Interreg CENTRAL EUROPE

European Union
European Regional
Development Fund

SHAREPLACE

D.T4.3.7 ENGAGEMENT STRATEGY AND CO-DESIGN APPROACH

GUIDELINES FOR POLICYMAKERS   Nov 2020

Authors: Florian Kressler, Doris Wiederwald (PP1 AustriaTech, AT)

Gabriele Grea, Anja Seyfert (PP2 Redmint, IT)

Contributing project partner organisations:

PP3 City of Bergamo (IT)   PP7 Mobilissimus (HU)

PP4 Autoguidovie (IT)   PP8 City of Zalaegerszeg (HU)

PP5 City of Ulm (DE)   PP9 Dyvolve (HR)

PP6 University of Ulm (DE)   PP10 Grad Osijek (HR)

Table of contents

Executive summary

These guidelines aim at fostering and supporting the adoption of the SHAREPLACE approach for the **development and implementation of co-designed innovations in the fields of flexible, shared and digitalized mobility** to enhance accessibility of the territories.

The SHAREPLACE approach is based on stakeholder **participation**, **co-design** of **flexible**, **shared** and **digital mobility innovations**, **technology** as enabler and **collaborative business models** as key elements for sustainability.

The guidelines have been designed respectively for **mobility operators**, **mobility planners** and **policymakers**, according to their expected role in the planning and co-design process. Rather than being alternative options as coordinators of the planning process, the addressees of these guidelines are intended as a **core group of promoters jointly initiating the participative approach**.

The approach has been validated by a three years process within the Living Labs established at local level by the project partners and animated by the contributions of engaged stakeholders.

During these three years, solutions such as **flexible** mobility services (Demand Responsive Transit), **shared** options (carpooling and bike sharing), and **digitalized** services (multimodal planners paving the way for MaaS applications) with a special focus on **low demand areas accessibility and inclusion** have been developed and implemented, and currently in their upscaling phase.

The engagement strategy and co-design approach guidelines are the result of the analysis of main project findings combining a) the framework created to guide the living labs activities (WP T1), b) the tools supporting innovation (WPT2) and c) the experience developed at pilot level on engagement, co-design and implementation of mobility innovations elaborated with the support of stakeholders engaged in the living labs, in particular public authorities and service providers.

The phases of the SHAREPLACE approach include **local engagement**, analysis of **needs and expectations**, **raising awareness** and fostering behavioural change, **co-design** of innovative solutions, definition of **sustainable collaborative business models**, development of the **digitalization** process.

For the implementation of each of these phases, practical step-by-step guidance can be found in the project deliverables quoted as sources and publicly available on the project website.

Introduction and definitions

Who are the addressees of these guidelines? There is no golden rule in deciding who should lead the local engagement and co-design process for new mobility solutions, but according to the SHAREPLACE experience **transport operators**, **mobility planners** and **policymakers** should cooperate according to their strategic objectives and innovative ideas.

The SHAREPLACE **goal** is to design innovative services, integrating flexible, shared services into the existing networks. The project concept is founded on three pillars: technology as enabler, business models for sustainability, participation in the design process.

Three versions of these guidelines are dedicated to the aforementioned categories of stakeholders, adapted according to the key role in the co-design process.

Thematically, the guidelines address three families of mobility innovations corresponding to the main fields of action of SHAREPLACE through its pilot actions: **flexible** (DRT), **shared** (carpooling and bike sharing), and **digitalized services** (multimodal planners paving the way for MaaS applications). At the same time, the engagement and co-design approach described here can be adapted to a broad range of innovative services and more in general to the process of **integration between traditional and new mobility options, subsidised and market-oriented services**.

The SHAREPLACE **approach** for designing innovative solutions can be summarized in three steps: engage stakeholders, establish living labs, co-design new services.

This approach is central in the structure of the project. Pilots and their living labs represent the place where innovative methodologies and approaches are applied (WP T1 Methodologies), innovative services are co-designed, developed and tested with the contribution of stakeholders (WP T2

Development and 3 Implementation), and strategies for further implementation and future scaling up of solutions are defined (WP T4 Strategies).

Fig. 1 – The SHAREPLACE project structure
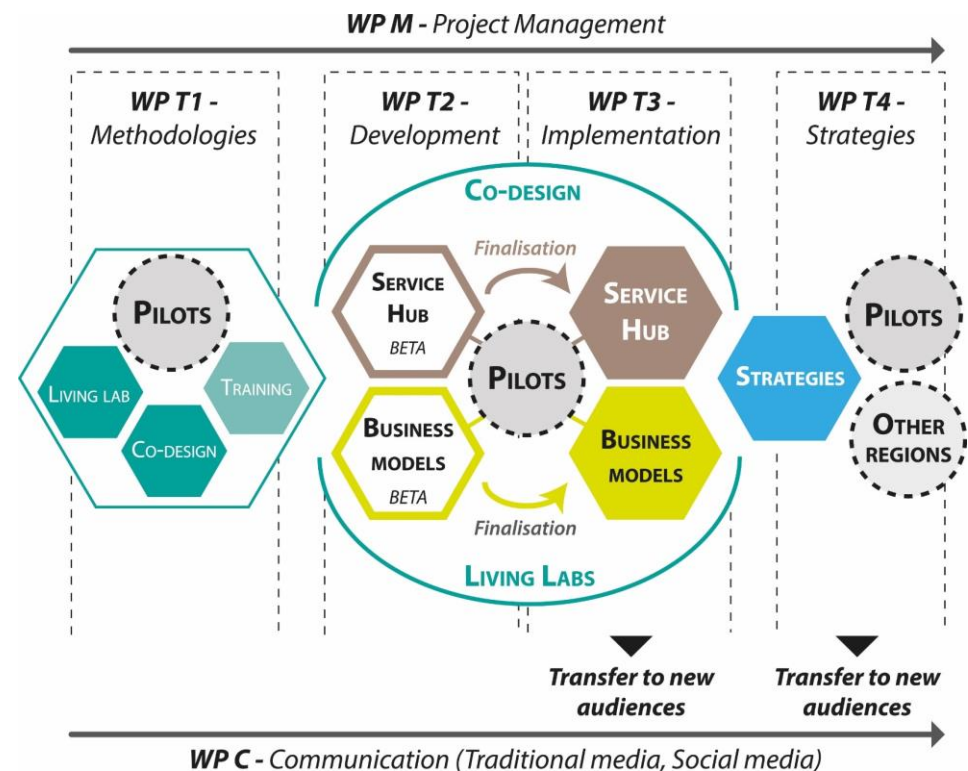
In SHAREPLACE we identified "co-design" in workshop format as the main approach to co-create and engage stakeholders as main participants for the living labs. The co-design methodology has been applied allowing a great

variety of stakeholders to contribute to the planning and implementation of innovations in mobility.

A set of definitions will be useful to better understand the **SHAREPLACE engagement strategy and co-design approach**.

Living labs

Living labs facilitate collaborative learning and introduce innovations to the unpredictability of everyday life. Through co-design processes and infrastructures, situated in real-life contexts, they enable users to become the co-creators of value. Living labs can be seen as a reaction to critiques of linear innovation models, which overlook the appropriation phase as an important arena of innovation. Living labs have been promoted to stimulate interactions between multiple stakeholders, create institutional support for innovation and reduce innovation failures.

Stakeholder engagement

The goal of stakeholder management is to build long-term relationships with the relevant stakeholders. Stakeholder management is a communication task and involves informing stakeholders about the project, engaging in dialogues with them, discussing expectations and negotiating goals. A structured approach is necessary in order to present an objective and valid picture of the needs, opinions and experiences of the individual stakeholder groups in order to be able to shape relationships based on them in the context of corporate goals. In most cases, not all stakeholders are considered, and the exchange is limited to communicating with investors, shareholders and journalists. However, the stakeholders include the project team, suppliers, partners, competitors, citizens, organizations and the media. The communication and integration of the employees is also essential and must not be neglected.

It is important to show the stakeholders that with the project the greatest possible benefit and profit should be achieved for them. This can be achieved through stakeholder participation.

Participation means involving stakeholders, having them "codecide", having them co-design, referring to them and informing them. As a result, the stakeholders feel involved, contribute to the development of plans and finally to the project and are part of the project.

Co-Design

Co-design reflects a shared design process, where designers and people not trained in design are working together to develop products, tools, processes and services. Co-design combines the collective creativity of diverse actors across the whole span of a development process. In the context of this project we refer to co-design as a collective creative process which is facilitated as workshops, with diverse stakeholders who sketch, ideate, experiment, learn and develop concepts together. A co-design process as several phases with different steps, which are interlinked. The process starts by understanding and framing the problem through sharing and comparing the experiences of the participating stakeholders. On this basis, diverse alternatives will be explored, by identifying the local resources and capabilities. The aim is to find and develop a shared solution supported by all stakeholders, which can be tested and developed further within an iterative co-design process.

References:

D.T1.1.1 REPORT ON CONCEPTS FOR LOCAL ENAGEMENT

1. Methodology and approaches to local engagement

1.1. The SHAREPLACE approach

The SHAREPLACE approach to local engagement is the implementation of the six living labs, which build on specific strategies for local engagement. By identifying the relevant stakeholders for each pilot region, an active group of participants has been gathered to collectively plan the aims of the different living labs with co-design workshops.

SHAREPLACE has identified a range of methods for the identification of stakeholders that have been applied by the local partners according to their needs. The approach has been developed as follows:

a) **Identify** your relevant stakeholders for the project: who should be invited to participate in the living lab activities? Implement an "environmental analysis" defining the "context" of the project to be developed: define **local problems**, **opportunities**, identify **local resources** and **capitals** the project might wish to grow, protect or diminish.

b) **Select and classify**: which stakeholders need **to be especially engaged with a primary role** and why? Who do you see as main beneficiaries of the project? Who are the most important stakeholders for you and why? Is it possible to categorize these in **different groups**, which might be **reached via different communication channels**?

References:

D.T1.1.2 GUIDELINES-FOR-SHAREPLACE-COMMUNITIES-ENGAGEMENT

D.T1.2.7 STAKEHOLDERS INVOLVEMENT AND OUTPUTS COLLECTION

1.2. Experiences from the regions

Bergamo

In Bergamo, stakeholders have been **identified** on the basis of the following attributes: I) **Influence**; II) **Proximity**; III) **Relationship**; IV) **Representativeness**; V) **Strategic policies and intentions**.

Their classification has been developed according to the identified relevant interest groups, and includes a) students / professors / technical-administrative staff of the University of Bergamo; b) public / private transport operators operating on the provincial territory; c) entities / associations / organizations in some way affected by the development of the initiative.

Ulm

Stakeholders in Ulm were identified on the basis of: I) the role in the **policy/planning process** and II) **demand and potential demand** of mobility services and innovations.

The classification divided the relevant stakeholders according to their professional (technical offices from the municipality, operators, IT developers), and supporting/decision-making background (political representatives and members of local assemblies, enterprises).

Zalaegerszeg

The criteria adopted for the identification of stakeholders in Zalaegerszeg were: I) **technical knowledge and role**, II) **influence and mandate**, III) **interest in the project**.

Stakeholders have been clustered in three groups, represented by technical public offices and operators (professional), political and community representatives (decision makers), and beneficiaries (target groups for mobility innovations).

1.3. Recommendations for the methodology and approaches to local engagement

- In order to identify the composition of the stakeholder group animating the Living Lab, **implement an "environmental analysis" describing the "context"** of the project to be developed: define local **problems**, **opportunities**, identify **local resources** and **capitals**;

- **Select and cluster** stakeholders according to **role**, **resources** and **expected benefits** (which stakeholders need to be especially engaged with a primary role and why? Who do you see as main beneficiaries of the project? Who are the most important stakeholders for you and why?);

- Define **further different stakeholder groups** according to the **communication approach** to be adopted in order to reach them (Is it possible to categorize stakeholders in different groups, which might be reached via different communication channels?);

- Elaborate a **communication strategy**: to accompany the Living Lab activities design actions to **keep the stakeholders engaged**; **raise awareness** on the project and its developments, reach a broad audience of stakeholders; aim at **transforming the Living Lab into a long-lasting tool** for co-design of innovative solutions.

For policymakers:

- Policymakers must ensure that the co-designed solutions are coherent with the regional and local strategies, effective and generating impact on the communities; therefore, they must **ensure that the identification and classification of stakeholders reflects the different governance layers**;

- Policymakers must **make sure the criteria of inclusiveness are respected** both in the stakeholder engagement and in the co-design process;

- From the public authority side, it is important to **foster the participation and commitment of stakeholders both by providing institutional presence, venue and non-monetary incentives** (e.g. combining the meetings with sharing and discussion of strategies, plans, announcements, etc.).

2. Analyzing mobility needs and expectations

2.1. The SHAREPLACE approach

The analysis of mobility needs and expectations is a key point in the engagement and co-design process. It provides mobility operators, planners and policymakers with the opportunity of gaining in-depth knowledge of the context where innovations are expected to be delivered, and generate consensus on new projects. On the other hand, it may result in an extensive collection of *desiderata* expressed by different stakeholder groups, with very little potential use in the co-design process.

The SHAREPLACE approach to the analysis of mobility needs and expectations takes on a **bottom-up perspective**, and has been built by valorising the experience and main elements of the debates developed within the common framework for analysis suggested for the established Living Labs. The framework proposed here facilitates the debate and helps classify and analyse the outcomes of the process, and can be summarised as follows:

a) concerning the **needs**, a first step is represented by the **collection of services and innovation categories to be introduced or enhanced within the transport network** (e.g. in the case of SHAREPLACE integrated, flexible, shared mobility, public transport). As a second step, stakeholders are invited to select and discuss a **range of quality attributes to describe their needs** (the debate within the Living Labs focused on connectivity, comfort, accessibility, safety, flexibility, low demand service, information, reliability, cooperation among actors, cost efficiency);

b) the **expectations** are classified according to the different **thematic contexts** (e.g. environment, urban planning, life quality related), to the related services and innovation categories (see needs), and to the **mobility related expected improvements** (e.g. quantity of supplied services, ticketing,

role of active modes, frequency, integration, inclusiveness, booking options, collaboration, cost effectiveness).

References:

D.T1.2.9 – DETAILED STUDY ON MOBILITY NEEDS AND EXPECTATIONS

2.2. Experiences from the pilot regions

Flexible services

The participative project across pilot regions contributed to the identification of two main categories of needed services, on one side those to **better connect** low demand and rural areas to the existing network, on the other one the ones providing **more flexible and on demand access** to main nodes.

Based on expressed needs, a common expectation is the need for a **better integration** (physical, informational and digital) of flexible and scheduled services, in space (with **flexible services covering low demand areas**) and time (**flexible services ensuring supply in off peak periods**).

Crema

In Crema, the **need** for flexibility is expressed mainly by a need for **better access to relevant nodes** like the railway station, in order to **make multimodal transport more attractive** for commuters and other users, and to the hospital, where no reliable alternatives to private vehicles exist.

In Crema, where DRT systems replaced the traditional scheduled urban transport several years ago, the **expectations** of stakeholders focus on the **development of a new generation of flexible services**, based on

operational, technological and collaborative innovations. In fact, stakeholders discussed a **possible "hybridisation" of the service with a mix of shuttle and on demand service**, a higher level of **information** and **real time booking** options, a higher attention to vulnerable groups and collaboration with volunteer associations in order to mesh formal and informal services where possible and thus raising the quantity and quality of provided services.

Zalaegerszeg

In Zalaegerszeg, the **need for a DRT system** has been investigated in peripheral areas where the access to the main transport network is hindered by a lack of services; needs were identified mainly by the trip motive, **commuting**, **shopping** and **access to main public services**.

Osijek

The stakeholders from Osijek see flexible services as a very important complement for **expanding the existing network towards low demand areas and city outskirts**, under the condition of a **higher degree of integration** of services from different operators under a common umbrella.

2.3. Recommendations for analyzing mobility needs and expectations

- The knowledge of the real needs of citizens, and more in general of the territory, cannot be determined only by static top-down investigations, even if scientifically robust and evidence based, but must be **largely based on dynamic and adaptive approaches** able to catch the different elements of a composite framework;

- The expression of needs and expectations is the result of a **process where stakeholders are invited to focus on common scenarios** for the future, in which specific interests are explicated and mutual impacts are considered;

- Needs and expectations must be **clustered in common categories by the facilitators** (e.g. see the classification proposed by the SHAREPLACE approach), in order to assess their intensity and foster the collaboration on a common basis;

- The analysis of needs and expectations should be **complemented**, ether ex ante or ex post, with **a potential demand analysis** focusing on a **limited number of alternative solutions**, either pre-defined by the planners and/or promoters or identified within the living lab co-design process.

For policymakers:

- The collection of needs and expectations is particularly relevant for policymakers, in order to properly interpret the requests of citizens and stakeholders; a crucial aspect is to **verify the timing of possible responses** to those expectations, **and the adequateness of governance structures and tools** in order to support innovation; **needs and expectations should also be classified according to the time horizon**, in order to align the implementation of solutions within the policy cycle;

- The debate on needs and expectations is also important in order to **make regulatory gaps emerge**, and prepare adequate context for the co-design, testing and possibly scaling up of future solutions.

3. Raising awareness and fostering behavioral change

3.1. The SHAREPLACE approach

Mobility concepts such as sharing systems or demand responsive transport can be an option to allow people to change their habits. Providing these services is not sufficient to influence behaviour. Successful implementation requires the provision of information and raising awareness actions.

Education and promotion are effective intervention tools which are more publicly accepted than hard measures as fees, taxes or regulations. Gaining attention is important for **modelling people's behaviour towards equitable, safe, efficient and climate responsive mobility in the future**.

The strategy behind communication activities within the SHAREPLACE project has been the fundamental framework in order to deliver the benefits of sustainable mobility thus **supporting the engagement and fostering acceptance of innovations**. This strategy built on four pillars, namely:

- Media relations (press releases, press conferences, on-site visits, portfolios, background talks, etc.)
- Publications;
- Events;
- Digital activities (including social media and multimedia).

However, the **long-term approach towards behavioural change must include the implementation of hard** (e.g. monetary and non-monetary incentives to the take up of mobility solutions, infrastructural measures, zoning/ pricing, etc.) **and soft** (mobility management, education, etc.) raising awareness and fostering behavioural change **measures**.

References:

D.T1.3.3 REPORT ON BENEFITS OF BEHAVIOURAL CHANGE

3.2. The take up of the SHAREPLACE mobility concepts

The mobility concepts promoted by SHAREPLACE can generate a broad range of benefits connected to behavioural change in transport:

- Concerning **collaborative and shared mobility**, the efficient use of resources, the flexibility of business and operational models to user needs provide an incentive to use vehicles with lower environmental impact (e.g. electric car sharing), to minimize the use of private motorized vehicles in favour of other more sustainable modes, to stabilize a car-less lifestyle;

- Flexible services such as **Demand Responsive Transport (DRT)** are environmentally friendly, inclusive and meet social needs by providing access to mobility in areas where traditional services do not existing or are not efficient; moreover, flexible services can contribute to lower car dependency, and increase the demand for public transport when used as a feeder for bus, tram and rail services in urban areas;

- **Digitalized mobility** offers the opportunity of filling the gap between personal and collective/intermodal mobility in terms of flexibility and user friendliness, by fostering the integration and seamless provision of services by the different actors in the mobility ecosystem.

3.3. Recommendations for raising awareness and fostering behavioral change

- Within the stakeholder engagement and co-design process, the implementation of **soft measures such as education and promotion represent the starting point** for the raising awareness approach, as well as the trigger for participation to the co-design process;

- **Targeted information** is fundamental not only to gather the attention of relevant stakeholders, but also to keep the level of interest on the strategic topic and related projects high all over the defined framework;

- One of the keys of the raising awareness scaling up process can be the **discussion and design of targeted and hard measures to accompany the experimental development** of co-designed solutions; a good example is represented by the implementation of mobility management actions (soft measures such as the implementation of company travel plans, or hard measures as mobility management based tariffs/incentives), to complement the launch of a carpooling system for example; the set-up of raising awareness instruments should be complementary and functional to the testing and delivery of co-designed innovations;

For policymakers:

- Once the strategic objectives of mobility policies are set, a mix of projects measures and **raising awareness actions should be designed and promoted consistently**; new plans must be inspired by a common strategic vision (e.g. carbon neutral mobility, car free/bike friendly city, etc.), and a **set of hard and soft measures fostering behavioural change must be designed** (possibly through the participative process); specific activities including the co-designed solutions must be coherent.

4. Methodologies and approaches to co-design

4.1. The SHAREPLACE approach

The overall goal of SHAREPLACE is to **develop an innovative approach to improve the connectivity of local, regional and transnational mobility systems**. SHAREPLACE is open to all types of passenger transport services and target groups. By implementing living labs and actively engaging stakeholders, transferable solutions for a more integrated, accessible and harmonised mobility system in the test regions have been co-designed.

The main approach for achieving this goal is the implementation of the **living labs**, which build on specific strategies for local engagement. For each pilot region, **groups of relevant stakeholders gathered to co-design innovative solutions for sustainable mobility**.

The SHAREPLACE approach to co-design is based on a set of guidance principles, through which every pilot region has been able to build its own local collaborative project adapting activities and tools to their specific needs.

In relation to the **organizational frame** for co-design activities, the SHAREPLACE approach is very open, with timing that can be concentrated and intense (e.g. two day workshops) for short term projects, and **several periodic meetings over a longer period** of time for more complex tasks (e. g. as it happened for our pilots, where the periodic meeting were organized over the whole project duration). Moreover, the choice of locations and organizational elements must **create opportunities to evaluate digital ideas, scenarios or (sub-) solutions** in an effective manner and to **prototype together with relevant stakeholders in real-life conditions**.

Concerning the group of **participants**, this should be heterogeneous enough to create a higher level of acceptance in society and to meet the mobility needs of the general population. The creative phase should be a **collaboration of a mixed team** of institutional and entrepreneurial **stakeholders** (policymakers and mobility providers), a multidisciplinary team of **experts** (mobility planners, researchers, etc.) and other **volunteers** (e.g. users, citizens, community representatives).

According to the open approach, **a set of good practices, co-design tools and methods has been collected and transferred to the partners in form of guidelines** (see D.T1.4.4 and D.T1.4.5), to support the respective pilot areas in performing co-design activities within the established living labs. Those tools are particularly useful in the initial phases, to enable a broadening and understanding of the project context including resources and relevant actors The use and mix of tools that create enough freedom for creativity should be preferred, and more general workshop methods should **bring the complexity of the topic of mobility closer to the participants**, to avoid emotional distance connected to excessively strict models.

The following picture provides a general overview of the suggested tools, classified by the phase of application.

Fig. 2 – Tools for co-design workshops

Intro	Context (1)	Problem (2)	Solutions (3)
Blind Drawing	Affinity Cluster	Mind-Mapping	World Café
Word Circle	Design Capitalia	Brainstorming	Role Play
Collage	Context in/out	Sustainability Map	Business Model Canvas
			Service Mapping

Concerning the **interaction rules**, the SHAREPLACE experience suggests to give stakeholders the possibility to **select their own role** in the debate, and **privilege group dynamics** against detailed structures questionnaires and exercises, in order to allow them to take on new perspectives. The co-design

activity can be a seen as a continuous activity with a starting point, a middle and an end, however the end can also become a "new starting", as it is set within a new context, building on previous learnings. Three phases are continuously repeated: **context, problems, solution**.

References:

D.T1.4.4 REPORT ON CO-DESIGN FOR INNOVATIVE MOBILITY

D.T1.4.5 GUIDELINES FOR SHAREPLACE APPROACH TO CO-DESIGN

D.T1.1.3 and D.T1.4.3 TRAINING ON COMMUNITY ENGAGEMENT AND CO-DESIGN PRINCIPLES

4.2. Experiences from the pilot regions

Osijek

In Osijek, engagement and participation were encouraged by the combination of different tools, such an **initial survey investigating the motivation of stakeholders**, and **interactive games and tasks to encourage discussion** and give opportunity to each stakeholder to express their opinion and ideas about the project.

The co-design activities focused on data integration, **defining the characteristics of a multimodal travel planning system** and discussing the opportunity of setting the scene for the **future implementation of DRT services**; transport operators and regional and local authorities were the most active stakeholders, together with students from the civil engineering faculty and environmentalist associations. Regional transport and other mobility providers were only partially involved.

The group of stakeholders **actively contributed by analysing the status quo, defining shared goals, carrying out an extended survey** to collect public opinion and experiences regarding public transportation, as well as to the **co-design of the solution**. The transport operators provided data for the tests.

Creating and sharing with the stakeholders a bigger picture of transport system planning process and strategy ensured the positive perception about active participation among the stakeholders.

Bergamo

The engaged stakeholders where involved in **groupworks held in the three different campuses of the University of Bergamo**. The organizers/facilitators decided to **test different methodologies for co-design**, such as the "Design Capitalia", "Mind map", "Stakeholders map",

"Brainstorming", "Affinity Cluster", as learned in the training by the University of Ulm.

Participation was fostered by the opening of **shared communication channels (from social media to repositories for documents) and the organisation of several periodical meetings**. Three phases were identified, a former and a latter where all typologies of stakeholders were invited (to define shared goals, to co-design the solutions), and an intermediate one focused on users (students).

Among the solutions identified, the project focused on the **carpooling option** and its **potential of integration with the existing mobility network**.

A very important synergy has been carried on with the U-MOB LIFE project, with the support of the University of Bergamo for the engagement of stakeholders, in particular users.

Coordinating a bottom-up initiative such as the co-design exercise has been a challenging experience for the Municipality, where **many ideas and contributions emerged from different stakeholder**s. A selection has been made considering the purposes of the project, but a collaborative approach and method have been established and new initiatives will be implemented according to the experience.

Multisector collaboration was fundamental, the involvement and collaboration of a wide range of stakeholders has created a "virtuous circle" with a **common understanding towards sustainable behaviour**. The efforts to **identify and build relationships with stakeholders** have increased confidence in the project environment, minimised uncertainty and accelerated problem solving and decision making.

Ulm

In Ulm, the co-design process involved three main groups of stakeholders and active contributors represented by the **civic tech communit**y (both at local and at national/international level, engaged through meet-ups), the **municipality and city employees** (main testers), **transport authorities and service providers**. Those groups were addressed through different channels and targeted actions, and at the same time could interact with each other within the living lab framework.

A relevant challenge identified during the co-design process was the conflict between the **community-/ citizen-oriented approach** of the municipality and project promoters, and the **view on business and data approach by mobility operators**. This, together with the **need of a common data policy** at municipality level, animated the debate and influenced the implementation of the project.

Two co-designed solutions were developed and implemented, the **Openbike** community bike sharing and the **Digitransit** multimodal travel planning system.

The ongoing process envisages, in order to allow the effective scaling up of the solutions, to continue with the living lab approach in order to a) **promote further the benefits** generated by the implementation of the two solutions, b) define a **common policy on data** targeting openness and security issues, c) work on **enhancing the integration of new services** within the mobility ecosystem.

4.3. Recommendations for methodologies and approaches to co-design

- The objective of this phase is to **co-design specific solutions, most suitable for the local needs**; these solutions might be products, services, experiences, events or some other outputs;

- Once the previous phases (stakeholder engagement, analysis of needs and expectations, raising awareness) have been carried on, the **group of committed stakeholders must be accompanied** in co-designing mobility innovations to enhance the existing mobility networks;

- The co-design process is based on the sequence: **definition of the context, identification of local problems, identification and exploring of new solutions**;

- The **co-design activity can be considered as circular**, building on previous learnings and continuously adapting to new contexts;

- At the beginning of each co-design workshop, experts/ facilitators **inform participants about the context of the project and the benefits** of participation;

- The **context can be re-defined and refined with the stakeholders**, according to their visions;

- Together with the stakeholders, **challenges and problem spaces** must be discussed and defined;

- **suggested solutions must address major problems** identified and be set within the defined context, ideas should not be restricted in the initial phase;

- A **scan of the available resources and levels of commitment** must be performed among stakeholders; solutions must build as well on available resources;

- the **most promising solutions** will be co-selected with the stakeholders, and **taken forward and tested** in real-life settings;

- the **process should be documented**, in order to keep track of the different steps and continuously assess and revaluate the solutions according to the context.

For policymakers:

- Policymakers should **promote the co-design approach as a method** to reach high consensus and to develop sustainable solutions;

- They should **represent the interest of communities** and different citizen groups;

- Policymakers **ensure coherence between the development of co-designed solutions and the strategic objectives** set at policy level;

- They should ensure support to the co-design process **integrating in the solutions enabling components** (e.g. specific derogations, incentives, use of public assets, etc) and **guaranteeing a suitable regulatory and market framework** for experimentation.

5. Engaging stakeholders in the definition of business models

5.1. The SHAREPLACE approach

Business models in sustainable mobility have evolved in the last decade at a dramatic pace, as a combination of a broader range of factors including social and behavioural change, competition and opening of service markets, sustainability driven public policies, technology and digitalization.

The SHAREPLACE approach is based on the **in-depth analysis of a range of business models for mobility innovations** carried out in order to inspire existing and planned mobility solutions in the pilot regions involved in the project, as well as innovations sketched and co-designed within the living labs activities.

The main objective of the business models' analysis was the **identification of elements useful for the development of effective and innovative business approaches** in order to support the development of innovative co-designed services and provide guidelines for their sustainability in the long run. The business model canvas has been used as framework for the representation and benchmarking of different models.

Reference models from the desk analysis have been **discussed and adapted to the specific needs of the local and regional contexts**, in order to sketch sustainable solutions for mobility innovations. Each solution developed in the pilots has been complemented with a business model structure to be shared with stakeholders, refined according to the local inputs and finalized as **potential collaborative model for the future scaling up**.

References:

D.T2.6.1 STUDY ON INNOVATIVE BUSINESS MODELS

D. T2.6.2 REPORT ON COLLABORATIVE BUSINESS MODELS

5.2. Experiences from the pilot regions

Crema

The aim of the Crema pilot is to **innovate existing DRT and better integrated with public transport**.

To achieve this result, the range of key partners must be broadened and include especially **other public transport and regional railway companies**, and public and private subjects that are **traffic generators** and could support the take up. In particular, suggestions for the scaling up include the public **hospital**, already involved in the co-design process.

The better integration is a crucial aspect that must be pursued at two levels: through the **digitalization** process, **including the exchange of information on scheduled and flexible services**, and in the **mobility planning**, fostering the definition of new and more economically viable operational model.

The discussion on the development of a **more sustainable business models** involved also **new operational elements**, although specific hypotheses could not be tested at the current stage. In particular, the new discussed approach included the possibility of an "hybridization" of the service **combining on-demand and shuttle services** on the main route to improve frequencies and attract new demand.

The cost structure must include those enabling a better integration (digitalization and new operational model).

Revenue streams might consider a **more complex segmentation of tariffs** and the addition of **market-based services in the long run**.

Osijek

The aim of the Osijek pilot is to **improve and integrate information on public transport and other mobility services**.

According to the analysis and debate on the business model, the range of key partners must be broadened and include especially **other public transport operators and mobility providers.** Other cities and communities interested in building on the Osijek experience and open-source code must be considered key partners as well for future improvements.

Three main elements have to be taken into account for the scaling up:

- The **inclusion of a plurality of services** and the development of new ones;
- The **replication in different cities and communities**;
- The opportunity to **provide dedicated focused services on a b2b perspective to companies** for better managing the mobility of employees and customers, **and to mobility providers** dealing with the digitalization and integration process.

The cost structure must include those enabling the scaling up, including marketing.

Revenue streams might consider the support to digitalization and customization of the service for specific areas (e.g. business districts, etc.), and the contribution to integration costs by private companies joining the system.

Bergamo

The aim of the Bergamo pilot is to **integrate carpooling as network element for specific areas/functions**.

The range of key partners must be broadened and include especially **public transport and regional railway companies**, the **local mobility agency**, and new public and private subjects that are **traffic generators** and could replicate the model. In particular, suggestions for the scaling up include the public **hospital**, the **airport**, and the **business district** located in Dalmine.

The integration of the carpooling with the public transport is a crucial aspect that must be pursued at two levels: through the **digitalization** process, **fostering the exchange of data and API**s between operators, and in the **mobility planning**, identifying possible specific areas of application (**low demand areas not covered by public transport to enhance intermodality, low peak timeframes where carpooling could integrate existing services**).

The cost structure must include those enabling a better integration (digital, and participation in planning of services), and for the public the definition of possible **mobility management-based incentives** for companies and employees to foster the use of carpooling especially as intermodal option. Revenue streams must include a fee on transaction for users and a flat fee for the activation and customisation of the carpooling solution for companies and other traffic generators.

Moreover, to cover the cost of mobility management-based incentives, a **multimodal integration-based public contribution could be introduced**, based on the estimation of public savings related to the substitution of traditional services where not efficient, the benefits of higher attractiveness of settlements and reduction of externalities, the increase of multimodal trips as rewarding parameter.

5.3. Recommendations for engaging stakeholders in the definition of business models

- In order to build sustainable business models for mobility innovations, it is important to **create the conditions for the development of collaborative approach, fostering trust and highlighting new business opportunities and efficiency gains**;

- Conditions for **digitalization and service integration** must be fostered; **data availability and integration, collaboration and fair competition ground in order to attract players lowering entrance barriers**;

- **The regulatory framework must be adapted** in order to **support innovations able to generate social benefits** (e.g. allowing light licensing options for drivers in digital matching services in remote areas);

- The development of **P2P solutions on community basis** must be encouraged;

- **Incentives** should be delivered **to citizens committing to more sustainable mobility options**, both as final users and service providers (e.g. prosumers);

- especially when dealing with user groups with different skills and attitudes especially in peripheral and low demand areas, **it is very important that innovative sustainable services are designed for customers and supported by multi-channel communication** in order to guarantee user friendliness and to accompany the digital transition guaranteeing high levels of inclusiveness.

For policymakers:

- considering the complexity of actors involved in the mobility ecosystem, the role of local authorities cannot be limited only to regulated services, but also **support the definition of competition rules and collaborative environments for market-oriented services and platforms**;

- to support the creation of ecosystems and integrated mobility networks, local authorities are required to intervene also on the funding scheme side, **reshaping public subsidies for the different cost-effective solutions** able to match the requirements of the demand.

6. The role of stakeholders in the digitalization process

6.1. The SHAREPLACE approach

The use of **open data** (accessible and available, open formats and digitally and machine-readable, virtually free of restriction on use or redistribution, universal participation, documented in metadata) can represent a useful approach for the public sector in the field of mobility data management and governance. Therefore, it is possible, by choosing this approach, to **enhance and secure an intermodal, connected and inclusive mobility for the people**. In order to build a common SHAREPLACE view on the topic, the **advantages and barriers** of this approach have been examined from four different perspectives, the public sector, the transport provider, the user and the developers and businesses.

A **general lack of open mobility data on the one hand, and the need to enhance the existing mobility networks** with new, better and more integrated services on the other are common characteristics across SHAREPLACE pilot areas.

The SHAREPLACE approach aims at promoting the benefits of open data in supporting the creation of new services as well as the enhancement of existing ones with a specific focus on low demand areas where market-oriented solutions that provide seamless mobility solutions seem less attracted. For this reason, **open data policies and conditions for a fair and inclusive digitalization of mobility services and networks have been put at the centre of the debate among stakeholders**, and common strategies have been designed and pursued.

As a general approach, the more data are circulated, used and contextualised the more benefits data bring to society and economy. This is particularly valid for sustainable mobility, where benefits for the communities can be amplified by a better digital and physical integration of options.

References:

D.T2.4.2 HOW TO DEAL WITH MOBILITY DATA: GUIDELINES FOR CITIES AND REGIONS

D.T2.4.3 DIGITALIZING MOBILITY SERVICES IN SHAREPLACE REGIONS: PLANNING, GOVERNANCE, TECHNOLOGY

6.2. Experiences from the pilot regions

Ulm

In Ulm, local stakeholders were engaged in the digitalization debate through a workshop focused on mobility data and planning. Main intention of the workshop was to get to a common understanding of legal requirements, licensing terms and mutual benefits with regard to open mobility data.

The discussion highlighted a general consensus on the benefits of open data approaches, as well as barriers related to standards, competencies and potential technological lock ins.

An important result of this approach was the kick-off of the process, with a first level of data to be collected and shared and the identification of potential developments.

In parallel, the Ulm Municipality **civic tech community** started exchanging knowledge and experiences through the participation to national and international meetups to discuss technological developments. This

participation fostered the development and testing of innovative solutions based on the Digitransit open-source platform in order to develop digital functionalities for sustainable mobility.

Lombardy Region

SHAREPLACE partners Bergamo, Autoguidovie and Redmint engaged stakeholders as **transport and mobility operators, transport authorities and digital ecosystems managers** in order to contribute to the debate on digitalization of mobility from a regional perspective.

Stakeholders contributed to a) the **identification of requirements and conditions** for digitalization, b) the **analysis of relevant impacts** for citizens **and opportunities** for expansion of demand, and c) the **definition of transparent rules** for data sharing.

The debate highlighted specific critical aspects related to **data governance and incentives**, helped identified **potential benefits** for different parties and a minimum common ground for **data sharing** and led to a review of the **main barriers to digitalization** of mobility data.

The workshop, together with further targeted interaction with relevant regional stakeholders, stimulated the debate on the potential of digitalization in mobility and contributed to pave the way towards the definition of the main requirements of a regional mobility ecosystem, in synergy with the E015 digital ecosystem promoted by the Lombardy Region.

6.3. Recommendations for the role of stakeholders in the digitalization process

- In order to support an effective digitalization of services, it is fundamental to **reduce dependency on closed systems, formats and from external digital service providers** by promoting open approaches and standards;

- Digitalization and data sharing are fundamental to **make sustainable mobility more user friendly**, implementing solutions such as crowd detection systems, booking and information on rules and behaviors, dematerialization of tickets (also supporting COVID-19 control policies);

- **Documentation of data flows** is a prerequisite for knowing how to export data and securing access to third parties;

- Adaptability should be guaranteed through **focus on** (ideally international) **standards** (GBFS, NeTEX, GTFS) and open interfaces;

- The **identification of cooperation opportunities** between different parties must be **based on shared benefits**, both for users and for the supply system;

- Integrated mobility planning must **consider the tradeoff between service flexibility and economic efficiency, identifying possible balance points through cost reduction and increased demand captured**.

For policymakers:

- **The Delegated Regulation (EU) 1926/2017, defining rules for data digitalization** (level 1 already active since 2019, static transport data for scheduled modes of transport; level 2 December 2020, fare data for all scheduled mobility services and DRT) **must be enforced;**

- In order to create trust on data sharing issues, an **independent entity in charge as guarantor of transparency** must be nominated;

- The **minimum efficient scale for the implementation and replicability of digitally based mobility solutions** (e.g. Regional) must be identified in order to overcome potential economic barriers, especially for low demand areas;

- In order to foster data sharing, **minimum requirements must be embedded in tender specifications and service contracts**;

- The **modulation of services to be integrated** can be developed through a joint market action and regulation/programming of services (bundling).

Conclusions

The document aims at providing **guidance for the development of stakeholder engagement and co-design approaches** to deliver innovative mobility services integrating flexible, shared services into the existing networks.

The guidelines combine the project common approach with the specific experiences by the living labs established in our pilot areas. Co-designed innovations focused on **flexible** (DRT), **shared** (carpooling and bike sharing), and **digitalized services** (multimodal planners paving the way for MaaS applications).

The guidelines have been designed respectively for **mobility operators**, **mobility planners** and **policymakers**, according to their expected role in the planning and co-design process. Rather than being alternative options as coordinators of the living labs, the addressees of these guidelines are intended as a **core group of promoters jointly initiating the participative approach**. The ideal start-up phase would be, based on the reading of the guidelines, an initial meeting where this restricted group of key stakeholders (operators, planners, policymakers) set up preliminary objectives and plan the establishing of a dedicated living lab.

The **outcomes** summarized as guidelines for future implementation are designed around the four SHAREPLACE pillars (participation, awareness, sharing, technology), and follow the structure of the activities carried out within the three years of project, highlighting the main findings and takeaways and experiences of the process both at project and at local level.

Fig. 3 – The SHAREPLACE engagement strategy and co-design approach
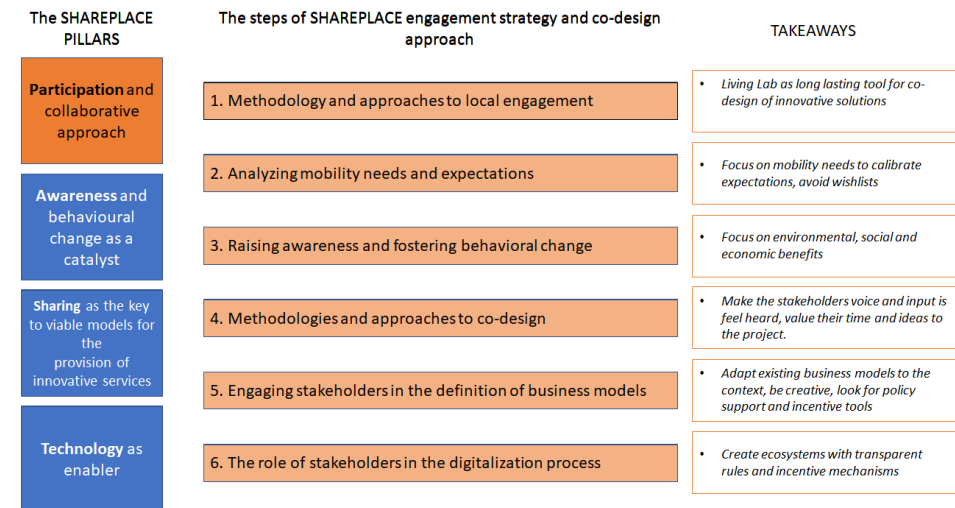
The codification of the guidelines for different categories of key stakeholders contributes to the definition of possible complementary roles among the three groups:

Mobility operators, whose primary focus is the ability to respond to the needs of demand in innovative and efficient ways, bring knowledge, expertise and resources to the co-design process and define the perimeter of feasibility of solutions.

Mobility planners, with a comprehensive view on the mobility network and its interconnections, contribute to the coordination of the co-design activities and guarantee the coherence and alignment with existing networks, main trends, other ongoing initiatives, and with the mobility planning cycle.

Policymakers, mainly interested in the sustainable development of communities and businesses, create the regulatory conditions and incentives for innovations to be developed and tested, and monitor the social value propositions and the generated benefits for the citizens.

The joint effort of operators, planners and policymakers in adopting the SHAREPLACE approach to co-design and implement flexible, shared and digital solutions complementing and enhancing existing mobility networks will generate the highest profit for citizens and communities when scaled up into well-established planning processes.

The engagement and co-design phases developed within the SHAREPLACE project can be aligned to the SUMP cycle (or other mobility planning tools and processes) in order to enrich the potential of the existing planning with new options, and to synchronize the policy cycle to the innovation development process as experienced within the SHAREPLACE project.

The final recommendation, for the living labs established within the SHAREPLACE project as well as for the ones that will be inspired by this set of guidelines, is to develop strategies to integrate the developed participative approach as a complementary element of the sustainable mobility planning cycle, in order to deliver innovative services integrating flexible, shared services into the existing networks.

Fig. 4 –SHAREPLACE and the SUMP cycle
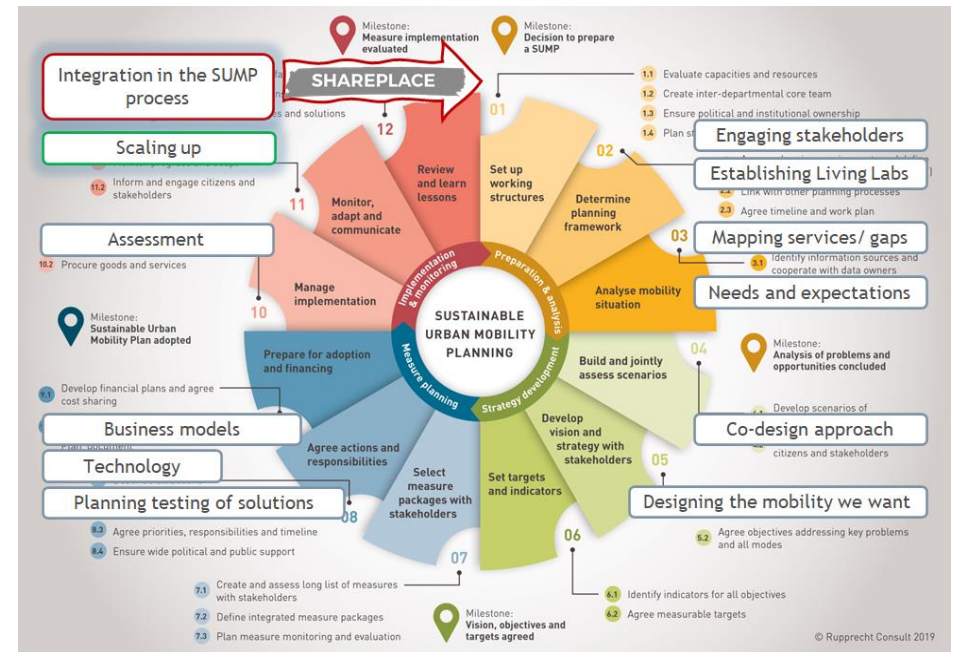
References

D.T1.1.1 REPORT ON CONCEPTS FOR LOCAL ENAGEMENT

D.T1.1.2 GUIDELINES-FOR-SHAREPLACE-COMMUNITIES-ENGAGEMENT

D.T1.2.7 STAKEHOLDERS INVOLVEMENT AND OUTPUTS COLLECTION

D.T1.2.9 DETAILED STUDY ON MOBILITY NEEDS AND EXPECTATIONS

D.T1.3.3 REPORT ON BENEFITS OF BEHAVIOURAL CHANGE

D.T1.4.4 REPORT ON CO-DESIGN FOR INNOVATIVE MOBILITY

D.T1.4.5 GUIDELINES FOR SHAREPLACE APPROACH TO CO-DESIGN

D.T1.1.3 and D.T1.4.3 TRAINING ON COMMUNITY ENGAGEMENT AND CO-DESIGN PRINCIPLES

D.T2.6.1 STUDY ON INNOVATIVE BUSINESS MODELS

D.T2.6.2 REPORT ON COLLABORATIVE BUSINESS MODELS

D.T2.4.2 HOW TO DEAL WITH MOBILITY DATA: GUIDELINES FOR CITIES AND REGIONS

D.T2.4.3 DIGITALIZING MOBILITY SERVICES IN SHAREPLACE REGIONS: PLANNING, GOVERNANCE, TECHNOLOGY