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Project overview:	Cities-4-People unfolds in five European areas: the Oxfordshire County, Hamburg District of Altona, Üsküdar in Istanbul, Budapest and Trikala. In these areas Mobility Communities are set up involving citizens, city authorities, mobility providers and innovation experts. By developing and providing a framework of support services and tools, Cities-4-People empowers these communities to actively contribute to shaping their local mobility innovation ecosystems in line with a People-Oriented Transport and Mobility (POTM) approach. POTM encompasses a blend of new digital and social technologies under an inclusive and multidisciplinary approach in order to bring out solutions that have a low ecological footprint, a sharing mentality and the potential to solve real urban and peri-urban mobility issues.		

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Abbreviations

BKK	Centre for Budapest Transport (Hungary)
C4P	Cities-4-People
DRT	Demand Responsive Transport
D3.1	Deliverable 3.1
D3.3	Deliverable 3.3
НСИ	HafenCity University, Hamburg (Germany)
H2020	Horizon 2020
KTI	Institute for Transport Sciences (Hungary)
NHS	National Health Service (UK)
OCC	Oxfordshire County Council (UK)
РОТМ	People-Oriented Transport and Mobility
Q&A	Question and Answer
QHS	Quadruple Helix Stakeholder
WP	Work Package

Executive Summary

This Deliverable 3.4 summarizes the activities and generated concepts of the Cities-4-People Mobility Labs of the five partner cities [Budapest, Hamburg, Oxfordshire, Trikala, and Üsküdar (Istanbul)] that were developed between August and September 2019. It focuses on one activity, the Hackday, which targets to generate concepts to scale-up successfully implemented pilots of round one. Goal is to condensing ideas, ruling out ineffective measures and approaches and generating significant ideas to be implemented in early 2020 in all cities. Activities that fed into the Hackday and concept generation are addressed in Deliverable 3.2.

In total, 28 concepts were generated and 97 members of the local Mobility Community participated in the workshops. This relatively low number of participants reflects the process focusing on the generation of more concrete concepts and ideas. It required to address specific stakeholders and thus limited the overall number of participants and generated concepts. Common challenges of the concept generation processes were connected with time constraints, as the timeline for participation in this round was rather condensed. In addition, limitations had to be set for the concept generation, as some pilots could not be scaled-up due to weather conditions, implementation problems or financial reasons. Even though, a successful concept generation was reached by the C4P members facilitating the process and using co-creation methods (e.g. World Café and Iteration Dice) that supported exchange of ideas, reducing complexity and helping to develop specific concepts. The concepts of Budapest, Oxfordshire and Üsküdar target to scale-up one pilot (Hamburg considered two but six out of seven concepts are related to one pilot). This reflects the focusing on the pilot that offers the best chances for scaleup regarding the timeline, resources, legal requirements and city-specific requirements and targets.

The further selection and development process of the generated concepts will be addressed in D3.6. This report is thus strongly linked with D3.2 and D3.6 that should be considered when studying this document.

1. Introduction

Within the Cities-4-People project several activities for the co-creation of sustainable mobility are carried out with the local community. For more information, see previous documents regarding round one implementation of the pilot projects (i.e. D3.3, D3.5). After the implementation of round one pilot projects, concepts should be developed to scale-up successful project ideas. The C4P participation process for round two consists in total of a Presentation Day, Hackday, QHS workshop and Prototyping. Purpose of this Deliverable 3.4 is to present practical concepts for the Cities-4-People pilot areas generated within the Hackdays. The Hackday targets to generate ideas for scale-up together with the cities and relevant stakeholders of the community. This report is describing the concept generation process, showing developed concepts of the cities, analyzing the processes and drawing conclusions. The three other activities, the Presentation Day, QHS workshop, and Prototyping are addressed in two separate reports (D3.2 and D3.6).

In short, all cities successfully performed the Hackday using several methods applied to the respective situation, generating four to seven scale-up concepts. In general, context varied in each city so that not all stakeholders were integrated in the concept generation process. Cities faced challenges when organizing and carrying out the Hackdays. A proper management and the use of appropriate methods could address these. All cities used lessons-learnt to co-create their scale-up concepts with the participants, focusing on successful measures and approaches. Most mobility challenges of the first round also occurred in the concepts of the second but changed regarding to the selected pilot for scale-up. The same accounts for the respective intervention to address the challenges. This report will present in *Chapter 2* the concept generation process, its organization, methods used as well as its challenges and successes. *Chapter 3* will present the scale-up concepts by city targeting on the experiences made in the first round and the resulting selection of scale-up projects, addressing challenges with specific interventions. Finally, *Chapter 4* gives a general conclusion by comparing Challenge Categories and

Intervention Types of round one pilot projects and round two generated concepts.

2. Concept generation process

The goal of the second participation round of C4P was to co-develop and elaborate on potential scale-up ideas for the implemented pilots in the cities with the local Mobility Communities. In each focus area, the Mobility Labs reflected on the successes and challenges of the implemented pilots and considered improvements or changes to these, which could be part of a scale-up in the second implementation round. This second participation round also allowed Labs to re-connect with the community stakeholders, as well as to attract new members. Further elaboration on the activities in the second round can be found in Deliverable 3.2 "Activities for the generation of mobility concepts."

Each of the five focus areas held a Hackday in their Mobility Labs in order to produce a list of possible scale-up concepts, which could be later endorsed by the Quadruple Helix Stakeholders. This section describes these events and the methods used to co-develop these concepts for scale-up.

2.1 The Hackdays

Between mid-August and late September 2019, all five focus areas held Hackdays to codevelop scale-up concepts. Some limitations were set on the organization of the Hackdays due to the overall deadlines and time constraints of C4P. While in the first participation round each Hackday was a stand-alone event, in this round cities could choose to combine this with another Lab event. The condensed timeline of the second participation round made this option attractive and most cities chose to combine events as for instance with the Presentation Day (Budapest, Hamburg, Trikala).

Table 1 summarizes the practical details of the Hackdays. Participants at Hackday were present from all four parts of the Quadruple Helix in Budapest, Hamburg, and Oxfordshire. Industry stakeholders were not present at Hackday in Trikala and Üsküdar. This may be due to specific approaches for scale-up and the background of the respective pilots implemented so far. Some pilots may also lack interest of the industry stakeholder group. Academic stakeholders were not present at the Hackday in Trikala. This was a result of unforeseen obligations of the invited stakeholders (i.e. university members). Between four and seven concepts for scale-up were developed in each Hackday. Overall participant numbers were lower than in the first participation round, especially in Budapest and Trikala. In Budapest, the lower participation can be explained by the fact that the event differed from the previous one. The round one Hackday was organized as an outdoor event at Városháza Park using and outdoor pop up park setting that was open to many, while in round two specific stakeholders were invited. In Trikala, several stakeholders were not able to participate in the second Hackday for organizational reasons as mentioned above. In Hamburg, Oxfordshire, and Üsküdar, the difference in Hackday participation between the first and second round was negligible. Any small differences are likely a result of the more narrow thematic focus of the events (only on implemented pilots rather than all mobility issues). Overall, the success of the Hackdays is seen in the co-development of a list of actionable list of concepts, which can be presented to the Quadruple Helix Stakeholders. Considering this, the presence of a diverse and dedicated group of participants is more important than a very large number. As the C4P cities generated several detailed concepts for a scale-up, together with a diverse group of participants, the second Hackday can be seen as a success.

Торіс	Budapest	Hamburg	Oxfordshire	Trikala	Üsküdar
Date	17 th September	14 th August	18 th September	20 th September	25 th September
Duration (hours)	1 hours	1,75 hours	3 hours	1,5 hours	2 hours
Number of participants	35	24	14	13	11
Composition of stakeholders					
Local Authority	15	4	5	2	5
Citizen	5	14	6	11	3
Industry	9	2	2	0	0
Academic	6	4	1	0	3
Number of concepts developed	5	7	7	5	4

Table 1. Hackday events 2019

2.2 Methods used at Hackdays

Several methods were used at the Hackdays to structure the event and support concept development (*Table 2*). However, these methods were used in different ways addressing the circumstances, specific situations and goals of the respective events in the cities.

	Method 1	Method 2	Method 3
Budapest	World Café	Brainstorming	Mapping
Hamburg	World Café	Iteration dice	'State your case' mini- debate
Oxfordshire	World Café	Iteration dice	
Trikala	Idea ranking	Crazy 8	One word before leaving (sum-up of the event)
Üsküdar	Paint Drawing method	Numeric voting method	SWOT analysis

Table 2: Methods used at Hackday

In Hamburg, for example, the world café method was used to exchange ideas created in small groups and develop them further. After a short 15 minutes ideation session, participants moved to another table. The moderator of the table informed the new group about the previous group's ideas. After this, they were further discussed and developed using the iteration dice method. All participants moved to all tables during the session, discussing and developing all ideas that were shaped more in detail with each new group. In Oxfordshire, the world café method was used differently. Here, participants were challenged to walk around the room, discuss with each other, and write priority

destinations for each of the selected locations. In a second session, participants were divided into two groups developing two different routes. At the end, they presented to each other the results that they had developed. These were then discussed with all participants. Also differently to Hamburg, the iteration dice was only used as a final activity to redesign the monitoring fields to fit the needs of the pilot scale-up. Both methods were used in a different form and context specific. While in Hamburg the ideation process was coupled with the specific development of the first ideas, Oxfordshire used different stages for the idea development that is also reflected in the very detailed results and overall duration of the event. Both created valuable concepts using the same methods but in their specific context.

2.3 Challenges and successes of concept generation

The concept generation process in the second round posed some common challenges for the focus areas. Time was a major concern, especially considering the condensed timeline for participation in this round. This was primarily the case in Üsküdar and Hamburg, where both teams felt that more actors, especially expert stakeholders, could have been reached with more planning time. Limitations on idea generation to specific pilots and/or changes desired to these pilots had to be addressed in all cities. Budapest and Oxfordshire had to consider these issues in their workshop planning and method selection. Trikala's main challenge was the financial constraints limited bigger measures.

In each focus area, careful consideration and selection of co-creation methods, along with a healthy dose of flexibility and support from C4P partners, allowed the overall goals of the concept development process to be met. Each success of the partner cities show that the teams, as well as several long-term Lab participants, learnt from the evaluation of the first implementation round and integrated experiences into the development of scale-up ideas. Especially Budapest and Trikala reported a strong and progressive interaction with their community that is connected with good communication of the projects and the showcase of successful implemented pilots. Hamburg and Üsküdar experienced a brought idea development that added valuable context to the possible scale-up projects. In Hamburg, several ideas were generated and vividly discussed and Üsküdar even created a new idea. A focused view underpinned with monitoring data helped Oxfordshire develop their ideas.

3. Concepts for Scale-Up in the five focus areas

The five participating cities developed several scale-up concepts at their Hackdays. The purpose of the concepts is to develop one or more scale-up project(s) in early 2020 based on the successfully implemented pilots. Lessons learnt from the previous pilots should be integrated in the scale-up, improving and adjusting the ideas. The concept generation process supported this by condensing ideas, ruling out ineffective measures and approaches and generating significant ideas. The subsequent subchapters describe the concept generation process in each partner city and contain a short description of the practical concepts developed. The tables in the cities subchapters show their scale-up concepts with descriptions of the ideas, its relation to the pilot, the challenge categories and intervention types. To reduce complexity in the tables the latter are shown only with their number. An overview with detailed description is given therefore in *Table 8*.

3.1 Budapest

Budapest implemented the first Mobility Point in the city as the first pilot, offering a diverse choice of shared vehicles (city bikes, e-scooter, and shared electric cars) from different operators. The location at St. Gellért Square is very central, connected with public transport and, thus, perfect to integrate multi-modal services. The second pilot aimed to increase bike riding at the river in Buda embankment during weekends by extending bike lanes in the place of car lanes. The third pilot created a pedestrian route alongside the Daunbe, which was already popular for many pedestrians but lacked additional infrastructure elements. Budapest's pilot 'Mobility Point' was considered for scale-up because new local mobility service providers (at least four to five new stakeholders) expressed their interest in becoming part of the mobility points in Budapest. Citizens of Budapest have evaluated the Mobility Point very favorably. Additionally, the smart city vision of Budapest and the Mobility Plan envision micro mobility solutions to ease the daily challenges of public transport. Budapest decided not to follow-up with the two other pilots ('Bicycle friendly pilot' and 'Buda walking path') because of this favorable situation of pilot one but also due to weather conditions that may hinder a successful scale-up implementation during winter.





Together with stakeholders, Budapest co-developed five concepts for scale-up at the Hackday (*Table 3*) based on the successfully implemented Mobility Point pilot. Four of them focus on expanding the same pilot project to a new area: (1) a residential area, (2) inner city area, (3) at railway stations, (4) at campuses and parks as well as (5) at shopping malls at the outskirts of the city. One concept proposes to update/overhaul the pilot by including shared cargo bikes on dedicated parking spots at the Mobility Point as a new service.

Table 3. Scale-up concepts-Budapes	Table	3.	Scale-up	concepts-	Budapest
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No	Concept Title	Concept Description	Relationship to Pilot(s)	Challenge Category	Intervention Category
1	Mobility point in residential area	Goal is to ease the travel challenges of local residents and provide appropriate micro mobility solutions for the first and last mile challenge. As the 1 st mobility point was in an inner-city mobility hub, new areas and micro mobility offers must be tested.	Expansion of the same pilot to a new area	CC-7	IT-6
2	Mobility point in inner city area	Goal is to ease the travel challenges of tourists and locals with a sharing mindset to reduce heavy car and traffic problems. As the 1 st mobility point was in an inner-city mobility hub at St. Gellért square, new services like cargo city bikes, storage facility, and electric mopeds, or info stands could be offered at other inner-city locations.	Update/ overhaul of existing pilot	CC-7	IT-6
3	Mobility point at railway stations	Goal is to ease the travel challenges of daily commuters who come from the outskirts of Budapest. As the 1 st mobility point was in an inner-city mobility hub, new area is to be tested.	Expansion of the same pilot to a new area	CC-7	IT-6
4	Mobility point at campuses/in parks	Goal is to ease the travel challenges of college students who must visit more buildings/faculties on daily bases in Budapest. As the 1 st mobility point was in an inner-city mobility hub, new area is to be tested.	Expansion of the same pilot to a new area	CC-7	IT-6
5	Mobility point close to shopping malls at the outskirts of Budapest (e.g. IKEA)	Goal is to ease the travel challenges of families and young adults who may not have a car yet but live far from shopping malls, and local markets. As the 1 st mobility point was in an inner-city mobility hub, new area is to be tested.	Expansion of the same pilot to a new area	CC-7	IT-6

3.2 Hamburg

Figure 2: Hackday in Hamburg



Hamburg considered the two successfully implemented pilots, 'Bike parking' and 'SharingDay'. Implementation of the third pilot 'Packing station and door-to-door delivery' was not possible in the first round and thus not considered for upscaling. The 'Bike parking' pilot targeted to increase parking options for bike users by installing 65 new bike racks in the pilot area at sites identified by the community. The SharingDay focused on the provision of information about sharing options, operators and access in the Altona neighborhood. In addition, participants could test-drive several shared vehicles (bikes, cargo bikes, e-scooters) on a closed lane. At Hackday, especially the bike pilot was discussed with great interest. Altona has the highest share of bike users in Hamburg (BMVI 2018: 9) and Altona Lab participants have consistently mentioned the need for more bike parking infrastructure (*Table 4*). In addition, there is an increase of cargo bike users locally and until now, no parking concept has been established addressing this user group. Targeting this special type of demand is a possible scale-up project. For the 'SharingDay', there were several ideas developed in order to improve the event with e.g. more sharing operators and a bigger test field.

Together with participants of the community, Hamburg co-developed seven concepts for scale-up at the Hackday (*Table 4*). Six are related to the pilot 'Bike parking' and one to the 'SharingDay'. This reflects the interest and demand for more bike parking infrastructure among the Mobility Community very clearly. In general, the concepts propose to overhaul the pilot by adding new features or user groups.

No	Concept Title	Concept description	Relationship to Pilot(s)	Challenge Category	Intervention Category
1	Standard bike parking	Goal is to reduce car parking lots (equalize car dominance) and foster bike (parking) infrastructure that is needed. This idea picks- up the previous pilot of bike parking. It may be expanded to cargo bike parking.	Overhaul of existing pilot	CC-2 CC-5	IT-1
2	Do-it-Yourself (DiY) bike repair station	Goal is to build more bike parking lots and combine it with repair stations to get 'first aid' for bike repair at DiY stations.	Overhaul of existing pilot	CC-2 CC-5	IT-1
3	Guarded bike parking	Goal is to increase security for bike parking, and better protection against weather (through roof). The idea may be implemented in different places regarding the existing 'desired places map'.	Expansion of the same pilot to a new area	CC-2 CC-5	IT-1
4	Roofed bike parking	Goal is to increase good bike parking infrastructure, especially against weather. The idea may be implemented in different places regarding the existing 'desired places map'.	Overhaul and expansion of the same pilot to a new area	CC-2 CC-5	IT-1
5	Reduce unused bikes at parking lots	Goal is to clean out existing bike parking spaces from 'ghost bikes' without ownership, in order to provide more space for users.	New idea	CC-2 CC-5	IT-1
6	Parklets	Goal is to implement bike parking pop-ups where needed. This could also be useful to test if a location is needed. The idea may be implemented in different places regarding the existing 'desired places map'.	Expansion of the same pilot to a new area	CC-2 CC-5	IT-1 IT-2
7	SharingDay 2.0	Goal is to establish a continuity for a better knowledge transfer, higher reach of interestees and more sharing operators to present their services. The event could be overhauled by inviting more sharing operators, and having a bigger test-field for more vehicles. In addition, more information (bundled in an app) could be provided.	Update/ overhaul of existing pilot	CC-4	IT-1 IT-2 IT-3 IT-5

Table 4. List of Concepts-Hamburg

3.3 Oxfordshire

Figure 3: Hackday in Oxfordshire



The first pilot aimed to train participants face-to-face to use a smartphone and apps. This pilot is directly linked to the second pilot, an on-demand bus service. As the target group that should profit from the bus service shows difficulties in using apps or smartphones, the first pilot offered training for four weekly sessions. The second pilot, the on demand bus service (by PickMeUp and local Community Bus), was set-up in order to fill the service gap and provide direct transport to affordable supermarkets. The third pilot aimed to encourage the use of the concessionary bus pass to access public transport including the on demand bus services.

The pilot 'Transport to Affordable Supermarkets' was selected for scale-up in Oxfordshire due to its potential to alleviate significant mobility challenges not only in Barton, but also in other nearby villages. Monitoring of the pilot revealed the significant financial benefit of the service run in Barton with some opportunities for improvement. Further, peripheral villages nearby Barton have little to no access to public transport, despite being within 5 kilometers of Oxford. This pilot was therefore selected to scale-up into the villages and build a transport service to connect these villages as well as continue to provide transport to affordable supermarkets from Barton.

The Oxfordshire Mobility Community co-developed seven concepts for scale-up (*Table 5*). All concepts focus on the expansion of the Transport to Affordable Supermarkets pilot to new areas by adding bus stops and destinations. With this project, Oxfordshire is establishing more opportunities for citizens living outside of the Oxford city center.

No	Concept Title	Concept description	Relationship to Pilot(s)	Challenge Category	Intervention Category
1	Otmoor to Thornhill Connector	A community transport bus route that would be best served as an informal and infrequent service.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3
2	Barton and Horspath Shopper	Connecting the neighborhoods and villages of Barton, Sandhills, Wheatley, Horspath, and Littleworth to the destinations of Oxford Retail Park, Cowley Centre, and Thornhill Park & Ride. (Thornhill P&R and Cowley Centre are transport hubs with connections to Oxford City, hospitals, airports, London, and the PickMeUp service to all destinations in East and South Oxford). This connection would be made using a minibus with approximately 16 passengers.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3
3	South Oxfordshire Circular	Connecting the villages and neighborhoods of Headington, Barton, Stanton St John, Forest Hill, Holton, Wheatley, Great Milton, Great Haseley Cuddesdon, Horspath, and Cowley to these destination: Wheatley Asda, Aldi, Headington Coop, Lidl, Oxford Retail park. This connection would be made using a minibus with approximately 16 passengers.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3
4	Sourth Oxfordshire Extended Circular	Connect the villages and neighborhoods of Headington, Barton, Beckley, Horton-cum- Studley, Stanton St John, Forest Hill, Holton, Wheatley, Great Milton, Great Haseley, Chalgrove, Cuddesdon, Littleworth, Horspath, Cowley to these destinations: Asda, Aldi, Headington Co-op, and Lidl. This connection would be made using a minibus with approximately 16 passengers.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3
5	Wheatley- Horspath- Cowley Connector	Connect the villages of Holton, Wheatley, Littleworth, and Horspath to the destinations of Oxford Retail Park, Cowley Centre, and services in Wheatley including Asda. These destinations have services such as doctor's surgery, multiple supermarkets, and a transport hub that provides access to Oxford Centre and hospitals. This connection would be made using a minibus with approximately 16 passengers.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3

Table 5. List of Concepts-Oxfordshire

6	John Radcliffe Villager Loop	Provide direct transport access from the villages of Forest Hill, Stanton St John, Beckley, and the neighborhoods of Headington and Barton to the John Radcliffe Hospital and the Barton Crematorium.	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3
7	Otmoor to Thornhill with Miltons and Haselys loop	This concepts would connect the villages of Horton-cum-Studley, Beckley, Stanton St John, Forest Hill, Miltons, and Haseleys to Asda and Thornhill Park & Ride (for connections with 400, access to coaches to airports and all local hospitals, PickMeUp to Oxford, X90 and Oxford Tube to London).	Expansion of the same pilot concept expanded into a new catchment area with new destinations	CC-3 CC-4	IT-3

3.4 Trikala

Figure 4: Hackday in Trikala



Two pilot projects were selected for scale-up: 'Smart lockers' and 'Wheelchair Scooter'. Both were successfully implemented and enjoy huge interest as they offer a service to local market shoppers and people relying on wheelchairs. The first pilot sought to ease traffic around the market caused by shoppers parking their cars illegally in order to store purchased goods. With the lockers next to the market, Trikala offered an alternative storage option. The second pilot increased the mobility of disabled citizens with an electric scooter. The current pilot offers limited service that might be increased by purchasing more scooters. The third project ('Pedestrianization') was not considered for scale-up, as legal and economic challenges were too high.

Trikala co-developed five concepts for scale-up (*Table 6*). Three of them (No. 1, 2, 5) target to update the two pilots while two (No. 3, 4) focus on the expansion of the pilots to a new area. The first idea is to expand the smart lockers by placing more in other locations in the city and make the lockers a 24-hour service. On the downside, challenges such as extra funding, further requirements and vandalism must also be considered. The second feasible pilot is to buy additional wheelchair scooters in order to serve more people.

No	Concept Title	Concept description	Relationship to Pilot(s)	Challenge Category	Intervention Category
1	Another Wheelchair Scooter	By having a second scooter, more citizens can use the service. The project can be combined with lockers: A person using a scooter can also make use of the lockers in order to make his/her transportation around the city easier.	Update/ overhaul of existing pilot	CC-2 CC-4	IT-4 IT-3
2	Expanded Sharing Schemes for the Scooter	Expanding sharing schemes is useful to make the scooter available for more users. It would update the pilot, since it may provide users a way to cover more distance, use to reach their residence or further areas in the city.	Update of existing pilot	CC-2 CC-4	IT-4 IT-3
3	Scooter drop off Points	This concept would offer extra freedom to the users, since they could return the scooters at locations other than the city center. By placing drop off points for the scooters at locations out of the city center, the pilot would be expanded to new areas.	Expansion of the same pilot to a new area	CC-2 CC-4	IT-4 IT-3
4	Smart Lockers in Other Locations	This concept will increase sustainable transport users (public transport, walking, cycling), because the beneficiaries will be able to temporarily and safely store their personal items in more locations in the city and they will no longer be compelled to use their private vehicle as a storage medium or make multiple visits to complete a specific number of tasks.	Expansion of the same pilot to a new area	CC-1 CC-2	IT-2 IT-3
5	24/7 Smart Lockers	This concept will increase sustainable transport users (public transport, walking, cycling). Beneficiaries will be able to temporarily and safely store their personal items at whatever hour of the day they choose to, and they will no longer be compelled to use their private vehicle as a storage medium or make multiple visits to complete a specific number of tasks. Expansion of the hours the service is operational.	Overhaul of existing pilot	CC-1 CC-2	IT-2 IT-3

Table 6. List of Concepts-Trikala

3.5 Üsküdar





Üsküdar considered one pilot for scale-up: 'I Own My Garden'. The pilot 'I Own My Garden' opened a new gate and paved a path through the Salih Solman Green Area, shortening a 400 meters pedestrian path down to 50 meters and thereby improving pedestrian mobility and convenience. Due to the very hilly topography of the area, walking is challenging even in short distances. The second pilot 'Resting Points' targeted especially older pedestrians and gave them a spot to rest when walking: benches were installed in streets with high gradients. Feedback from participants was good, especially concerning the new paved and shortened way through the park that saved several minutes of travel time. Still, no concepts targeting Resting Points were developed. The third pilot that was not considered for scale-up is 'Pavement for everybody' as the paving implementation is cost intensive and thus not feasible for scale-up.

Üsküdar co-developed four scale-up concepts with their stakeholders at the Hackday (*Table 7*). All but one target to update/overhaul the pilots. The first concept is a new idea that targets to transport disabled or older people through the park by electric car(s). The second idea is to paint the shortest route for pedestrians. Concept three targets to change the opening hours of the gates in order to open the park for pedestrians also at night. Finally, the last concept's goal is to give information to pedestrians regarding length or gradient of the walk, nearby travel connections etc.

Table 7. List of Concepts-Üsküdar

No	Concept Title	Concept description	Relationship to Pilot(s)	Challenge Category	Intervention Category
1	Electrical Cars in green area to transport elderly and disabled people	Aim is to ease mobility of elderly and disabled people through green areas, because of high inclination in the pilot area. The pilot will be updated according to local needs by adding a vehicle for the elderly citizens.	New idea	CC-3	IT-3 IT-4
2	Painting the shortest route	The pilot area is very big and it has many paths that could be used by the citizens while they are travelling from one gate to the other one. Goal is to help pedestrians to find the shortest road and have visual signs on their path that they can follow. Update/overhaul of existing pilot by painting the shortest route.	Update/ overhaul of existing pilot	CC-2	IT-1 IT-5
3	Changing the schedule of the gate opening time of the park	At the moment there are closing times for the park at night. Goal is to update and change opening hours of the park to make it more pedestrian friendly and avoid long detours.	Update/ overhaul of existing pilot	CC-2	IT-1 IT-2
4	Information Boards for routes	Information on routes should help pedestrians find the shortest way from one gate to another because these gates are connecting two main transportation locations. Information are given according to the users demands. The boards will have information such as amount of meter, minute, step cal. The previous version did not have any information boards. However, for this pilot area, it is thought that information boards would be very useful for users.	Update/ overhaul of existing pilot	CC-2	IT-1 IT-4 IT-5

4. General conclusions of the concepts

This chapter draws a conclusion of the concepts by analyzing the Challenge Categories and Intervention Types that were used to address mobility problems of the partner cities. Bases of the analysis are the first round pilots and second round concepts that are used to show the development of the concept generation process. Finally, this chapter will summarize previous sections and show further steps that follow the Hackday. For this documentation of the Hackday and the previous D3.3 report, categories of challenges and types of interventions are used to address the specific problems in each city. Deliverable 5.1 concluded, that there are several categories that apply to all cities. These categories are described in detail in D5.1 and summarized in *Table 8* below.

Challenge Category	Main Challenge Type			
CC-1	Road Congestion			
CC-2	Low quality and provision of end-to-end cycle and pedestrian Infrastructure			
CC-3	Low -connectivity of public services (service gaps)			
CC-4	Affordability & access to a viable private car based alternative			
CC-5	Parking provision/capacity			
CC-6	Low-frequency of public services (service gaps)			
CC-7	Air & noise pollution (due to traffic)			
Intervention Category	Intervention Type			
Intervention Category IT-1	Intervention Type Promotion of active travel			
Intervention Category IT-1 IT-2	Intervention Type Promotion of active travel Traffic reduction strategies			
Intervention Category IT-1 IT-2 IT-3	Intervention Type Promotion of active travel Traffic reduction strategies Affordable and quality travel options			
Intervention Category IT-1 IT-2 IT-3 IT-4	Intervention Type Promotion of active travel Traffic reduction strategies Affordable and quality travel options Inclusive mobility infrastructure			
Intervention CategoryIT-1IT-2IT-3IT-4IT-5	Intervention Type Promotion of active travel Traffic reduction strategies Affordable and quality travel options Inclusive mobility infrastructure Travel information provision and literacy			
Intervention CategoryIT-1IT-2IT-3IT-4IT-5IT-6	Intervention TypePromotion of active travelTraffic reduction strategiesAffordable and quality travel optionsInclusive mobility infrastructureTravel information provision and literacyEmission & noise control strategies			

Table 8. Challenge Categories and Intervention Types

4.1 Challenge categories in the cities

In C4P Deliverable 5.1, the views of expert stakeholders in all C4P areas were analyzed to produce seven challenge categories (CC) for the project, see *Table 8*. Comparing the cities' challenge categories of the pilots with the developed concepts of the round two Hackday shows that all but one city has shifted or reduced their challenge categories

(see *Figure 6*). Only Oxfordshire addressed both CC-3 and CC-4 in round one and two, developing the specific pilot idea further (*Table 5*). In general, *Figure 6* shows that most common challenges of the cites are in CC-2, CC-3, and CC-4. Changes in the challenge categories addressed in the other cities had to do with the limitations on the pilots considered for scale-up. This was the case in Hamburg, Budapest, and Trikala. Üsküdar added a concept addressing service gaps (CC-3; see *Table 7*) that reflects the learning process and openness for adaptation.

All challenge categories except for CC-5 (parking provision/capacity) were addressed in round two concept generation. As CC-5 was also not addressed in the pilots from round one, the overall challenge focus in C4P has remained the same in the second round. The goal of the Hackday was to generate concepts that reflect learning through the successes and challenges of the previous pilot implementation (*Chapter Introduction*). This implies to improve and/or change these pilots, which has been done by all cities in the generation of the scale-up concepts. The tighter grouping of CCs in each focus area therefore reflects this process of honing the field of work in the Labs.



Figure 6: Challenge Categories Round 1 Pilots vs. Round 2 Concepts

4.2 Types of interventions

Accompanying the challenge categories, intervention types for C4P actions were also developed in Deliverable 5.1, see *Table 8*. Comparing the intervention types (IT) of each city's pilots with the developed concepts from the round two Hackdays shows that almost all cities shifted or reduced intervention types (see *Figure 7*). In general, it shows that IT-1, IT-3 and IT-4 are the most common project interventions. Üsküdar, the exception, added two ITs, due to addressing two new topics with their concepts. As with

the CCs, the reduction in scope of ITs in the other cities is a result of the narrowed focus on one or two pilots for scale-up. Oxfordshire (IT-3) and Budapest (IT-6) are the only two cities focusing on one intervention type. This reflects a commitment to a particular course of action which has been shown to be effective though the pilot stage. In Hamburg, Trikala, and Üsküdar, the IT of the ultimate scale-up project(s) will be determined by the selection process of the Quadruple Helix Stakeholders.



Figure 7: Intervention Types Round 1 Pilots vs. Round 2 Concepts

4.3 Conclusions

This report is connected with activities documented in the Deliverables 3.2 and 3.6. The mentioned reports should be used as reference and to understand the context of the overall process. The general concept generation process (Hackday) documented in this Deliverable 3.4 was marked by context specific approaches of the cities in shaping the event e.g. by combining Presentation Day and Hackday, pre-selecting topics with the QHS, or limiting concept generation by not considering pilots for the development. Even though the cities used different approaches, all of them generated four to seven scale-up concepts that can be approved and developed further in the QHS and/or Prototyping (see Deliverable 3.2 and 3.6). To support the ideation process, each city used methods that were applied specifically to the context. Main challenges that occurred were connected to time constraints (affecting the reach of participants and development of more concepts) as the timeline of the event implementation was rather short, financial or legal restrictions, and of cause the implementation phase in early 2020. Last limited

the implementation of several outdoor events. In spite of the challenges posed, the teams together with the Mobility Communities managed to co-create detailed and well-developed ideas for scale-up's:

Budapest focused in the concept generation on their successful pilot Mobility Point. All five concepts are related to this pilot, expanding the idea to a new area or updating it. Hamburg co-developed seven ideas relating mainly to their pilot Bike Parking (one concept targets to update the SharingDay). Four ideas overhaul/update the pilots, while two expand the pilot to a new area. One idea was new and does not relate directly to the pilots. Oxfordshire also co-created seven concepts. As they pre-selected the scale-up pilot On-Demand Bus Service in advance, the concepts focus on expanding the pilot to a new options (bus stations). Trikala was limited in financial and legal aspects and thus focused with their five co-created concepts on two pilots Wheelchair Scooter and Smart Lockers. Three of them target to update/overhaul the existent pilots and two on expanding to a new area. Finally, Üsküdar co-developed four concepts focusing on the pilot I own my Garden. Three concepts target to overhaul/update the pilot and one offers a new idea.

External Bibliography

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