NSB CoRe Policy Paper

12.11.2018

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Executive summary

The transport sector is in transition. Development pressures come from urbanization, environmental challenges and customers' needs for more flexible mobility. The Mobility as a Service (MaaS) vision has inspired companies and the public sector in recent years as a solution for the future of transport. The MaaS concept is particularly relevant for city regions and the various sized communities along commuting corridors between them that are seeking to advance user-centric mobility services and seamless trip chains.

This NSB CoRe policy paper identifies and promotes that local governments (municipal and regional), alongside national and private sector ambitions, have a key role to play in the shift toward multimodal mobility ecosystems and the provision of new innovative mobility solutions to their residents. Based on insight gathered in two workshops with experts from the North Sea – Baltic corridor area, this policy paper covers five topical focus areas in which local governments throughout the corridor are facing challenges in their pursuit for enabling car-light lifestyles and greater service integration. Each focus area is accompanied by recommended policy options to act upon.

The NSB CoRe policy recommendations

Focus area 1: Local governments must create shared visions. The proliferation of new sustainable mobility services and the integration of mobility services is slowed down because of a lack of vision and ambition within local governments. It is important to establish an inclusionary process for co-creating a shared vision and roadmap that makes sustainable mobility a strategic goal across departments. Generating local demand for new mobility service will boost the development of services.

Focus area 2: Seamless regional travel needs political leadership. Trip chains rarely function adequately at the level of the urban area or region (corridor) due to limited political leadership. At least the integration of first/last mile solutions is often missing. Municipal co-operation is needed to coordinate service development. Building a culture of experimentation and sharing experiences and good practices strengthens collaboration among authorities.

Focus area 3: Service development in rural areas requires proactive involvement of local governments. Extending mobility chains to the rural areas along commuting corridors needs the introduction of flexible and sustainable mobility solutions that don't require a lot of passengers to be feasible. New forms of cooperation and business models are needed in order to find functional new services.

Focus area 4: Local governments must take lead in the coordination of service integration. Service integration processes are difficult to manage because the transport system is split into competing sectors (national, local, private), isolated silos within the sectors, and single-modality specializations. Local governments can facilitate collaboration by calling for increased central government steering of nationally-owned operators and inviting private sector operators into joint pilot projects. All stakeholders will benefit when the role of users is elevated.

Focus area 5: Open access interfaces are a priority. Universally open access to data and sales and transaction interfaces is crucial for MaaS but often obstructed by limitations in technology, usability, and commercial terms. Local governments can hasten the process towards open interfaces by generating direct or indirect resourcing for their creation. Mutually beneficial interface-sharing contracts between local public transport operators and private companies may also need a facilitator.

These NSB CoRe policy paper recommendations highlight which issues local governments should put on their agenda when aspiring to facilitate the growth of a MaaS ecosystem. The recommendations, however, should always be evaluated and acted upon based on the situation in each country, region, and municipality.

The paper also illuminates the needs of local actors along a European corridor and in which types of actions they need support from national and European policymakers to implement the MaaS vision. National governments must engage into the process by strengthening coordination of the transportation services they control, ensuring the existence of an enabling legal framework, and offering collaborative discussion forums for all stakeholders.

The European Commission must continue to provide platforms for experimentation and knowledge-sharing as well as support the harmonization of regulation, standards and data accessibility to enable a single, open market in Europe that allows for the full deployment of MaaS across the continent.

1. Introduction

This NSB CoRe policy paper provides recommendations on how local and regional governments in the North Sea – Baltic corridor can work together with private sector passenger transport operators to enhance people's mobility in and between urban nodes. Attention is focused on advancing the Mobility as a Service (MaaS) vision, which, in this paper, generally means boosting the development of new innovative and environmentally conscious mobility services as well as their integration under a one-stop-shop service umbrella that's accessible on demand.

> **The nine core characteristics of the Mobility as a Service concept according to Jittrapirom et al. (2017):**
>
> **1** The integration of transport modes, both shared and more traditional,
> **2** The tariff option (i.e. mobility packages and pay-as-you-go),
> **3** A single platform for planning, booking, paying and receiving tickets for trips,
> **4** Multiple actors (customers, providers, platform owners, authorities, etc.),
> **5** The involvement of technologies (smartphones, online networks, ICT, etc.),
> **6** Demand orientation,
> **7** The need to register for usage facilitation and enabling service customisation,
> **8** Personalisation to match the needs of the user,
> **9** Customisation, enabling the user to modify the offered option based on their preferences.

The paper reflects the discussions and conclusions of two thematic workshops ("innovation labs") on the challenges and possible solutions local governments should consider when shifting towards the direction of a wider application of the Mobility as a Service (MaaS) vision in the region. By doing so, the paper contributes to the discussion on the future of transportation in a time characterized by disruptive changes and evolving boundary conditions.

The main part of the paper is structured into a set of widely shared local government challenges and recommended policy options to overcome them. While the contents of the paper are formed together with experts representing a range of policy contexts, the recommendations should always be evaluated and acted upon based on the situation in each country, region, and municipality. The advancement of a high-quality integrated multimodal transportation system touches upon several interdependent, overlapping and chronologically occurring domains of policy action, which makes the starting point for each local government unique, defined by their prior activities in each domain.

1.1 THE NSB CORE PROJECT

The NSB CoRe project seeks to enhance regional development in the North-Eastern Baltic Sea Region. The project's main goal is to improve sustainable internal and external passenger and freight transportation accessibility around the EU TEN-T core network corridor North Sea – Baltic. The project focuses on supporting entrepreneurship in the corridor, creation and promotion of access points, and spatial development potentials.

The NSB CoRe project is financed by the Interreg Baltic Sea Region Programme and led by the Helsinki-Uusimaa Regional Council. The project partners are from Finland, Estonia, Latvia, Lithuania, Poland and Germany. This policy paper is an output of the project's work package 3. Its agenda is defined as:

"The strategic aim is to strengthen the cities and regions along the North Sea Baltic core network corridor through organizing intensive links, especially in cross border regions, access routes and services for business and labour mobility. This includes improving cross border transport connections and services, enhancement of last mile solutions and digital services in interurban and urban transport. NSB CoRe enhances interaction between infra development (passenger terminals), planning of transport services (timetables and tariffs) and smart mobility services."

2. Local Governments and the Future of Transportation

2.1 THE CHANGING LANDSCAPE OF TRANSPORTATION

Transport accounts for roughly a quarter of Europe's greenhouse gas emissions. The share has increased by 23 % between 1990 and 2015 (European Commission 2018A). Parallel to the critical need to fight climate change, the need of governments at all levels to do more with fewer resources as well as urbanization and the densification of urban environments are all factors adding up to an intensifying demand to move more people (and goods) in ways that are more efficient, sustainable and cleaner than is done with the current transportation system.

The role of the private car has particularly become a focus of concern. In 2015, 44,5 % of the European greenhouse gas emissions from road transport were contributed by passenger cars (EEA 2018). Excess driving also causes local air pollution, requires a lot of space, and is a prime cause of congestion in urban areas. While there is a pressing need to shift towards a more sustainable modal split, public transportation is often a competitive choice only in large cities.

Parallel to these events, substantial changes are shaping transportation markets across Europe: Technological advancements are making transportation and transportation services increasingly connected, intelligent, and automated. The past decade in transportation has been characterized by the rise of new on-demand services to match the expanding demands that arise from the sharing economy, car-light lifestyles, and increasingly personalized consumption patterns. The use of apps and smartphones has also become the new normal for planning trips and buying tickets. In the future, automatization may reduce the costs of public transportation and increase safety across the transportation system.

2.2 SHIFTING TOWARDS THE 'MOBILITY AS A SERVICE' VISION

The changing priorities in transport has led to the emergence of a vision to viewing and organizing mobility in a new way: consolidating the entire spectrum of the service offer behind a single service platform or app which allows for the end users to fulfil their individual mobility needs in a customized and personalized way.

This *Mobility as a Service (MaaS)* vision, in a nutshell, aims to make it unnecessary for people to own cars and pave the way for digital platforms that help integrate end-to-end trip planning, booking, electronic ticketing, and payment services across all modes of transportation, public and private. The result is a network of interconnected mobility service operators benefitting from each other's services.

Besides boosting car-light lifestyles and user-centredness of the transportation system, the idea to intensify service integration is expected to grow to a business worth over one trillion euro by 2030 (MaaS Alliance 2017). The potentials it bears has raised interest around the world within the private sector as well as among national authorities.

Today MaaS is at a very early stage in its development. The concept is operationalized only by a few experiments. The building blocks of the ecosystem are, however, continuously increasing and driven forward by new digital and personal transport innovations. The car share market, for instance, expanded globally from one million users to 15 million between 2011 and 2016. By 2025 the number of users is expected to grow to 36 million (Movmi 2018).

In this paper, advancing the Mobility as a Service vision is understood in its broad sense as an ambition to promote the emergence of intelligent & sustainable, new-era, mobility solutions and their integration & packaging to provide travellers seamless trip chains regardless of geographic context.

2.3 THE ROLE OF LOCAL GOVERNMENTS IN BALANCED MAAS ECOSYSTEMS

While this policy paper focuses on the role and work of local governments (sub-national entities) in advancing the emergence of new transportation solutions and service integration, it must be noted that the role of national and European-level policies and their parallel advancement is essential. The Mobility as a Service vision requires a legal framework that enables its implementation as well as a shared understanding of standards in technology, data, etc. to unlock the possibilities for transportation services to operate across national contexts.

The work of the European Commission on this front is guided by policy goals outlined in the EC White Paper (European Commission 2011), the Strategy and Action Plan for creating an Energy Union (European Commission 2015), and by the European strategy for low-emission mobility (European Commission 2016). Furthermore, in 2017 the Commission launched "Europe on the Move" (European Commission 2018B), a three-staged package of legislative and non-legislative initiatives to accelerate a European Union-wide shift towards a sustainable, digital and integrated mobility system.

The European public-private partnership MaaS Alliance is also currently working to harmonize regulation and standards as well as promoting the availability and access of relevant data to enable a single, open market in Europe that allows for the full deployment of MaaS across the continent.

At the national level, legislation has in some countries been changed to remove barriers for the implementation of MaaS. Finland, with its recent Act on Transport Services, has been a forerunner in establishing the preconditions for the digitalisation of transport and enabling a comprehensive overview of the transport system. The scope of the legal questions, however, is broad and expands to the field of tax policies that often incentivize the use of private cars or disincentivize the consuming of bundled-up mobility services due to unclear VAT issues. It is currently, for example, not clear how the VAT rate of a monthly package consisting of multiple trip chains from multiple independent service providers would be formed.

These factors are vital to MaaS, but not directly in the scope of local government policies. Indirect action can, however, be taken. Local governments can support the work for achieving an enabling legal framework across Europe to transition toward integrated and sustainable mobility schemes. Local governments should, for example, engage with relevant European networks, such as the *MaaS Alliance*, *Civitas*, and *Eltis*, to share and learn from best practices. Local governments can also lobby ministries or participate in national government driven multi-stakeholder working groups that discuss topics relevant for MaaS, such as the VAT issue.

There is also plenty of room for direct action. Local public sector actors are a necessary part of the MaaS equation and ecosystem. Even if the mainstream discussion tends to emphasize the role of the private sector in bringing change, local governments are involved in the future of transportation by having a role in policy formation, setting rules and regulations, transportation services delivery (especially in areas with low demand for public transportation and for special needs groups), and operational aspects. Local governments seek to fulfil goals having to do with achieving policy objectives such as delivering economic growth, social inclusion, space optimisation, and citizen health and wellbeing. The scope of these roles has changed over time and they will continue to evolve also in the era of MaaS.

Moreover, there is increasing demand for local governments to participate in the realization of the MaaS vision, even if they conventionally have not been very prominently engaged in the process (Polis 2017). Due to ever intensifying urban growth, the localities along transportation routes connecting large functional urban regions have become increasingly central places. By being well-connected to the main arteries of such "growth corridors", also smaller localities have the possibility to benefit from the economic growth of the main urban regions.

Local and regional governing bodies are needed to make sure that the entire corridor becomes a dynamic zone where all trips are sustainable. What is required, therefore, is a cooperative approach to mobility and transportation that employs the opportunities of MaaS and tries to find positive outcomes for both private operators and the local authorities. To ensure sustainable outcomes that serve communities and support economic growth, a balanced governance model has become a priority.

From the point of view of local governments, this objective can roughly be divided into interdependent, overlapping and chronologically occurring domains of action.

1. The strategic domain. Here the main agenda is setting the scene by securing policy goals and removing initial development barriers. Critical action points include the creation of a cross-cutting strategic vision for the local government and optimizing the regulatory framework.

2. The operational domain. The goal in this domain revolves around defining the business environment and responsibilities. Critical action points include definition of ownership, procuring innovative solutions, etc.

3. The infrastructure domain. Here the aim is linked to building the necessary physical and digital infrastructures for the MaaS sector solutions. Critical action points are investments to develop facilities for sustainable transport, information and communication infrastructures/APIs, etc.

4. The support domain. Here the focus is on incentivizing and establishing supporting initiatives. Critical action points include defining incentives, building a knowledge base, and promoting user-involvement in further development.

Finally, the advancement of a MaaS ecosystem should be understood as a process across and within each of the domains. Sustainable and high-performance service packages and seamless trip chains are only possible following solid progress in all domains.

To release the full potential of the MaaS vision, there must also be strong focus on public transport, cycling and walking and not only on taxis, car sharing, and car hire services. An unbalanced MaaS approach may end up being counterproductive: It can disincentivise choosing sustainable trips, increase costs for users and transport providers, and create a disconnect between the user, transport provider and transport authority.

Select examples of existing MaaS sector services in the North Sea – Baltic corridor as identified by the Warsaw innovation lab workshop participants. A more thorough overview of innovative services can be explored in the NSB CoRe "*Transport services benchmarking***" report (Lintusaari et al. 2017).**

Poland
- Jakdojade public transport planner with access to schedules in over 40 Polish cities
- epodroznik.pl journey planner and ticketing platform that links intercity transport (road & rail) with urban transport
- Blablacar nationwide carpooling service

Finland
- DriveNow free floating car sharing service ('drive your own taxi')
- Whim, a full-fledged MaaS service offering integrated packages of taxi, public transport, car rental, and bikeshare services
- Kyyti rideshare app

Estonia
- Free public transport offer in the entire country
- Public transport free of charge for Tallinn local citizens, QR tickets available for visitors
- Waze carpooling service

Latvia
- Car Guru carsharing service
- Riga region bikesharing service
- Riga Taxi service apps

Germany
- Frankfurt (Oder) monthly and annual ticket for city and for surrounding area (Brandenburg and Berlin)

3. MaaS and Local Governments – Key Challenges and Policy Responses

This chapter defines the key challenges the NSB CoRe project has identified local governments are facing in the progression of a new, more sustainable, transport paradigm. They have been grouped into five focus areas. The first two address political leadership whereas the last two touch on more practical issues. The middle one is a call to all parties to join in on the innovation of out-of-the-box solutions for rural areas. Each issue definition has been coupled with a set of policy responses that can be used to overcome the challenges.

3.1 THE LACK OF SHARED AND INTEGRATED VISIONS

Issue definition

The lack of vision and ambition within local governments is slowing down the introduction of new sustainable mobility services and the integration of mobility services. With the absence of clear strategic steering, local transportation marketplaces are left open to operators that do not necessarily help meet desired societal goals, such as the reduction of climate emissions. The transportation marketplaces are also left open to the entry of global mobility actors which decrease the space for cultivating local transport services.

Systemic change unavoidably creates new kinds of structures and practices. An underlying cause for the lack of vision and ambition is that the ambiguity and complexity of the new transportation paradigm has created pockets of uncertainty and confusion among municipal decision-makers and executive administrators. A few leading individuals who do not endorse the transition are already able to slow down decision-making processes and implementation of pilot projects.

Policy responses

An inclusionary process for creating a shared cross-sectoral vision and roadmap
The process defines the local situation and crystallizes what the local government is trying to achieve (for example a vision for being a carbon neutral city). The vision encompasses all administrative domains and defines the course for mobility development as well as the local government's relationship with the MaaS approach. Possible steps:

- An inclusionary discussion forum for reaching an agreement on a purposeful vision framework.

- Tying the vision to existing strategy platforms and associated working groups for preparing and steering the transition towards the new vision. To be effective, the vision must address the entire transport system, including policy in fields such as parking, cycling, walkability, city contracts, as well as other governance sectors (for example spatial planning).

- Coordination. The formulation of a model how the multiple stakeholders within local government will organize around the set goals: Who has ownership, who coordinates, who deals with partnerships, contacts, etc. There needs to be a clear internal understanding about the roles different actors have in the transition towards the new vision. For external interaction, local governments should designate a person or unit responsible for the customer relationships with new mobility service providers (e.g. carshare companies). Cooperation potentials may collapse early if it is not clear who's the right person in the organisation to talk to.

Raising awareness among decision-makers
The sectors and actors within local government that have the relevant knowledge can take action to plan which items are taken to decision-makers and to develop a completing communication strategy to bring all decision-makers to the same level. Pioneering mobility providers can be taken as partners to elaborate why the transition and changes in policy are necessary.

Generating local demand for new mobility services

Local governments can create mobility management strategies (also referred to as demand management) for shaping the attitudes and choices of travellers. This will also help in building a customer base for the local mobility business. The scope of these schemes can range from implementing road pricing to delivering benefits and rewards to people who join the implementation of more sustainable travel options. Areas with large shares of travellers not using digital services must also focus on inclusiveness. Resourcing can be organized directly by local government or in partnership with private sector actors. For example:

- Rewarding people for making sustainable travel choices and introducing gamification schemes. The local government or a public-private partnership could, for example, sponsor amenities in a neighbourhood if people in it are committed to sustainable travel choices.

- Setting an example with the local government's own actions. For example, motivation work within the city's organization, making the city's own vehicle fleet include also bikes and/or shared vehicles, and accepting travel time in public transportation to be used as working time for employees.

- Public information campaigns. The local government can execute similar information campaigns as with traffic safety for the necessity to use sustainable transportation modes / solutions.

- Congestion charges. Local governments in urban areas can introduce a fee for using private cars on certain roads or in appointed districts during peak traffic hours or indefinitely. The income from the scheme can be used to fund transportation improvements.

3.2 THE LACK OF MUNICIPAL COOPERATION IN URBAN AREAS AND REGIONS

Issue definition

Car-free travel chains are rarely competitive alternatives to private cars regionally or along commuting corridors in domestic and cross-border contexts. At least the first/last mile solutions are often missing. An underperforming or missing leg of a journey within or between functional urban areas will result in failure of the entire travel chain. For example, if a traveller is not able to continue his/her journey easily when reaching a railway station along the commuting corridor, the practical alternative is to travel the entire route by car. Depending on location, challenges can be present at several regional contexts.

At the level of functional urban areas, the challenges for dysfunctional travel chains range from the lack of having an integrated public transport network altogether to the influence of inter-municipal competition in the organization of transportation. In the case of the latter, a city might, for example, introduce a different bikeshare system than its neighbouring jurisdiction.

In the post-socialist regions of the Baltic Sea Region, urban areas may lack mechanisms for funding regional public transportation networks or administrative bodies to manage them. Elsewhere, the transport system development in functional urban areas can be discouraged by cost-sharing issues. This is likely to happen when central cities are the primary benefiters of the public transportation schemes, but their costs are shared with the municipalities of the entire urban region. Conflicts of interest are intensified by the existence of various subvention systems.

At the level of broader regions and corridors, the transportation landscape is often characterized by organizational and service fragmentation. Often trips other than between the core urban nodes are most convenient to travel by car. Typically, municipalities have placed insufficient effort in the design of transportation systems that work together nor has any administrative body been appointed to oversee the development of mobility from this perspective. However, Germany represents an exception by having federal states act as the responsible authorities for organizing local public transportation.

Knowledge, experiences and best practices have also been noted to disseminate slowly between local governments in functional urban areas and regions. Municipalities often tend to approach transportation innovation on their own and with limited resources, whereas joint efforts and learning from existing pilot projects would be more beneficial.

Policy responses

Strengthening coordination for increasing regional transportation governance
The municipalities within city regions and cross-border regions that lack an established regional public transportation system should begin negotiations over agreeing on a joint funding mechanism for providing cross-municipal transportation services. A coordinating entity should also be appointed for bringing together the different stakeholders, both public and private.

Strengthening coordination for reducing intermunicipal competition
Intermunicipal competition can be reduced by exploring new models for the sharing of costs and benefits across municipal boarders.

In functional urban areas, leadership must be taken by the central cities as they are commonly the greatest benefiters of local public transportation schemes. Therefore, it isn't necessarily a good solution to pursue improving mobility only by expanding the coverage of the local public transportation authority as the central city's position will stay the same. In addition, building stronger links between the development of the transport system and economic policy in the urban area will help to intensify intermunicipal collaboration.

At the regional or corridor level, there needs to be more effective oversight of key travel chains and collaboration between public and private actors for sharing risks and operational parts of travel chains. Depending on the type of the region, this coordination can be done by the local governments, a regional government body, or a specifically appointed administrative unit.

Building a culture of experimentation
The collaboration within urban areas and regions can be advanced through the implementation of joint pilot projects. This can offer a vehicle to intensifying collaboration in a subtle way. Successful pilot projects can be formalized through democratic processes later on. This requires the identification of suitable funding channels.

Sharing experiences and good practices
In urban areas and regions, intensified collaboration and cost reduction can be achieved by increased sharing of experiences and knowledge between local governments and other local actors, such as research & innovation institutions. The idea of knowledge sharing must be acknowledged when designing new pilot projects to secure access to information at later stages. Regional governing bodies and intermediary actors (for example R&D platforms) could facilitate and coordinate the sharing of knowledge. Experiences especially from the Netherlands and Switzerland can be explored to understand the political process towards advanced regional public transportation.

Examples of cross-border collaboration inside the North Sea – Baltic corridor:

Helsinki-Tallinn
The ferry connection between the two capitals is one of the busiest in the world with over 8 million passengers annually. The cities are currently collaborating through the *Finest Smart Mobility* project (2018) in order to provide a more fluent integration of different transport modes for this inter-city and cross-border traffic with piloting and planning of ICT-driven solutions.

Valka-Valga
The Latvian-Estonian twin town Valka-Valga are engaged in projects to improve the physical connectivity between the two sides of the border to support cross border activity. The towns are, for instance, developing a pedestrian street that will link the churches of both town centres. According to statistics, more than 1000 people cross Estonian-Latvian border for work every day (Keep.eu 2018).

Frankfurt (Oder) – Słubice
The German-Polish conurbation of 80 000 inhabitants has several joint structures in place to govern the area. The cities have for example established a cooperation centre and they discuss advancing people's interaction across the border through joint thematic working groups on topics such as city development, mobility and cycling infrastructure (Bollmann 2015).

3.3 THE LACK OF SERVICES IN RURAL AREAS ALONG COMMUTING CORRIDORS

Issue definition

Extending mobility chains to the rural areas along commuting corridors needs the introduction of flexible and sustainable mobility services that don't require a lot of passengers to be feasible. The sparsely populated areas along commuting corridors cannot be serviced by the same mobility service concepts as in urban areas. For example, infrastructure cannot be implemented in the same way due to limited resources and slim transportation streams. Administrative issues add another layer of challenges in cross-border areas.

The questions are many: What kind of business opportunities, to what kind of enterprises and for which functions? How do you get new mobility services there? How do you integrate these as part of trip chains? Is it possible to upgrade existing services to match the requirements of a MaaS ecosystem?

In these areas, local governments will have a role in creating business opportunities because new-era mobility service concepts are unlikely to emerge without the facilitation of the public sector. Sparsely populated areas are not interesting for solely market-based solutions, but also solely government-driven solutions are not feasible (cost & lack of innovation).

Identified obstacles to overcome also include the established practices within local government and with mobility providers. The local government may not have the ambition to pursue new transportation solutions. Existing mobility providers, for example taxi companies, may also find it difficult to adapt their business schemes. There may also be regulatory issues that narrow down the possibilities for introducing new mobility concepts.

Policy responses

Identifying a model for cooperation and public spending for the progression of new mobility services
Local governments must define how deeply they are involved in the progression and funding of new mobility service concepts. The local government does not need to participate in the operations of the new concepts, but it will need to set an operational framework which guides public spending. Suggested methods for supporting operationalization:

- Investing into new mobility services as a customer. The creation of new markets can be facilitated by being involved as a customer when planning for the organization of the city's own transportation services and logistics. Other public-sector actors can similarly be encouraged to get involved as customers. The method requires measures to ensure fair treatment among possible service providers.

- Using legally-required transportation duties as a platform. The local government can be involved in new mobility service development via their public procurement policy for school transfers and other legally-required transportation duties in different service sectors. The integration and coordination of local transportation duties will require negotiations with local social and healthcare services, school services and the national social security authority.

Offering support and mediation
Local governments can support the capacity of existing transportation services in rural areas to adapt to the needs of today. For example, by helping them to introduce a digital service interface. Local governments can also help new and existing mobility services negotiate with bigger transportation actors (for example train companies) in service integration processes. New or small service providers rarely have the power to make contracts with established large-scale transportation operators. They will require support and mediation activities from the local government to make agreements. Support and mediation will also be needed in cross-border areas to enable collaboration between service providers and other stakeholders.

Tourism as a platform
The tourism activities and flows of tourists can be used as a platform to bring new services to the market. Cooperation with the tourism board and local tourism stakeholders is required.

Local online sharing platform
Local governments can enable the emergence of new online platforms that helps combine rides by sharing information and hosting financial transactions. The logic with these types of platforms is to is to locally facilitate the introduction of part-time multi-entrepreneurship concepts which can use the platform to create demand and offer in a self-organized way. For example, any individual could offer rides while they are doing something else. The platform and involvement of local government increases the transparency of these types of activities and opportunities for black market activities are reduced. Solutions for non-locals to access the platform need to be considered.

Prioritizing transportation nodes
The transportation nodes of the region must be prioritized as locations for accessibility, investments and development activities as resources are scarce. In many cases this means railway stations where travellers change to commuter lines. A strong focus on nodes will support the generation of agglomeration benefits that serve the surrounding areas and can open various kinds of potentials.

3.4 INTEGRATION OF THE SERVICE OFFER

Issue definition

The practical collaboration in service integration between mobility service providers and operators representing different governance sectors (national, local, private) is challenging due to underlying political and structural fragmentation. This applies to systems both at the local and regional level. The current transportation system(s) and infrastructure is governed and developed not only in different governance sectors, but also in isolated silos within the sectors, and often focusing only on a single modality.

For example, the land, infrastructure, and buildings around railway stations may all be governed by different actors, and, in similar vein, the trains are operated by a national entity, the buses by local government and private enterprises, and the taxis by private enterprises. Travellers may experience such fragmentation as disharmonised schedules, the service providers and operators as an obstruction for innovation.

Traveller-centric development and service integration will require intense coordination and strengthening of collaboration between different service providers and operators. When the collaboration is not there, all actors remain vary about experimenting with new service models. But who has the mandate to begin orchestrating the collaboration?

One underlying issue is that many actors, both public and private, are not familiar with the MaaS concept, which creates misunderstandings and affects how quickly actors begin to engage with the progression of service integration. There is little courage for experimentation without a clear understanding of the bigger picture and potential stakeholders to get involved with.

Service providers and operators can also be hesitant to embrace change. For example, taxi companies may have established a strong foothold in their locality. Local public transportation operators may view new mobility services as competition to their tasks as they have been designed to increase their own ridership constantly.

Policy responses

Lobby for increasing national or state level steering
Decisions made by national or sub-national governments are a precondition for advancing a sustainable transportation system comprehensively. Examples of possible actions to lobby for include:

- Opening markets that are fully governed by publicly owned (state or national government) companies to new service providers.

- The establishment of internal innovation units within publicly owned (state or national government) transportation operators. These units can work relatively independently and using more flexible methods, such as the "start-up cycle", to find unforeseen solutions for service integration.

- Increasing internal national or state level coordination in transportation nodes where the national or state government is a big stakeholder (owner of infrastructure, services or land) but its ownership is divided between different administrative units.

Advancement of joint pilot projects

Experimenting with ideas can help reduce opposition between service providers and operators and form positive cycles for collaboration in service integration. Preferred projects are small scale, quick, commercially oriented, low cost and include evaluation of the results. In addition, knowledge from pilot projects made within sectors can be shared to stakeholders from other sectors by establishing a framework of common meetings.

Lobby for joint discussion forums

Local governments can lobby for the establishment of a joint and regularly meeting discussion forum in their country or region where stakeholders from all sectors are present. The purpose of such forums is to foster discussion around cooperation possibilities and overcoming obstacles. The national or state government needs to orchestrate the forum to ensure major service providers, such as national train companies, are present.

Organizing educational activities and cooperating with associations

There is a need to elaborate what the MaaS concept means for actors in different sectors. Educational activities can be done for example in partnership with national or EU level mobility associations/organizations, such as Maas Alliance.

Embracing and promoting user-centric development

Local governments can facilitate the incorporation of the users of mobility services and their needs into the core of the development activities. Ensuring that transportation users and their voices are clearly heard by stakeholders will help keep the stakeholders' focus on relevant outcomes. Methods for progressing include:

- Updating of public participation and engagement practices. User-centric mobility solutions cannot be done if the users are not dynamically involved as actors in the planning and implementation of new transportation services as well as providers of information and feedback.

- User-data collection and deployment. Local governments can support and lobby for the national government to create an open platform that collects and compiles data about how people use the transport system. This will increase understanding about how various traveller groups use the system. The goal of collecting the data is to facilitate the development of trip chains, mobility services, etc. considering the perspective of the users and their needs and behavioural patterns.

- Incentivizing the civil society to act / promoting active citizenship. Local governments can support the various civil society actors and networks for increasing their proactivity in engaging into the development work of the transportation system.

Examples of collaborative networks in Europe

The LIPPU network

The Finnish network is an example of a joint discussion forum for all MaaS-related stakeholders that is coordinated by national agencies. The network has been formed under the national LIPPU project which aims to create opportunities for providing travel chains in accordance with Finland's new legislation on transport services. The network members include around 170 people from 80 different organisations.

The MaaS Alliance

The MaaS Alliance is a public-private partnership founded by the European Union to facilitate information-sharing among transport operators, service providers and users, and pave the way for a common approach to MaaS across EU countries. The Alliance has working groups addressing issues around single market development, user needs, regulatory matters, and technology.

3.5 OPEN ACCESS TO INTERFACES

Issue definition

Application programming interfaces (APIs) and open access to real time data (timetables and routes, for example) as well as sales and transaction interfaces are crucial for an integrated mobility services ecosystem. This need concerns both public and private mobility operators. Open access to information and ticketing makes it possible for service providers to create and offer one-stop-shop mobility products from the services available on the market. Open APIs also offer a platform for innovators to create other types of new digital services.

The progression of access to various interfaces has, however, been slow. There are challenges in three interrelated dimensions: the technological dimension (the interfaces do not exist or work), the practical dimension (the ticketing interface, for example, only accepts credit card payment), and the commercial dimension (undesirable commercial utilization terms / discriminatory pricing).

When the necessary basic data and sales & transaction interfaces do not exist or aren't technologically designed to be universally accessible, the underlying challenges may relate to the local regulatory and/or cultural environment. Sometimes the opening of especially ticketing APIs can only happen following legal enforcement. Not having widely open APIs can also relate to factors such as a fear of data leakage within those organizations that could make it happen or unwillingness to let other mobility operators to the local market.

In other cases, the interfaces can be available but accessing them is impractical for service providers interested in integration. For example, if a service provider only accepts ticket payments by credit card, another mobility operator that deals with thousands of customers would need an impossibly large credit limit to buy them. In addition, the standards and protocols across regions are not compatible now. The ticketing systems and interfaces need to be made compatible regionally, nationally and at the European level. Making them compatible is crucial for expanding businesses across borders. This is international and national work that also requires the inclusion of the local governments' perspective.

Finally, the potential of using shared ticketing interfaces can be impeded because of unbalanced commercial terms for utilizing the APIs. A service provider may, for example, only sell their tickets to select actors at reselling value and to others at end-user value. There is a need to make the commercial terms the same for all actors. Offering trip chains that mix services from multiple service providers will otherwise not be commercially attractive for people.

Policy responses

Supporting the opening of interfaces
Most transportation services have information and ticketing systems in place and they must be made accessible for other service providers. This, however, requires resources. Many interfaces are managed by the public sector. If public spending or grant applications need to be done in MaaS advancement, supporting working interfaces is a good option to target funding to.

Facilitating negotiations
Local governments can be active in driving negotiations and the creation of contracts that bring added value to both public and private actors. For example, there could be a requirement that publicly governed transportation operators can sell their tickets to private service providers at resell value if they are committed to increasing the use of sustainable travel; The offering of shared car services, for example, must not reduce the usage of local public transportation.

Lobby for legal changes
If the work for opening interfaces does not progress via negotiations, or legal action is a requirement for open APIs, local governments can lobby for the national government to make legal amendments.

4. NSB CoRE recommendations

This NSB CoRe policy paper has identified that local governments (municipal and regional), alongside national and private sector ambitions, have a key role to play in the shift toward multimodal mobility ecosystems and the provision of new innovative mobility solutions to their residents. The focus has been on the advancement of the Mobility as a Service (MaaS) vision.

Building on insight obtained from the participants of two workshops, the policy paper covered five topical focus areas where local governments throughout the North Sea – Baltic corridor are facing challenges in their pursuit for enabling car-light lifestyles and greater service integration. Each challenge is accompanied by policy recommendations for setting the scene for the development of new innovative and environmentally conscious mobility services as well as their integration under a one-stop-shop service umbrella that's accessible on demand.

Focus area 1: Local governments must create shared visions. The proliferation of new sustainable mobility services and the integration of mobility services is slowed down because of a lack of vision and ambition within local governments. It is important to establish an inclusionary process for co-creating a shared vision and roadmap that makes sustainable mobility a strategic goal across departments. Generating local demand for new mobility service will boost the development of services.

Focus area 2: Seamless regional travel needs political leadership. Trip chains rarely function adequately at the level of the urban area or region (corridor) due to limited political leadership. At least the integration of first/last mile solutions is often missing. Municipal co-operation is needed to coordinate service development. Building a culture of experimentation and sharing experiences and good practices strengthens collaboration among authorities.

Focus area 3: Service development in rural areas requires proactive involvement of local governments. Extending mobility chains to the rural areas along commuting corridors needs the introduction of flexible and sustainable mobility solutions that don't require a lot of passengers to be feasible. New forms of cooperation and business models are needed in order to find functional new services.

Focus area 4: Local governments must take lead in the coordination of service integration. Service integration processes are difficult to manage because the transport system is split into competing sectors (national, local, private), isolated silos within the sectors, and single-modality specializations. Local governments can facilitate collaboration by calling for increased central government steering of nationally-owned operators and inviting private sector operators into joint pilot projects. All stakeholders will benefit when the role of users is elevated.

Focus area 5: Open access interfaces are a priority. Universally open access to data and sales and transaction interfaces is crucial for MaaS but often obstructed by limitations in technology, usability, and commercial terms. Local governments can hasten the process towards open interfaces by generating direct or indirect resourcing for their creation. Mutually beneficial interface-sharing contracts between local public transport operators and private companies may also need a facilitator.

These NSB CoRe policy paper recommendations highlight the issues local governments should put on their agenda when aspiring to facilitate the growth of a MaaS ecosystem. The recommendations, however, should always be evaluated and acted upon based on the situation in each country, region, and municipality.

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