collaborative networks. The formal dimension here includes policies and regulations that are implemented on a regional and local level. An example is legislation that hinders carsharing stations to use public space for parking; easy access to carsharing being an important part (and enabler) of MaaS (cf. König et al., 2016).

The informal dimension includes, for example the way collaboration and partnerships are established among actors that have not previously worked together. Each actor enters the collaborative processes that signify MaaS with their own ideals, interests and expectations. An important challenge for creating MaaS and for the creation of a competitive service content is, indeed, collaboration between different actors (Holmberg et al., 2016) but cooperation between, for example public and private service providers is not well established (König et al., 2016).
A major issue is to what extent key actors believe that MaaS provides a business opportunity. Public as well as private actors express a fear of losing customers to other service providers, of losing one’s own brand image as well as one’s relation to the customers (e.g. Smith et al., 2017a; Sochor et al., 2015). Even though there is an opportunity to attract new categories of customers, several sources (e.g. Karlsson et al., 2017) argue that there is as yet little knowledge on travellers’ actual willingness and intention to adopt MaaS, an uncertainty which hinders the actors taking “the next step” (Smith et al., forthcoming).

A related obstacle is the perceived lack of appropriate business models. Although various models have been proposed in which different actors take on different roles (see e.g., König et al. 2016), both private and public actors express uncertainty as to what their respective roles could, or should, be within a MaaS. In particular this concerns public transport organisations.

3.2.3. Micro level

The micro level can describe the individual as citizen, as tax payer, but here the micro level refers primarily to the individual as customer and user of MaaS. This is the least investigated level of the three.

The identified formal barriers and enablers on a micro level are mainly consequences of laws, regulations, and policies implemented on the meso and macro levels, such as for example congestion tax.

The informal factors include norm, values, and habits (e.g. Verplanken et al., 1998). Whereas the private car is often described as “the norm” several investigations now indicate a change, not least among the younger generation. Furthermore, societal trends in terms of environmental concern and the notion of a sharing economy, open up opportunities for services such as MaaS (e.g., König et al., 2016).

Other barriers to the adoption of MaaS have been found to include economic aspects but also perceived efforts associated with having to learn how to use a new service (Sochor et al., 2016), i.e. creating new habits and routines. Travel patterns are habitual why changes in travel behaviour are not likely to occur unless MaaS fulfils the customers'/users’ travel needs in a way that is salient and have positive outcomes (cf. Gärling and Fuji, 2009). Pilot trials of MaaS have shown that these new services can provide several perceived benefits, such as convenience, flexibility, and perceived increased access to mobility options (Karlsson et al., 2016) even though not for all.

4. Concluding remarks

The IRIMS project has created a framework based on institutional theory and has identified institutional factors of importance though literature studies, workshops involving actors with different expertise and experience, and by interviewing actors who have been or are presently involved in the development of MaaS.

The described framework is tentative and need further development. For example, even though not developed here, there are evidently considerable interdependencies between the levels and between formal and informal aspects. These interdependencies need to be further investigated. There is also a need to further look into the differences between different stages of MaaS development: initiation, implementation, and regular operation to understand the factors that contribute or create barriers to the dissemination of MaaS. Fundamentally, empirical evidence is (as yet) to a large extent lacking but is needed in order to understand, in-depth, the factors that influence the development of MaaS in different contexts.
Acknowledgements

The IRIMS project is in part financed by Vinnova, Swedish Innovation Agency.

References


Sochor, J., Karlsson, I.C.M., and Strömberg, H. (2016) Trying Out Mobility as a Service: Experiences from a Field Trial and Implications for Understanding Demand. Transportation Research Record 2542, 57-64.
