SI-DRIVE
Social Innovation: Driving Force of Social Change

SOCIAL INNOVATION IN TRANSPORT AND MOBILITY

STATE OF THE ART SUMMARY

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I.   INTRODUCTION

Background and objectives
This report is **the summary** of an explorative study about governance systems of mobility and transport and their relation to social innovation practice fields and projects. It is written as part of work package 8 on "social innovation in mobility and transport" of the SI-Drive project. The SI-Drive project is the current large-scale flagship research project on social innovation funded by the European Commission[1]. The project's research objective is analysing the relationship of social innovation and social change by focusing on the following dimensions of social innovation: concepts & understanding; societal needs & challenges; resources, capabilities & constraints; process dynamics; actors, networks & governance in seven different policy fields[2]. This report has its focus on actors, networks and governance in mobility and transport. The report has to be seen as a part of the baseline mapping activities of SI-DRIVE consisting of four pillars: 1) Policy field reports, 2) Regional reports, 3) Data collection for Mapping 1 (Database of 1.000+ SI cases), and 4) Social Innovation Database Screening (compatible with the mapping 1 database).

With its selected focus on contextual issues of social innovation rooted in the diversity of governance systems, the report will be complementary to other SI-Drive analyses (survey of 1000 cases, in-depth cases and regional reports). Accordingly, the overall objectives of this report are as follows:

- To explore how governance systems of mobility and transport influence social innovation practice fields and projects and, vice versa, how it is influenced by them. Thereby, drivers and barriers, conflicts, and roles of different actors will be worked out.
- To elaborate different levels in the policy field's governance system and social innovation practice fields and projects on the EU, national and global level.

By following the two objectives, mainly through desk analysis of existing documents, the present report's results will be the generation of profound hypotheses regarding social innovation in mobility and transport with relation to governance, practice fields and projects. These hypotheses will guide future field work of the work package, in particular analyses of the survey data and in-depth case studies.

Due to the iterative approach of SI-DRIVE the report is an initial attempt to describe the policy field background and context for social innovation. This report has to be seen as a starting point and a first overview mainly focusing on the countries of the involved partners. A final version will be established after the second empirical phase of in-depth case studies at the end of the project (end of 2017).

Key concepts and research interest
According to the SI-Drive working definition, **social innovation** "is a new combination of social practices in certain areas of action or social contexts with the goal of better satisfying or answering social needs and problems than is possible on the basis of existing practices. [...]. In this sense, social innovations encompass new practices (concepts, policy instruments, new forms of cooperation and organisation), methods, processes and regulations that are developed and/or adopted by citizens, customers, politicians etc. in order to meet social demands and to resolve societal challenges in a better way than existing practices" (Howaldt 2014, p. 3).

The Council of European Municipalities and Regions (CEMR) defines **mobility** as a right "universal to all human beings, and [as] essential for the effective practical realisation of most other basic human rights" (CEMR 2007, Preambel). However, in the academic debate there is no general acceptance of what exactly the term "mobility" stands for. Within this SI-Drive work package, mobility and transport will be studied as a means of providing physical access to resources and services such as education, healthcare, sanitation, water and food, employment, and cultural facilities. Emphasis will be on the local level, while assessing the relation of mobility and transport to these resources and services. In consequence less attention is paid to aviation, freight logistics and mobility of migrants.

Mobility and transport have always been part of human activity (see Bonß/Kesserling 2011, p. 177), and their innovations are inseparably connected with **socio-economic change** over time and with this important quality, mobility and transport is a promising policy field to study the main aim of SI-Drive, namely to analyse the relationship of social innovation and social change. However, there are also several side effects related to mobility and transport generally perceived as being negative and as causation of disadvantages for affected social groups. Against this backdrop, a great variety of actors put efforts into making mobility and transport easy, efficient and high performing, cheaper and faster, as well as more sustainable and just. This great variety of actors makes the **governance system** of mobility and transport rather complex. This complexity and therefore itself the governance system needs to be understood more broadly in order to grasp the policy field's structures, functions and logics.

Structure of the summary

This summary is structured into four chapters[3], including this introduction. The second chapter reflects on mobility and transport in Europe by exploring current and future challenges, strategies and the role of social innovation. Chapter 3 details governance structures and social innovation practice fields by comparing different national levels, in particular Austria, The Netherlands, Germany, United Kingdom, India and Romania. Snapshots will be provided of North Europe and Belgium. The overall aim is to grasp the diversity of social innovation practice fields and to discuss how they are stimulated by different contexts. This summary concludes with discussing the objectives and research question. Furthermore, hypotheses and research questions will be formulated that direct future empirical work within this work package of the SI-Drive project.

II.   MOBILITY AND TRANSPORT IN EUROPE – CHALLENGES, STRATEGIES AND THE ROLE OF SOCIAL INNOVATION

Strategies to counter current and future challenges

Two central challenges make mobility and transport a fundamental field for studying social innovation from a European perspective. Firstly, the challenge of overcoming the currently high CO2 emission, air pollution, congestion, and noise levels. Secondly, mobility is a key characteristic of a modern society in order to give access to places, goods and services and thus it is central for getting access to societal life. Ensuring the mobility of all groups of society is a crucial step for moving towards a socially inclusive society and a territorially cohesive European Union. As these current challenges will not be tackled easily, they will also remain to be of future relevance, especially against the background of an expected increase of transport during the next decades.

Two broadly accepted strategies referring to *sustainable* mobility and transport systems and to *inclusive* mobility and transport systems have been formulated to tackle the challenges and to reduce negative societal consequences. In practice, of course, there is great overlap between the two objectives as they must be realised within the same transportation system. But for analytical reasons, each objective will be discussed separately from each other.

An important strategy for realising a sustainable transport system is the *avoid-shift-improve* (ASI) approach: If possible, trips should be avoided, shifted towards non-motorised or public transport modes, and technological advancements should improve transport modes in terms of energy efficiency (Koch et al. 2005, Bakker et al. 2014). At EU-level, emphasis is put on shifting transport towards non-motorised or public transport and on improving technological components in order to achieve high energy efficiency. Behavioural change towards transport avoidance, for example through education and information activities, only plays a minor role.

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[3] The annex of the full report contains the national reports of: Austria, The Netherlands, Germany, Great Britain, India, Belgium and Romania. The full report contains also a first brief overview of global challenges, which will be elaborated in the final version of the full report after analyzing the mapped social initiatives.

The second major challenge, achieving an inclusive mobility and transport system that does not exclude parts of society through limited transport options, can be tackled by the so called 4A-approach. Mobility and transport have to be *available, accessible, affordable*, and *acceptable* (see UN 2013, p. 108). A transport mode has to be existent where people live and work (available). Its usage should be convenient in terms of waiting time, the provided information, and should not exclude some groups (e.g. people with reduced mobility) (accessible). It should be financially affordable for all. Last but not least it should be designed in a way that people can use a transport mode without fear and concerns. This means it should be adjusted to cultural values and norms of its societal context (acceptable).

Both strategies can only be implemented in an integrated approach including different actors from civil society, public authorities, the private sector, as well as from research and development[4]. The nature of necessary behavioural change connected to these actor groups and the potential for social innovation is elaborated in table 1.

Table 1: Space for social innovation within the ASI and the 4A strategy

Challenge / social need	Objective	Strategy	Behavioural change behind strategy / space for social innovation
Overcoming high CO2 emissions, air pollution, congestion, and noise levels.	Sustainable mobility and transport	ASI: *avoid-shift-improve*	Civil society: reduction of trip distances and frequency, increased usage of resource-efficient transport modes, openness towards electric mobility Public sector: urban planning for compact cities, resource-efficient public transport, integrated policy programmes, sustainable management of public sector fleets, infrastructure for electric cars Private sector: reduction of trip distances and frequency, usage of efficient engines and transport modes, sustainable management of company fleets Research and development: development of new technologies, scientific support to develop concepts that enable reduction of trips and distances as well as usage of resource-efficient transport modes
Ensuring mobility of all groups of society in order to give access to places, goods and services.	Inclusive mobility and transport	4A: *accessible, affordable, available, acceptable*	Civil society: usage of information provision through new technologies (apps), acceptance of diverse transport modes and multi modal trips Public sector: a reliable and affordable public transport system especially in remote areas, integrating needs of social groups (pupils, people with special needs, elderly) into planning of public transport infrastructure, implement new technological opportunities to increase accessibility Private sector: new business models, market at base of the pyramid[5], Research and development: development and assessment of new concepts, surveys elaborating accessibility, affordability, availability and acceptability in order to close the gaps and monitoring the developments

Source: own compilation

The European governance structure of mobility and transport and social innovation practice fields
As already mentioned in the first chapter the role of social innovation in mobility and transport is very much determined by contextual factors, rooted in the governance system.Combining the definition of Stroker (1998, p.18[6]) and the work of Geels and Kemp (2000), the regime context of mobility and transport can be described

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[4] Elsewhere, this actor constellation is labelled as the quadruple helix of innovation systems (Carayannis/Campbell 2009)
[5] http://www.cs.berkeley.edu/~brewer/ict4b/Fortune-BoP.pdf
[6] cf. Introduction

as complex and includes institutions, regulations, laws, etc. as "hard". These are highly influenced by 'soft factors' like norms cultural values, the increased valuation of leisure time, etc., also referred to as 'landscape factors'.

Following this, the structure of the governance structure of mobility structure can be summarized by a number of main characteristics. Firstly, mobility and transport is a highly regulated policy field. Due to the wide ranging influence on socio-economic change, there is high self-interest of many states to regulate mobility and transport. Regulations are directed towards transportation infrastructure, transportation companies and transportation markets[7]. In the second place it can be concluded that among the 'landscape factors' in mobility and transport, the high appreciation of cars as a status symbol in many social milieus and across all European countries is a major barrier for behavioural change. However, behavioural change might be promoted due to changing values of younger adults living in urban areas. In this milieu, new kinds of status symbols seem to have detached the valuation of cars, for example in Germany[8]. Thirdly, non-institutional factors, autonomous from the mobility perspective, are influencing the governance of European mobility and transport. Among these are climate change as a driver for promoting sustainable transportation systems, demographic developments and ageing societies in many countries, ever increasing globalisation that has massive implications for mobility and transport, as well as continuous technological progress. In the fourth place the system is characterized by its extreme diversity and complexity, caused by numerous actors with different activities, interests, political influence (lobby), objectives, etc. Last, but certainly not least, the modes of interactions, networks and alliances are based on the long-lasting physical infrastructure and huge financial investments and stakes, which is clearly a distinctiveness of mobility and transport.

To structure the discussion of governance structures relevant for social innovation, it is useful to overview the European social innovation practice fields in mobility and transport. These were identified at an SI-Drive workshop in Lisbon in November 2014[9]:

- Citizen initiated public transportation: co-production of public transportation through citizens as new actors.

- Intelligent transport systems: highly relying on technological advancements, as compared to other practice fields; appropriate compatibility with current governance structure.

- Smart working smart commuting: reduce congestion by new ways of organizing work in a more profitable way for companies and better way for the employees.

- Mobility and education: accessibility of educational infrastructure, parents and school management play a major role.[10]

- Car-sharing: car-usage instead of car-ownership, originally initialised by citizens.
- Woonerf and car-free housing areas: enabled by new planning approaches.

- Gender-sensitive transportation: mostly initiated by interest groups.

- Mobility of people with disabilities and/or elderly (working title): services are based on volunteer schemes and may require registration and provision of a disability certificate or certain age.

- Mobility Apps: many apps are developed by transportation actors but involve engagement of users. Smart phones are a prerequisite.

- Public sector innovation in mobility and transport (working title): as compared to other practice fields, this practice field seems to be compatible with current governance structures.

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[7] cf. http://wirtschaftslexikon.gabler.de/Definition/verkehrspolitik.html
[8] http://www.handelsblatt.com/auto/nachrichten/wertewandel-nur-noch-jeder-fuenfte-macht-den-fuehrerschein-mit-17/11170028.html?mobile=false
[9] A more detailed account of the practice fields is provided in the annex of the full report.
[10] The title of this practice field is a working title. It will include projects related to "walking school busses", but might also have a broader range. This will be more clear after the analysis of 1000 SI-projects ("mapping").

- Bike sharing: complementary to public transportation in order to improve connections. High variation in acceptance across European cities.

- Mobile doctors/clinics/practices – mobility of health services: this practice field is rapidly developing due to advancements made in medical technologies.

Conclusions

Despite the variety of actors, past and present mobility and transport solutions in the European Union and other parts of the Global North were, and still are, often dominated by furthering innovations with a clear technological emphasis. Focus is on the "shift" and "improve" part of the ASI approach. It is therefore one of the central future challenges within European mobility and transport to realise the potential of merging technological solutions and new social practices. First successful attempts underline the possibilities for this. For example the practice of car-sharing is continuously further developing in light of solutions provided by smartphones and apps. Change and re-orientation strategies are related to these developments. For example, the practice of car-sharing, namely to use a car on demand rather than having permanent ownership of it, might lead to new business models of the many established car-manufactures.

Several hypotheses and research questions can be generated based on the discussions of the policy field of mobility and transport in Europe. They mainly relate to the difference between the governance system and the social innovation practice fields. See chapter IV.

III.   COMPARATIVE ANALYSIS OF NATIONAL LEVEL GOVERNANCE AND SOCIAL INNOVATION

Introduction

This chapter of the report is a comparative analysis of governance structures and social innovation practice fields of different national levels, in particular Austria, The Netherlands, Germany, United Kingdom, India and Romania. Snapshots will be provided of North Europe and Belgium. The overall aim is to grasp the diversity of social innovation practice fields and to discuss how they are stimulated by different contexts.

In order to discuss the research questions, this comparative analysis focusses on key commonalities and differences of the countries, asks for the range of practice fields across the countries, and develops first assumptions about the relation between social change and social innovation. The aim is to generate hypotheses for the future empirical work within the SI-Drive project. A detailed comparison is found in found in the full reports

Themes and challenges

Concerning themes and challenges of mobility and transport policy in the countries, the *extension of transport infrastructure* is of high relevance in India and Romania. Whereas infrastructural projects are adapted to the environment/landscape in India (construction of waterways, rail, or roads), emphasis is on the extension of motorways in Romania (not least to facilitate export of cars produced by Dacia/Renault).

Environmental and economic dimensions of sustainability strongly influence the political agenda in The Netherlands, Austria, Belgium, Germany, and the Nordic countries. This goes along with a considerable orientation towards fostering *cleaner and more efficient technological and infrastructural transport solutions*.

As regards car-sharing, established actors have a country-wide scope, i.e. they are political actors on national level, country-wide associations, and influential automotive companies, especially in Germany. A distinction of some Nordic countries (Sweden, Denmark, and Finland) is the strong involvement of municipal representatives.

Social aspects are only implicitly tackled – or they are side effects of other measures in the majority of countries except Great Britain. In Great Britain, social concerns, especially related to *people with reduced*

mobility like elderly people or people with disabilities, are integral topics of policy programmes and actions as well as are relevant actors engaged in major policy processes.

Drivers, barriers and actors

Drivers of behavioural change and the scaling of social innovation practice fields in many of the European countries are *changing mobility demands* due to demographic developments and an aging society. Therefore, it seems to be likely that social issues will be of increasing relevance in the set-up of future political strategies. In this regard, GB could play an important role as a pilot region and there seems to be a lot to learn for other European countries. An additional driver with potential to stimulate behavioural change is *technological progress* and its direct impact on the individual level in the policy field of mobility and transportation. Examples are applications on smart phones that facilitate multi-modal trips, ticketing and usage of shared cars and bikes, as well as applications that increase passenger safety (emergency apps).

A barrier found in almost all countries is the considerable *complexity of the mobility and transportation system*. Transportation systems are characterised by *high fragmentation of interests* according to the different segments actors are involved in, and it is almost impossible to define commonly accepted objectives.

Another barrier for scaling social innovation seems to be *difference in types of actors* between the established governance regime and social innovation practice fields: long-term actors of the governance regimes are representing the national automotive and transportation industry as well as the political-administrative system. Activities within social innovation practice fields are conducted by civil society (volunteers), NGOs, and the public sector which are a different kind of actors. One exception is the actor constellation in GB, where social innovation actors seem to be well-integrated into the established governance regime. Consequently, fostering social innovation in mobility and transport in GB is much more debated at the highest level and implemented more easily, in comparison with other European countries.

It needs to be examined during future research whether public sector authorities have the potential to close the gap between the two different groups of actors, as they are present in both. They could be considered as a "connecting element" helping to scale-up social innovations. As a first step, it seems to be useful to study the role of public actors in scaled practice fields (such as car-sharing) to test this hypothesis.

It should not remain unnoticed that, apart from car-sharing, it is strikingly obvious that *private actors are absent in social innovation practice fields* in most countries.

Context and social innovation

The established regimes in mobility and transport are maintained by "classical" actors such as large and influential automotive, transportation and construction companies, political and other public sector actors, as well as research and development institutions, e.g. developing new battery technologies, fuels, materials, etc., and representing high-technology developments. Issues related to social innovation do not belong to the fields of activity of these actors. It seems thus to be a logical consequence that social innovation is not part of the top priorities in many countries, since social innovation actors are not part of formulating and negotiating relevant programmes, laws and regulations (in NL, BEL, AUT, GER).

Furthermore, social innovation seems to be kind of a competitive concept to energy efficiency in making mobility and transport more environmentally friendly, at least from a policy perspective. Even if overarching aims are the same (sustainable and inclusive transportation systems), priority setting and the selected implementation measure exclude alternative approaches at the same time (a focus on social innovation vs. a focus on energy efficiency). The emphasis on promoting environmentally friendly transportation systems by implementing new technological solutions is found in many of the analysed European countries with the same consequences for the support of social innovation. Again, GB seems to be a notable exception, as the potential of merging the two approaches has been noticed and realised.

The relation between social innovation and the broader governance context in India is seen from a two-sided perspective. Despite flourishing social innovation initiatives in mobility and transport and broad recognition of the topic as such (cf. the concept of Jugaad innovation), it is criticised that such practices do not take into account the root causes of social problems and structural inequalities are either perpetuated or consolidated.

Sustainable and inclusive transportation systems – ASI and 4A approach
The two challenges, sustainable and inclusive transportation systems, discussed in the first chapter of this summary, influence the mobility and transport regime in almost all of the analysed countries. As has been discussed earlier (cf. part I), overcoming both challenges requires behavioural change and social innovation. However, the relevance of social innovation in defining concrete measures depends on how the interpretation of the actors involved. In most of the countries except Great Britain, Austria, India and Romania, sustainability aspects and the ASI approach seem to be dominant over the 4A approach. In Great Britain and Austria, inclusive transportation and the 4A approach dominate, whereas in India and Romania no explicit aims have been defined.

IV.   ORIENTATION FOR FUTURE RESEARCH ON SOCIAL INNOVATION IN MOBILITY AND TRANSPORT IN SI-DRIVE

Social innovation governance, practice fields and projects in mobility and transport by desk analysis. It had the overall aim to generate hypotheses and research questions about the question how governance systems of mobility and transport influence social innovation practice fields and projects and, vice versa, how it is influenced by them. A second objective was to elaborate different levels (EU, national)[11] of the governance system and social innovation practice fields.

Based on this analysis, the following set of hypotheses and research questions has been developed. It is formulated around the contradiction that there are some well-diffused social innovation practice fields in mobility and transport such as car-sharing or mobility apps. On the other hand there are many initiatives facing barriers in their diffusion process. It will thus be of future interest to study the differences between well and less diffused practice fields in mobility and transport.

Hypotheses
Hypothesis 1: Among the main reasons why certain social innovations in mobility and transport do not scale up is their incompatibility with the established governance regime. It is necessary to include parts of the established regime in order to have a successful diffusion process.

Hypothesis 2: Well-established practice fields in mobility and transport such as car-sharing or apps include components that are highly compatible with the governance regime. It will be a central research focus to analyse these highly compatible components in order to learn how social innovations scale-up.

Hypothesis 3: However, well-established practice fields (and social innovation projects) do not necessarily need to be compatible with the governance regime of mobility and transport. They can also be scaled up in other governance contexts (such as education, employment or health). The reason is that mobility is not an end in itself; many innovations come from what should be delivered and from users and customers trends.

Hypothesis 4: Incompatibility with established governance regime has been identified as a potential barrier to scaling up social innovation projects in transport and mobility. However, drivers and barriers will be different among social innovation practice fields and projects and in addition have a strong contextual dimension. It will be central to work out differences among drivers and barriers in order to better understand social innovation processes.

Hypotheses 5: Countries focussing on inclusive mobility and transportation systems are more open towards establishing and scaling social innovation.

Hypothesis 6: In order for social innovation to be scaled-up, social innovation actors need first to be established at a country-wide level to support/lobby scaling and diffusion.

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[11] The full report contains also a first brief overview of global challenges, which will be elaborated in the final version of the full report after analyzing the mapped social initiatives.

Hypothesis 7: The public sector is an important actor within the established mobility and transportation regime and within social innovation practice fields. Due to the insight into both spheres, public sector actors can play the role of a bridging function and facilitate scaling processes of social innovations. It is of high interest to study measures and mechanisms of public sector actors through which they have supported the establishment of social innovation practice fields.

Hypothesis 8: The involvement of several companies and other private sector actors, as well as the development of different business models within a practice field, is an indication of the degree of scaling of social innovation practice fields.

Hypothesis 9: In order to understand mechanisms of scaling social innovation, it seems promising to study the practice fields of car-sharing, mobility and education (walking school bus) and mobility applications. These practice fields are widely diffused across several countries.
Further research orientations relate to the three building blocks by which empirical material will be obtained, namely analysis of social innovation projects in mobility and transport that are accessible via the online survey (mapping), the policy round tables, and the in-depth case studies.

Next to discussing the hypotheses that will be of relevance in all of the three empirical building blocks, the following research topics seem to be promising:

As regards the online survey/mapping it will be relevant to analyze:

- the variety of actors, their roles and functions
- the breadth of social innovation projects in mobility and transport including the different thematic emphases,
- the degree of novelty related to the social innovation projects
- differences in social innovation projects across countries
- the degree of cross-sector orientation of social innovation projects and
- the role of technology

During the policy round tables it will be of interest to bring together actors of the established governance regime in mobility and transport and actors active in social innovation practice fields. Discussions should be related to the role of social innovation in mobility and transport as well as to approaches of how to integrate social innovations into established mobility and transportation systems and to

In the course of SI-Drive, about ten in-depth case studies will be conducted in the policy field of mobility and transport. It will be of interest to study

- scaled and non-scaled social innovations in mobility and transport in order to allow for comparisons among the two categories
- the drivers and barriers related to the innovation processes
- the question which kind of components of the social innovation cases come from the policy field of mobility and transport and which kind come from other sectors
- the role of technology in the innovation process
- and the knowledge developed and applied during the innovation and scaling processes

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