

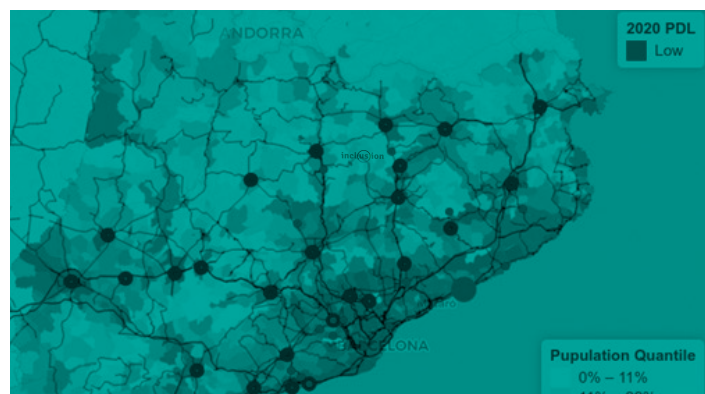


inclusion



Business models for inclusive mobility





guidance for successful implementation



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DOCUMENT TITLE	Business Models for inclusive mobility: guidance for successful implementation
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ABSTRACT	This document is the outcome of the INCLUSION project activities focused on the development of business models supporting effective mobility solutions for vulnerable users in prioritized areas. It is one of the key publications of the project and is intended for use by policymakers, authorities, and transport operators. It provides the final version of the Business Models produced by the INCLUSION Consortium and refined through the feedback provided by the INCLUSION Stakeholder Forum. For each Business Model defined, this publication presents a set of recommendations on their transferability into prioritised areas, highlighting the potential benefits that could be achieved for vulnerable users. These recommendations include drivers/barriers and other critical elements to provide a comprehensive overview of the relevant decision points to consider for the business models' introduction and delivery. The role of technological/organizational dimension and social innovation as components of each Business Model is highlighted. Cross-comparison considerations for the promotion of inclusive mobility solutions are reported, with recommendations on how public, private, and community users could act for a more inclusive transport system.
LAYOUT	PEAK Sourcing
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Executive Summary

INCLUSION (Towards more accessible and inclusive mobility solutions for European prioritised areas) aims to understand, assess and evaluate the accessibility and inclusiveness of transport solutions in European prioritised areas, to identify gaps and unmet needs, propose and

experiment with a range of innovative and transferable solutions, including ICT (Information and Communication Technology)-enabled elements, ensuring accessible, inclusive and equitable conditions for all and especially vulnerable user categories.

INCLUSION aimed to develop business models as a closing task, to support new accessible and inclusive mobility solutions in prioritised areas and draft specific recommendations for their transferability.

In early 2020, the INCLUSION project developed an initial set of 14 Business Models (BMs) based on concepts that bridge policy priorities and Inclusivity goals. These BMs were assessed according to criteria, such as prioritised areas for implementation, synergies with the demonstration of the INCLUSION Pilot Labs, links with the 50+ case studies, feasibility of implementation in a short time, etc. This resulted in the selection of 5 BMs where the INCLUSION project highlighted concrete/specific opportunities to improve inclusive mobility for different groups/needs.

The 5 BMs selected reflect the most promising BMs in relation to each primary actor involved (i.e. Private sector-led, Public sector-led, Public-Private partnership, Community sector-led, and Solutions to support multi-actor delivery). Each of these 5 BMs have been validated through i) Surveys involving the INCLUSION Stakeholder Forum and

INCLUSION Pilot Labs, designed to elicit opinions on the viability of the business models developed (thinking about the effectiveness, efficiency, affordability, and practicality) to solve the identified mobility challenges; and ii) An Online workshop (dated 15 July 2020) with the INCLUSION Stakeholder Forum was held to consolidate the survey's results and to carry out a second-level analysis of the 5 BMs.

This publication is the result of this task, providing in-depth analysis of each of the validated BMs. A set of recommendations for transferability and long-term sustainability has been developed and is presented here. The document also presents a specific section (Section 5) where the main recommendations for inclusive mobility are presented, which consolidate the findings from the business models development activities and the other tasks of the project.

The document concludes with specific suggestions for how the public sector, the private sector, and the local communities can improve the accessibility and inclusiveness of the European transport system.

Introduction to Business Models generation process

INCLUSION aimed to develop business models to support new accessible and inclusive mobility solutions for vulnerable users in prioritized areas through:

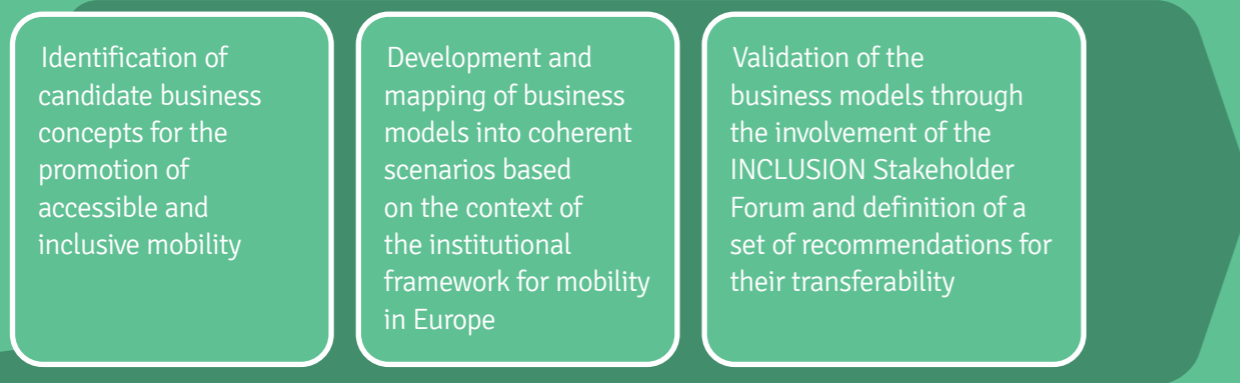


Figure 1 Key steps followed in the development of the INCLUSION Business Models

This publication exhibits the results of the following INCLUSION project activities:

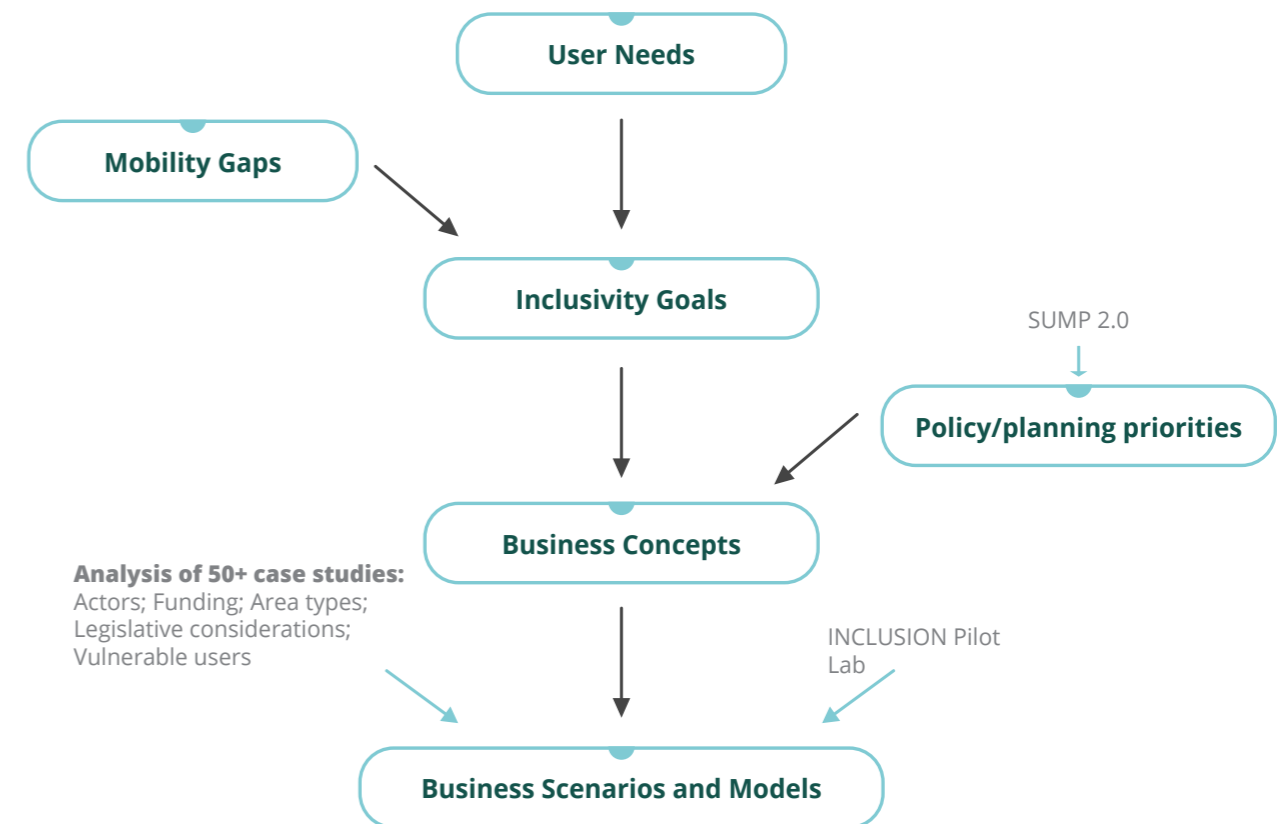
- The identification of mobility gaps, prioritized areas and vulnerable user groups
- The results of the review of 50 study cases carried out in terms of good practice solutions for improving mobility accessibility analysing the relevance of each component (market research, institutional and regulatory framework, stakeholders' cooperation, ICT, funding, promotion, etc.)
- Assessment of the role ICT solutions can guarantee for the development

and operation of affordable accessible mobility solutions and the identification of most promising technological applications and key functionalities

- The experience of the INCLUSION Pilot Labs demonstrating key solutions for improving accessibility in different contexts and operational scenarios, addressing various target users and starting from different background conditions
- The evaluation of Pilot Labs actions in terms of process and impacts

The overall process that was followed for the generation of BMs is specified in Figure 2.

Figure 2: Generation process of Business Models



The main stages of the Business Models' generation were the following:

- Identification of the inclusivity goals based on a users' needs analysis, mobility gaps assessment, survey of good practices and Living Labs actions carried out in WP1, WP3 and WP4
- Definition of the business concepts answering to the INCLUSION Inclusivity Goals and taking into consideration the current public-sector policy and planning priorities at the EU and Member States level
- Mapping of the business concepts in supporting scenarios based on the prioritized areas, target "vulnerable users, institutional context, etc.
- Development of Business Models based on the business scenarios, focusing on the challenges and opportunities for each of the actors involved and the social and demographic barriers for each of the target users
- Selection of the most promising Business Models according to different criteria, such as prioritized areas for implementation, synergies with the demonstration of the INCLUSION Pilot Labs, links with the 50+ case studies, feasibility of implementation in short time, etc.

A detailed description of the methodological approach adopted, as

well as the full set of business concepts and scenarios, are available in the Deliverable *D6.1 Business concepts and models to support accessible and inclusive mobility* (available at <http://www.h2020-inclusion.eu/resources/publications/>).

The initial set of Business Models identified and developed by the project consortium were then assessed according to different criteria, such as prioritised areas¹ for implementation, synergies with the demonstration of the INCLUSION Pilot Labs, links with the 50+ case studies, feasibility of implementation in a short time, etc. This resulted in the selection of 5 BMs where the INCLUSION project highlighted concrete/specific opportunities to improve inclusive mobility for different groups/circumstances.

The 5 final BMs were selected through:

- Conduction of surveys involving the INCLUSION Stakeholder Forum and INCLUSION Pilot Lab partners designed to elicit opinions on the viability of the BM developed (thinking about the effectiveness, efficiency, affordability, and practicality) to solve the identified mobility challenges;
- Consolidation of survey results with an online workshop (held on 15 July 2020) with the INCLUSION Stakeholder Forum to consolidate the survey results and to carry out a second-level analysis of the 5 BMs.

At the end, the most promising BM's in relation to each type of actor primarily involved were selected for an in-depth

validation. The selected BMs and related actors are reported in Table 1 and presented in the following section.

Table 1: Business Model selected for in-depth analysis in relation to the different involved actors

Primary actor involved in the delivery of the BM solution	Business Models selected for an in-depth validation
Private sector led	Big data analysis to better identify where demand for transport services exist to provide commercially viable collective transport services
Public sector led	Not-for-profit collective transport services in rural and peri urban areas
Public-Private partnership	Asset sharing in rural or peri-urban areas
Community sector led	Peer-to-peer ridesharing services
Solutions to support multi-actor delivery	New forms of subsidised travel through MaaS systems

¹ In the context of INCLUSION, prioritised areas are defined as those transport environments (area types) with gaps in transport infrastructure and/or service provision that significantly impact upon transport accessibility, inclusivity and equity, and where the challenges in serving target user groups and their mobility needs and requirements are greatest

Business Models supporting effective mobility solutions for vulnerable users in prioritised areas

This section provides the consolidated definition of the BMs selected and further refined following the validation process.

The analysis of the Business Models validated by INCLUSION project within WP6 must be accompanied by additional considerations. In the transport sector, business model solutions are usually regarded through a financial lens for the solution initiator, with the aim of understanding whether an off the shelf product or an innovative mobility solution can enter the market of transport, and how it can match the standard public transport and other means of transportation. Within the INCLUSION project, the approach has been quite different as the pros and cons of the mobility solutions have been analysed from the perspective of the overall stakeholders interested in the delivery of the solution, and not by a single-actor.

Business Models supporting effective mobility solutions for vulnerable users in prioritised areas

Moreover, the solutions have been developed and assessed considering monetary and non-monetary “values”, including, for example, the social values important for vulnerable users.

Finally, due the specific environment (i.e., the prioritised areas) where the solutions must be implemented, the participation of social entrepreneurs

and their integration in the service delivery has also been considered as a key factor for the successful implementation of the BM.

A more detailed explanation of this guideline is reported in Figure 3. These considerations allow to understand the Business Models in the right perspective.

COVID-19 CONSIDERATIONS

Some key considerations regarding the possible impacts/opportunities of the COVID-19 pandemic related to the success of the business models have been analysed and reported for each solution. These have to be read with some precautions due the status of uncertainty which characterise the mobility sector at this stage.

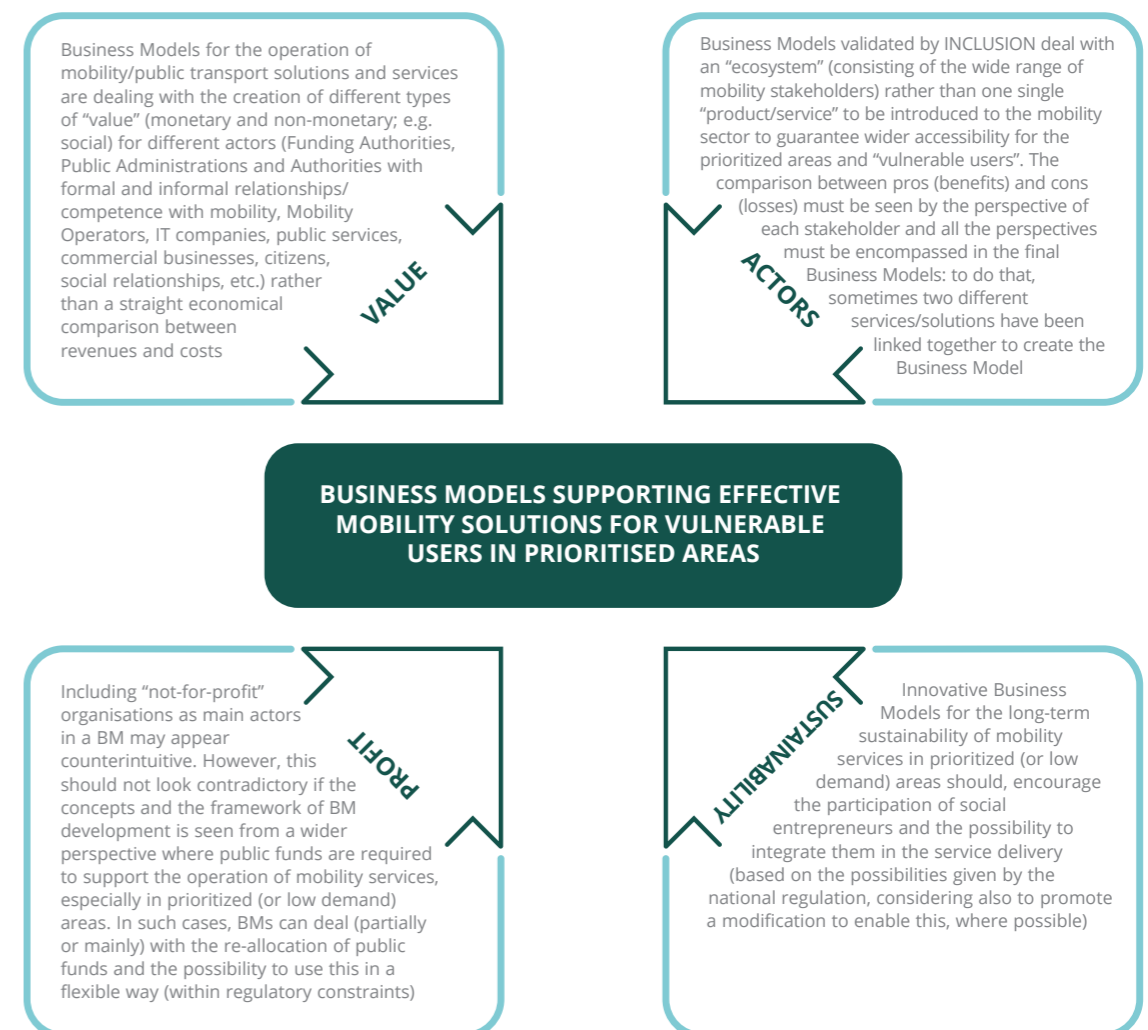


Figure 3: Indications for a correct comprehension of the INCLUSION Business Models

3.1 Big data analysis combined with commercially viable collective transport services that better meet vulnerable user demands



Business Concept: Lower cost services that better meet vulnerable user demands, combined with data capture using technology to better understand these needs lead to improved, integrated, planning decisions

INTRODUCTION TO THE BUSINESS CONCEPT

This scenario involves possibilities where digital solutions, based on analysing large quantities of readily available data from digital social media, play a part in the process of identifying the potential demand for designing commercially viable collective transport services. Information mining from Social Networks on travel desires and needs can provide a better comprehension of the demand and radically improve the uptake of bus ride-sharing services, through enhanced design and aggregation of demand offering more tailored services for vulnerable groups. This solution is especially suited to identification and aggregation of demand to large scale

occasional events, particularly those attended by younger people – as they are one of the most active user groups on social media.

The application of data analysis in the planning of commercially profitable collective transport services allows private sector providers to extend these services beyond urban areas, where they mainly serve commuter demand. There are other commercially viable examples of these services operating to serve a specific niche market where demand is high and/or where high fares can be charged (e.g. airport shuttle services). However, this demand is sometimes hard to detect and few of these commercially viable examples have been developed with vulnerable users in mind. For instance, in rural and peri-urban areas demand is hard to detect and with strong vulnerable users’ presence, which brings the need of performing information mining to detect such demand and to take into account vulnerable users’ needs.

OVERVIEW OF THE BUSINESS MODEL

Private sector technology companies develop social media data analysis models for demand prediction that allow private or public sector bus operators to improve understanding of latent mobility

demand for specific events (in terms of geographical location) prior to event ticket purchase. This information is then used to inform design and delivery of tailored collective transport services that better meet user demand and improve overall transport accessibility.

An approach for increasing the demand for new collective services from vulnerable users is to better identify where the demand exists and to design the new collective service according to users’ needs. This maximises passenger numbers and subsequent revenue generation. If revenue generation from vulnerable users is not sufficient to adapt services to vulnerable users’

needs, then enabling vulnerable users to pay more for a service may give private sector providers sufficient incentive to stimulate new or enhanced service provision that better meets their needs.

PILOT REFERENCE: BARCELONA PILOT LAB.
















The goal of the pilot was to develop ICT tools that allow BusUp (a PT service provider) and the event organizer (Canet Rock) to improve understanding of existing mobility demand for the event (in terms of geographical location) so as to be able to offer better tailored bus routes and increase the overall transport accessibility.



Source: <https://canetrock.busup.com/home>

BM1: COMMERCIALY VIABLE COLLECTIVE TRANSPORT SERVICES THAT BETTER MEET VULNERABLE USER DEMANDS

BM CANVAS TABLE

 <p>1- Market & Customer Segments</p> <p>Multi-sided market: The users identified for this BM share the need to use transport services to attend an event, but where location of specific user demand is uncertain and dispersed. Tailored collective bus services offer a means of serving this demand in a viable way. Digital data analysis techniques to estimated user demand is crucial for this to be feasible. This analysis can have a focus on or give more weight to vulnerable users. On the other hand, it also needs bus/coach providers to contract the work to.</p> <p>User needs:</p> <ul style="list-style-type: none"> • Users with poor PT connection to attend events and with no car option have the need for more convenient and empowering transport options. • Women that feel uncomfortable by travelling in other transport modes that may make them feel unsafe or that are not driven by professional drivers have the need for more gender equitable options. 	 <p>2- Vulnerable Users & Prioritised Areas</p> <p>Vulnerable users:</p> <ul style="list-style-type: none"> • Vulnerable users that are looking for safer and more convenient collective transport options and are prepared to pay premium fares (women travelling at night) • Vulnerable users that are willing to travel to common destinations with affordable prices (young people accessing concerts/ large events) • Users with disabilities (cognitive and sensory) <p>Prioritised areas: In peri-urban areas (where there is more potential demand but it is not sufficiently concentrated or regular to justify fixed route services).</p>	 <p>4- Value proposition</p> <p>Direct on-demand bus routes to leisure and/ or cultural events and attractions.</p> <p>Added value: Save time (versus PT) and costs (versus car) and have access to a safer and more sustainable mode of transport</p>	 <p>6- Communication & engagement</p> <p>Communication: Personal assistance for vulnerable users that have specific needs</p> <p>Communities and organisations that engage with the vulnerable user groups and can promote the service</p> <p>Event organisers to raise awareness and promote the bus service amongst potential attendees</p> <p>Attraction managers to promote the bus service</p> <p>Channels:</p> <ul style="list-style-type: none"> • Mobile Apps • Websites • Social Networks 	 <p>9- Key Resources</p> <ul style="list-style-type: none"> • Technical: Booking platform & Demand Aggregation Algorithms • Physical: Fleet Availability • Human: Drivers
 <p>3- Social Demographic Barriers</p> <p>Rural areas have more difficulties to be commercially viable for private operators</p>	 <p>5- Mobility Gaps Addressed</p> <ul style="list-style-type: none"> • Mobility Gaps • Addressed • Limited access to PT • Direct routes to the event • Official and safe mode of transport • Affordable 	 <p>10- Key Activities</p> <ul style="list-style-type: none"> • Communication • Customer Care • Operations 	 <p>11- Key Partners</p> <ul style="list-style-type: none"> • Client (event organiser) • Bus operator • Tech company 	
<p>7- Organisational & Operational context</p> <p>Digital data mining (from social media activity or mobile phones activity) can highlight pockets of demand from certain user groups to access particular locations. This is used to establish collective bus service routes that suggest there is sufficient demand to be commercially viable. Private sector providers offer new on-demand collective bus services on these routes. Bookings are made online via bus company web-site or app. Routes are only confirmed, when booking reach a minimum of 70% of bus capacity.</p> 				
<p>12- Cost Structure</p> <p>Between 60-80% of the costs are subcontracting of bus operators Marketing. Technology development.</p> 			<p>8- Revenue Streams</p> <p>Ticket sales to passengers</p> 	
<p>15- Social Innovation</p> <p>Better transport organisation, more efficient service provision, more tailored end-user services (crowdsourced routes)</p> 	<p>13- Inclusion Principles/Goals</p> <p>Convenient, Empowering, Gender equality</p> 		<p>13- Technology</p> <p>Identification of potential demand of the service through social media and data mining</p> 	

POTENTIAL FOR TRANSFERABILITY

Target area



Peri-urban and suburban areas appear the most promising target areas as the population must be sufficiently large and not too thinly dispersed to make a service viable. Comparatively, in high-density urban settings, there is usually a better PT provision and affinity to use it, so there is less (actual and perceived) need for extra/special services. Rural/remote areas are in an “in between” situation depending on the specific local context: an event could be sufficiently popular in a really rural area to make the service viable even there, especially in case a direct service can be organized with few origin points the people come from (i.e. the train station). Urban

areas, despite having good urban public transport services’ offering, are also in high demand of direct bus routes to/from peri-urban areas with limited PT connection, specially at odd hours.

Vulnerable users



In this BM, vulnerable users are determined as “people living in areas who are poorly served”. Extending the scope of INCLUSION Barcelona Living Lab, it could be transferable to different segments of users such as a future aiding in safety of vulnerable lone women, or in aiding elderly to attend cultural/public events to reduce social isolation. Based on the use of data collected on social media, younger people appear the primary target segment.



Challenges and opportunities

Actor	Challenges	Opportunities
On-demand PT Operator	Provide commercially viable services where there is low demand, or the total demand is partially unknown. Expand the market segment on the service by offering the service for different events.	Provide services that meet vulnerable users’ needs that can be identified using social media or mobile phone data analysis technology. Promote more sustainable transport services for attending events
Technology providers	Need for understanding mobility problems and trends in order to have a bigger impact in the model development. Digitalise all the processes involved in the service	Enlarge the market segment of social media data analysis techniques by their application in transportation studies. Routes optimisation based on confirmed bus stops.

Event organisers	Give enough information about all the different transport modes to attend the event and emphasise the most sustainable ones.	Provide accessible transport services to vulnerable users that otherwise would not have an option to attend the event.
Users	Switch from traditional transportation modes to others more innovative and sustainable. Uncertainty if booked trip is cancelled due to insufficient passengers	Affordable and reliable transport option to attend an event that otherwise would be difficult to reach. Safer travel option tailored to vulnerable user needs



Financial relationships in the Business Model

Actor	Income/Funding access	Costs/Funding contribution
On-demand PT Operator	Bus tickets sales to attend the event	Subcontracting of bus operators (60-80% of the cost) Promotion and marketing of the service to potential users
Technology providers	Contract with the operator to develop the model to: (i) Find potential areas to put the bus stops and (ii) find the potential demand who wants to attend the event	Data collection from social media and other sources Development of the model for demand prediction
Event organisers	Additional tickets sold thanks to the operation of the on-demand service. Savings in public parking lots rental fees and in security staff to control traffic access and parking lots	Contribution to finance the bus operator (not necessarily)
Users	Savings compared to car use	Bus ticket to travel to the event

DRIVERS AND BARRIERS

Drivers

- ICT tools as technological enabler of new mobility solutions. This BM exploits the opportunities provided by data mining tools to optimize planning of the public transport services according to the real needs of users
- Wider use of social media by the citizens in particular related to the participation to social public event (search/sharing of information, looking for/buying tickets, etc.)
- People desiring “customized” niche services with higher quality standards than the conventional public transport (in particular for trips related to special events or needs)
- Presence of niche market segments in mobility/public transport which are not large enough for economical profitability and long-term sustainability for large/medium public transport operators but enough for small operators

Barriers

- The data used for mining processes must guarantee a sufficient quality to allow effective results from data mining. This need could limit the data used. Secondly some of the datasets are not complete (i.e. Twitter data cannot indicate when and where); however, even this can be solved by merging with other datasets
- The use of crowdsourced data can yield contradicting user needs, but this situation can be addressed by

the knowledge based “smart” data mining rules adopted

- Users will expect the service to be very high quality. This can generate high expectations (i.e. service to be affordable compared to other transport options such as a taxi but in the price range of conventional public transport). High expectations could be hard to be guaranteed in a sustainable way and even could bring to “failures” when the service is used.
- Regulatory and legislative frameworks can be barriers at national level depending on the flexibility of boundaries between the provision/operation of a “package tour” and “transport service”. There may be practical issues requiring some formalised solution, such as access to venues, stations and stops, and type of consumer protection to be applied.
- Regulatory and legislative framework conditions at local level can vary depending on the municipality. For instance, if a municipality obliges the buses to stop 1 km from the destination, use of the service might be discouraged. However, this is unlikely, since local municipalities are usually interested in motivating the use of public transport instead of private vehicles
- Privacy rules (GDPR 2016/679) must be taken into account for data accessing
- In case of integration of data from different sources, the BM could change if the data will be free-available or not.



Post-COVID 19 and second wave impacts

COVID-19 negative impacts

Entity: strong negative impact

Description:

Main negative impact is the temporary restrictions or cancellations of major large socio-cultural events, which radically decreases the demand for this type of services, while the restrictions are implemented. Users may be less willing to share vehicles with other people, thus an increase in the use of private car for attending cultural/social events may be possible; however, some cultural destinations such as theatres are not accessible (or hardly accessible) by private car, thus the increase in the use of private car may be softened. The sanitisation procedures of the vehicles may compromise the business model of the service, due to the additional cleaning costs. The reduced capacity of the vehicles may result in a more difficult management and operation of the service, and will impact on profitability.

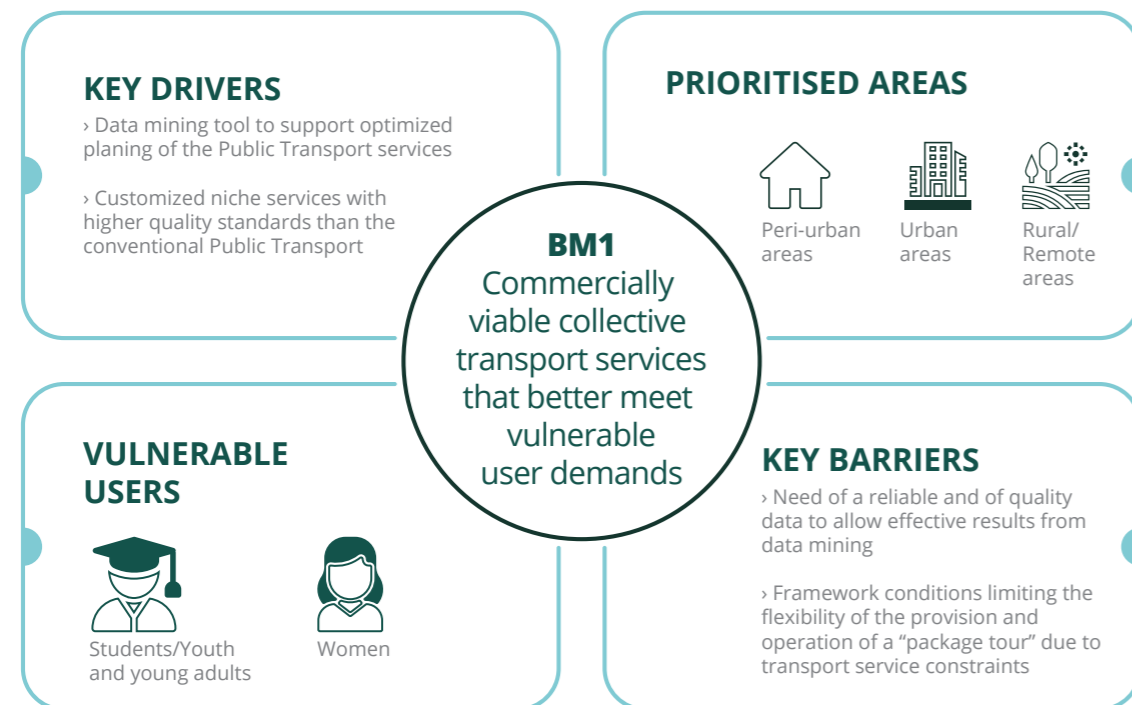
COVID-19 indirect positive effects

Entity: weak positive effect

Description:

While public perception has shown that private car use is perceived by the public opinion as a safer option compared to PT, it has also shown that private buses, with limited capacity (coaches) and stricter disinfection protocols, are perceived as safe as private cars and much safer than PT.

Summary and key recommendations for long-term sustainability



Key recommendations for long-term sustainability

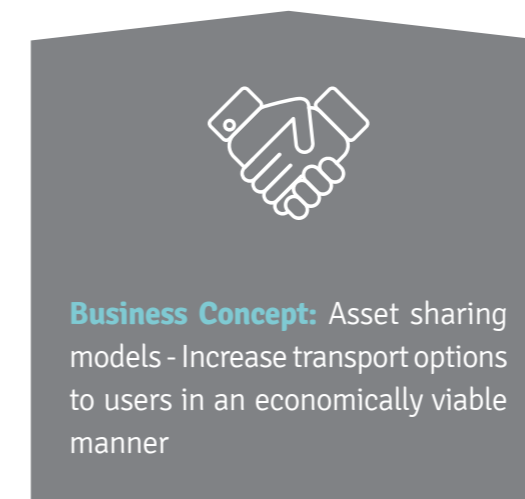
Strong promotional activities are required to make the target user segments aware of it. This service must be marketed in places where users normally look for information. This could bring some difficulties as it is not always easy to build collaborative relationships with "destinations" and the organizers of the events

The activities required to run the BM (i.e. setup of data mining process, interfacing/integration of the data sources, market research, promotion, etc.) are resource-intensive in relation to the small nature of the service (same problem as with all planning tasks). The BM (and the application of data mining processes supporting the planning of the services) should be enlarged to the optimization of different/all service in order to share the costs of the tools

Special attention should be kept to the transferability of this BM: it is not at all likely that findings from market research in one place/for one occasion is valid also in another place/occasion

Identifying pockets of demand in the low demand areas could be the winning card for the development of dedicated flexible transport services

3.2 Asset sharing in rural or peri-urban areas where the users of the asset are individual members of the public



INTRODUCTION TO THE BUSINESS CONCEPT

Asset sharing is when vehicles (scooters/bikes/e-bikes/mopeds/cars) are collectively owned (by the municipality, local company or community group) and are made available for shared use by either individuals or local groups. Asset sharing models can provide more travel choices for users without the need for private ownership and can foster cooperation between sectors and hence reduce sector specific dedicated services, resulting in more cost-effective delivery.

OVERVIEW OF THE BUSINESS MODEL

Unlike in urban areas, where these schemes are predominantly operated by private sector providers on a commercial basis, in peri-urban and rural areas individual demand for collective asset sharing services is not sufficient for commercially viable operation from private sector providers. As a result, financial support

is required to establish collective asset sharing services. This financial support offers the leverage to ensure asset sharing services are designed and delivered with certain vulnerable user needs in mind.

PILOT REFERENCE: CAIRNGORMS NATIONAL PARK PILOT LAB.

The Business Model covering this concept has been designed based on the delivery of an e-bike sharing scheme in the INCLUSION Pilot Lab in the Cairngorms National Park (CNP), a large, hilly and diverse area that presents numerous public transport challenges: i) Low density and dispersed population results in sparse PT service coverage, ii) Infrequent services and longer journeys, iii) An aging resident population in the area and iv) Many tourists in the summer and in the short ski season.

To extend transport options in the area for both tourists and local residents an e-bike share scheme has been established at three towns in the area. Through an innovative public private partnership between HITRANS, the regional transport authority, and existing local bike shops, an affordable delivery mechanism has been established. The public sector partner (HITRANS) provided the financial support to purchase the e-bikes and then partnered with local bike shops that own suitable premises and employ office/admin/maintenance staff who can host and operate the service at significantly reduced cost compared to the public sector providing the service on its own.

BM2: ASSET SHARING IN RURAL OR PERI-URBAN AREAS WHERE THE USERS OF THE ASSET ARE INDIVIDUAL MEMBERS OF THE PUBLIC – E-BIKESHARING

BM CANVAS TABLE

<p>1- Market & Customer Segments </p> <p>Multi-sided market: Mass Market: Since this BM is addressed to the whole population of rural and peri-urban areas, the customer segments are focused on one large group of customers with broadly similar needs and problems (that are related to convenient and accessible transport modes).</p> <p>User needs:</p> <ul style="list-style-type: none"> Target customers for this BM find some trips infeasible if they do not have access to conventional transport modes, creating the need of improving their accessibility to certain places. Therefore, with the implementation of asset sharing schemes, their need for convenient transport modes can be fulfilled for some trips. The lack of transport options for the users to perform certain trips creates the need to improve their empowerment. 	<p>2- Vulnerable Users & Prioritised Areas </p> <p>Young people, students and tourists who need a short-term hire for a certain activity</p> <p>Active elderly for social and leisure/fitness purposes (in the case of e-bikes)</p> <p>Residents suffering from fuel poverty due to high rural fuel costs.</p> <p>Unemployed who need long term hire to access job opportunities or training.</p>	<p>4- Value proposition </p> <p>Short term hire: Provide alternative travel around rural areas, more affordable & accessible by offering a shared mobility service.</p> <ul style="list-style-type: none"> To improve the experience of more sustainable travel options that may not be considered. To provide a profit-making service to tourists in order to cross subsidise use by locals <p>Long term hire: Offers the possibility to have a flexible transport mode for a temporary period.</p> <ul style="list-style-type: none"> To access specific training, or to help unemployed locals access job opportunities with the ultimate aim they purchase their own transport once they can afford it. To provide active transport to aid recuperation from injury or illness (in case of e-bikes). 	<p>6- Communication & engagement </p> <p>Advertising to let vulnerable users know about existence of these services.</p> <ul style="list-style-type: none"> TV advertising Radio advertising Newspaper advertising Local community centres and hubs <p>Marketing to visitors / tourists where applicable.</p> <p>Utilise promotion at public transport interchanges</p> <p>Build partnerships with local businesses to promote the use of the shared asset amongst their staff / clients.</p>	<p>9- Key Resources </p> <p>Fleet of shared vehicles (e.g. e-bikes, mopeds, cars).</p> <p>Premises to offer vehicle hire services.</p> <p>Local businesses that can provide in-house maintenance.</p>
<p>3- Social Demographic Barriers </p> <p>Complexity of travel options.</p> <p>High car ownership and low public transport use.</p> <p>Population variation and isolation.</p>		<p>5- Mobility Gaps Addressed </p> <p>Improvement of accessibility</p> <p>More active travel options</p>	<p>10- Key Activities </p> <p>Maintenance and management of services (e.g. through partnership with local businesses).</p> <p>Partnership building for local referrals.</p> <p>Identify where the infrastructure allows to implement these services.</p>	
<p>7- Organisational & Operational context </p> <p>Delivery through Public-Private Partnership arrangement: Public sector to purchase assets; private partner with premises and employ existing office/admin to host and operate the service. This form of partnership is effective where staff input is limited to managing the service and no driver costs are incurred. Private sector partner is a local business, preferably with in house maintenance capability, and has strong presence in the local community and can act as the 'local champion' for the service. This could also be done by social enterprise companies in place of private sector partner in some circumstances. Both public and private sector partners work with employment, health and social care sectors to identify vulnerable users who would benefit most from a longer-term hire (particularly in non-tourist season).</p>				
<p>12- Cost Structure </p> <p>Asset purchase (from public sector). Operating costs (from user revenues). Maintenance and management (from user revenues and possibly partnership funding). Marketing</p>			<p>8- Revenue Streams </p> <p>Revenue from users' payments (premium charges for tourist use). Private sector partners receive maintenance and management revenue from the public entity and indirect sales of merchandise to e-bike scheme users. Sponsorships from local businesses</p>	
<p>15- Social Innovation </p> <p>Referrals from local community businesses and service providers (e.g. health services) for staff/client use of shared asset.</p>	<p>13- Inclusion Principles/Goals </p> <p>Accessible, Convenient, Empowering</p>		<p>13- Technology </p> <p>Booking technology for hiring asset. Some partnerships allow In-shop booking without technology.</p>	

POTENTIAL FOR TRANSFERABILITY

Target area



The BM suggests a wide transferability regarding the population density of an area. In urban areas the users often prefer the e-bikes for medium and short distance but, for longer distance, public transport could be a competitor. There may also be issues with competition law in urban areas where several bike shops compete against each other. Alternative delivery mechanisms will likely be more suitable in urban areas. Peri-urban and suburban areas are ideal locations for this service as a first mile solution, as the area is isolated, but close enough to an urban area. The demand in rural/remote areas might be high in these areas but the accessibility of the service depends on the nearest local (bike) shop that provides this service. The transferability between different areas is limited more by cultural questions (i.e. use of bike as travel model, awareness of using sustainable transport modes, etc.) than the type of area. Nevertheless, the features of the area are an influential factor: i.e. the maintenance status of the road, the measures adopted to improve safety conditions for bikers.

Challenges and opportunities



Vulnerable users

Elderly individuals in good health, but unable to ride pedal bicycles over long distances, can increase their range and confidence to cycle with e-bikes. People without other travel options or alternatives to the private car may find this solution suitable for their mobility needs as well. Longer term hire for several weeks is required for accessing work and can help young people or unemployed access job or training opportunities for the duration of a course or until they can afford to purchase their own form of transport. In urban areas, low income households do not always have a secure bicycle parking and bikes might get stolen or vandalized and so rental options can look attractive. This is however, not a solution for "all": the inability to ride a cycle means that certain physically impaired people and the frail elderly cannot use this service. However, the transport authority is working to extend the e-bike scheme to less able older users through introduction of e-trikes using volunteer riders, in partnership with both the local bike shops and local care homes.



Actor	Challenges	Opportunities
Public Authorities	Choose correctly which types of asset to purchase that meet the needs from each area. Difficulty of deploying such a service in rural areas without a commercial environment.	Fill the mobility gaps that are left by limited conventional PT services in rural and peri-urban areas. Provide sustainable and active transport modes to rural and peri-urban dwellers and consequently reduce car ownership.

Private sector service providers	Adaptation of facilities to provide maintenance and management of the services. Carry out operation of the service (i.e. booking, asset control).	Increase in the number and type of people using bikes, and therefore buying merchandise. Many people who try e-bikes through shared hire scheme go on to purchase an e-bike.
Users	Change of behaviour by adapting to new mobility schemes that give less weight to private car and enhance collective and sustainable transport options. Confidence in ability to use bike or e-bike (especially on road) for older persons or those with some physical disability.	More transport options that empower vulnerable users when traveling in rural and peri-urban areas. Sustainable transport options which help boosting active lifestyles. Health related benefits (for bike + e-bike services).

Financial relationships in the Business Model



Actor	Income/Funding access	Costs/Funding contribution
Public Sector	n/a	Purchase of shared asset. Contract with bike shop for maintenance costs
Private sector bike shop	Not for profit operation: User hire charges cover hosting and operating costs incurred by shop. (more expensive hire to tourists used to cross subsidise longer term hire for locals) Payments from public sector to cover maintenance costs Users of e-bike hire go on to purchase merchandise and e-bikes from the bike shop.	Hosting and operating costs largely subsumed in existing bike shop premises and staff costs. Bike shops motivated to market product in the community. More users = more potential customers for merchandise etc.
Local businesses	n/a	Sponsorship – to pay for marketing and possibly additional e-bikes or reduce hire charges for certain users
End users	n/a	Revenue from users' payments (premium charges for tourist use)

DRIVERS AND BARRIERS

Drivers

- Local community business-based provision of the service could change cost level and offer additional synergies, making service easier to provide economically (i.e. maintenance covered by the bike shops). This could represent the key strength point in overcoming the barriers faced by “commercial” asset sharing initiatives which have been demonstrated to be hardly sustainable outside metropolitan and larger urban areas
- Hosting hire service via bike shops reduces the technology requirements and keeps booking simple for older users.
- Increasing penetration/adoption of bike use as transport mode due to the higher awareness of the use of sustainable mode (related to environmentally friendly behaviour and health preservation) and the impacts of post COVID pandemic

Barriers

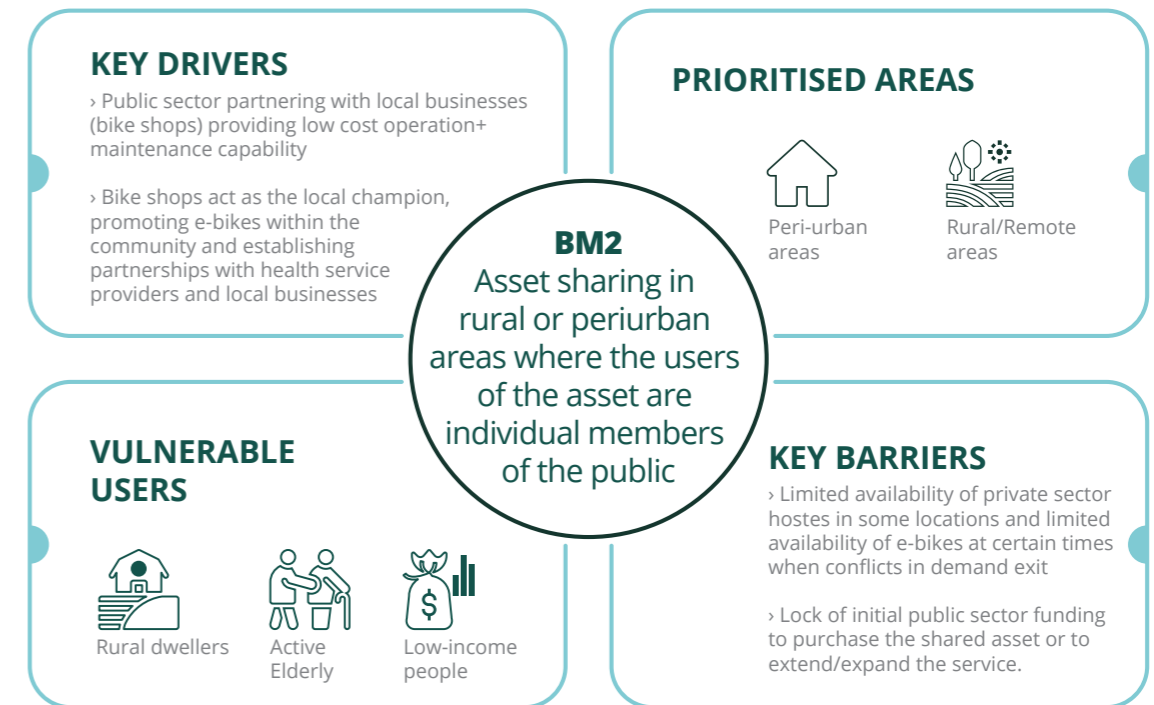
- Conflicting demand between locals and tourists if small numbers of bikes are available or when the residents want to use the bikes regularly as “personal bike”. On the other hand, it could become economically challenging to guarantee a widespread availability of e-bikes, considering also the lack of “local businesses” (i.e. bike shops) in rural areas.
- Hosting hire service via bike shops restricts out-of-hours hiring although arrangements can be made for late returns. This does not affect longer term hires.
- Pre-requisites should be defined to use the e-bikes thus setting a certain level of restrictions in the users’ target. Furthermore, the level of social acceptance among the users (i.e. older people, use in bad weather conditions, acceptance of “shared mobility” schemes, etc.) could restrict the market also.



Post-COVID 19 and second wave impacts

COVID-19 negative impacts	COVID-19 indirect positive effects
<p>Entity: weak negative impact</p> <p>Description: The sanitisation procedures of the bikes may compromise the business model of the service, due to the additional costs needed for cleaning. As all bikes are returned to the staffed bike shop, main contact points requiring disinfecting are handlebars and seats, and as the turnover of users is relatively infrequent (each hire lasting several hours minimum) the cleaning demands can be easily managed.</p>	<p>Entity: strong positive effect</p> <p>Description: Bikes as individual transport mode are seen as “safer” transport mode compared to collective ones (i.e. Public Transport, ridesharing, etc.)</p>

Summary and key recommendations for long-term sustainability



Key recommendations for long-term sustainability

Public sector stakeholders should take the leadership of local actors in order to coordinate the establishment of public-private partnership. Transparency and equality (fair conditions) issues need to be considered in the involvement of private organizations (shops) in this partnership. Transparent tendering of the required services by the public side is required and conditions for participating in the tendering process should be defined allowing all interested parties to participate

Responsibilities allocated to public and private organisations need to be specified in detail to avoid gaps and to facilitate the interactions between the two sides. Asset maintenance is an important, but often overlooked, aspect in the partnership

The pricing system can be set up in a way that regular use (for locals) is cheaper than short-term/one off use by non-frequent users but care needs to be taken to ensure this does not generate the perception of unfair conditions

Special attention should be focused on creating awareness on the existence of the service through communication and establishing partnerships in the community to receive referrals from local organisations. In case of e-bike/mopeds, a training courses could be required before accessing the service

This BM is presented as general asset sharing, so including cars as possible option. A “winning” Business Model for car sharing in small/medium urban and rural areas has not been explored yet. Heavy subsidy from Public Authorities should be envisaged and cars will serve only small groups of “vulnerable users” thus failing in addressing a market scale appropriate for long-term sustainability

3.3 Peer-to-peer ridesharing services



Business Concept: Expand Ride-Sharing - Utilise volunteer ride-sharing options to plug gaps in core service at low cost

INTRODUCTION TO THE BUSINESS CONCEPT

Peer-to-peer ridesharing services include carpooling (where private individuals share the journey they are already making in their own car with other people going in the same direction at the same time) or volunteer lift giving schemes (where drivers, usually with their own vehicle, offer lifts to certain users for free or for a small reimbursement). These types of solution can increase coverage for non-essential trips at a low cost and also increase integration to the core transport network.

OVERVIEW OF THE BUSINESS MODEL

In rural areas, peer-to-peer volunteer lift giving services where individuals use their own private vehicle have the potential to fill some of the gaps in the public transport network, delivering non-essential transport for social, shopping and leisure purposes. This expands the range of transport services available for non-essential travel. These services can be small scale, with only a few volunteers requiring little coordination and management, up to large scale schemes, with hundreds of volunteers

that require substantial time input in management and coordination of rides and in attracting and retaining volunteers. Usually, larger scale schemes are managed by community transport groups using a paid manager supported by volunteer staff.

While small schemes can be provided without public sector funding, it is often the case that some public sector grant funding is required to be provided to community sector organisations to provide volunteer training and to meet management costs. Operational costs of volunteer car schemes are often met by user contributions and sponsorship or donations from local businesses. The more complex the needs of vulnerable users, the more essential the requirement for a funding source to manage the service and adequately train volunteers.

Where there is a shortfall in operating costs incurred by community or social enterprise service delivery, this can be funded (or part funded) through public sector grants where services are non-commercial and there is no other competition in the area to provide the service to the target users.

PILOT REFERENCE: THE FLANDERS PILOT LAB

Within the INCLUSION project, the Flanders Pilot Lab provided enhancements to an established ridesharing service. The Flanders area of Belgium provides a mixture of urban, peri-urban and rural geographies, but public transport does not offer any door-to-door solution creating difficulties

for many older persons to access the network. To bridge this gap in provision, TAXISTOP, a social enterprise company (and INCLUSION project partner), offers a door-to-door ridesharing service for 35,000 elderly persons in Flanders through their Less Mobile Stations (LMS) provision using volunteer drivers. In 80%

of the Flemish municipalities, there is a partnership between the municipality and Taxistop to organise this service.



The Business Model that follows is developed by TAXISTOP based on their knowledge and experience delivering the LMS services.



Image source: <https://www.brasschaatsefilm.com>

BM3: PEER-TO-PEER VOLUNTEER RIDESHARING SERVICES

BM CANVAS TABLE

 <p>1- Market & Customer Segments</p> <p>Segmented customers: Peer-to-peer ridesharing services are targeted to serve users that have slightly different needs and capabilities, sharing the fact that they cannot use conventional public transport services, either because they are not door to door or because they simply do not exist!</p> <p>Users:</p> <ul style="list-style-type: none"> Target users for this service need door-to-door services in order to travel to certain destinations. Transport services for vulnerable users need to be affordable and convenient compared to expensive private door-to-door transport services. The lack of public transport options creates the need for more community led empathetic and empowering transport schemes. 	 <p>2- Vulnerable Users & Prioritised Areas</p> <p>Different categories of vulnerable user (rural dwellers, elderly, physically disabled, sensorially disabled, low income, people without car license, women) in rural and peri-urban areas with limited conventional PT service provision and lack of commercial service providers.</p>	 <p>4- Value proposition</p> <p>Users get affordable transport in places where no alternative exists and companionship</p> <p>Freedom to go to a certain activity or to visit family and friends</p> <p>Volunteers get feeling of satisfaction, pride and identity</p>	 <p>6- Communication & engagement</p> <p>Promote the service among places with people in need of this service (nursing homes, hospitals, local communities etc.), as well as local businesses.</p> <p>Encourage volunteer participation by organising social events</p>	 <p>9- Key Resources</p> <p>Volunteers</p> <ul style="list-style-type: none"> Management and coordination team for large volunteer schemes
 <p>3- Social Demographic Barriers</p> <ul style="list-style-type: none"> Women using the service to be able to choose women drivers. Peer-to-peer services often exclude physically disabled and those require an accessible vehicle Volunteers may not feel comfortable transporting users with additional needs that they are not familiar with or do not understand. Social exclusion 	 <p>5- Mobility Gaps Addressed</p> <p>Plugs gaps in public transport for those without access to own car. Not suited for essential trips as services cannot be guaranteed.</p>	 <p>10- Key Activities</p> <p>Awareness training on vulnerable users' needs for volunteer drivers</p> <p>Trained volunteers to have access to a pool of accessible vehicles</p> <p>Community driven activities</p>		
<p>7- Organisational & Operational context</p> <p>Volunteer schemes run by community sector with role in management, coordination and attracting & retaining volunteers. Public sector grant funding to be provided to community sector to provide volunteer training and to meet management costs. Larger schemes coordinated by social enterprise companies with paid staff.</p> <p>These services are most useful for non-essential transport such as social, shopping and leisure purposes in rural and peri-urban areas.</p> 				
<p>12- Cost Structure</p>  <p>Management and marketing. Volunteer driver scheme payments to drivers to cover petrol and wear and tear.</p> <p>Staff time to recruit volunteers</p>	<p>8- Revenue Streams</p>  <p>Volunteer driver ridesharing: Revenues from users' payments. Users typically pay a low reimbursement per km to drivers to use these services. Contributions to volunteer drivers is limited by legislation to ensure that private car insurance policies remain valid. If shortfall in operating costs, this can be funded (or part funded) through public sector grants, if there is no competition. Sponsorship or donations from local businesses.</p>			
<p>15- Social Innovation</p>  <p>Providing an affordable option for non-essential trips to all vulnerable users Use of volunteers on such schemes Boosting the community feeling between elderly people and volunteers</p>	<p>13- Inclusion Principles/Goals</p>  <p>Accessibility, Affordability, Empowerment, Empathy, Convenience</p>	<p>13- Technology</p>  <p>Technology to match those offering lifts to those seeking lifts</p>		

POTENTIAL FOR TRANSFERABILITY

Target area



The BM is widely transferable among the different types of prioritized areas, in particular those poorly served by public transport. In any case, being largely addressed to cope with the needs of specific categories of “vulnerable users” (who are not duly served by conventional public transport), this BM can deal also with urban and suburban areas.

Vulnerable users



The target segments of this BM are: elderly, people with special needs (e.g. Physically impaired, sensorially impaired, low income, people without driving license, etc.), non car owners.

Challenges and opportunities



Actor	Challenges	Opportunities
Community transport organisations	<ul style="list-style-type: none"> Management and coordination of rides. Attracting, retaining and coordinating volunteers, ensuring a rigorous vetting and training. 	<ul style="list-style-type: none"> To provide a door-to-door transport service that meet vulnerable users' demands and are affordable for them. No capital spending on vehicles needed.
Volunteers	<ul style="list-style-type: none"> Being empathetic and understanding of vulnerable users' needs and capabilities. Ensuring safety and trust when providing ridesharing services. Lack of accessible vehicles that some vulnerable users need. Encouraging volunteers to widen the range of users they are willing to help. 	<ul style="list-style-type: none"> Ensuring inclusive mobility for all. Allow volunteer drivers access to a shared accessible vehicle pool Strengthened social cohesion Incentives can be used to encourage volunteers to agree to transport different types of user or at times of day most demanded.
Users	<ul style="list-style-type: none"> Reliability (availability when needed) of services which rely on volunteer drivers. 	<ul style="list-style-type: none"> Ability to reach more destinations using ridesharing services instead of more expensive door-to-door transport services. Social companionship with volunteers

Financial relationships in the Business Model



Actor	Income/Funding access	Costs/Funding contribution
Public sector	n/a	<ul style="list-style-type: none"> Funding provided to cover volunteer recruitment, vetting and training Funding provided to cover management costs for larger scale schemes Funding to cover shortfall in operating costs incurred.
Community / not for profit organisations	<ul style="list-style-type: none"> Funding received from public sector grants for volunteer recruitment, vetting, and training. Management staff costs funded by public sector grants for large scale schemes. Shortfall between revenues received from passengers and payments paid to drivers comes from public sector grants or sponsorship money/donations 	<ul style="list-style-type: none"> Volunteer staff provided for most day-to-day activities
Volunteer drivers	<ul style="list-style-type: none"> Compensation payments received to cover fuel and vehicle wear and tear costs (maximum amount capped by national regulation) 	<ul style="list-style-type: none"> Provide time and private vehicle free of charge
End users / passengers	n/a	<ul style="list-style-type: none"> Payments to drivers (via scheme managers) to cover fuel and wear and tear costs (maximum amount capped by national regulation).
Local business sponsorship / donations	n/a	<ul style="list-style-type: none"> Sponsorship money used for marketing and to cover shortfall in operating costs between revenues received from passengers and compensation payments made to drivers

DRIVERS AND BARRIERS

Drivers

- Low-cost solution requiring little or no capital funding for vehicles and incurring minimal operating costs.
- Volunteers want to transport the elderly to help them. The social motivation, in the end, is essential. The familiarity that builds among passengers and drivers is usually one of the greatest benefits of the service
- Peer-to-peer service schemes can also be combined with accessible vehicles owned by a local authority/ public institute

Barriers

- Recruitment, vetting, training of suitable volunteers
- Services not suited for essential trips since availability of volunteers cannot always be guaranteed.

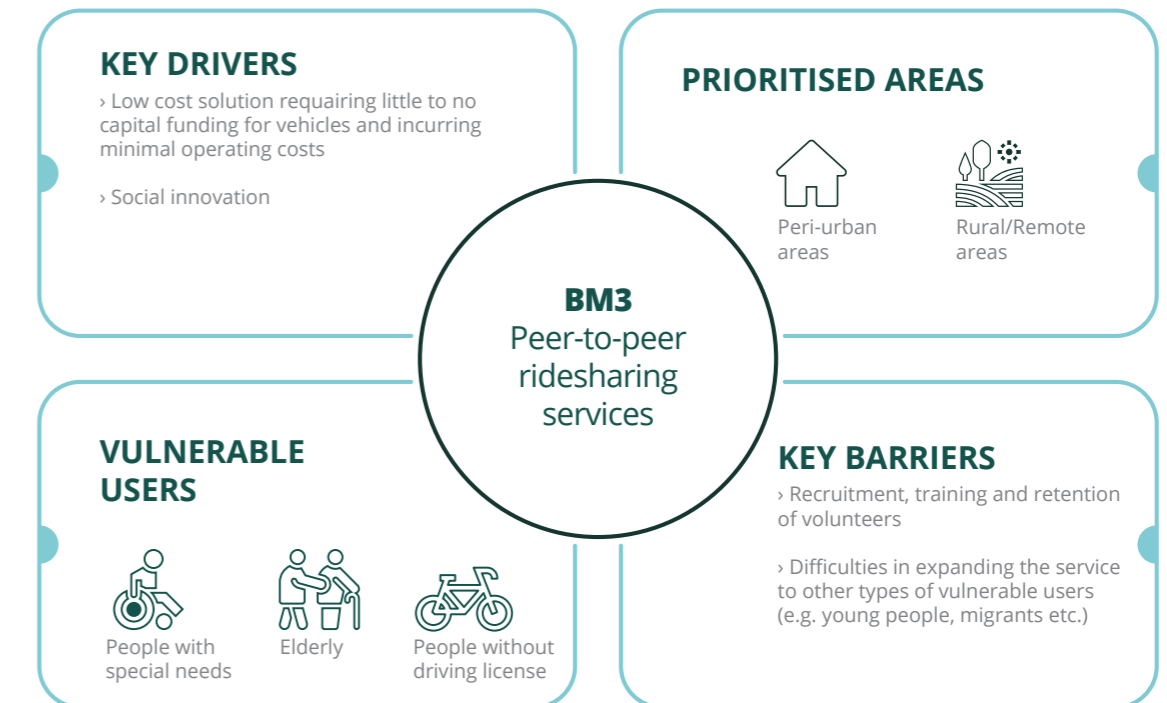
- A key issue is the question of whether this can be expanded to other market segments other than elderly or disabled people, in particular the need to enlarge the service to young drivers and users
- As in BM4, the transferability of this BM depends country by country on the compatibility of the regulation: in particular, some small adaptation could be required (i.e. the possibility to give monetary incentives to the drivers participating to the scheme)
- Insurance issues are a major source of uncertainty for volunteers, even if they have less relevance in practice. The insurance industry itself could be more helpful to cope with this need offering discounts or incentives
- Transport of disabled/impaired should require special equipment (out of the standards for commercial cars) thus limiting the wider transferability potential of the BM



Post-COVID 19 and second wave impacts

COVID-19 negative impacts	COVID-19 indirect positive effects
<p>Entity: strong negative impact</p> <p>Description: People, especially elderly, will be reluctant to share the vehicle with someone else, even if they are friends. More strict sanitation of the vehicle will be required. Volunteers may be less inclined to offer their services to transport passengers.</p>	<p>Entity: strong positive effect</p> <p>Description: COVID scenario can offer the opportunity to extend/ adapt the service from a lift giving scheme to (at least partially) delivering shopping and medicines.</p>

Summary and key recommendations for long-term sustainability



Key recommendations for long-term sustainability

The technology is not so crucial for operating the BM. In Europe (i.e. in Germany) there are local initiatives that work smoothly and are very low-tech. Booking operation can be carried out by phone, in particular when the number of requests is low enough and the network not too complex. On the users' side, INCLUSION Pilot Lab experience in Flanders Region demonstrates that the introduction of ICT enabled booking procedure (APP) could not produce positive effects when the users are already well familiar with other traditional options and "on-demand" requests is not perceived as a primary need

The engagement of local sponsors / ambassadors / VIPs to support the scheme are all key actions to maximize the effects of the promotion activities, the impacts on target market and the long-term sustainability

A stakeholder is needed to act as "leader" of the other involved actors, bringing all together

The transformation into a regular public organisation/funding construction (instead of vulnerable and unsure pragmatic arrangements with volunteers, etc.) could be a future challenge for this BM

Driver training could be very important not only for providing high quality level of service but even more to unlock public sector discount (i.e. UK DBS)

Reward and discount (i.e. car washing) are useful incentives to attract drivers (in particular those more difficult to get involved: i.e. youngsters)

3.4 Not-for-profit collective transport services that better meet vulnerable user demands in rural areas



Business Concept: Encourage new collective services - Lower cost services that better meet vulnerable user demands

INTRODUCTION TO THE BUSINESS CONCEPT

The majority of collective services provided in peri-urban or rural areas are to replace poorly used conventional public transport services, to provide a service in rural areas where no other public transport exists or to complement existing public transport service with further lines or trips. Commonly these collective services form a disjointed array of demand responsive bus services. These are sometimes provided under service contract by private sector providers but are more often provided at lower cost by not-for-profit community sector providers to serve specific purposes where a gap in the conventional network is evident. Vehicles can vary in size according to the

demand being served but typically are small minibuses or large people carriers.

OVERVIEW OF THE BUSINESS MODEL

To better meet the needs of more vulnerable users in rural and peri-urban areas, it is recommended that these collective transport services are made open to all and operate using accessible vehicles. The funding could be through public-community partnerships where public-sector grant funding should be used to purchase or lease a 'pool' of standardised fully-accessible vehicles, of suitable size for the areas they serve, allowing their use on a core network of flexible public bus services driven by professional drivers (or by trained volunteers on small bus). The community organisation supplies the driver and operation of the service, the funding for driver training and the salary (in case the service is operated by professional drivers).

If the public-sector finances accessible vehicles for the collective transport service then, due to 'state aid' rules, those vehicles can only operate on non-commercial services and where there is no other competition in the

area to provide the service to the target users. This limits their use to community sector, charities and social enterprise organisations, operating on a non-commercial basis. Public sector funding is required for the shortfall, although this requirement could be reduced through sponsorship from local businesses that may benefit from the existence of the new service. Volunteers can be used also for undertaking other part of the services (e.g. management of bookings, funding research, relation with the authorities, etc.). With a partnership arrangement, the public sector can specify minimum operating times and areas covered by the service while keeping flexibility in terms of specific stops and pick-ups.

Including schools or hospitals in the areas served can reduce the need for dedicated services for education or health clients and pull in financing from these other public-sector partners to help fund the service.

PILOT REFERENCE

While no INCLUSION Pilot Labs specifically focused on this Business Model, the overview of 50+ case studies of inclusive and accessible mobility solutions revealed several examples of this transport service including; De Bij Bus - the Netherlands, Bürgerbuses in North Rhein Westphalia - Germany, and Wensbus ("Wish bus") Limburg, NL.



Image source: <http://buergerbus-senden.de>

BM4: NOT-FOR-PROFIT COLLECTIVE TRANSPORT SERVICES THAT BETTER MEET VULNERABLE USER DEMANDS IN RURAL AREAS

BM CANVAS TABLE

<p>1- Market & Customer Segments </p> <p>Segmented customers: Not-for-profit collective transport services can enhance the level of service provision in the cases conventional PT is not economically convenient</p> <p>User needs:</p> <ul style="list-style-type: none"> Customers addressed in this BM have the need for an affordable and convenient transport option that allow them to avoid the use of expensive door-to-door transport services. The gap in conventional PT services for vulnerable users in rural and remote areas requires more accessible and empowering transport scheme 	<p>2- Vulnerable Users & Prioritised Areas </p> <p>The service can be started for addressing the needs of people at risk of isolation and social exclusion in remote and rural areas. Afterwards, the target user groups can be expanded to include people in rural areas without car and vulnerable users such as elderly or people with reduced mobility who need periodic access to social activities or daycare facilities.</p>	<p>4- Value proposition </p> <p>Reduction of social exclusion in rural areas by improving access to and from sparse and remote villages.</p> <p>Fill the gap in the service provision which is usually made of few transport services operated based on the resources available.</p> <p>The participation of volunteers is determinant for 1) having an in-depth understanding of the actual needs of rural population and 2) reducing the operational costs.</p> <p>Cost reduction compared to conventional or door-to-door service</p>	<p>6- Communication & engagement </p> <p>Vulnerable users can be made aware about the service via the development of focus groups and local promotional campaign.</p> <p>The competent authority, such as transport agency or county council, has to set up an open dialogue among stakeholders in order to avoid competition or confrontation between the non-profit organisation and the local bus operators and at the same time for improving the integrations between different services.</p> <p>Communication with the local communities / no-profit organizations (in particular the ones acting as local initiatives coordinator), or local LEADER groups, if any, for raising awareness about the service and getting national and local government to give higher priority and support.</p>	<p>9- Key Resources </p> <p>Driver trainers. Selected drivers. Local Ambassadors for the recruitment of the drivers and the promotion of the service. Staff of Transport Operator working on Service Control for service planning, integration and monitoring</p>
<p>3- Social Demographic Barriers </p> <p>Especially for services grouping different rural areas/counties, it is important (but not always easy) to have a number of voluntary sector representatives from each area and target group. This aspect is important due that each volunteer can highlight the specific mobility and social needs of target rural people.</p>	<p>5- Mobility Gaps Addressed </p> <p>Mobility needs of people living in rural and remote areas where the mobility choices/options are limited and/or there is low provision of public transport services</p>	<p>10- Key Activities </p> <p>Service planning (co-creation design with target segment can help). Definition of service level agreement and performance indicators. Set of monitoring procedures. Service promotion</p>	<p>11- Key Partners </p> <p>Public sector for the provision of part of the resources.</p> <p>Local Communities and working group for getting national and local government to give higher priority and support to developing rural mobility services.</p>	
<p>7- Organisational & Operational context </p> <p>The services have to be carried out by organisation with a license emanated by the national regulation. Then, the service could be operated under the umbrella of a Transport Company of which the community organizations should as “sub-contractor”. Call centre has to be provided for registration and booking. Services can be operated with mini-bus fully accessible vehicles, and drivers can be trained for helping passengers drop on/off operations. To the extent possible, services are scheduled to connect with other scheduled bus routes.</p>				
<p>12- Cost Structure </p> <p>Major costs are due to the purchase of the vehicles and the costs for the operation of the service (mainly cost of the drivers where paid drivers are used, fuel and maintenance). Other costs are due to the purchase and/or maintenance of the ITS software (if implemented, see 14).</p>		<p>8- Revenue Streams </p> <p>Passenger fare revenues. Public financial support (State level, transport sector and Health sector). Local contributions (advertisements, sponsorships).</p>		
<p>15- Social Innovation </p> <p>Not-for-profit organisation integrating the service provision as transport provider</p>	<p>13- Inclusion Principles/Goals </p> <p>Affordable, accessible, empowering, convenient</p>		<p>13- Technology </p> <p>Low costs AVL solution for service monitoring, management and service reporting. Booking management sw (including APP for end-user) as a plus.</p>	

POTENTIAL FOR TRANSFERABILITY

Target area



The most promising prioritized areas for BM transferability are rural/remote areas where collective services targeted for special needs are hardly to be sustainable due to the low density of the population and the longer travelling time. Peri-urban and suburban areas follow in the second position as well as rural areas already served by public

transport (assuming this guarantees to transport people with special needs). In the urban areas, more competitive services can be found (i.e. volunteers associations, health services, etc.) even they could be more expensive.

Vulnerable users



The BM is targeted for people who live in “poorly-served” areas, including people without driving license and non-car owners.



Challenges and opportunities

Actor	Challenges	Opportunities
Public Authorities	Study the potential demand for this service to purchase an adequate fleet of vehicles. Specifying minimum operating times and areas covered by the service while keeping flexibility in terms of specific stops and pick-ups. Financing accessible vehicle purchase.	Providing an alternative collective transport to fill the mobility gaps created by the limited conventional PT services. Opportunity to save money by replacing inflexible and infrequent fixed route bus services with low passenger numbers with services that better meet user demands. Flexible transport service that better meets vulnerable users' needs (e.g., door to door) and increase PT service scope. Provides connections to conventional PT network. Opportunity to encourage and finance local networks (for elderly, for young people, etc.) as a possible coordinator of the solution
Community sector transport providers	Adaptations to deliver flexible collective services that do not follow traditional PT schemes (e.g. flexible specific stops and pick-ups) Attracting volunteer drivers. Paid drivers can improve reliability and stability of the service but incurs significant cost.	Providing a service that better meets and adapts to vulnerable users' demands. Local champions for the service well placed to raise awareness and promote to difficult to reach groups in the community.

Other public-sector partners (e.g. health, social, education)	Reallocation of client transport budgets to help finance the collective transport service.	Opportunity to provide door-to-door accessible transport services to meet their clients' needs, removing need for separate expensive dedicated client transport often using taxis.
Users	Adaptation to new forms of flexible collective transport services (e.g. booking, flexible stops etc.).	Reduction the need for car ownership by having this accessible, affordable and flexible option. Greater independence and freedom for vulnerable and isolated citizens.



Financial relationships in the Business Model

Actor	Income/Funding access	Costs/Funding contribution
Public Sector (Government department, Transport Authorities, Municipalities)	n/a	Grant funding to purchase or lease a 'pool' of standardised fully-accessible vehicles; contribution in the funding for the operation of the service
Other public-sector partners (e.g. health, social, education)	n/a	Contribution in funding and sustaining the service
Community sector providers (no profit organisations, charities and social enterprise organisations, operating on a non-commercial basis)	Income by passenger revenues; advertisement and sponsorship fees	Funding for driver training and the salary
Local enterprises and businesses	n/a	Contribution to the expenses by sponsorship fees

DRIVERS AND BARRIERS

Drivers

- The transportation of people with special needs in rural and remote areas is still an “uncovered” market segment. The public services (i.e. health) are only able to answer specific needs (and can be expensive for the others) and collective transport is not yet able to provide “full accessibility for all” in such a context; this hybrid solution can suit well into this niche market.
- Cross-sector synergies to provide door-to-door services removing the need for separate expensive dedicated client transport often using taxis

Barriers

- The operational implementation of the BM should change based on regulation in the country (as per BM3): community-based services

are not a general scheme applicable everywhere in the same manner. Cooperation between formal public transport operators and community-based service has not been yet explored in some countries as well as the possibility to fund it with public resources (directly or under a public-community partnership)

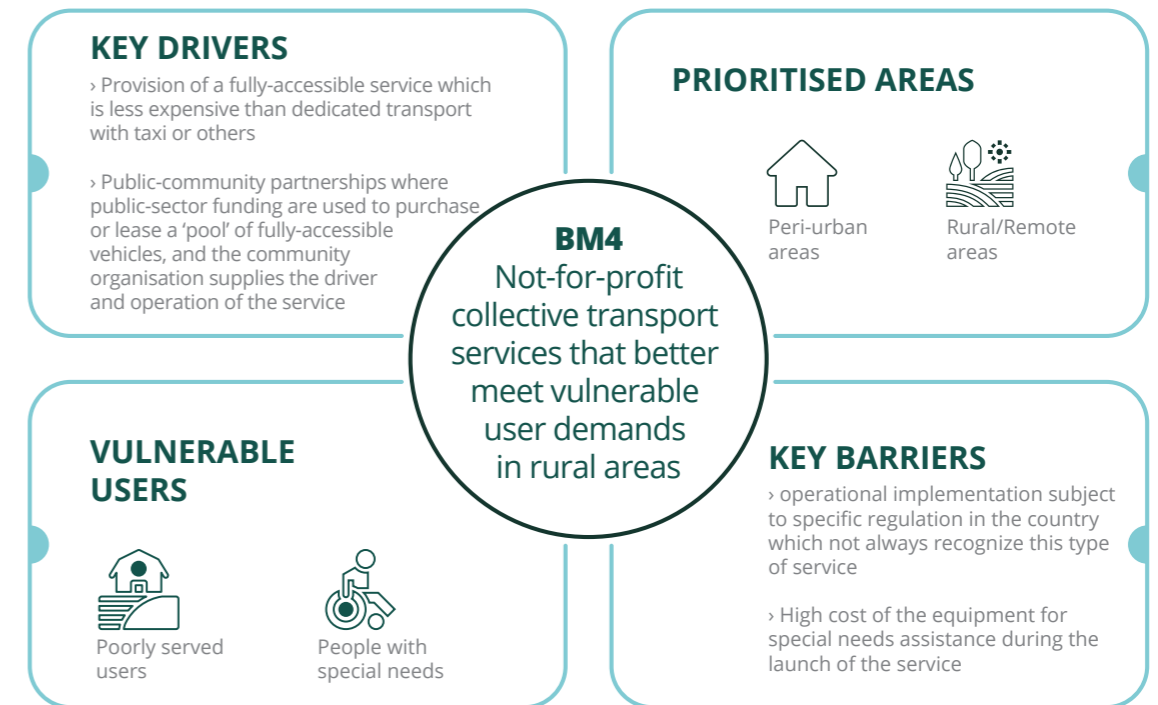
- Collaboration between Public Authorities, Public transport operators and community organizations are not easy to establish as “siloed thinking” approach (reflected into the regulation) must be overcome
- Costs of the equipment for special needs assistance should impact on the launch of the service as these costs should be entirely sustained by public sector (assuming that donors or sponsorship can play just a minor role)



Post-COVID 19 and second wave impacts

COVID-19 negative impacts	COVID-19 indirect positive effects
<p>Entity: weak negative impact</p> <p>Description: Compared to BM3, this BM is less effected as the vehicles are not private (owned by the volunteer) but dedicated to the service (as the traditional collective transport). Restrictions to vehicles’ capacity could slightly affect the full exploitation of the BM. A slight increase of operational costs will be required for the sanitation of the vehicles.</p>	<p>n/a</p>

Summary and key recommendations for long-term sustainability



Key recommendations for long-term sustainability

This BM is more a framework concept which can be implemented in different ways in the practice. From one hand this means that the BM is highly flexible and transferable, from the other, its introduction to local context should require adaptation of the elements of the framework concept

Service reporting procedures should be kept simple and documentation requirements be limited to what is strictly necessary in order to avoid demanding workflow on the community organizations related to the service operation.

Donors and sponsor can reduce the costs for purchasing the equipment for assistance of special travel needs and contribute to service operation

Professionalising the service and using standardised fully-accessible vehicles enables the possibility for other public-sector clients to be transported on these vehicles. This is especially beneficial where hospital or health centres and social care establishments are within the service area of the collective transport service

Word of mouth promotion convince other people living in the area to use the system/ delivering

3.5 New forms of subsidised travel through MaaS systems



Business Concept: Discount payments through MaaS - Providing financial support to users

INTRODUCTION TO THE BUSINESS CONCEPT

The concept builds on the idea of offering free or discounted travel to eligible users to reduce financial barriers for travel. Under this structure, the transport provider is reimbursed to compensate the reduced fare revenues; the actors involved in this process can be the transport authority, public and private service providers depending on the commercial environment (regulated or deregulated) and discount scheme. Other public-sector partners may also be involved (e.g. social care who reimburse free travel for their clients). In peri-urban and rural areas, however, the choice of discounted services may be limited and not inclusive of emerging solutions like new collective flexible services provided by both private sector and community organisations, asset sharing,

hire services and possibly also volunteer and peer-to-peer services.

A MaaS-type system can offer a subscription payment model for all transports in the area and has then the potential to provide more affordable choices to vulnerable users supporting more independent travel. A MaaS technology platform offers a mechanism by which different sectors and organizations can provide funding for discounted travel by their vulnerable client groups. All this can motivate commercial mobility providers to cater for vulnerable users.

OVERVIEW OF THE BUSINESS MODEL

An ideal MaaS system for this Business Model requires a technological platform that integrates data on availability, timings, routes and cost of use for all transport services. To maximise choice, these need to not only include the conventional public transport services and taxis, but also flexible collective public bus services, shared taxi services, volunteer car service and possibly the peer-to-peer lift sharing offers.

The MaaS system would also need to contain tailored information on types

of vehicles and driver profiles to allow vulnerable users to find options that match their specific needs. In addition, other asset sharing services not involving drivers, such as car share, bikeshare, e-bike hire and moped hire services, should also be integrated in the available options. Thanks to a subscription payment, individuals would be able to pre-select a mixture of transport services, with a monthly km-allowance for each service to form a package; The alternative to this is a pay-as-you go approach, whereby users select their mode of travel as and when needed, based on what is available at the time, and pay the km-rate for the selected mode.

Users can opt for a pre-paid package with discounted rates or a monthly personal mobility budget to spend on their travel

needs as they choose. This is sometimes referred to as a 'person centred' funding approach, where the funding authority grants a personal mobility budget to qualifying vulnerable users. In this case there is no control over how the funding is allocated to service providers and it is the vulnerable users themselves who choose and pay for the services out of a mobility budget they receive.

PILOT REFERENCE: THE FLANDERS PILOT LAB

The concept of a mobility budget provided through MaaS App has been deployed in INCLUSION Pilot Lab in Flanders, where the MaaS Olympus App has been developed for migrant job seekers with the mobility budget included.

Image source: <https://www.its.be/member/Olympus>



BM5: NEW FORMS OF SUBSIDISED TRAVEL THROUGH MAAS SYSTEMS

BM CANVAS TABLE

<p>1- Market & Customer Segments </p> <p>Multi-sided market: The implementation of subsidised travel through MaaS systems serves two interdependent Customer Segments. Concretely, this BM needs a large base of vulnerable users that receive their personalised mobility budget through this App and also a large base of transport services that want to be available in the MaaS App.</p> <p>User needs:</p> <ul style="list-style-type: none"> Customers that receive public funding for travelling need a more empowering system that allow them to choose the transport services freely. There is also a need for accessible and affordable services to be at hand. 	<p>2- Vulnerable Users & Prioritised Areas </p> <p>Any vulnerable person with a statutory entitlement to transport provision could be a candidate to receive personalised mobility budgets in place of a dedicated service: e.g. for certain trips some elderly, disabled, children. Others may receive personal mobility budgets funded via employers: e.g. Job seekers, Migrants, Low-income users.</p>	<p>4- Value proposition </p> <p>Any vulnerable person with a statutory entitlement to transport provision could be a candidate to receive personalised mobility budgets in place of a dedicated service: e.g. for certain trips some elderly, disabled, children.</p> <p>Others may receive personal mobility budgets funded via employers: e.g. Job seekers, Migrants, Low-income users.</p>	<p>6- Communication & engagement </p> <p>Communication: Advertise the App around associations and entities that help vulnerable users to encourage them to use the App.</p> <p>Engagement Provide App tutorials and trainings for vulnerable users that have difficulties understanding this technology.</p> <p>Incentive for transport providers to offer services which better cater for vulnerable user needs</p>	<p>9- Key Resources </p> <p>MaaS system that integrates data on availability, timings, routes and cost of use for all transport services.</p>
<p>3- Social Demographic Barriers </p> <p>Digitally excluded users not being confident or not being able to use these technologies.</p> <p>Issues around affordability of services for those not eligible for travel budgets.</p>	<p>5- Mobility Gaps Addressed </p> <p>Increased affordability and choice for eligible users.</p> <p>Improvement of network accessible and connectivity and enhancement of intermodal options</p>	<p>10- Key Activities </p> <p>MaaS App development and API integration with all the transport services</p>	<p>11- Key Partners </p> <ul style="list-style-type: none"> Private sector tech companies Transport service providers Public sector entities Employers 	
<p>7- Organisational & Operational context </p> <p>MaaS platform development could attract venture capital investment and be developed by private sector tech companies. Delivery could also be commercially viable with the private sector organisation receiving a cut of the monthly subscription payments. However, in areas where demand is not high enough (e.g. rural areas) it is likely that deployment would require additional investment from public sector to develop the platform but also to ensure a choice of transport provision in the area since the MaaS concept requires all transport options be integrated in a single MaaS platform. Public-private partnership funding and agreements. The MaaS system provides a mechanism for other public-sector partners to subsidise transport for their clients to access services that meet their objectives (e.g. education authorities, employment agencies). Qualifying users are credited with their personalised mobility budget by their public-sector provider and can top up their budgets using their own income.</p>				
<p>12- Cost Structure </p> <p>MaaS Platform development and maintenance. Additional investment in transport supply options in low density areas where commercial providers are absent. Finance from public sector for personal mobility budgets.</p>			<p>8- Revenue Streams </p> <p>Venture capital investment for platform development. Cut of the monthly subscription payments for use of MaaS platform. Public sector investment (for non-commercial scenarios)</p>	
<p>15- Social Innovation </p> <p>Technology inclusive for vulnerable users that gives them freedom of choice</p>	<p>13- Inclusion Principles/Goals </p> <p>Empowerment, Accessibility, Affordability</p>		<p>13- Technology </p> <p>MaaS platform technology</p>	

POTENTIAL FOR TRANSFERABILITY

Target area



The most promising target areas are urban and suburban/peri urban. MaaS experience on rural areas is less mature as well as the corresponding service is

either not available at all or only in a very rudimentary way.

Vulnerable users



The BM addresses elderly, disabled, children, job seekers, migrants and low-income users.



Challenges and opportunities

Actor	Challenges	Opportunities
Technology providers	<p>Development, update and maintenance of the MaaS App in line with innovation and technology updates.</p> <p>Integration of many transport services with different operation and management schemes in the MaaS App.</p> <p>Provide payment functions that allow vulnerable users from different public sector clients to spend their personalised mobility budget in the transport mode that they prefer.</p>	<p>Create a fully integrated system with all the transport services available and a booking and payment system that allows users to view and select all options from a single platform.</p> <p>Use the data collected from the App to continuously improve the service tailored to the user and provide mobility-related information to public sector focused on user insights.</p> <p>Attract new users (vulnerable users) and the share of subscriptions/booking payments this generates</p>
PT service providers	<p>Transition from traditional discount travel schemes to innovative subsidised payments via a MaaS App.</p> <p>Loss of service-based funding (service contracts) to be replaced by payments per trip (made by eligible users). Uncertainty of revenue.</p>	<p>Provide better PT connections through the MaaS App and the integration of other transport services.</p> <p>Use multimodal data collection from the App to improve the PT services taking into account the information from the users.</p>
Private transport service providers	<p>Adapt the service offered to the user from traditional schemes to integration in a MaaS App.</p>	<p>Enlarge the market share through the integration of the service with potential competitors.</p> <p>Collaboration with other transport services by sharing users' data to have a deeper user understanding.</p> <p>More opportunities for service providers not traditionally funded through service contracts.</p> <p>Direct payments to users give those users more empowerment and individual choice to demand transport. The private sector is therefore motivated to enhance promotion and marketing of service to vulnerable users.</p>

Users	<p>Those without access to digital technologies unable to use the service or receive the personalised budget in this platform.</p> <p>Users may spend their allocated budget too quickly or may not make best value choices.</p> <p>Some vulnerable users may have difficulties when using the App</p>	<p>Have all transport services easily available in one App anytime and everywhere.</p> <p>Freedom of choice of transport mode thanks to the personalised mobility budget.</p> <p>Some vulnerable users will be unable to manage their personal budgets and make informed choices. This offers an opportunity for community sector organisations to act as a broker between vulnerable users and providers.</p>
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Financial relationships in the Business Model

Actor	Income/Funding access	Costs/Funding contribution
Public Sector (Government department, Transport Authorities, Municipalities)	n/a	<p>Funding provided to transport providers supposing that the subsidy schema is in form of discounted travels for the end users.</p> <p>Contribution to the Public/private transport service providers for the promotion of the subsidy initiative and for operating the MaaS system.</p> <p>Contribution to the MaaS ICT solution provider/developer for the development/operation of the MaaS ICT tools.</p>
Public or private transport service providers (operating following the MaaS schema)	<p>Reimbursement for income losses due to travel subsidies provided to the end users by the public sector.</p> <p>Contribution from public sector for the promotion of the MaaS system and the subsidy schema.</p>	<p>Financial contribution to the MaaS ICT solution provider/developer for the development of MaaS ICT tools.</p> <p>Costs for promotion of the subsidy initiative and the MaaS system</p>
MaaS ICT solution developers (technology providers)	<p>Contribution from Transport service providers for the development of the MaaS system. Depending on the financial agreements, the contribution can be shared between the Public Sector and the transport service providers.</p>	<p>Costs for development of MaaS system.</p>
Final users, travellers	<p>Funding/subsidies received in form of pay-as-you-go or km allowance. The funding is received from the public sector. It is supposed that the funding is not a monetary allowance provided to the user but rather as discounts on travel.</p>	n/s

DRIVERS AND BARRIERS

Drivers

- MaaS type subscription service for vulnerable users has the potential for better tailored packages being offered to each particular client, in other words a more useful kind of assistance
- Assess which MaaS packages make sense from the customers' (market) and commercial side (sustainability of discounted prices)
- API services and "cloud" architecture to allow integration of data/services from different Operators in the covered area
- Co-creation as a key factor for making the technology as accessible as possible for the users

Barriers

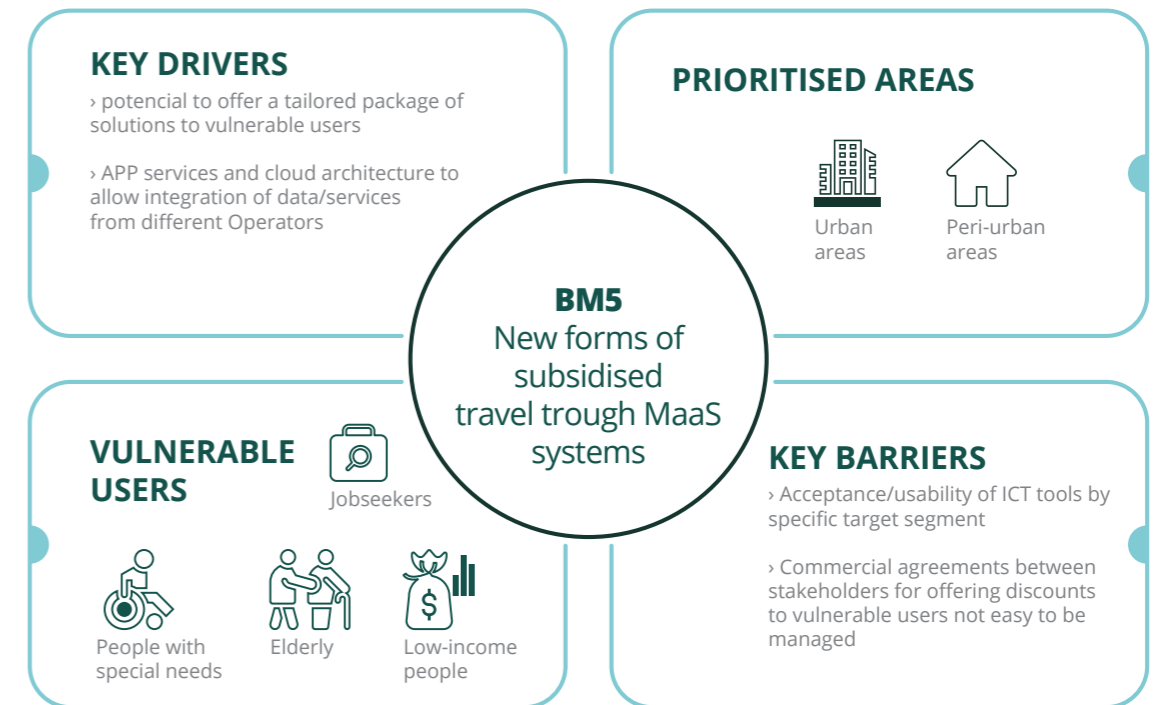
- Acceptance or usability of ICT tools can be a barrier for specific target segment (i.e. elderly, migrants). High accessibility for visually impaired people should be guaranteed
- Commercial agreements between stakeholders. As these packages are expected to differ from normal MaaS products mainly in terms of prices, so there is a question on service providers as to how much discount they are prepared to give and to political decision makers as to how much subsidy they are willing to give
- Liability in case of service failure

Post-COVID 19 and second wave impacts



COVID-19 negative impacts	COVID-19 indirect positive effects
n/a	<p>Entity: weak positive effect</p> <p>Description: The possibility provided by MaaS to package multiple travel options (including both the standard public transport and other individual services such as bike sharing) to the users and related greater flexibility in choosing the means of transport trip by trip, day by day, could discourage the users in abandoning sustainable transportation due to feeling of unsafety in sharing trips with others.</p>

Summary and key recommendations for long-term sustainability



Key recommendations for long-term sustainability

MaaS market presents a wide range of private commercial actors. Public Authorities/ Mobility Operators must keep attention that the service contract for the use of the platform will not affect the long-term sustainability with extra-costs (i.e. addition of future services in the future, sw maintenance, etc.)

Public Authorities and Mobility Operators must keep more attention on the proper definition of commercial agreement and operational aspects rather than the "fashion" of technology purchasing

Donors and sponsor can reduce the costs for purchasing the equipment for assistance of special travel needs and contribute to service operation

It is recommended to develop appropriate technological conditions (i.e. data access through webservices, etc.) to be able to provide MaaS packages over different platforms

The high quality of data (reliability, coverage, etc.) must be guaranteed as precondition for BM development

Transport for all: the direction forward

This section summarises the primary recommendations for inclusive mobility. It brings together the main findings from earlier work (mainly the case study and pilot lab outcomes) alongside the business modelling conclusions to deliver a number of recommendations related to the most critical aspects of exploiting the

Business Models and delivering successful solutions. These are not intended as solutions for all issues which prevent the current transport system from being accessible for all, but rather to present guidance, drawing from activities developed within the INCLUSION project.

Considering the Business Models developed, along with the main findings from the 50+ case study and pilot lab demonstration work, the following four recommendations for the development of inclusive mobility solutions are proposed:

- Address user requirements through better engagement: co-participation and co-design workshops, focus groups and interviews, trainings, strong promotional activities. Equally, re-design of new and existing business models with the vulnerable users' needs in mind

- Realise cross-sector societal benefits through partnership planning with other sectors and multi-sector coordinated funding
- Efficient & effective delivery of solutions (including ICT services) through public-private partnership delivery of services
- Expand range of services and assist users through community-based delivery of services

Figure 11 summarises these recommendations. Each business recommendation is expanded on below.

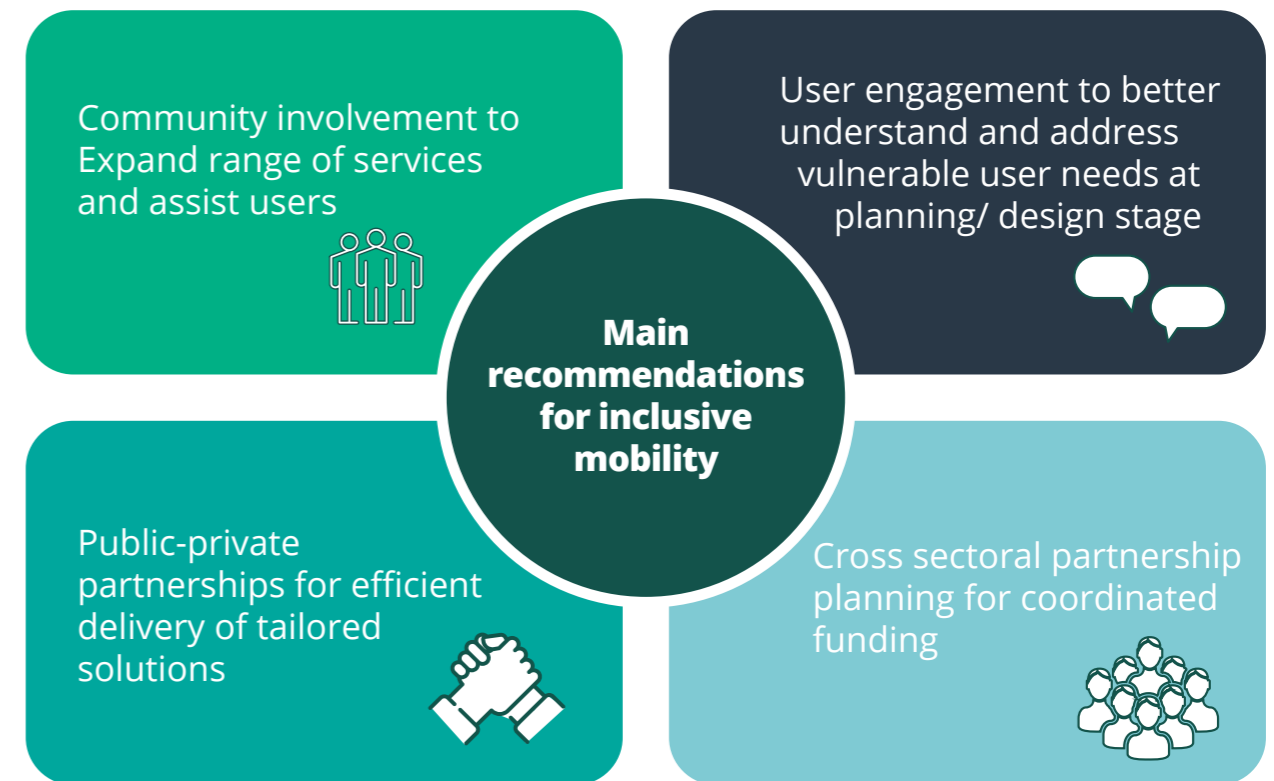


Figure 12: Main recommendations for inclusive mobility

4.1 Address user needs through better engagement with users

It is only through improved and direct engagement with vulnerable users that their needs can be understood, and solutions developed to accommodate them.

The 8 general user principles provide a framework for understanding the most important needs of different types of vulnerable users in different prioritised areas.



In relation to these user principles, the following approaches to user engagement can help to improve understanding and address vulnerable users' specific needs through improved service planning and design:

- **Co-participation workshops** involving public sector transport planners and funders, private sector transport providers, community organisations involved in mobility services, transport technology developers and most importantly vulnerable users and

user representative organisations. The purpose is for public sector planners and private and community sector providers of services to gain a better understanding of the needs and types of problems faced by different vulnerable users in different prioritised areas when using transport services, the main unmet needs and the most important barriers to an effective use of mobility services. This will help to identify the types of services and/or service improvements which need

to be delivered and to establish the most suitable funding mechanism/ approach for achieving this given the local circumstances.

- **Co-design workshops** focused on specific solutions are necessary for both the provision of new transport services as well as the development of new technologies for supporting travel. Even in this case, it is important that these events involve the developers, providers and users of the intended service, so that the services and related travel information technologies can be tailored to vulnerable users' needs and capabilities.
- Providing vulnerable users with a means to share with planners and operators their specific needs and difficulties through **crowdsourcing Apps**. Such Apps allow collection of crowdsourced information, aggregated where relevant, and analysed by the transport service provider in order to find possible strategies to improve the service. With the use of this functionality, a new social connection evolves between the target groups and the service providers and operators, who will gain a better knowledge of the requirements and problems that users may experience while using a particular transport service;
- Gain knowledge of user demands through **data mining**. This process enables to gather a better understanding of the latent vulnerable mobility demand (in terms of geographical distribution) and the identification of the unsatisfied demand. Moreover, this technology

can help optimising costs by replacing inefficient services to others that better meet user demands, especially vulnerable users' needs and increase the number and quality of collective transportation services in areas where there is limited PT. Data mining of social networks complemented by other data sources compatible with the topic will be needed to enrich and make a robust base (such as demography, transport connectivity, local relevance, etc.) ensuring that the possible data acquisition setback, obstacles or barriers can be overcome in an appropriate manner.

To increase uptake, there is a need to address confidence and information barriers through human dimension solutions. The user principles related to the human dimension identified in WP3 included the need for service provision to be empowering, empathetic, gender equitable, and safe. Solutions which address these needs involve ensuring that staff and volunteers who are in contact with vulnerable users have a means of recognising them, have a good understanding of their additional needs, and have knowledge of how to best deliver service to them. This includes greater recognition that less visible disabilities such as autism, dementia or anxiety can be just as much of a barrier to travel as a visible disability. The types of solutions this can relate to include delivery of training to staff and/or to volunteers on interacting with users who have complex needs, introduction of some mechanism for identifying yourself as a user with complex needs, tailoring information provision to inform users with complex needs on what services are available to them, and one-

on-one travel support or accompanying services offered by providers using staff or volunteers. Solutions related to this include:

- **Staff training** to ensure staff know how to interact with users who have complex needs;

- **Tailored information** provided/ available to users with complex needs in advance and during travel;
- **One-on-one** assistance to build confidence, know-how and trust.

INCLUSION PILOT LAB FLORENCE METROPOLITAN AREA

In the peripheral area of Campi Bisenzio, a co-participatory and iterative process with the direct involvement of stakeholders' representatives and selected vulnerable users' category (i.e. people with a migrant background and low-income) has shown to be a meaningful way to get a deeper understanding of the users' needs, habits, difficulties, and problems in using the PT service. One of the main results consisted of the development of a new version of the existing Ataf app, with an easy-to-use interface, user-friendly graphics, and a new "crowdsourcing" functionality to assess and rate the quality of the operated service on the bus lines 30 and 35.



Image source : Busitalia

INCLUSION PILOT LAB FLORENCE METROPOLITAN AREA INCLUSION PILOT LAB BUDAPEST

The public transport company of Budapest, BKK, created a complementary package of measures that engage users in service improvement and design, as well as in the delivery of the public transport services.

And online crowdsourcing data platform was launched together with the local NGO Járókelő to allow travellers to share their travel experiences and highlight specific problems they face with the PT system. Transparent, two-way communication is maintained between the users and the PT operator, as

the current status of efforts to resolve the issues is made publicly available. People with reduced mobility were directly involved in the development and delivery of staff awareness training for metro, tram and bus staff, ticket inspectors, and customer service employees.

Both measures have fostered a new social connection and trust between the target groups and the service providers and operators: people with reduced mobility feel more empowered and better supported when using public transport services, while the PT staff have a deeper understand of - and responsiveness to - their mobility needs.

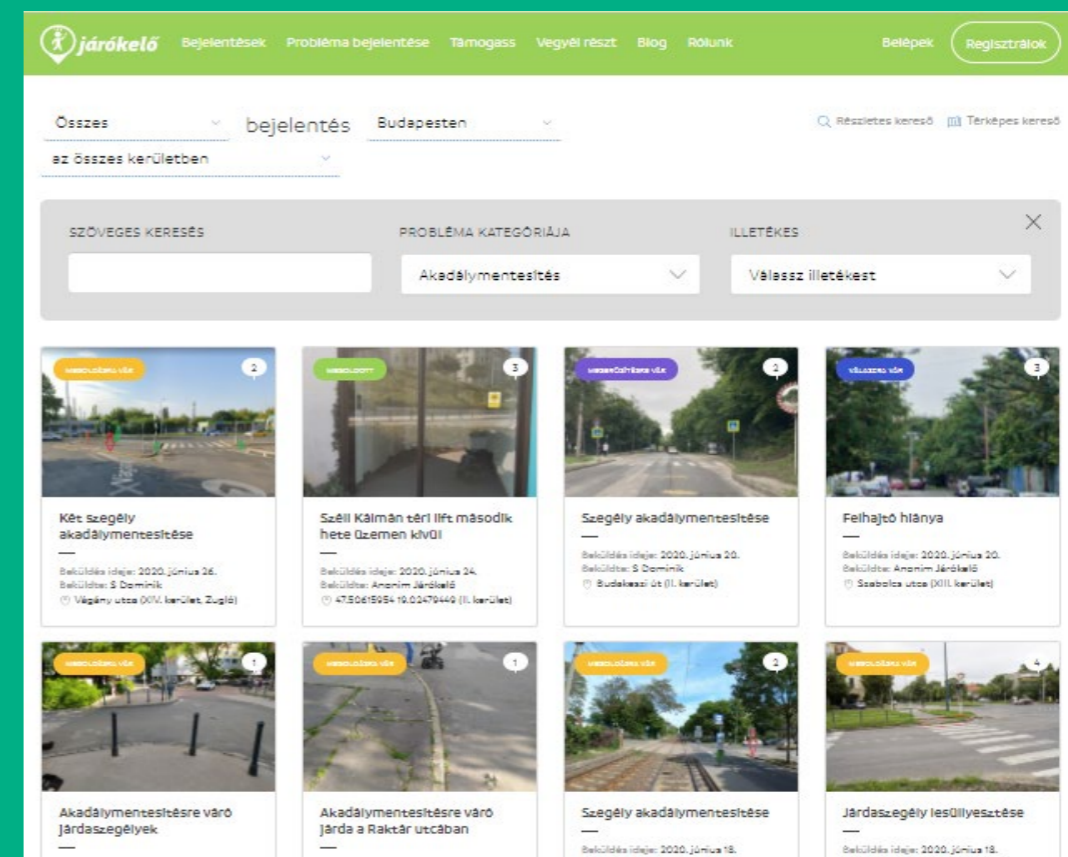


Image source:
BKK Budapesti
Közlekedési
Központ

4.2 Realise cross-sector societal benefits through Partnership planning with other sectors

Partnerships within the public sector encourage coordinated planning to attract funding from other sectors. This aims to increase the public sector budget available for providing transport services which better respond to the needs of those sectors and their clients (often vulnerable user groups). Stronger use of partnerships is needed to integrate the organisation, procurement and delivery of transport across various sectors. In the organisation and procurement, these partnerships can be between transport authorities, health authorities, education authorities, employment sector. Mutual benefits can accrue when transport services are planned in a coordinated fashion taking account of the societal benefits in other sectors which well-designed transport can generate. These include improved wellbeing and mental health, increased physical activity, early intervention health benefits through improved access to GP, improved access to education, training and employment and delivering cross sectoral cost savings (e.g. reducing missed hospital appointments; reduction in benefits claims/increase in tax through improved access to employment). These benefits are amplified when delivered to vulnerable user groups.

Moreover, important savings can be made by merging special services with other forms of transportation. For example, dedicated transport for healthcare services can be developed in partnership with the transport sector. The standard public transport provision can therefore be designed for answering these vulnerable users' needs with on-demand services or with fully accessible vehicles (with an onboard assistant, if required) on standard lines. This is particularly

important when intermediate and flexible service models (often supported by public-private cooperation or contributed by "not-for-profit" organizations or social entrepreneurs) have demonstrated to play a key role answering to the mobility needs of prioritized areas. Unfortunately, in many European countries the transport regulation has not developed yet appropriate prescription to make the operation of this kind of services duly flexible and sustainable. This is something that still needs to be properly addressed. Consultations on adapting legislation related to this have been started in the UK, where the process for the development of different legislations for urban and rural areas, especially for flexible and door to door transport services, is under consideration.

Partnership planning within the public-sector can result in:

- more **integrated service provision** resulting in more connected transport system and a reduction in duplicate services;
- opportunities for providing **shared vehicle assets**, following a universal design philosophy, that are compatible across public sector departments and suitable for use by all vulnerable users;
- breaking down silo mentality within the public sector leading to **more efficient service planning and delivery**.

Finally, it has to be noted that multi-sector funding schemes are of particular relevance for rural areas, where due to austerity measures the resources allocated to the transport sector have been decreased over the last years. These

are the areas where relevant benefits could be achieved thanks to coordinated funding and planning instruments

dedicated to improve the accessibility of rural territories.

4.3 Efficient & effective delivery of solutions through Public-Private Partnership delivery of services

Partnerships between public sector and private sector can result in provision of services which cannot be initiated by the private sector alone or that can be implemented with higher costs (thus are usually not feasible or sustainable in the long term). This form of multi-actor delivery can lead to the provision of transport services and solutions at a lower cost thanks to the private sector involvement.

Public private partnerships offer a mechanism to involve the private sector in mutually beneficial initiatives which is less rigid than other funding mechanisms such as service contracts or block grants. The purpose is generally to provide services with lower investments using private sector involvement.

Examples include public sector providing infrastructure or vehicles of a certain specification (but retaining ownership) with private sector providing hosting, service delivery and maintenance. This approach makes it possible for a wider range of private sector or community organisations to compete to provide the service while retaining the flexibility to switch provider where needed.

These forms of partnership can be especially important in peri-urban

and rural areas where user demand is insufficient to support fully commercial service provision.

They can also be used as a mechanism to ensure private providers adequately provide for particular vulnerable user needs when specific legislation is insufficient. The public sector funding provides the leverage to ensure vulnerable user needs are catered for and can benefit from the schemes.

Engaging local businesses in operation and maintenance of the service can lead to an "indirect" promotion and dissemination of the new service. This is particularly important in rural areas where the community experience can smooth the delivery of the service.

Finally, the setup of private-public cooperation models to operate the mobility/public transport services can be the key drivers to guaranteeing long-term sustainability. The mobility stakeholders can further explore this opportunity looking at the different benefits each side of the cooperation can achieve, from one side to reduce the operational costs thanks to community engagement, from the other to avoid high amortisation costs for the purchase of the vehicles or means of transport.

INCLUSION PILOT LAB CAIRNGORM NATIONAL PARK

In the Cairngorm National Park in rural Scotland, public-private partnership with local bike shops was shown to provide a successful and cost-effective mechanism for delivering an e-bike sharing scheme. It involved setting up three small-scale e-bike hubs in the key gateway towns for the CNG: Aviemore, Grantown on Spey and Fort William. Six e-bikes are offered at each station, which is hosted by local bike shops. The regional transport authority and PL coordinator, HITRANS, also partnered with the Cairngorm Business Partnership to hold workshops during development of the measure. Having bike shops host the e-bike share has the benefit of saving costs that would have otherwise been spent on on-street infrastructure



Image source: Mikes Bikes Shop, Aviemore

4.4 Expand range of services and assist users through Community delivery of services

Community organisations can play a vital role for the provision of inclusive mobility options. In many cases they fill those gaps that are left when commercial provision is not viable and where the financial capacity of the public sector to contract private sector providers reaches its limits.

Community organisations are often charities with a non-profit ethos. Typically, they operate with very low costs and revolve around the commitment of volunteers as drivers, information

providers, carers and mobilisers, although there is often a core of paid staff who manage the operations. This results in low cost services where passenger fares, donations and sponsorship can cover much of the service delivery costs. However, the cost of management/ administration staff, upkeep of premises, maintenance and replacement of vehicles requires additional funding. Public sector grant funding is essential to retain and build capacity in the community sector.

Community organisations are ideally placed to provide volunteer labour intensive one-to-one engagement with vulnerable users. However, the recruitment and training of a sufficient number of volunteers will incur additional costs which need to be met through public-sector funding. In cases where vulnerable users' needs are especially complex adequately trained paid staff may be required.

The types of community services that expand the range of transport provision include volunteer ridesharing, demand responsive community buses and vehicle brokerage. All of these can contribute to fill the gaps in the limited transport provision, especially in rural and peri-urban areas. When community organisations are involved in inclusive mobility initiatives questions about reliability, long term

commitment, organisation capacity, funding and insurance all require specific attention.

Issues faced by vulnerable users often stem from inability to benefit from the services due to unsuitable vehicles and lack of reliable services provided by volunteers. Where partnership planning within the public sector has led to the purchase of buses with universal design, these can be operated by community organisations as a shared asset. If volunteer drivers are utilised this can provide adequate provision for non-essential social, shopping and leisure trips. If essential client service trips are required, then the use of paid drivers should be introduced to ensure availability and professional levels of training and behaviour.

INCLUSION PILOT LAB FLANDERS

The Mobitwin app supports the mobility of elderly people living in the Flemish cities and peripheral areas of Oudenaarde and Ghent. It was developed by the PL coordinator, Taxistop, and several local Less Mobile Stations (LMSs), all of which are Flanders-based non-profit organisations. The aim is to make booking volunteer car service trips more convenient and responsive for elderly and disabled users. The LMSs played a key role in promoting the real-time demand-responsive service towards their members, as well as recruiting volunteer drivers from the local community and testing the app with drivers and members. A key lesson learned was that the LMSs have a key role to play in building trust relationships with users, which can support the co-design of new services and technologies and boost their take-up in the local community.



Image source: Taxistop vzw

Conclusion

This publication presents the results of the INCLUSION activities aimed to identify the most promising Business Models and their potential for implementation in prioritised areas. Starting from a number of business concepts and scenarios, 14 different Business Models have been defined in accordance with the user

needs, the characteristics of the prioritised areas and the SUMP2.0 guidelines. The Business Models have been carefully selected and validated both internally and through a participatory approach with an open dialogue with the members of the INCLUSION Stakeholders' Forum.

Key specific recommendations for transferability have been proposed for each Business Model, considering the key aspects of prioritised areas for implementation, measures for vulnerable users, main drivers and barriers. The following points summarizes very synthetically the recommendations formulated in detail in this report:

- Address user requirements through better engagement: co-participation and co-design workshops, focus groups and interviews, trainings, strong promotional activities. Equally, re-design of new and existing business models with the vulnerable users' needs in mind
- Realise cross-sector societal benefits through partnership planning with other sectors and multi-sector coordinated funding

- Efficient and effective delivery of solutions (including ICT services) through Public-Private Partnership delivery of services
- Expand range of services and assist users through community-based delivery of services

Consolidating and summarising the key findings from the BM activities, it is worth highlighting the main opportunities that each "actor" in the mobility and transport sector could explore for improving the accessibility and inclusivity of the transport system. Three main actors have been considered including: Public sector, Private sector (including technology providers) and Communities & users. Some considerations related to innovative forms of public-private partnership are reported too.



Where to go next

Is the current transport system for all?

TRANSPORT POVERTY

"transport poverty means that an individual can't fully participate in social life due to limited means of transport"

*Rob van der Bijj (Favas.net)
Hugo van der Steenhoven (Hugocycling)*

TRANSPORT JUSTICE

"We should join forces to build a transport system which guarantees equitable access to all users"

*Prof Kareel Martens
(Israel Institute of Technology, Haifa, Israel)*

INEQUALITY IN TRANSPORT

"It is accepted that there will be inequalities in transport, but the more fundamental question is whether the nature and scale of inequalities are increasing or decreasing"

*Prof David Banister
University of Oxford*

INCLUSION definition of prioritised areas:

"...those transport environments (area types) with gaps in transport infrastructure and/or service provision that significantly impact upon transport accessibility, inclusivity and equity, and where the challenges in serving target user groups and their mobility needs and requirements are greatest"

...Let's act for an inclusive mobility

Image source: Quick wins for independent mobility: lessons learnt from the INCLUSION Pilot Labs, MemEx Srl, INCLUSION and HiReach Final Conference, 22 September 2020

PUBLIC SECTOR

The public sector has a crucial role to play for the improvement of the accessibility and inclusiveness of the transport system in Europe. Relevant opportunities and benefits could be achieved in a short time by facilitating and empowering vulnerable users to increase their

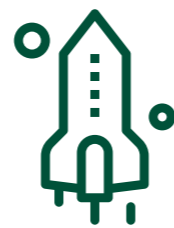
possibilities of independent travel and mobility. Some efforts and resources have inevitably to be spent, but this should not be considered a major issue as most of the resources can be taken/saved from other current expenditures which are avoided as a result of the proposed measures.



OPPORTUNITIES

- ▢ Fill-in the mobility gaps in rural and peri-urban areas, where the transport provision is usually poor or limited, by supporting the development of asset sharing services in cooperation with the local businesses.
- ▢ Promote and enable sustainable and active transport modes to rural and peri-urban dwellers, reducing car ownership and carbon dependency.
- ▢ Encourage the development of ridesharing and community-based services by supporting and sponsoring local initiatives.
- ▢ Providing an alternative collective transport to fill the mobility gaps created by the limited conventional PT services. This would also replace inflexible and infrequent fixed route bus services with low passenger numbers with services that better meet user demands.
- ▢ Adapting the regulatory and legislative frameworks for the development of these solutions.

- ▢ Purchase of assets (whether Scooters/bikes/e-bikes/mopeds/cars)
- ▢ Management of contracts with local businesses (such as bike shops and mechanical workshops for maintenance costs)
- ▢ Funding provided to cover volunteer recruitment and training, management cost and shortfalls in operating costs in volunteer lift giving schemes.
- ▢ Grant funding to purchase or lease a 'pool' of standardised fully-accessible vehicles; contribution in the funding for the operation of the service
- ▢ With Maas applications, funding provided to transport providers supposing that the subsidy schema is in form of discounted travels for the end users.
- ▢ Contribution to the Public/private transport service providers for the promotion of the subsidy initiative and for operating the MaaS system

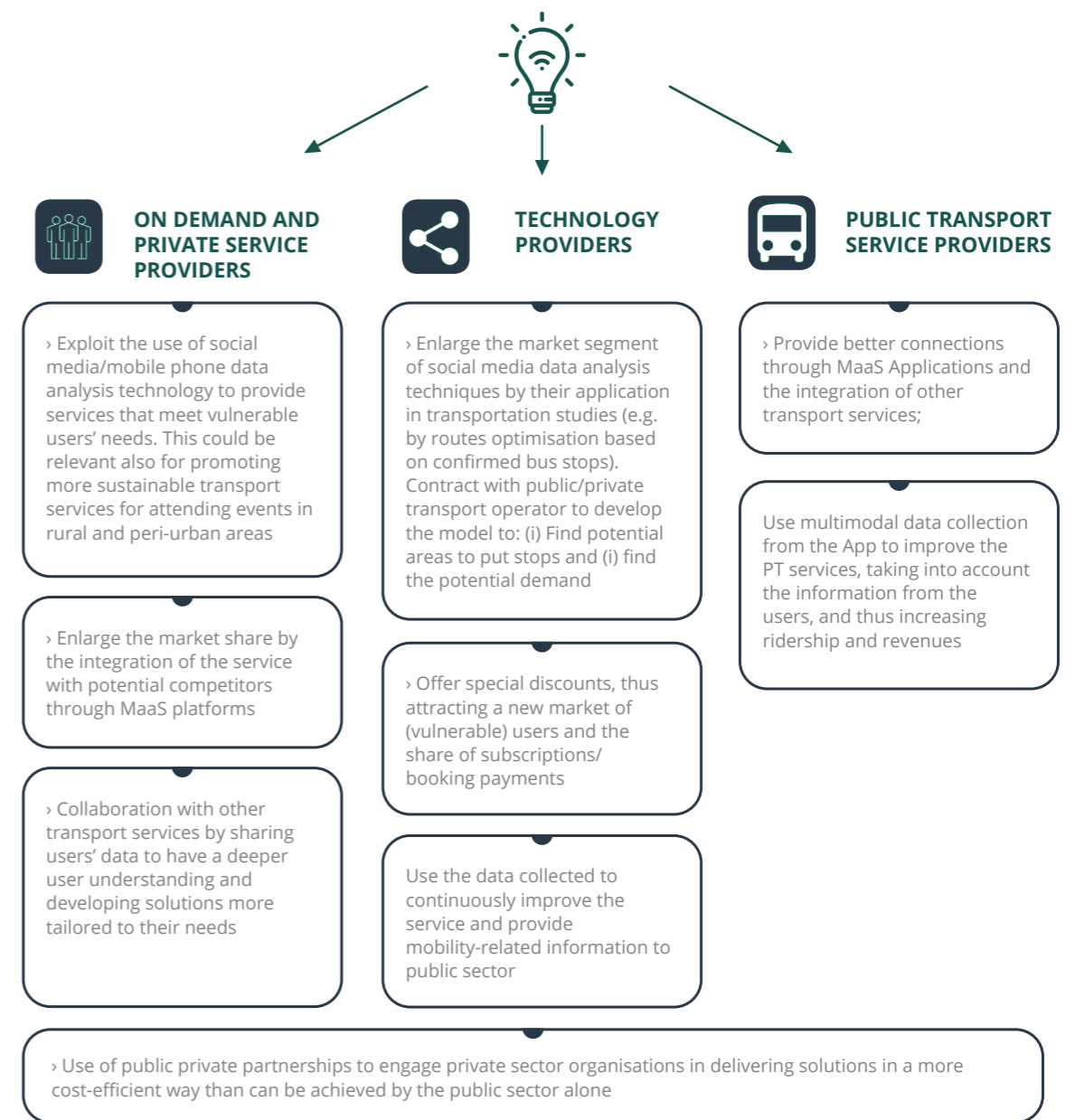


EFFORTS

PRIVATE SECTOR, INCLUDING TECHNOLOGY PROVIDERS

The private sector should not consider the improvement of accessibility of the PT system as a responsibility of the public sector, but rather be actively engaged in promoting inclusive mobility solutions. The current transport services, where existing, may have relevant gaps, both in the services themselves and the supporting travel information systems. With joint efforts

by commercial operators, technology providers, and the public sector, these gaps can be limited or removed, allowing improved participation of the end-users in transport. Moreover, some business model solutions highlighted consistent revenues that could trigger private stakeholders' appetite to operate in prioritized areas, including rural and remote, where they currently don't due to the perceived low level of remuneration.



Big data analysis combined with commercially viable collective transport services that better meet vulnerable user demands is a good example of a business model involving private transport operators and technology providers:

- This solution is led by the private sector and allows private operators to provide collective bus services in peripheral or rural areas where population density is low but travel demand is sufficient for commercially viable bus services.
- Social media data analysis is used for identifying the latent mobility demand in low density areas for travel to specific destinations.
- It has potential to be transferred in peri-urban and suburban context for providing improved and inclusive access to specific events/locations.
- Based on the experience of the Barcelona Pilot Lab, a project targeting young people attending a music festival, it could be transferred to different users in the future, for aiding women's safety, or enabling elderly individuals to attend cultural/public events to reduce social isolation. Drawing from data collected on social media, younger people appear to be the most suited primary target segment.
- The IT tools used to run the BM (i.e. setup of data mining process, interfacing/integration of the data

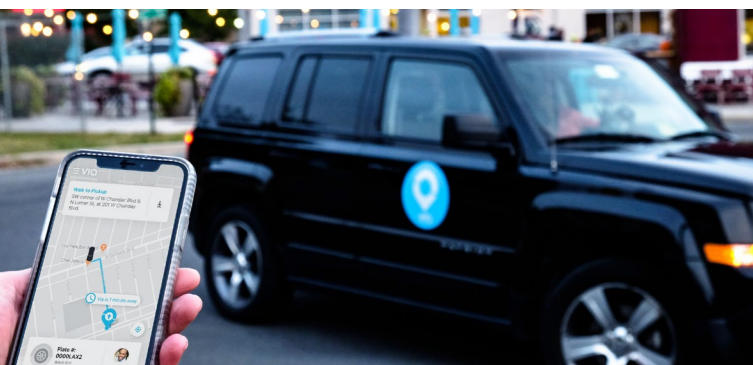


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sources, market research, promotion, etc.) require initial costs that could be resource-intensive when applied into small scale transport services. The more services they are applied to, the more economies of scale can be achieved.

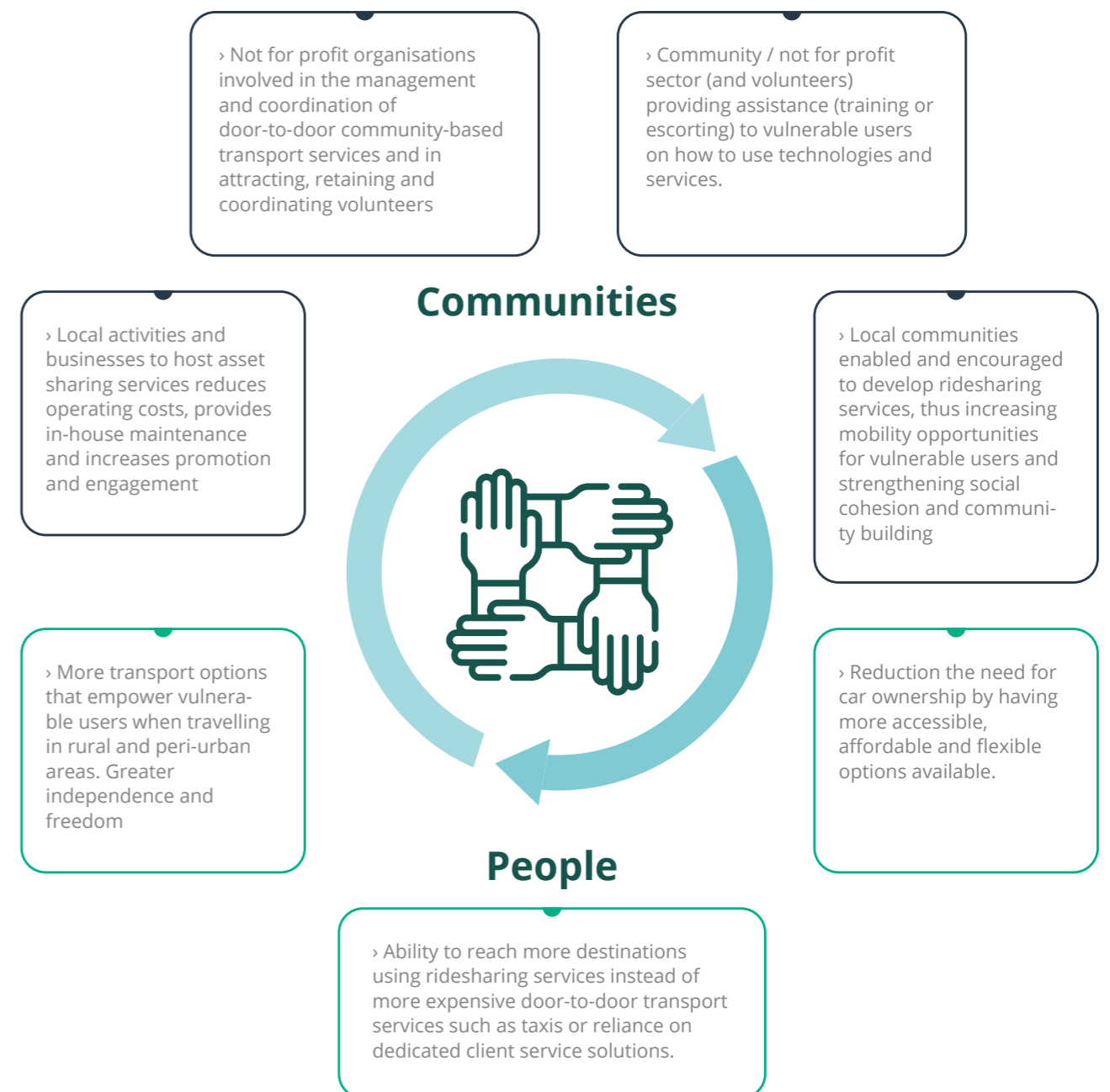
Among the analysed business models, the provision **of new forms of subsidised travel through MaaS** has proven to be another opportunity for private operators to enter in the transport market by offering effective complementary measures for inclusive transport:

- The concept expands the idea of offering free or discounted travel to eligible users to reduce financial barriers for travel.
- In this schema, the transport provider is reimbursed to compensate the reduced fare revenues or for additional costs incurred in meeting vulnerable user needs; the actors involved in this process can be the transport authority, public and private service providers depending on the commercial environment (regulated or deregulated) and discount schema. Other public-sector partners may also be involved (e.g. social care who reimburse free travel for their clients).
- A MaaS type subscription service for vulnerable users has the potential for better tailored packages being offered to each particular client.
- The high quality of data (reliability, coverage, etc.) must be guaranteed as precondition for BM development
- Public Authorities and Mobility Operators should pay attention to understand not only the complexity of the MaaS implementation but also the related organizational and operational aspects (e.g. commercial agreements, integrated fare structures, management procedures, data reporting, etc.)

COMMUNITIES AND USERS

Local communities have a huge potential to reverse the trend in declining mobility options in some European prioritised areas, especially rural and remote. Although the difficulties in achieving a balance/integration between standard public transport and local initiatives can be an obstacle, the public sector

should focus more effort in engaging local communities and users themselves in the design and delivery of transport service provision. Local stakeholders and businesses can help cover part of the costs (e.g. by providing sponsorship budget or assisting in marketing and promotion).



The **Peer-to-peer ridesharing service** Business Model is a good example of an effective Business Model for communities:

- The solution includes both carpooling (where private individuals share the journey they are already making in their own car with other people going in the same direction at the same time) and volunteer lift giving schemes (where drivers, usually with their own vehicle, offer lifts to certain users for free or for a small fee).
- These solutions can increase coverage for non-essential trips at a low cost and increase integration to the core transport network

- The BM is widely transferable among the different types of prioritized areas, in particular those poorly served by public transport
- The social motivation is a fundamental piece of the puzzle. The familiarity that builds among passengers and drivers is usually one of the greatest benefits of the service
- Peer-to-peer service schemes can also be combined with accessible vehicles owned by a local authority/ public institute for enabling the transport of people with reduced mobility



Image source: <http://www.cimulact.eu/scenariocreationworkshop/>

PARTNERSHIPS

A key finding from the validation of the results obtained by the INCLUSION experimental activities in the six pilot sites was the importance of building partnerships and providing one-to-one support in order to increase user awareness, confidence and capability. Local businesses and community organisations have a key role here.

The public sector has a role to play through financing, monitoring, and assuring quality and safety. Public-private partnerships (or Public Community Partnerships) often provide the best means of delivering solutions. Public sector funding provides the leverage to ensure vulnerable user needs are properly catered for. These partnerships also add value by increasing promotion and engagement within the local community.

The Business Model design activities have focused on different types of partnerships, with potential for cost reduction and improved financial viability.

The following have been identified as the most promising Business Models involving partnerships:

The **asset sharing in rural or peri-urban areas where the users of the asset are individual members of the public** has proven to be an effective measure where public-private partnerships reveals their potentials:

- This solution deals with asset sharing. Scooters/bikes/e-bikes/mopeds/cars are collectively owned (by the municipality, local company

or community group) and are made available for shared use by either individuals or local groups.

- It has relevant potential to be implemented in peri-urban and rural areas where the demand from individuals for collective asset sharing services is not sufficient for commercially viable operation from private sector providers.
- Public-private partnership, where the public sector purchases the asset and the private sector (i.e. local businesses) provides low-cost operation and maintenance can be the winning card.
- Transparency and equality (fair conditions) considerations are important when involving private sector organizations (shops) in the private-public partnership. Transparent tendering of the required services by the public side is required and conditions for participating in the tendering process should be defined allowing all interested parties to chance to participate
- The pricing system can be set up to ensure regular use (for locals) is cheaper than short-term/one off use by non-frequent users such as tourists, although care should be taken to avoid the perception of unfair conditions

Not-for-profit collective transport services which better meet vulnerable user demands in rural areas provides very good opportunities for an integrated transport service. This complements the existing offer, where cooperation

between actors gives strategical advantages:

- The solution aims to replace under-used public transport services, to provide a service in rural areas where no other public transport exists or to complement existing public transport service with further lines or trips.
 - Can be operated at lower cost by not-for-profit community sector providers to serve specific purposes where a gap in the conventional network is evident.
 - The most promising prioritized areas for BM transferability are rural/remote areas for replacing dedicated services targeted for people with special mobility needs, which are usually hardly to be sustainable due to the low density of the population and the high operational costs
- The operational implementation of the BM should change based on regulation in the country: community-based services are not a general scheme applicable everywhere in the same manner.
 - Donors and sponsors can contribute to the cost of purchasing vehicles, equipment, and volunteer training to assist travellers with special needs and contribute to service operation.

INCLUSION consortium



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