

# **Report on HiReach Startup Lab and testing activities**

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## Abstract

The recently launched SME Strategy for a sustainable and digital Europe (2020) recognise the startup ecosystem as a game-changer for the EU competitiveness. However, some very innovative solutions fail to see the light of day due to lack of proper support and incentives, falling in the so-called Valley of Death.

To counteract this problem, HiReach has set up a cross-country, fairly long (8 months) and stepwise (3 phases) acceleration programme to support and encourage more than 20 startups to develop new transport concepts and solutions that could meet concrete accessibility problems of vulnerable to exclusion user groups. This Deliverable 4.3 provides insights and fundamental learnings from this enriching experience.

## About HiReach

HiReach aims at addressing the mobility needs of different groups vulnerable to transport poverty and social exclusion like people with temporarily or permanent reduced mobility, children, young and elderly people, women, migrants and ethnic minorities, low income and unemployed, to favour more inclusive and flexible mobility solutions. The project also analyses geographical and spatial elements affecting transport poverty to figure out mobility options that can simultaneously combine the needs of several groups in different target areas like urban-peripheral, peri-urban, rural, and remote or deprived territories.

By combining different attributes of available transport concepts and bottom-up initiatives with new operational schemes and IT applications, HiReach explores viable business models for small scale, modular and easily replicable mobility services that can be provided at affordable prices and/or with minimum subsidies. For the first time, community transport services, informal ridesharing and van pooling, innovative ride-hailing mobility services and on-demand public transport are assessed within the scope of a new collaborative and well-regulated business environment.

The HiReach mechanism for exploring, generating and testing inclusive mobility solutions is based on the creative work of startups and innovative entrepreneurs, but also on social innovation through the direct involvement of different social groups as developers, co-users and co-owners of the proposed solutions. HiReach is working in 6 EU study regions: Counties of Esslingen and Göppingen (Germany), Naxos and Small Cyclades (Greece), Inner Area Southern Salento (Italy), Guarda and Torres Vedras (Portugal), Buzău (Romania), North and South-East Luxembourg.

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## Definitions, acronyms and abbreviations

ACRONYM	DEFINITION
API	Application Programming Interface
APP	Mobile Application
AT	Austria
B2B	Business-to-Business
B2C	Business-to-Consumer
B2G	Business-to-Government
BE	Belgium
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
COSME	Europe's programme for small and medium-sized enterprises
DE	Germany
DISC	Digital Innovation and Scale-up Initiative
DK	Denmark
DP	Development Plan
EASME	Executive Agency for Small and Medium-sized Enterprises
EC	European Commission
EEN	Enterprise Europe Network
EFSI	European Fund for Strategic Investments
EIC	European Innovation Council
EIT	European Institute of Innovation and Technology
Eoi	Expression of Interest
EP	European Parliament
ERA	European Research Area
ES	Spain
ESIF	European structural and investment funds
EV	Electric Vehicles
FET	Future and Emerging Technologies
FTI	Fast Track to Innovation
GPS	Global Positioning System
GR	Greece

ACRONYM	DEFINITION
H2020	Horizon 2020 Programme
HC	Host company
HU	Hungary
IA	Innovation Action
ICT	Information and Communications Technology
IHV	Impact Hub Vienna
INEA	Innovation and Networks Executive Agency
IoT	Internet of Things
IT	Information Technology
IT	Italy
KIC	Knowledge and Innovation Communities
KPI	Key Performance Indicator
LCC	Lincolnshire County Council
LGF	Loan Guarantee Fund
MaaS	Mobility-as-a-Service
MVP	Minimum Viable Product
NGO	Non-Governmental Organisation
NFC	Near Field Communication
NL	Netherlands
OOI	Objects-of-interest
OEM	Original Equipment Manufacturer
PL	Poland
POI	Points of interest
PT	Portugal
PT	Public Transport
QR	Quick Response code
R&D	Research and development
RIA	Research and Innovation actions
RFP	Request for Proposals
RO	Romania
SaaS	Software as a Service
SC	Steering Committee
SDK	Software Development Kit
SME	Small and medium-sized enterprises

ACRONYM	DEFINITION
TRL	Technology readiness level
TRIMIS	Transport Research and Innovation Monitoring and Information System
TuG	Take-up Group
UK	United Kingdom
UX	User Experience
VC	Venture capital
WP	Work Package



## Executive summary

The recently launched SME Strategy for a sustainable and digital Europe (2020) recognise the startup ecosystem as a game-changer for the EU competitiveness. Startups are increasingly called to fulfil relevant gaps in the transport sector, making use of the inherent creativity and value proposition they bring to the market and the industry at large.

However, some very innovative solutions fail to see the light of day due to lack of proper support and incentives, falling in the so-called Valley of Death. To counteract this problem, HiReach has set up a cross-country, fairly long (8 months) and stepwise (3 phases) acceleration programme, to support and encourage a group of startups to develop new transport concepts and solutions that could meet concrete accessibility problems of vulnerable to exclusion user groups.

Impact Hub Vienna GmbH (IHV) was selected by HiReach to organise and manage the HiReach Startup Lab acceleration programme, with the main objective of validating innovative transportation solutions that can improve mobility in urban, peripheral, rural, remote and deprived areas, while addressing the needs of potentially vulnerable groups such as children and youngsters, elderly, women, people with reduced mobility, migrants and ethnic minorities, people with low income and unemployed.

This report describes the goals, methodology, operation and results of the HiReach Startup Lab. It is based on the concrete experience in managing an acceleration programme on the specific topic of transport poverty. This acceleration programme, entailed a multiple phase approach, with different components of Acceleration and Incubation, intended to develop projects with real challenges in mind, to conduct proof of concept under real-life conditions. The different phases had served to filter the most appropriate projects aligned with the programme objectives, to develop and validate a Business Model Canvas. This programme raised a lot of interest among the creative ecosystem. In a nutshell, 65 ventures applied to the Startup Lab, 23 participated the first phase of the Bootcamp in Vienna, 10 evolved during the acceleration programme and 5 reached the final pilot and roll out phase.

A dedicated webpage (<https://vienna.impacthub.net/program/hireach/>) was built and customized content was prepared for startups through an *ad hoc* mentoring programme, set up in order to nurture young entrepreneurs and empower them with the necessary skills to tackle the complex underlying problems of transport poverty. Indeed, the novelty of an acceleration programme on the specific topic of transport poverty has led the steering team to offer content and information on various topics, ranging from insights about inclusive mobility and recommendations on how to create inclusive mobility solutions, to guidance on how to create a user-centric solution, to hands-on sessions on how to develop socially inclusive business models, learning how to better balance social needs with the ambition to create a product-market fit and generate profit.

The Startup Lab offered incentives for the participation of companies at early maturation stage (seed or even pre-seed), providing some funding, mentoring, networking and matching each team with real-world hosts, an activity that set the scene for the development of solutions to concrete problems and ultimately help guaranteeing transferability and upscaling for other replicable contexts.

Gathering a total of 30 prospective hosts, the success of the open call for pilot hosts helped the project to widen the geographical scope beyond the boundaries of the HiReach targeted study regions, clearly showing that transport poverty is, on the one side, a fairly complex problem, for which a growing number of stakeholders are becoming aware of. But also, on the other side, that there are new ideas and solutions much beyond business-as-usual, that might be particularly effective to alleviate accessibility problems.

The planning of the programme has been affected by the outbreak of the Covid19 pandemic, which has challenged the organisers and the teams to react quickly and adapt their business models and technological concepts to the new circumstances. Plans were rapidly revisited under the light of the “new-normal” and concrete immediate impacts can be identified. Indeed, HiReach has brought early responses to Covid19, helping to nudge the cluster of startups to improve preparedness against serious infectious disease pandemics which tend to affect vulnerable groups particularly severely.

Equally important, within a short timeframe, a group of entrepreneurs with scarce knowledge on the transport poverty field has been capable of developing new features, like algorithms for matching demand and supply and integrating special requests in their respective transport platforms. They have also built inclusive transport services from scratch and were capable of making proof of concept with vulnerable groups, even under several constraints such as the ones resulting from social distancing needs. All in all, the startups earned their merit to be regarded as the beating heart of HiReach and one of the fundamental legacies of the project that will maintain its spirit much beyond the project lifetime.

# 1 Introduction

## 1.1 Purpose and scope

HiReach is a three-year EU-funded Horizon 2020 project that aims at eliminating transport poverty by generating new mobility solutions that reach low accessibility social groups and areas.

This deliverable **D4.3 “Report on HiReach Startup Lab and testing activities”** was elaborated under the scope of **WP4 (Development of mobility solutions)** of HiReach, and intends to offer a summary of the HiReach Startup Lab activities and presentation of the outputs and achievements of the selected innovative solutions. The aim of the vertical set of activities comprehended in WP4 is to explore viable business models for small scale, modular and easily replicable mobility services that can be provided at affordable prices and/or with minimum subsidies. This Work Package is set to be devoted, in short, to the development of mobility solutions that can make an impact on the project's ambitious objectives of tackling or alleviating transport poverty among vulnerable groups.

By the time this deliverable is submitted, the acceleration programme is still running. Hence, the present Deliverable not only focuses on the testing activities of the five startups that are still evolving, but offer a much wider comprehensive overview of the full acceleration programme, based on the constant reports produced by the HiReach Steering Team and the professional accelerator hired to backup and steer the overall acceleration programme.

**The HiReach Startup Lab acceleration programme is one of the founding pillars of this H2020 project** and definitely can be regarded as one heritage for the scientific and technological future of Europe, together with the HiReach book publication<sup>1</sup> that condenses the main components of the research phase and provides theoretical guidance to the startups work. The acceleration programme was designed to be a catalyst of innovation and as such it is deeply rooted in previous experiences investigated in earlier stages of the HiReach project.

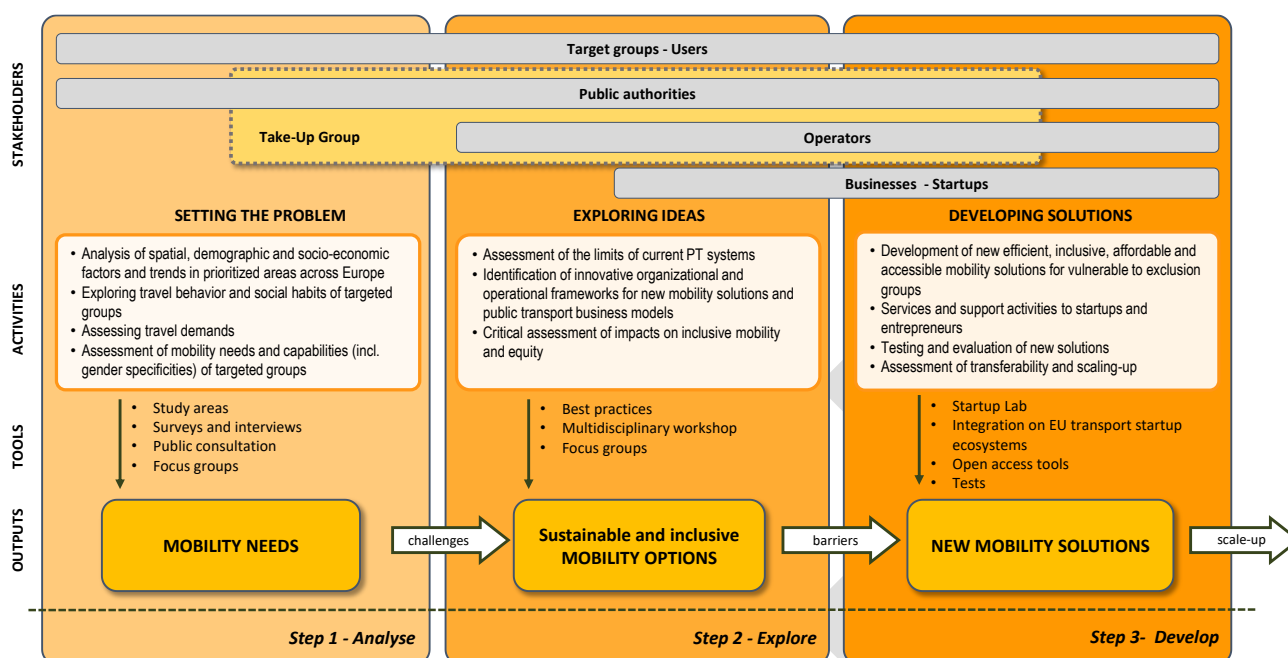
## 1.2 Linkages with other project Work Packages

As mentioned above, this deliverable is part of Work Package 4 (WP4) that aims at the development of new more inclusive mobility solutions. This work package has a fundamental exploitation role in the HiReach workflow, as it embeds the activities of both the first and second step of the project (“Analyse” and “Explore”, respectively) in the development of new concrete solutions to a wide range of stakeholders dealing with transport poverty issues.

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<sup>1</sup> The to-be-published book is called “Re-thinking Mobility Poverty Understanding User’s Geographies, Backgrounds and Aptitudes” and can be seen in this link: <https://www.routledge.com/Re-thinking-Mobility-Poverty-Understanding-Users-Geographies-Backgrounds/Kuttler-Moraglio/p/book/9780367333300>

Figure 1: HiReach workflow



Source: Own elaboration

Indeed, whilst the first step, materialized in WP2, has allowed HiReach to grasp and advance on the knowledge about transport poverty, the second step, materialised in WP3, has explored existing mobility solutions in the large EU transport ecosystem. This effort has allowed to have a good understanding of the users, on the one side, and of the market on the other side, but also enabled HiReach to critically identify major operational and organisational frameworks for the provision of transport schemes.

In this third and last step of the project, a specific **acceleration for ideas and Minimum Viable Products (MVPs)**, involving startups looking for product-market fit on new transportation possibilities for under-served urban and rural areas, with new business models and technological concepts, was implemented.

The **Startup Lab** was developed on the building blocks of the multidisciplinary workshop held in Brussels in March 2019, which involved several European startups that were selected upon an open call.

This bulk of information collected in previous phases of the project is well condensed and digested in several public deliverables, namely:

**Deliverable 3.2 - Innovative mobility solutions: case study description and analysis** (Van Egmond P., Wirtz J., Chiffi C., Bosetti S., Borgato S., Freitas A., Reis V., Moraglio M., Kuttler T., Döge N., Grandsart D. 2019) researched a series of frameworks and mobility solutions from different geographical areas and countries, in order to identify case studies and best practices. This has helped to determine which aspects of these solutions indeed lead to improved accessibility, better mobility and more equity in prioritised areas. 20 case studies of innovative transport solutions have been considered to understand their advantages and limitations.

**Deliverable 3.3 - Mobility solutions and estimation of their potential impacts on inclusive mobility and equity** (Van Egmond P., Wirtz J. 2019) assesses the acceptance of innovative solutions by a variety of vulnerable social groups, including the potential change in travel behaviour and the expected impacts in terms of inclusive mobility and equity. This has been achieved through the engagement of vulnerable users in focus groups in all six HiReach study regions.

**Deliverable 3.4 - Drivers and barriers of organizational frameworks aimed at delivering innovative mobility options** (Chiffi 2019) reports on the drivers and barriers of organisational frameworks aimed at delivering innovative mobility options. This document includes recommendations on how to implement mobility solutions to cope with transport poverty, tailored to different stakeholders, including public authorities, operators/new enterprises, and users, in the form of guidelines and recommendations.

WP4 has also produced two preliminary deliverables so far:

**Deliverable 4.1 - Open source tools for transport poverty solutions** (Gheorghiu and Iordache 2020) documents the research towards the identification of open software tools for solutions to transport poverty, relevant for new startups in the field of transport poverty. It offers a comprehensive analysis of existing software packages that can suffice transport poverty issues.

**Deliverable 4.2 - Solutions to transport poverty for start-ups** (Reis and Freitas 2019), is a guide corresponding to a specific booklet, which resumes and adapts the information contained in previous phases of the project into a publishable format, adapted to an audience with scarce knowledge of the transport and transport poverty fields.

## 1.3 Structure of the document

This deliverable is organised in 6 chapters.

The present section, **Chapter 1**, introduces the content of the document, its scope within the HiReach project and its connection to the other project deliverables and to WP4 as a whole.

**Chapter 2** presents a brief overview of the role of startups in the transport sector and also presents the state of play of entrepreneurship in H2020 projects. It describes how startups are increasingly called to fulfil relevant gaps in the transport sector, making use of the inherent creativity and value proposition they bring to the market and the industry at large.

**Chapter 3** presents all the features and specificities of the acceleration programme, describing the relevant phases required to set up a suitable framework to support startups work. It also introduces all the **processes** required to select both the accelerator that operationalised the programme, and hand-picked startups that joined the programme.

**Chapter 4** provides a glance over the 10 startups that have participated in the acceleration programme (second stage) and their mobility-related solutions, including **preliminary achievements**. It also unfolds details about the last stage of the Startup Lab, where ventures are invited to work in a real-life environment to tackle transport poverty problems.

**Chapter 5** presents a synthetic reflection about the post-acceleration period and the opportunities for the selected startups to continue being supported by EU funding schemes and actively contributing to the European Research Area (REA).

Finally, **Chapter 6** presents a series of reflections about the Startup Lab approach and methodology, including the main takeaways that will constitute the heritage of the programme after the project lifetime. It also entails some overarching remarks and suggests the next steps.

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## 2 Entrepreneurship in H2020 projects

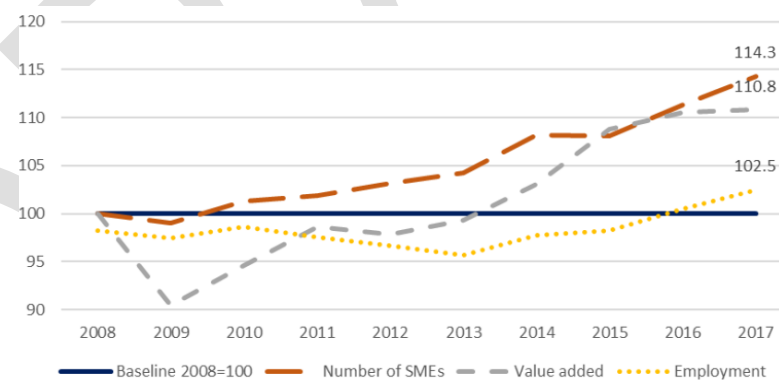
### 2.1 Particular features of R&D in SMEs and startups

The EU policy is clear in recognising small and medium-sized enterprises (SMEs) as a backbone of Europe's economy (COSME 2015). Europe's 25 million small and medium enterprises represent 99% of all businesses in the EU and provided around 85% of all new jobs, as well as two-thirds of the total private sector employment in the EU. The European Commission considers SMEs and entrepreneurship as key to ensuring economic growth, innovation, job creation, and social integration in the EU.

As the backbone of the EU economy, “they are therefore **central to the EU’s twin transitions to a sustainable and digital economy**. Yet, SMEs in Europe face big obstacles to growth and development, barriers to enter new markets, access to finance, low R&D&I intensity, lack of skills and administrative burdens” (Commission 2020a). Common identified obstacles to innovation spurring from SMEs can be grouped along the following main issues:

- Competitiveness and internationalisation: the small size of SMEs, with a consequent lack of financial and human resources is a strong barrier to entering new markets;
- Research and development capabilities: limited innovation in many enterprises make SME products less competitive in external markets;
- Company performance: in comparison to large enterprises, SMEs perform worse in terms of turnover and value added.

**Figure 2: Evolution of SME value added, employment and number of SME's in the EU non-financial business sector**



Source: (Vanrie and Chisnall 2020, 6)

SMEs and startups are, by definition, organisations with limited human and financial resources. Startups, in particular, do not have financial reserves to overcome delays in funding. This is problematic in EU R&D policy, as EU programmes generally operate on relatively long timescales.

There is an extensive literature (Köhler and Frencia 2011) that shows that, while the overall level of resources in SMEs may be a small proportion of the total in an industry, they are particularly effective at bringing forward new ideas and technologies. However, if research and development activities are not translated into innovation, i.e. value creation from



novelty, the added value and profit for SMEs is minimised. Addressing the so-called Valley of Death has been, and still remains, a big challenge for the EU competitiveness.

## 2.2 Main funding instruments for SMEs and startups under H2020

While the participation and engagement of SMEs in transport R&I has been promoted since the initial R&I programs, over the last years, the Commission has taken further this objective and put together a considerable number of initiatives for facilitating their involvement. The Small Business Act (Commission 2008) can be seen as an overarching framework for the EU policy on small and medium-sized enterprises (SMEs) aiming to improve the approach to entrepreneurship, simplify the regulatory and policy environment for SMEs, and remove the remaining barriers to their development. The various instruments under H2020, together with the measures taken under the Single Market Strategy, gave a boost in this direction. Moreover, and within the Juncker package, also ESIF and EFSI funding schemes look to facilitate and promote SMEs and startups participation.

**Startups can be regarded as very early stage SME's.** They too play a critical role in the innovation system, introducing advances in products, methods and processes by making breakthrough innovations themselves or by adopting incremental innovation generated by larger companies. Nevertheless, "the share of SMEs present in industries with high or very high R&I intensity at EU-28 level is only 27.3%" (Commission 2020a).

The contribution of Horizon 2020 for this result is evident. The programme has been playing a strong role as a policy instrument to turn Europe the most open research and innovation area in the world. Horizon 2020, the EU Framework Programme for Research and Innovation (2014-2020), is unique to this respect. Nonetheless, according to the Interim Evaluation of Horizon 2020, bottlenecks still exist, creating an innovation deficit: "Although Horizon 2020 is attracting the best universities, research organisations, researchers and many of the top 'established' innovative companies, it has not been able to reach out to young and fast growing innovative companies worldwide" (Innovation 2017, 236).

Amongst other various instruments and networks designed to facilitate and enhance SMEs and startups, one can refer to the **Eurostars program** under the Eureka umbrella, to the establishment of the **Risk Sharing Finance Facility instrument**, but also to the **SME Instrument** (H2020), addressed to innovative SMEs demonstrating a high level of technology readiness and at the final phase of innovation activities or even the Fast Track to Innovation (FTI) program, both managed by the EASME agency.

As of October 2017, the SME Instrument has become a part of the European Innovation Council together with three other innovation funding instruments i.e. the FTI, Future and Emerging Technologies (FET) and Horizon Prizes.

The SME Instrument programme has raised tremendous interest among innovative small and medium sized enterprises across Europe and beyond. Indeed, "the SME Instrument has been one of the most effective mechanisms to support SMEs growth: there are clear indications that SME Instrument beneficiaries achieve faster growth paths than in control groups and the scale-up of their activities is more likely and/or more significant" (Innovation 2017, 156). Aligned with the SME Strategy for a sustainable and digital Europe, the **Startup Europe** is an initiative of the European Commission launched in 2020 for strengthening networking opportunities for deep tech scaleups. It is supported by policy actions such as the EU Startup

Nation Standard, the Innovation Radar and the Digital Innovation and Scale-up Initiative (DISC).

Another relevant instrument for newcomers under the portfolio of Horizon 2020 is the Fast Track to Innovation (FTI)<sup>2</sup>, which “was implemented as a full-scale pilot in 2015 and 2016. It addresses industry-driven consortia seeking fast market uptake of new solutions. Its funding enables SMEs and startups to test, demonstrate and validate innovations that can be co-developed by all sorts of actors with complementary backgrounds, knowledge and skills, with the aim of (re)shaping value chains and making them more fit for business. The main objectives of this bottom-up innovation support programme that promotes close-to-the-market innovation activities consist of:

- reducing time from idea to market,
- stimulating the participation of first-time applicants to EU research and innovation funding, and
- increasing private sector investment in research and innovation.

This program may assist partners to co-create and test breakthrough products, services or business processes that have the potential to revolutionise existing or create entirely new markets, under the umbrella of the Enhanced European Innovation Council (EIC) pilot.

The expected needs from the startups vary extensively, but mainly relates to access to new markets and the competitive position of partners internationally. As already stated in project Deliverable D3.4, “from a dynamic competition perspective, a higher number of market actors would have a variety increasing effect, raising the number of competing solutions and improving the chance of an innovative solution being selected (...) startups can disrupt the transportation sector, by bringing onto the market new transport schemes, business models or practices that make use of recent technological advances and develop tailored software solutions” (Chiffi 2019, 41).

Indeed, the transferability and upscaling ambition of the startups is severely limited by the available funding schemes. As acknowledged in the Draft proposal for a European Partnership under Horizon Europe European Partnership on Innovative SMEs, “for a long time, SME support programmes have been core components of regional and national R&I policies and of support through the European Structural and Investment Funds. However, their inherently national focus often limits their impact (...). There is a need for public support programmes to align with the ambitions of businesses, particularly as companies see access to national and international markets as one of the biggest barriers to scaling up their business” (Vanrie and Chisnall 2020).

## 2.3 Startups' contribution in the transport sector

As seen above, **startups in general face considerable challenges in attracting sufficient funding**. Those projects are generally too risky for private investment. “The EU is involved in several initiatives to fill this funding gap, including the Capital Market Union, the European

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<sup>2</sup> <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/fast-track-innovation-pilot>

Investment Fund, and the European Innovation Council. Those responses are important and useful, but they generally seem insufficient for three reasons" (Bikard 2019, 15). First, the current amount of funding is still too low considering innovators' needs, and in light of what is available in other countries and continents such as the US or in some parts of Asia. Second, other bottlenecks exist beyond funding—such as the availability of expertise and the lack of a general infrastructure to accompany would-be entrepreneurs. Third, European initiatives are fragmented, and the lack of integration complicates cross-border collaborations.

This risk of falling into the so-called Valley of Death is considerably higher when it comes to the **specific niche of transport poverty**, dealing very often with covering areas where existing public transport services are not offered on a regular basis and are not profitable. This research issue has led the HiReach team to question the extent to which deprived and rural areas are a field of interest for startups and entrepreneurs (Chiffi 2019), to complement the work carried out locally and foster partnerships that allow the establishment of flexible services, aimed to increase regional accessibility and based on minimum subsidies (normally under the framework of public service obligations – PSO).

This question has led the project to investigate good practises of successful startups, that have actively contributed to the transport sector. An outline of the particular assets they bring to tackle complex transport poverty issues is most notably documented in HiReach Deliverable D3.2. Two concrete examples of startups that have flourished in this particular market niche were **Shotl** (<https://shotl.com/>), a Spanish company that worked with in low-density areas within the region of Catalonia, developing a mobility platform that matches multiple passengers headed in the same direction with a moving vehicle, and **GoOV** (<https://www.go-ov.nl/>), a Dutch company that successfully developed an app that supports independent travel with public transport in the Netherlands.

A particular feature of transport is that it consists of interrelated, but separate subsystems: physical infrastructure, operations and system control and vehicles. While components of this industry are dominated by large companies (like vehicle manufacturing or heavy public transport operation), startups can fill-in technological gaps or develop new services relying on novel business models or technologies. Startups are agile and comprehend a lean structure. This is a reason found in the previous Deliverable D3.4 for encouraging the involvement of startups in deprived territories, where the public transport operations are financially risky and often not profitable or cost-covering. Therefore, and theoretically, they have the capacity to offer value for very little unitary costs, unlike other traditional players and transport operators, who provide services under a business as usual basis.

In addition to the above, another not negligible contribution that startups tend to bring to the market is their user-centric approach. This characteristic drives them to respond better to user needs, producing unique products of high value proposition, rather than focusing on traditional business requirements

Taking into consideration desk research on TRIMIS, the Transport Research and Innovation Monitoring and Information System, the level of openness and risk-taking of HiReach is unparalleled in other transport related projects, especially among those who are more largely dedicated to the topic of transport poverty. Current HiReach "sister" projects, such as the H2020 Inclusion project, the EP funded SMARTA project or even the Interreg Mamba, explore solutions to increase accessibility, each in a context specific catchment area: metropolitan regions in the case of Inclusion; European-wide rural areas in the case of

SMARTA; and rural areas in the northern region of Europe and Baltic sea, in the case of Mamba.

All in all, unlike the former projects, HiReach engages young entrepreneurs and startups to try new products and business models. Indeed, **HiReach allocates roughly one third of the project timeframe to the development, validation and evaluation of new transport solutions**, through a series of open calls for proposals that will be further explained in the coming sections. It is also unusual that Research and Innovation projects, such as this one, dedicate this level of attention to the exploitation of new solutions, an area which is traditionally taken forward by projects falling in IAs or in fast-track for innovation.

DRAFT

## 3 The HiReach Startup Lab

### 3.1 Rationale

**The HiReach Startup Lab is an acceleration programme, aiming to support early-stage startups through funding, mentoring and bridging them with potential customers or partners.**

It is a vertical accelerator, focusing on solutions for transport poverty, that can improve mobility in urban, peripheral, rural, remote and deprived areas, while addressing the needs of potentially vulnerable groups such as children and youngsters, elderly, women, people with reduced mobility, migrants and ethnic minorities, as well as people with low income and unemployed.

Following an international open tender, the programme management was assigned to a professional **Accelerator company**, Impact Hub Vienna GmbH (IHV). Together with IHV, the **HiReach Startup Lab Steering Committee**<sup>3</sup> were capable of leveraging new projects lead by early stage ventures eager to operationalise their ideas and solutions for deprived regions and to tackle accessibility problems felt by vulnerable groups of people.

The programme is attractive to startups partly because it takes no-equity, with all expenses being covered awarding merit. As a consequence, involved startups claimed that one of the main motivations for participating in the HiReach Startup Lab was the financial incentives attached. The startups were compensated for moving forward through the different phases of the acceleration programme.

During the Startup Lab, the ventures received mentoring from the accelerator company and HiReach partners alike, and a fast track to the mobility industry, having the chance to receive counselling, to meet with investors and to develop the proof of concept under real-life conditions.

This acceleration programme entailed a multiple phase approach, intended to develop projects with real challenges in mind. The different phases served to filter the most appropriate projects aligned with the programme objectives. Stepwise, the programme comprised:

- a one-week bootcamp,
- a 3-month acceleration phase,
- a pilot phase, on which startups were called to work with “real-industry” partners.

The different steps of the programme are presented below:

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<sup>3</sup> The HiReach Startup Lab Steering Committee include TRT (project coordinator), TIS (WP4 leader) and PRO (Task 4.4 – HiReach Startup Lab – leader).

**Figure 3: Timeline of the Startup Lab Programme**


Source: Own elaboration

## 3.2 Setting up the programme

To make the development and testing of new solutions within the helm of the Startup Lab, the HiReach team has set several supportive elements to help startups grow and prepare their mobility solutions to tackle transport poverty problems. A dedicated webpage was built and published online (<https://vienna.impacthub.net/program/hireach/>) and customized content was prepared for startups to **allow them to navigate around the specific topic of transport poverty and to receive knowledge, networking and support on more conventional business-related areas.**

For the specific purpose of the HiReach research, the objective of the programme was to develop and validate a **Business Model Canvas (BMC)** per startup. The BMC is a standardized template that forms a visual chart with elements describing all key service or product's value proposition elements, such as infrastructure, customers, and finances, that strategically assists the management of new or existing business models. The **Technology Readiness Level (TRL)**<sup>4</sup> of startups products or services should be minimum of 2 at the end of phase 2 and minimum of 5 at the end of phase 3.

Five fundamental actors were activated for the particular purpose of supporting the work of the startups: a hosting partner, an accelerator, a business coach, a transport expert coach and a technological team to back up the envisaged IT developments. The first two correspond to organisational layers of the programme whilst the later three are more clearly dedicated to troubleshooting and day-to-day assistance to the startups.

<sup>4</sup> Consistently with the EU Horizon 2020 definitions, TRL level 2 stands for “technology concept formulated”, whereas TRL level 5 represent “technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)”.



A brief presentation of each of these five pillars is presented below:

- **Hosting partner**

The hosting partner is represented by the institution who directly or indirectly deals with a transport poverty problem, as theorized in project D2.1 (Kuttler et al. 2018), and that seeks innovative approaches, offering startups adequate patronage and leverage to that particular end. It is a guarantee of success of the Startup Lab, as it allows to validate the viability and relevancy of the business models to be developed. The hosting partner is further described in section 3.3.

- **Accelerator**

The HiReach Startup Lab is operationalised by Impact Hub Vienna GmbH, who plays the role of Accelerator, and that steers the programme. Its main responsibilities are to scout and select startups for the acceleration programme, to be the main contact point for the startups and to organise the acceleration programme, including several touch points (physical or remote) with the startups to keep track of progress. The accelerator is further described in section 3.4.

- **Business coach**

The business coach is a specialized **mentor** appointed by either the Accelerator or by the HiReach Steering Committee. The mentor provides perspective on the direction that the startup works may take, and inputs and advice on how that particular idea can be converted into a business. Additionally, it prepares the startup for the phase-out of the programme, when no subsidies are given. The business coach is further described in section 3.7.

- **Transport expert coach**

The transport expert coach was typically a HiReach representative, with a two-fold role, acting simultaneously as transport consultant and as liaison between the project and the startup. In this role, they guarantee alignment of the focus of the startups with the project scope, a smooth communication flow between hosts and startups, and lastly offered feedback on the various array of reports that the startups had to deliver. The transport coach is further described in section 3.7.

- **Technological backup team**

The HiReach partner UPB had a fundamental supportive role during the programme. As experts in open-source tools with inclusive features – hence relevant in the transport poverty field – they were in a privileged position to advise startups. Also, they acted as IT helpdesk and developed open-source API's customized to the startups needs. The technological backup team is further described in section 3.7.

### 3.3 Open call for pilot hosts

As mentioned before, the Startup Lab programme proposes a multiple phase approach with different components of Acceleration and Incubation, where it is intended to develop projects with **real challenges in mind**, while the several phases serve to filter the startups according to their potential and alignment with the programme's objectives.



It was therefore of utmost importance to scout suitable institutions to welcome the startup teams. This work, which was entailed in Task 4.5 (Testing of solutions) of the HiReach project, was anticipated several months from the foreseen May 2020 and has started much earlier in September 2019. The objective was clear, to **set the ground for the startups to work on and to prevent that early stage startups don't have a fairly chance to participate and bring their innovative ideas into the spotlight** (otherwise, entrepreneurs at early-stage with no commercial agreements previously signed, would not be able to access and progress with a real pilot assignment to work with).

The HiReach project already counted on 10 **Take-up Group (TuG) members**, which have shown potential interest in replicating the new tool and business models developed within the project since the proposal phase. Arguably, this group was the first one to be consulted and **challenged to propose a concrete problem**, as TuG members were representative of regions with vulnerable groups that feature mobility-related problems (or representative of organizations that have dealt with these issues). Moreover, they had a good knowledge of the field, especially thanks to the work carried out during the fieldwork activities of HiReach. An important milestone for the project team was however to allow each startup team to choose a different pilot host, well beyond the limited number of TuG members which was far more reduced than the number of startups invited to join the acceleration programme. Hence, it was necessary to open up the range and find other suitable candidates.

**Matching startups and pilot hosts is a steppingstone in the project** as it sets the scene for the development of solutions to concrete problems and ultimately help guaranteeing transferability and upscaling for other replicable contexts. As it is often recognised, a successful acceleration programme is not dependent only on highly talented entrepreneurs. It happens very often that products are developed with no end-user in mind. This risk is particularly high in projects, such as HiReach, which incentivise the participation of companies at early maturation stage (seed or even pre-seed), in order to give them a chance to bring breakthrough ideas off the ground. In real market conditions, such companies might never have the chance to establish commercial relationships with clients nor have a good understanding of the market where they are going to compete. Additionally, the presence of hosts is seen by startups as an added value of the programme, because it allows them to connect and work together with a potential customer and investor.

Hence, to guarantee the proof-of-concept of the solutions, increase the market value of the mobility solutions and minimize the risks involved of no utility of the solutions developed, the HiReach team launched a call for pilot hosts and scouted **over 50 suitable pilot hosting candidates throughout Europe**, thanks to the network of its members, and shortlisted 30 that were particularly relevant, including partners from the TuG members list and other new interested stakeholders that were willing to embrace innovation and solve problems that affect people with whom they work with or for.

These entities drafted a pilot case which the entrepreneurs have been challenged to work on during the Bootcamp, highlighting several accessibility problems for which they didn't had the chance nor the capacity to solve and that could be dealt in the context of an acceleration programme. They have done so by filling in a dedicated online form, describing the main mobility problems in their area of influence, the reasons why they were still untapped, and a vivid identification of the vulnerable groups affected by those challenges. To select the most appropriate test beds that were presented to the startups,

an initial selection of pilot hosts (leading to the shortlisted 30) was abided to the following criteria items:

- **Relevance** criterium

*The mobility-related problem presented by the prospective host is well focused and addresses the needs of vulnerable groups.*

- **Effectiveness** criterium

*The mobility-related problem entails an underlying business-proposition.*

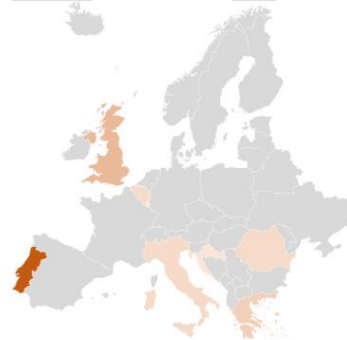
- **Feasibility** criterium

*The problem is feasible to be overcome (or partially solved) within an acceleration programme, which has time and budget limitations and the case study has a strong technological orientation (likeability to solve the problem is high).*

The scope of the entities represents a good mix of countries and type of entities (e.g. 1 private and 1 public PT operator). Moreover, the research team has achieved a relevant output, materialised in the fact that this action has allowed to attract relevant institutions to the HiReach project, helped outreaching the project, and realizing that stakeholders are becoming much more aware of the transport poverty problems affecting their regions and vulnerable groups.

**Figure 4: Profile of prospective pilot hosts**

Country	Pilots
Consultancy company	1
EU advocacy Platform	1
IT company	1
Local authority	24
PT Operator	2
University	1



The success of the open call for pilot hosts helped the project to widen the scope of the project beyond the boundaries of the countries where the project partners come from, clearly showing that transport poverty is gaining momentum and is not a phenomenon that affects only member states from one particular region.

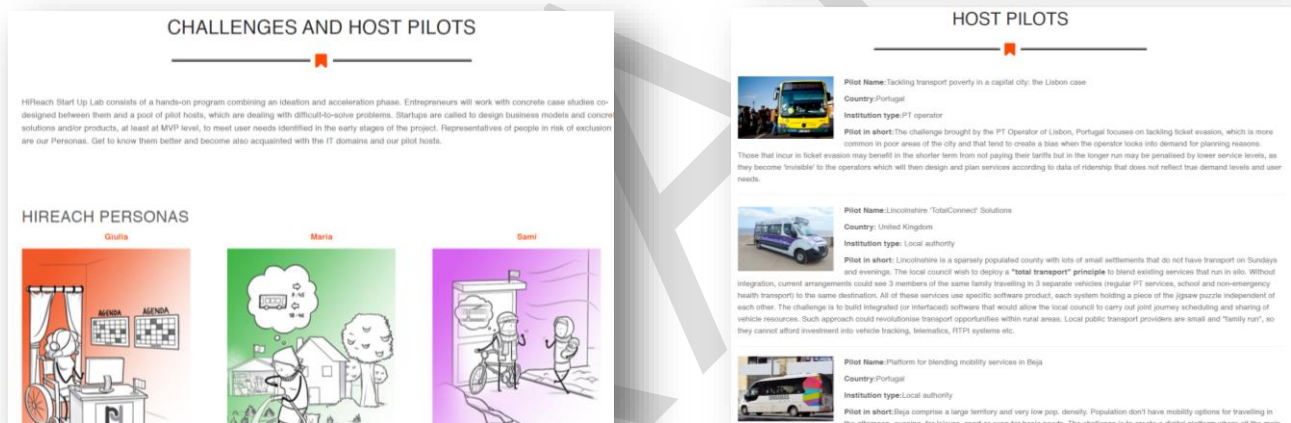
It became particularly evident that the HiReach project **outreach activities** have attracted the commitment of several motivated entities throughout Europe, spanning from local transport authorities to IT companies and from both the public and private sectors. However, it is also evident that the hosting entities comprehended specially public authorities, which is partly a result of the type of relationships of the HiReach network, and partly a result of the nature of the problems encompassing the topic of transport poverty, where the role and interest of public authorities tends to be critical for making new solutions viable.

The **match between startups and pilot hosts** has essentially followed a bottom-up procedure, as startups were requested to choose a pilot host with which they would like to work with (based on the website description<sup>5</sup>, see following figure).

Selected hosts committed themselves to welcome teams of startups in their premises, to give them access to data and to supervise all the work they carry out, attending regular phone calls with the accelerator and the HiReach team. In section 3.8, one can find the identification of the host partners assigned to each startup, as well as an overall description of the pilot scope.

To raise trust between the teams and the hosting company, the HiReach Steering Committee has prepared a **partnership agreement** to join together the expectations and duties of all parties. This document was signed by the pilot hosts, the entrepreneurs and HiReach representatives and was the basis for the **development plan**. In particular, it laid down the objectives that the startup sought during the acceleration phase and the concrete outputs that are due to be delivered to the Pilot Host at the end of the programme.

**Figure 5: Snapshots of the host pilot webpages published in the HiReach website**



Looking back to this activity with a critical view, one can understand that the importance and the impact of scouting suitable pilot hosts was undoubtful, particularly among the startups which were less mature and with no real commercial agreements established prior to the acceleration programme. Indeed, 13 out of 23 startups that attended the Bootcamp have chosen a pilot from this specific pool of hosts. And out of the 10 that moved to the next phase of the programme, 4 (CityMaaS, Mobito, Nemi and Tandem) have worked with suggested pilot hosts. This can be seen as a distinctive element of the HiReach Startup Lab and one of the ingredients for success of this kind of business acceleration programmes.

<sup>5</sup> <https://hireach-project.eu/content/challenges-and-host-pilots>

Given the critical role of, in particular, public authorities, in making transport poverty solutions viable, the matching process approach seems suited to build innovation in this field. For future applications featuring hosting partners, some lessons and points for consideration can be identified below:

- **Commitment of hosts** - given the uncertainty of the process, a reasonable level of commitment to the acceleration programme's process is required from hosts, as well as flexibility and power to engage in the innovation process in question, where a dialogue with startup(s) is established and may lead to different solutions than the ones initially foreseen.
- **Flexible and iterative matching process** - even if there is an initial match between startup and a host, only the process of dialogue dictates if the match is indeed effective. Therefore, the matching process could be divided into iterations, where a startup may be matched to several hosts initially, allowing for a more informed filtering of common ground. This step could yield a significant advantage, putting the participants in close contact with various alternatives for future cooperation.
- **Level of maturity of the startups** - the management of expectations between hosts and startups is easier if the startup cohort is relatively uniform in terms of the state of development of the solutions. This would allow hosts to be aware if they are engaged in the whole open innovation process from idea to Minimum Viable Product (discovery phase), or if they have directly the opportunity to test different already consolidated solutions. For more diverse cohorts, such as the one entailed in the HiReach Startup Lab, this management of expectation becomes more demanding.
- **Scale of the programme** - the transport poverty topic encompasses multiple target groups and use cases. Therefore, it is required that there is a sufficient number of startup and host cases in order to have a reasonable likeliness of appropriate matches. A European level acceleration programme like HiReach, featuring multiple potential hosts, allowed to reach such a minimal viable scale - initial matches could be found for every participating startup. To reach such scale, the participation of multiple partners or umbrella organizations (with a high capability to reach hosts with different needs) is necessary. A European dimension is critical for increasing the chances for innovation.

### 3.4 Open call for the accelerator

The Startup Lab steering team has launched an international open call to select one accelerator to help organising a well-structured **acceleration programme**. In order to ensure a large visibility of this call for tenders and to target the right experts within a short timeframe, HiReach has taken forward a European awareness raising campaign where several leading accelerators have been contacted. The Startup Lab brochure<sup>6</sup>, a direct output of D.4.2 referred to above, was one fundamental communication supportive tool during this scouting phase. It offered a comprehensive outlook of the programme and of

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<sup>6</sup> [http://hireach-project.eu/sites/default/files/HIREACH\\_Brochure.pdf](http://hireach-project.eu/sites/default/files/HIREACH_Brochure.pdf)

the specificities that transport poverty entail and for which many players of the startup ecosystem were unaware.

In order to ensure wide visibility, all the tender specifications and documents were published on the project website. In addition, these were also published on relevant newsletters from partners, as it was the case of Productized (PRO), who made use of its European and local networks of business support.

More in details, in July 2019 HiReach launched a request for Expression of Interest, outlining the key principles of the acceleration programme. This market prospection initiative served to make a pre-qualification of accelerators suitable to be hired to manage the programme. A total of 117 accelerators were contacted throughout Europe, most of them with a background in managing social acceleration programmes with entrepreneurs from multiple countries.

Eleven accelerators have responded to the call for EoI and therefore, in September 2019, they directly received the request for proposals (RFP), a document outlining the tender requirements. All these 11 accelerators have then submitted a proposal, which were evaluated under three criteria, the most relevant of which was the technical proposal (accounting to 70% of the overall score), followed by expertise, CVs and references (25% of the overall score) and price (5% of the overall score).

This competitive tender was finally won by Impact Hub Vienna, who started cooperating with HiReach in October 2019.

## 3.5 Open call for startups

### 3.5.1 Startup prospection strategy

As soon as the accelerator was hired, the next immediate step consisted in outreaching and selecting talented startups throughout Europe, a task which required a number of activities.

This work was steered by IHV who set up an outreach strategy based on:

- 1) Top down communication
- 2) Bottom-up scouting

#### 1. Top down communication - centralised promotion

Impact Hub Vienna team was responsible for creating and implementing the communication plan for HiReach Startup Lab. The plan consisted of activities focussed on creating awareness about the call for applications and reaching as many potential applicants as possible through IHV channels. The communication plan included the following elements:

- **Multiplier partners:** A multiplier kit containing several materials were created, in order to support the promotion of the call. The toolkit was shared with all European Impact Hubs, multiplier partners and research companies. This effort included social media channels.



- **European network of 40 Impact Hubs:** In addition to promoting the application call on the Impact Hub Vienna channels, IHV has reached out to the other 40 European Impact Hubs branches and asked for further support in promoting the call within their own local communities, partners and ecosystems.
- **Landing page and lead capture:** The dedicated programme webpage for HiReach Startup Lab was hosted on the Impact Hub Vienna Programs page (<https://vienna.impacthub.net/>). The website includes an overview about the programme offer, main events, timeline and mentors. In addition, in order to keep track of all potential applicants, IHV has built a form, allowing everyone who showed interest in the programme to apply and to receive the programme information package with more details about the Startup Lab programme, the application link, as well as details about the upcoming info sessions hosted by the accelerator team. These contacts were relevant for sending communication reminders during the application process.
- **Hosting bi-monthly online info sessions:** During the selection phase IHV has organised online info sessions to provide information about the call 'in-person' to the potential applicants. This was also the opportunity to answer potential questions and to get to know a bit more about each other: for the acceleration team to understand better who are the potential applicants and fine-tune their outreach strategy, and for the startups to know more details about the acceleration programme. In total, IHV has hosted 3 info sessions throughout this prospection period, assembling a total of 44 different participants.

## 2. Bottom-up scouting

In addition to the outward communication strategy, IHV has also focused on active direct scouting using their own network of contacts. This direct scouting involved:

- **Research:** IHV has conducted research on all relevant startup channels for references to relevant transport and mobility projects and startups, such as accelerators, contests, transport and mobility platforms.
- **Referrals:** IHV has approached their own database of 500 programme alumni and entrepreneurial community of 600 members for direct referrals to entrepreneurs and ventures that they knew were working on transport and mobility solutions.
- **Scouting through European network of Impact Hubs:** IHV has collaborated with Impact Hubs in 5 of the 6 HiReach demonstration EU countries<sup>7</sup> as scouting partners to recruit startups that fit the criteria of the HiReach Startup Lab. The target for each of them was to generate a database of potential applicants and to invite them to the scheduled info sessions.

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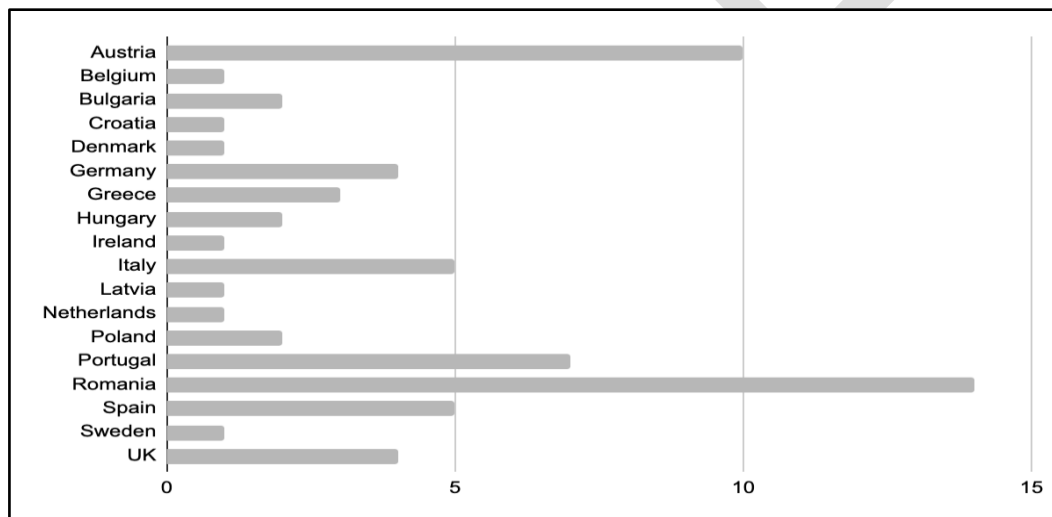
<sup>7</sup> Portugal via Impact Hub Lisbon; Italy via Impact Hub Network (Milan, Trento, Rome, Syracuse, Turin, Reggio Emilia, Florence, Bari); Romania via Impact Hub Bucharest; Germany via Impact Hub Network (Berlin, Munich, Dresden, Ruhr, Stuttgart); Greece via Impact Hub Athens; Luxembourg via the URBELAC Network and direct support from OekoBusiness Wien, direct partner of Impact Hub Vienna.

As can be seen in the figure below, particularly great results were recorded in Romania, where a total of 14 ventures applied to the HiReach programme. Reasons for this striking result can be found in the fact that the local online press coverage in the magazines targeting startups has given a lot of coverage to HiReach and that the local scouting coordinator (Impact Hub Bucharest) appeared to be very well embedded in the mobility local startup scene.

#### Startup scouting KPIs

- Number of lead list<sup>8</sup>: **433 ventures**
- Total projects on the application platform - **72 ventures**
- Total number of application submitted - **65 ventures**

**Figure 6: Number of startup applications per country**



### 3.5.2 Selection process

The initial screening to find the 25 most suitable candidates for the HiReach StartupLab, out of the 65 that applied, has included a thorough selection process.

<sup>8</sup> Startup representatives contacted during the scouting phase, most of which downloaded the IHV info package.



On a first stage, Impact Hub Vienna has made a first control check, shortlisting the number of applicants<sup>9</sup> from 65 to 50, filtering only those that have completed all the elements required for this application phase.

Indeed, there are multiple definitions of what a startup is. Hence, to be eligible for the HiReach programme, startups had to meet some criteria, following standards that are commonly accepted in the creative industry ecosystem. Therefore, in the context of the HiReach Startup Lab acceleration programme, a startup should meet all the following criteria:

- A group of people with at least 2 founders (team) or a company with at least 2 shareholders that is already incorporated, no more than 5 years old, and below 100,000€ yearly revenue in the last fiscal year;
- In bootstrap mode, or with pre-seed funding less than 250,000€, since incorporation date and until signing date;
- Willing to incorporate into a company, after the Bootcamp phase, to invoice further investment, namely for the proof of concept;
- The founding teams/ startups must be based in the European Union.

On a second stage, the HiReach Startup Lab Steering Committee, composed by TRT (project coordinator), PRO (responsible for the acceleration programme), TIS (WP4 leader), together with IHV (the accelerator company), evaluated the applications. The final selection was stepwise, according to the following rationale:

- The assessment of the 50 shortlisted applications was done using an evaluation grid designed by Hireach Steering Committee (see section 3.5.3);
- The jury members had 4 working days to review and assess the applications on an individual basis;
- The final review of the results was discussed together with all jury members in an online forum;
- At the end of the online evaluation meeting, the jury selected the top 25 startup choices and 8 startups for backup;
- The winners were contacted via email and informed about the decision and asked to confirm their participation by signing a contract with HiReach.
- The final list of startups invited to attend the Bootcamp in Vienna can be found in Table 1.

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<sup>9</sup> The application process was hosted on the Impact Hub Vienna Online Application Platform, which was customized in order to correspond to the HiReach branding and program details and information (timeline, program offer and application questions), while respecting the European GDPR regulation.

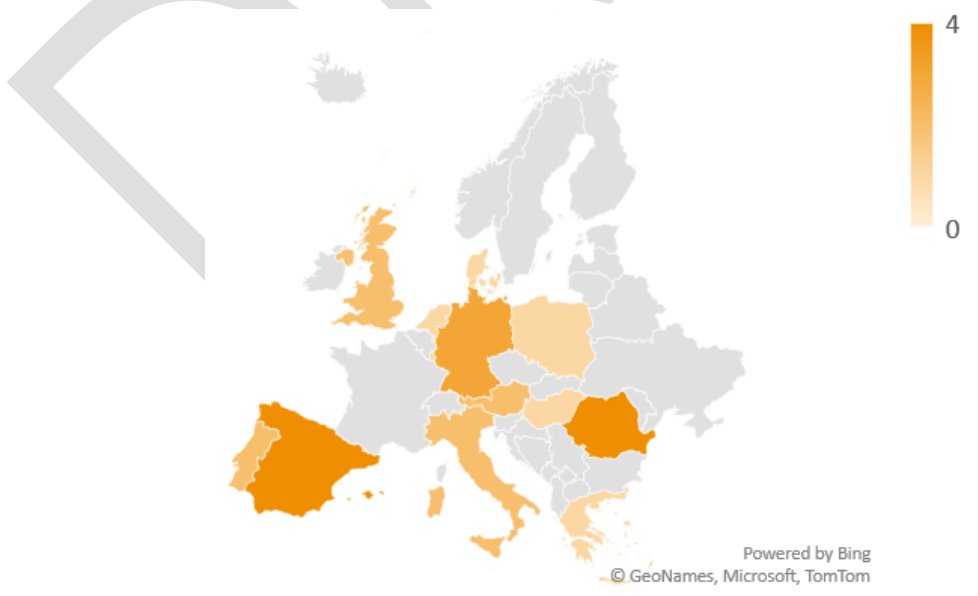
### 3.5.3 Assessment of candidates

For selecting the top 25 startups that were invited to take part in the Bootcamp, the HiReach SC applied the following criteria, evaluating each startup on a 1 to 5 scale in each specific evaluation domain:

- **HiReach fit (weight of 25% in overall score):** analysing HiReach alignment: new business model offering viable alternatives to groups facing transport poverty. And assessing the extent to which the HiReach acceleration programme has a significant difference on the startup development.
- **Value Proposition (weight of 25% in overall score):** quality of the problem analysis and evidence that the solution will solve their key pain points of the target group.
- **Market Potential (weight of 25% in overall score):** clear idea of target market and big enough market to be VC attractive (+1B€ size). Assessment also of the quality of the revenue model identified.
- **Impact Potential (weight of 15% in overall score):** the urgency and relevance of the problem and the quality/depth of the impact on the target group. Also the scalability of the solution and amount/quantity of people potentially impacted.
- **Team Dynamics (weight of 10% in overall score):** strength of the founding team (diverse skill set, knowledge of the target group) and (proven) capacity to turn the solution into a viable business.

The final selected startups that were invited to take place at the Bootcamp featured a very heterogenic profile, spanning 14 different countries. The typology of solutions comprehended car-pooling and shared services, data management systems, freight delivery, electric mobility, blind people digital assistants and small scale mini-bus fleet management systems.

Figure 7: Number of startup applications per country



**Table 1: Profile of startups selected for the Bootcamp**

#	TEAM	SHORT DESCRIPTION	COUNTRY
1	<b>Aperider</b>	Dockless bike sharing	RO
2	<b>B2RIDE</b>	Corporate carpooling	DE
3	<b>Childfy</b>	Community drivers for kids	ES
4	<b>Citymaas</b>	MaaS platform for reduced mobility persons	UK
5	<b>Dreamwaves</b>	Augmented reality for blind persons	AT
6	<b>Get2</b>	Connect audience of events (esp. disabled)	GR
7	<b>Hoop_carpool</b>	Flexible carpooling platform and community with shared values	ES
8	<b>Journify</b>	Intelligent Carpooling App for Daily Commuting	ES
9	<b>Kolbev</b>	Mobile on-demand EV charging station	PL
10	<b>Lamiloo</b>	Last mile delivery of pharmaceutical products	DE
11	<b>Lupo taxi</b>	Transport solution in poor/rural villages	HU
12	<b>Mobito</b>	Mobility data collector	BE
13	<b>Myecogiro</b>	Mobility app in low population areas	PT
14	<b>Nable solutions</b>	Assistant to improve disabled people accessibility	GR
15	<b>Nemi</b>	On-demand transport solution where PT lacks	ES
16	<b>Neobility</b>	Flexible ride sharing bus on demand	RO
17	<b>Netmobil*</b>	MaaS solutions for rural areas	NL
18	<b>Paltec</b>	GPS for blind persons	DK
19	<b>Pickup &amp; Ride</b>	App to facilitate kids pick up from school	PT
20	<b>Pinkcab*</b>	Women ride sharing platform	RO
21	<b>Tandem</b>	Local taxi becoming shared mini buses	UK
22	<b>Triply</b>	Help event's organizers to improve mobility during events	AT
23	<b>Uiq travel</b>	App for female solo travellers	RO
24	<b>Volvero</b>	Connect owners to share their cars	IT
25	<b>ZTT SRL</b>	Sharing services platform at local level	IT

\*) Two startups, in the end, were not able to join the Bootcamp, and therefore they were excluded from the acceleration programme

## 3.6 The Bootcamp phase

The Bootcamp (Vienna, 17 to 20 February 2020) corresponded to the official kick off for the acceleration programme. It entailed a full one-week intensive event, held in the premises of the accelerator company (IHV). The bootcamp was designed to empower the startups with grass root concepts in the area of transport poverty and business development, capable of further supporting them in developing their MPV and business prototype. Besides offering skills and knowledge, the bootcamp ultimately allowed the HiReach Steering

Committee to grasp a good knowledge of the capacities of the teams, seeing them evolving during the week and drafting a prototype of their MVP and business model canvas.

**Figure 8: Snapshots from the Bootcamp**



A synthesized resume of the main activities developed during this week can be found below:

- **Day 1** of the bootcamp included ice-breaking activities to build team spirit, allowing the teams to get to know each others. UPB presented Smart and open technological solutions for inclusive mobility, resulting from desk research conducted during the HiReach project.
- **Day 2** of the bootcamp featured a presentation from TIS about EU reference cases and recommendations for inclusive mobility solutions, as well as several coaching sessions that introduced the teams to the lean canvas methodology.
- **Day 3** allowed the team to create empathy maps through a Design Thinking hands-on process with a focus on the customer journey for their target groups and to develop ideation methodologies. It also conveyed a presentation from EPF about Designing user-centric passenger services and products.
- On **day 4**, participants learned how to pitch and to develop a business model canvas.
- The **5<sup>th</sup> and last day** of the event was devoted to the pitches (5 min pitch presentation & 5 min Q&A) and to the jury assessment. The pitch followed this slide deck:

- 1-Liner tweet
- Empathy towards the Persona(s) explaining the geographic (rural/ peri-urban/ urban) and social context.
- Identification of the transport poverty *problem*
- Identification of the transport poverty *solution*
- Evidence (data-backed) that the solution will work
- Market potential & how many people the solution will be able to help
- Pilot (Who is the host? What is the use-case? What are the hypotheses to validate with the pilot?)
- Team: the difference HiReach will make for the team

All in all, the first three days included several coaching sessions, where teams had the chance to interact with multiple coaches (both from HiReach members and IHV staff), with very different technical backgrounds.

At the end of the Bootcamp, participants were asked, in the format of open comments, to provide feedback about the main learnings they have extracted from the event. Some contributions can be seen below:

**"Benefited from all the advices and feedback received** from the programme coaches; it was a great opportunity to make business connections and connect with entrepreneurs working on a similar topic" (Childify)

"Access to mobility experts and generalist coaches; lean canvas further development; **opportunity to work with a host company to run and test solutions**" (CityMaas)

"Feedback received from mobility experts and coaches; **financial support** which allowed to participate in a one-week training which allowed the team to work and focus on their solution" (Nable)

"Help to better define the problem and solution space; got **valuable insights about inclusive mobility and transport services in remote areas**; it was a time to sit together with the team and think about the business model and customer experience, something which is hard to do while also running the daily operational tasks" (Neobility)

**"Connections to powerful European networks** of experts, innovators, and experts, including a peer network of other companies also interested in solving transportation poverty" (Tandem)

Complementary to the qualitative assessment of the bootcamp, the startups were called to score, on a 1 to 10 scale, the satisfaction level regarding the quality of the bootcamp and of the sessions hosted. The results of that questionnaire have shown that Hireach

bootcamp received an average score of 8,25, which is a very high score and perfectly comparable with other workshops and bootcamps that Impact Hub Vienna usually run on different subjects<sup>10</sup>. This result mirrors the fact that the HiReach bootcamp participants envisaged value in the programme delivered, most notably owing to the knowledge and insights received from coaches and experts in the field of mobility and transport poverty.

**Evaluation-wise**, the jury for this phase consisted of 1 representative from each member of the HiReach Startup Lab Steering Committee, and each of the jury members had 1 vote. The criteria applied for evaluating the startups was very similar to the one used for selecting the bootcamp teams, however with a small change in the weight on the criterium for HiReach Fit and Team dynamics. This time, in the selection process, the team parameter weighted 15% compared to 10% in the first evaluation wave, and Hireach Fit weighted 20% compared to 25%. The reason for this change was the fact that during the bootcamp the HiReach Startup Lab SC interacted and worked with the teams closely, and consequently had a better and informed opinion about their capabilities as entrepreneurs, as well as their working commitment.

**Table 2: Startups selected after the Bootcamp to access the acceleration phase**

#	TEAM	SHORT DESCRIPTION	COUNTRY
1	<b>B2RIDE</b>	Corporate carpooling	DE
2	<b>Childfy</b>	Community drivers for kids	ES
3	<b>Citymaas</b>	MaaS platform for reduced mobility persons	UK
4	<b>Dreamwaves</b>	Augmented reality for blind persons	AT
5	<b>Hoop_carpool</b>	Flexible carpooling platform and community with shared values	ES
6	<b>Lamiloo</b>	Last mile delivery of pharmaceutical products	DE
7	<b>Mobito</b>	Mobility data collector	BE
8	<b>Nemi</b>	On-demand transport solution where PT lacks	ES
9	<b>Neobility</b>	Flexible ride sharing bus on demand	RO
10	<b>Tandem</b>	Local taxi becoming shared mini buses	UK

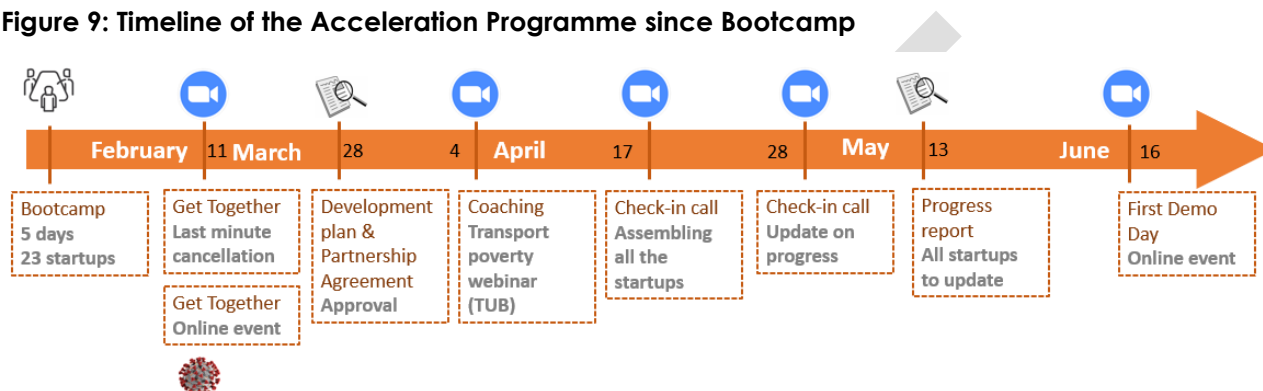
<sup>10</sup> The "Found!" program, which is a 5-month accelerator program for social entrepreneurs whose projects help to prepare refugees for the Austrian labor market, received an average score of 8.75 for their bootcamp, whilst the "Re:Wien" program (focus on inclusivity and solution for improvement of the city) received an average score of 8.25.



### 3.7 The Acceleration phase

Once the 10 more promising startups were selected at the Bootcamp, the second stage of the Startup Lab has started. This stage was called the “acceleration phase” and lasted for approximately 3 months. It started officially with the get together meeting on the 11<sup>th</sup> of March and evolved until the first demo day on 16<sup>th</sup> of June.

Figure 9: Timeline of the Acceleration Programme since Bootcamp



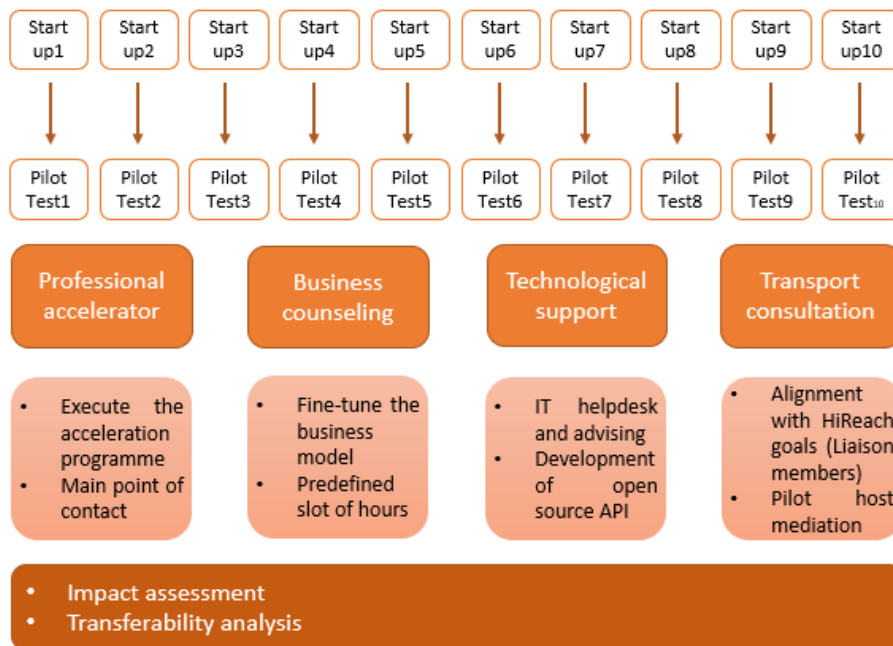
Source: Own elaboration

The planning was affected to some extent by the outbreak of the Covid19 pandemic, which lead the steering team to move two physical events to online platforms.

The first of these events was the **get-together**, which was planned as a physical event in Vienna, joining both startups and hosting partners. It would allow them to meet each other for the first time and create bounds that could facilitate the work ahead. The second of these events was the **first demo day**, which was planned to take place during the ITS congress in Lisbon, regarded as a privileged showcasing event to give appropriate visibility to the startups work.

In between, a wide set of remote meetings have taken place and several reports were requested from startups to keep track of their progress. A graphical visualisation of the structure of the acceleration stage can be seen below.



**Figure 10: Structure of the Acceleration Programme and key activities entailed**

Source: Own elaboration

The **professional accelerator**, i.e. IHV, has taken up the role of main contact point with all startups and organised several cohort calls (4, during the acceleration phase). These calls had the main purpose of receiving development updates from the startups and making sure that they are on track and aligned with the HiReach goals.

All startups were entitled to 13 hours of **business counselling** per team. The coaching was used for providing feedback in order to support them with the development of the MVP during the acceleration phase. Examples of topics covered by IHV expert pool include business modelling, financial planning, communications, marketing, product positioning, design thinking, sales and partnerships.

The third key layer of the acceleration programme has been **technological support**, a role lead by UPB, which drawn from their desk research on open source software to assist startups and advise them in all technological matters required for building up their MVP. One of the responsibilities of UPB was to develop new APIs based on startups needs, the most prominent of which has been API on crowdedness and machine learning prediction.

**Transport consultation** were mostly provided on a continuous basis by HiReach members, which managed to match the startup with a hosting company to support the pilot development, offered their large network of connections to enlarge the market scouting and offered technical support according to their areas of competence.

The acceleration phase entailed several reporting duties from the startups. This mechanism allowed the Steering Committee to adequately take stock of the progress. In concrete, startups were called to provide the following deliverables:

- **by 20 March:** Development Plan (DP) and the Partnership of Agreement;

- **by 30 April:** Progress Report that describes the achievements to date and updates the DP;
- **8 June:** Pitch presentation (minimum structure of pitch: Mission, Problem, Solution, Business Model Canvas, Team) and video recording of the pitch presentation;

The **Development Plan** is a document of paramount importance, which was filled in by all startups involved in the acceleration phase. It reflects the roadmap of each startup during the programme, including an update of the lean canvas presented during the Bootcamp in Vienna, the description of the Minimum Viable Product to be developed (including expected TRL), the identification and expected involvement of the pilot host company, the expected results and the timeline.

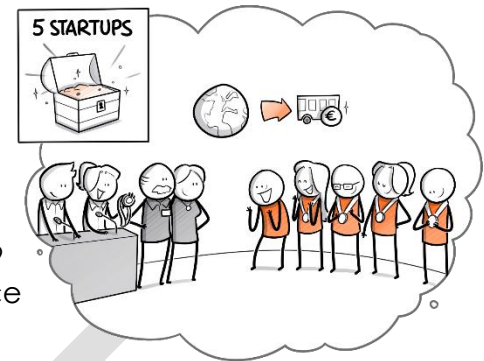
The **partnership of agreement**, on another hand, was a document signed by 3 parties (startup, host, HiReach). It presents duties and expectations from all parties and was foreseen as a way to raise trust of the host company in the project.

The **pitch** followed this slide deck:

- 1. Welcome (Logo + Slogan)
- 2. Problem (What is the user pain / need)
- 3. Solution (must present the benefits for the users)
- 4. Market validation (results of interviews and surveys w/ host) or existence of market in other alternative platforms.
- 5. Market Size (proven statistical data) and addressable market size.
- 6. Product
- 7. Business model.
- 8. Track record of progress w/ timetable and KPIs achieved during 3 months.
- 9. Proposed outcomes for pilot development w/ host for next phase.
- 10. Competition (what is the difference in the value proposition)
- 11. Competitive advantages (we are better than the competition because...)
- 12. Team that will be working on hosting pilot/ roll-out.
- 13. Media clippings (if any, increase HiReach credibility)
- 14. Testimonials from real users or host (build trust).

Throughout the acceleration programme, the startups received a lot of content and information on various topics, ranging from insights about inclusive mobility and recommendations on how to create inclusive mobility solutions to guidance on how to create a user-centric solution to hands-on sessions on how to create a sustainable business model, and to develop socially inclusive business models, **learning how to better balance social needs with the ambition to generate profit.**

At the end of the acceleration phase, and evaluation-wise, the focus of the criteria chosen to select the top 5 ventures that moved to the third and last stage of the Startup Lab appropriately reflects the importance of i) accelerating the business model elements; ii) achieving relevant outputs and outcomes for the respective host and for the end-users; iii) and aligning the product/services to the challenges raised by Covid19 (therefore introducing what can be called a resilience factor).



Arguably, even though specific weights were assigned to each criterium, the feedback from each jury member based on the day-to-day contact both with the startups and the hosting companies was found decisive.

The specific criteria adopted and that guided the assessment of the startups were the following:

- **Proposed pilot (weight of 30% in overall score):** assessing relevance of pilot for startup development, the host and HiReach, as well as the quality and credibility of the pilot implementation plan taking into consideration the outbreak of Covid19;
- **Value proposition (weight of 20% in overall score):** assessing the quality of the problem analysis, the evidences that the solution will solve key pain points of the target groups, as well as the transport poverty features that characterise the solution and the extent to which the startup solution is innovative and distinct from other similar options.
- **Market and business model (weight of 20% in overall score):** assessing the extent to which the startup has a clear idea of target market and big enough market to be Venture Capital attractive, as well as the quality of the envisaged business model.
- **Impact Potential (weight of 20% in overall score):** level of inclusivity towards the HiReach social groups and prioritised geographical areas targeted by the solution; the quality/depth of the impacts on the selected target groups, as well as the quantity of people impacted and the scalability of the solution.
- **Team dynamics (weight of 10% in overall score):** Strength of the founding team, as well as the (proven) capacity to turn the solution into a viable business.

A multi-criteria assessment has taken place, valuing very positively startups such as Dreamwaves for instance, who mainly did product development during the acceleration phase, and consequently not yet had the opportunity to make a meaningful difference in the everyday life of end-users. On the other hand, it has also led to value less positively those for which the Startup Lab did not made much difference in their business development or are not completely aligned to the HiReach spirit, which aims to develop new tools to improve accessibility for special areas and communities.

A glimpse over the startups assessment can be found in the following table.

**Table 3: An overview of the second phase assessment**

TEAM	PILOT (30%)	VALUE PROPOSITION (20%)	MARKET & BUSINESS MODEL (20%)	IMPACT POTENTIAL (20%)	TEAMS DYNAMICS (10%)	MAIN EVALUATION JUDGMENT
<b>B2RIDE</b>	--	+	++	++	-	Startup already mature and implemented in the market. HiReach seems to make little difference in their business development.
<b>Lamiloo</b>	+	+	++	+	++	Very good concept and very auspicious preliminary results. However, the business model is not very innovative and the alignment with HiReach ambition to improve accessibility is not perfect.
<b>Mobito</b>	--	++	+	-	++	Working on expanding data capabilities. Suffered some drawbacks from hosting partners. Focusing on data management, the pilot only indirectly impacts on end-users.
<b>Neobility</b>	--	--	-	-	-	Although preliminary results were achieved, the alignment with HiReach, which favours new scalable PT services, is low.
<b>Tandem</b>	--	--	--	--	+	Several problems were raised that menaced the pilot progress and made the startup unable to show what they are capable of.
<b>Childfy</b>	++	++	+	+	+	Started at ideation phase and followed an impressive development, very well supported by a suitable host.
<b>Citymaas</b>	+	+	+	++	++	Development of an app from scratch. Working in a new environment (country and business area), the startup has developed relevant inclusive features that are not yet mainstream in journey planners.
<b>Dreamwaves</b>	++	++	+	++	++	The product is PT focused and can be regarded as an add-on to previous monomodal app that helps significantly disabled people to move around independently in PT.
<b>Hoop</b>	++	+	+	+	++	Very good effort in adapting the car-pooling app to the needs of the Host and adding new inclusive features in the app.

TEAM	PILOT (30%)	VALUE PROPOSITION (20%)	MARKET & BUSINESS MODEL (20%)	IMPACT POTENTIAL (20%)	TEAMS DYNAMICS (10%)	MAIN EVALUATION JUDGMENT
Nemi	++	+	+	++	++	Clear example of a small scale and easily replicable flexible PT solution. Despite some drawbacks, the startup was able to secure a pilot for the 3 <sup>rd</sup> phase, while developing some new features (such as notification systems).

++ scored very high; + scored high; - medium score; - - low score; highlighted in orange are the startups that moved to the final phase of the programme

**Table 4: Startups selected after the acceleration phase to access the pilot and roll out phase**

#	TEAM	SHORT DESCRIPTION	COUNTRY
1	Childfy	Community drivers for kids	ES
2	Citymaas	MaaS platform for reduced mobility persons	UK
3	Dreamwaves	Augmented reality for blind persons	AT
4	Hoop_carpool	Flexible carpooling platform and community with shared values	ES
5	Nemi	On-demand transport solution where PT lacks	ES

### 3.8 The Pilot and roll out phase

During the ongoing third and final phase of the Startup Lab, the cohort of 5 talented startups listed in Table 4 will evolve towards the launch of pilots with their hosts. An updated development plan is prepared, revisiting the problems stated before under the light of the new Covid19 circumstances and describing the key metrics (and corresponding evaluation methods) which they will use to measure success.

Moreover, this phase will serve to follow up more closely with the selected startups, offering them a close, yet necessarily remote, support in a number of areas, ranging from GDPR and data protection compliance to tailored marketing approaches, in order to facilitate a seamless official launch of most pilots.

A description of the trial or roll-out activities which will be conducted in this final phase of the programme is described in detail further ahead, in section 4.2.

In parallel, HiReach helped startups to showcase their solutions, by disseminating them to a relevant set of private investors, business angels and business incubators (such as Demium<sup>11</sup>) and to a wide number of possible future business partners (some of which from the initial group of prospective hosts), helping to scout the market for upscaling and transferability under the umbrella of a parallel project task.

Indeed, HiReach will investigate the extent to which the business models developed within the Startup Lab are transfer-worthy and will analyse the conditions under which they could be successfully introduced in the six HiReach study regions (Naxos, Guarda, Esslingen und Göppingen, South Salento, Luxembourg and Buzau) and escalated. This will be the scope of HiReach D4.4 (Transferability and scale-up analysis report), which will also recap the recommendations drawn in D3.4 (Drivers and barriers of organizational frameworks aimed at delivering innovative mobility options) in light of the experience gained during the testing programme.

### 3.9 Contextual elements impacting on the acceleration programme

The acceleration phase was affected in particular by two different circumstances, which had impacts upon the startups. On the one side, the **outbreak of Covid19** created very different effects, either constraining the initially envisaged business models, accelerating it or even changing entirely the mindset and the business approach of the entrepreneurs.

The general lockdown and the rise of new social distancing needs has diminished the chances for collecting information from end-users that could help to validate the ideas and concepts. It also impeded early pilot roll outs, with the exception of the delivery of products to people's homes, which had the opposite effect and has been fairly accelerated as a result of the pandemic crisis.

Examples of startups particularly affected by this external and unpredictable event were the carpooling services, such as the ones from Hoop Carpool, B2Ride or Childify. Hoop, in particular, intended to operate in a highly sensible area, which was hit particularly hard by Covid19, especially taking into consideration that the demonstration activities were planned for increasing accessibility levels to Spanish Hospitals.

The epidemiological situation of the new coronavirus has also decreased chances for startups to gather feedback from end-users and to contact more directly with their host partners. This was the case of CityMaaS, for instance, which was planning to travel to Porto (PT) and to collect real-time data and information from bus services which were no longer operating under regular and normal conditions.

There were other issues of different nature, but with a strong relationship with the former problem. In concrete, some startups were affected by the **lack of stability in their institutional relationship with the pilot host**. This level of volatility is perfectly typical and

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<sup>11</sup> <https://demium.com/>



expected in the startup ecosystem. However, problems were amplified by the pandemic crisis, which led several pilot hosts to concentrate on other pressing issues. For instance, Mobito was planned to work with the city of Gent (BE), which, with the rise of social problems and the need to safeguard the population, decided to remove their initial support. Hence, the company had to look for other suitable pilot hosts, in partnership with the HiReach Steering Committee. Very similar problems affected Neobility, Nemi or Tandem.

However, the capacity and resilience of some startups is remarkable. For instance, due to the Corona virus context, one team had to change their approach from a DRT solution for people (Neo.Bus), they rapidly pivoted towards a Demand Responsive Transport for parcels (Neo.Delivery) addressed to NGOs that work with vulnerable groups, most notably children with autism.

This is an example of utmost relevancy of the **immediate impact that Hireach has brought as a response to the Covid19, helping to nudge the cluster of startups to improve preparedness against serious infectious disease pandemics.**

## 4 The startups and their mobility solutions

### 4.1 Profiling the 10 startups that participated to the acceleration phase

#1 B2RIDE	
Country and region	Germany, district of Würzburg
Solution	Carpooling for vulnerable people
HiReach focus	Main vulnerable group: wheelchair users Secondary vulnerable group: single parents Main territorial layer: peri-urban areas
Brief introduction	B2RIDE Business Ridesharing is a provider of a smart Business Ridesharing and Van-Pooling solution for employees. They have a headquarter in Munich but wish to operate in all European countries.
Hosting company	The Host Company candidates (not fully committed due to Covid-19), were: - Government of Lower Franconia, - Mainfränkische Werkstätten GmbH in Würzburg, - Würzburger Versorgungs- und Verkehrs GmbH or - Schwarz Mobility Solutions GmbH in Neckarsulm ("SMS GmbH").
Mobility solution developed during acceleration phase	<p>Employees with or without disabilities working in rural areas suffer from transport poverty. Transport services for severely disabled people are very expensive. Employers of vulnerable people in rural areas interviewed during stage 1 of the acceleration programme mentioned that there is a huge need for ridesharing and van-pooling for commuting between home and work and for leisure activities. B2Ride has consequently developed inclusive features and services for vulnerable people and provide employees with the necessary peer-to-peer matching software, paid by the employer.</p> <p>Employees typically register with an email from the customer's domain and are matched in real time. During HiReach, <b>B2Ride has created new types of features especially created for vulnerable people, who can use special B2RIDE services with a unique token for registration.</b> Users can define their ride preferences, for example to restrict matching to women only or to be matched with disabled people. New matching groups make it possible to bring together people in wheelchairs with people who are willing to transport them. There is also a possibility to match people in wheelchairs into larger vehicles – the so called "van-pooling".</p> <p>If the vans are provided by the employer and the drivers are colleagues who commute regularly, the cost per trip is only 5 to 10 percent of the cost of a taxi. The matching software is white label and fully available. Rides can be requested and offered with frontends such as Android and iOS apps, web browsers and even calendars.</p> <p>B2Ride customers typically do not have the resources or expertise to manage the implementation of a ridesharing and van-pooling solution, so the company acts as mobility manager and steer the onboarding and operating services for the employers.</p> <p>All information is placed on the customer's intranet and communicated to the users via all available channels. The willingness of employees can be achieved through financial incentives, social activities and comfort benefits such as reserved parking spaces for drivers or door-to-door transport for passengers.</p>

#1 B2RIDE	
	<p>B2Ride performs all necessary operating services such as reporting, gamification and communication and uses business intelligence tools to suggest activities to the employer and ensure that the ridesharing community flourishes.</p> <p>The venture revenues are primarily based on subscriptions per user of RideShare and VanPool solutions paid by employers. In addition, B2Ride is paid for hardware per product, such as rewards, displays and in the future charging stations. Workshops are paid per day and consulting for onboarding services and training per hour.</p>
<b>How HiReach influenced their work / impacts and outcomes of the project</b>	<p>Thanks to HiReach B2Ride has identified new target groups during the bootcamp in Vienna.</p> <p>During the acceleration programme B2Ride has conducted many interviews with authorities, hospitals and companies that employ people with disabilities. HiReach has provided B2Ride with fantastic support to help developing services tailored to vulnerable people in rural areas and their employers. The Startup Lab coaches have been supportive in helping B2Ride to focus on real business needs.</p> <p><b>Main impacts and outcomes include:</b></p> <ul style="list-style-type: none"> <li>• <b>New algorithms for matching (matching women only for instance)</b></li> <li>• <b>Development of van-pooling options for people in wheelchairs</b></li> </ul>
<b>Status</b>	This company has <b>failed to move to the third and last stage of the programme</b>

#2 CHILDFY	
<b>Country and region</b>	Spain, Málaga
<b>Solution</b>	Experienced drivers for kids
<b>HiReach focus</b>	<p>Main vulnerable group: children</p> <p>Secondary vulnerable group: single parents</p> <p>Main territorial layer: peri-urban and rural areas</p>
<b>Brief introduction</b>	<p>Childfy was born in Málaga (Spain) in January 2020 thanks to the AllStartup weekend organized by Demium, an event to connect entrepreneurs and develop a scalable business idea. Juan Árevalo the CEO and Marian Jiménez the CMO first met during this event and Andrei Sandu joined later the project as CTO. Juan is an experienced social/technological entrepreneur that enjoys developing products and solutions to solve real world problems. He is a father of twins and always looking for solutions to support families achieving a work-life balance. Marian is a pedagogue with extensive experience working with children and as an entrepreneur founded two digital marketing agencies. Andrei is a senior full-stack developer and gamification expert for children.</p>
<b>Hosting company</b>	<p>The hosting company is La Noria, a social innovation centre from the regional local authority: <a href="https://www.malaga.es/lanoria/">https://www.malaga.es/lanoria/</a>. Their role was to facilitate the interaction with other key project stakeholders including:</p> <ul style="list-style-type: none"> <li>• Network of schools in the province of Malaga;</li> <li>• Connections with the regional local authorities including Malaga Municipality;</li> <li>• Parents associations;</li> </ul>
<b>Mobility solution developed</b>	<p>Childfy offers a carpooling solution for families contributing to achieving work life balance and creating a network of families. Childfy is a platform connecting</p>

#2 CHILDFY	
during acceleration phase	<p>families for sharing trips to schools, academia and clubs, providing a location based real-time notification system ensuring route optimization and providing all the functionalities for parents to keep track of their children. During HiReach, the company has carried out a validation exercise with a selected group of families (&gt;25) and schools (&gt;15).</p> <p>The pilot is being implemented in Malaga province (including rural areas) with a population of 571.026 inhabitants. There are 175.290 children enrolled in primary education (3-11 years old) and 76.000 in secondary schools (12- 15 years old), according to the Regional Government: "Junta de Andalucia" 2019. Therefore, total target population is more than 250.000 children and <b>Childify aims to target 4.000 children during the first year</b>, supporting single parent families with economic difficulties.</p> <p>After developing some basic prototypes and mock-ups together with families, Childify gathered the necessary feedback to go ahead with the development of the MVP. The <b>MVP is a functional web-based platform that it is being tested with a selected list of families and clubs/centres interested in the service</b>. The MVP is based on Node.js API. For the front-end Angular.js is used, making easier the swift to a mobile app once the web-based app is ready. The algorithm needed for the matchmaking of families is being implemented together with the University of Bucharest (UPB). <b>Due to covid19, testing is being carried out online.</b></p> <p>The business model has been improved as the team considers now clubs/academia/schools as a potential source of revenue stream. They are able to promote their activities on the Childify platform.</p> <p><b>At the beginning of the programme, Childfy was still at ideation phase.</b> The product envisaged still had very distinct approaches scenarios and no product development had been done. From that moment on, Childify has made extensive progress, developing and user validating wireframes and mock-ups, considering further product options (e.g. user peer-to-peer vs 'club' approach) and starting the development of the MVP. <b>A first beta-MVP was ready at the end of May which they used to obtain user feedback.</b> The full design of the mobile version of Childfy was completed in the beginning of June. In the meantime, the startup initiated a very active presence on social media, starting to build the visibility and credibility among their target group.</p> <p>Childify plans to do their first trial in Marbella (July 2020) in collaboration with several schools that will open for the summer reinforcement programme. The official product launch will be at the beginning of the school season in September 2020. <b>The solution will be also tested in rural areas as requested by the pilot host.</b></p>
How HiReach influenced their work / impacts and outcomes of the project	<p>HiReach has played a key role in Childify project by providing <b>high quality mentoring support</b>, including: international experts in the mobility sector with specific experience with children, marketing support, technical advice and business models. After an initial prototyping phase, Childify developed a fully functional MVP that was later validated with families and schools. <b>Several marketing actions were also carried out to support families during the Covid-19 crisis generating a sense of community.</b> Childify is currently developing the first version of the mobile app based on the feedback gathered. <b>Thanks to the support of the HiReach programme, they turned an idea into reality in just a few months.</b></p>
Status	<p>This company has <b>successfully moved to the third and last stage of the programme</b></p>

#3 CityMaaS	
<b>Country</b>	UK
<b>Solution</b>	MaaS journey planner for reduced mobility persons
<b>HiReach focus</b>	Main vulnerable group: Elderly people Main territorial layer: peri-urban areas
<b>Brief introduction</b>	CityMaaS is a startup founded 2019, based in London, the UK. The team consists of experienced executives and award-winning software engineers and data scientists, dedicated to create solutions for inclusive mobility and help businesses to be inclusive of people with disabilities.
<b>Hosting company</b>	<p>VALPI is the hosting company. This is a public passenger transport operator with operations in northern Portugal. The fleet consists of 135 buses. It carries approximately 12 million passengers annually. The passenger mix is very heterogeneous, including children and students, adults, elderly, people with reduced mobility and migrants. The routes cross very distinct territories including urban, peri-urban and rural areas. There are relevant commuting flows between those areas.</p> <p>There are 2.4 million people live in the metropolitan area of Porto. The largest age group is between 60 to 69, corresponding to the main target group. (<a href="https://worldpopulationreview.com/world-cities/porto-population/">https://worldpopulationreview.com/world-cities/porto-population/</a>). <b>The pilot host has challenged CityMaas to improve bus users experience on their bus journeys, helping the suburban population of north of Portugal to tackle transport poverty by making their bus journey accessible and pleasant, especially the elderly.</b></p>
<b>Mobility solution developed during acceleration phase</b>	<p>A personalised route planner mobile application is to be developed, built on CityMaaS existing technologies. User profiles will be used to deliver tailored local and journey information to users in order to increase engagement with Valpi users.</p> <p>The startup has made significant progress since the Bootcamp. They have built a fully functional app that can offer real-time information to the host (PT company) users. The usage of this app has been validated with several persons, including the PT company staff members and it is being tested with the main target groups in the elderly people. Important to highlight that they have incorporated feedback from these rounds of consultations in their software.</p> <p>One <b>important functionality developed is the possibility to share the location</b>. Another that is being tested is <b>helping the elderly not to miss a button through AI recognition</b> (their proprietary Machine Learning Algorithm). This work will impact significantly in the relation between the PT company and the citizens as there is currently no other communication channel than social media and telephone and the startup has been able to develop an app from scratch tailored to the host reality and following the host brand. This will enhance the communication with the clients and impact on the communication dimension of transport poverty. The PT company can, for instance, inform about real time disturbances. (Another significance of CityMaaS white label bus app is save wasting waiting time providing real time location of the bus and the user locations.)</p> <p>The startup has established an excellent communication flow with the Host and has managed to counteract the difficulties of the host in gathering suitable data. Indeed, host company's initially little interest to work with an international startup company turned into a keen interest and to be a potential customer in the near future.</p> <p>The startups has also been in permanent touch with UPB, which is helping them to find adequate open-source API's relevant for the app development, on</p>

#3 CityMaaS	
	congestion and crowdedness for the benefit of visual impaired and autism patients.
How HiReach influenced their work / impacts and outcomes of the project	<p>The venture was already working in inclusive software design. <b>Thanks to HiReach, they started to work in a new line of business (public transport companies) and in a new territory (Portugal)</b>, bringing CityMaaS Technology from TRL 6 to TRL 8/9. Key developments during the HiReach acceleration phase included:</p> <ol style="list-style-type: none"> <li>1. <b>An inclusive white label bus app</b> to help people live and work, and tourists in the north of Portugal to avoid time wasting and do <b>customized journey planning for their travel (POIs are displayed according to their onboarding profile, for instance)</b>;</li> <li>2. Created a <b>digitally inclusive platform for travellers via CODIE</b>, a Machine Learning Algorithm;</li> <li>3. Provide <b>dashboard for bus operators</b> to optimise their operation and improve their profit margins.</li> </ol>
Status	This company has <b>successfully moved to the third and last stage of the programme</b>

#4 Dreamwaves	
Country	AT
Solution	Augmented reality for blind persons
HiReach focus	<p>Main vulnerable group: Disabled persons</p> <p>Main territorial layer: urban areas</p>
Brief introduction	Dreamwaves is an early stage Startup based in Vienna, Austria. The company was founded in March 2019. The team strongly believes that an intuitive navigation app will enable blind and visually impaired people to be more independent.
Hosting company	The host company is the Hilfsgemeinschaft der Blinden und Sehschwachen Österreichs (Austrian association for the blind and visually impaired). The HC is a self-help organisation with headquarters in Vienna. Although a focus is on blind and visually impaired people, the HC also runs retirement homes regardless of any visual impairment.
Mobility solution developed during acceleration phase	<p>The target group are blind and visually impaired people. Independent mobility is one of the main challenges faced by blind and visually impaired people. Outdoor navigation - especially in unknown places - is extremely difficult and sometime just impossible. This results in dependence, discomfort, high risk for accidents and social isolation. In the world there are about 250M blind and moderate to severe visually impaired who face these challenges every day. 20M of these live in Europe.</p> <p>Key features of Dreamwaves solution rely on a <b>navigation and orientation application to assist blind and visually impaired people</b> in overcoming their mobility challenges. The <b>key aspect</b> of the envisaged solution, is that people can <b>understand where</b> they need to <b>walk to</b>, in the most <b>natural and intuitive</b> way. In the mobile application, Dreamwaves create <b>virtual sounds embedded in real world locations</b> - for instance in a street corner where the user might need to turn. With headphones, the users can <b>hear the virtual sounds as if they were real objects</b>. They can therefore walk towards this "sound object". Therefore, there is no need to interpret audio instructions, only to rely on the intuitive ability of</p>



#4 Dreamwaves	
	<p>finding sound location, much like being able to find out where a ringing phone is located in a room (and walk up to it without even seeing it).</p> <p>With the Dreamwaves app, users simply insert a destination and a route will be calculated. Using <b>augmented reality, virtual waypoints along the route</b> are placed. With headphones, the users will always hear the location of the next waypoint and will be guided to the destination, from waypoint to waypoint.</p>
How HiReach influenced their work / impacts and outcomes of the project	<p>In the HiReach acceleration phase, Dreamwaves has made great progress both on a technical and on a business level. On the one hand, the company has <b>added public transport routing to their initial solution which was pedestrian only</b>. So <b>multimodal routing is a direct result of the work carried out during the HiReach project and so are the improvements in the localisation algorithm and the new sound design</b>. Also, they have <b>investigated the use of machine learning to detect bus and tram doors</b> and other features. Finally, they have conducted <b>usability workshops</b> to better understand user needs in terms of interface.</p> <p>On the business side, the company <b>improved their business model, extending the range of people that might benefit from their app in the future</b>. These groups include elderly people and cyclers (previous business model was concentrated on blind people only). Moreover, they also recognized that even for the general public there is added value as navigation is easier. Finally, they also significantly improved the financial planning of the startup.</p>
Status	This company has <b>successfully moved to the third and last stage of the programme</b>

#5 Hoop Carpool	
Country	ES
Solution	Carpooling for hospitals and rural areas
HiReach focus	<p>Main vulnerable group: People living in rural and deprived areas</p> <p>Main territorial layer: peri-urban areas</p>
Brief introduction	<p>Hoop is a carpooling solution that connects drivers and passengers so they can share their daily rides to work, university and the hospital. The company was founded 2 years ago with the purpose of empowering people with opportunities to change their world.</p> <p>The team is composed of 5 founders but comprise a team of eleven people working full time, of which 6 are in the product area and 5 are in the business, finance and marketing side.</p>
Hosting company	Hospital Universitario el Escorial
Mobility solution developed during acceleration phase	<p>Hoop solution has been designed for people who work or live in rural areas or city peripheries, where there are poor transport connections and no alternatives to the private vehicle. As any other carpooling company, Hoop want people to make a more efficient use of their own car by providing empty seats to others in exchange for a fair price for cost-sharing.</p> <p>The app allows users to be drivers or passengers depending on the day, and to publish their routines in an easy way. Once this is done, the app finds matches for each of them and suggests drivers or passengers. The app includes a payments platform to share ride costs. Hoop takes a 10% commission fee out of it.</p> <p>The app counts on a ratings system, as well as a promo-code system that are used to incentivize users.</p>

#5 Hoop Carpool	
	Hoop has a community of 5.000 users and around 2.000 available rides on their app every week. During HiReach, the team has conducted UX tests with doctors and nurses, adapting the app to Covid19 safety requirements and they are offering it to Hospitals so that their personnel can avoid agglomerations in public transport.
<b>How HiReach influenced their work / impacts and outcomes of the project</b>	<p>HiReach allowed the team to learn more about transport poverty and focus on specific vulnerable sectors that they didn't have in mind before. For this reason, Hoop has decided to focus on hospitals and rural areas, where the need for better transport connections is patent. HiReach allowed the team to partner with hospital de El Escorial, located in a rural area in the region of Madrid who found the HiReach approach very appropriate and relevant.</p> <p>The fact that a Hospital that has led the fight against Covid has seen in this company a useful solution for going back to normality validates their approach and is allowing Hoop to help many other multinational companies and universities too.</p> <p>Regarding the product, during these months Hoop has been testing the solution with patients, doctors, and people living in those areas, and we have implemented all their feedback in a new version of the app which will be released during summer 2020.</p> <p><b>Examples of new functionalities introduced are the "wheelchair space check", "only women filter" and a parking optimisation solution.</b></p>
<b>Status</b>	This company has <b>successfully moved to the third and last stage of the programme</b>

#6 Lamiloo	
<b>Country</b>	DE
<b>Solution</b>	Last mile delivery of pharmaceutical products
<b>HiReach focus</b>	Main vulnerable group: Elderly people Main territorial layer: urban areas
<b>Brief introduction</b>	Lamiloo delivers drugs on demand by bike from pharmacies to end consumers. Based in Munich Alex (CTO) and David (CEO) are pushing the vision of effortless same-day-delivery since the beginning of 2019.
<b>Hosting company</b>	Sanacorp Pharmagroßhandel, pharmaceutical wholesaler
<b>Mobility solution developed during acceleration phase</b>	<p>Elderly people, in particular, are suffering from current non-availability of drugs. If their requested drug is not available they have to come to the pharmacy a second time, which is not comfortable because most of them are handicapped. In the current COVID19 pandemic, Lamiloo enable elderly people in getting their medicine without the risk of being infected.</p> <p>Through integration into the processes of the pharmacy and intelligent route planning, Lamiloo can provide same-day delivery within 3 hours of ordering, with comparatively low delivery costs, through efficient bundling of deliveries, speed advantages of bicycle couriers in urban areas and an intelligent route planning algorithm. In addition, Lamiloo offers a plannable time window delivery.</p>
<b>How HiReach influenced their work / impacts and</b>	Through HiReach resources and expertise, <b>Lamiloo became ready to launch their mvp in a first trial phase in April</b> . Together with 10 local pharmacies and the support of their host company, it was possible to deliver about 700 deliveries serving over 300 people in the high-risk group over the age of 61.

#6 Lamiloo	
outcomes of the project	
Status	This company has <b>failed to move to the third and last stage of the programme</b>

#7 Mobito	
Country	BE
Solution	Mobility data collector
HiReach focus	Main vulnerable group: People living in deprived areas Main territorial layer: urban areas
Brief introduction	Mobito is a Brussels based company facilitating the exchange of Mobility Data. Their mission is to help businesses and cities leverage the power of data to improve their own services and make data-driven decisions towards more connected, efficient and sustainable urban cities. Mobito was created in 2019 and have 7 full time members split in two offices in Brussels and Athens. The founders are industry experts and have in the past been successful in another mobility company serving major OEMs.
Hosting company	Municipality of Valongo (Portugal)
Mobility solution developed during acceleration phase	Looking at the mobility ecosystem Mobito identify many struggles in accessing, utilizing and exchanging data. This bottleneck limits the chances for city planners and decision makers to understand mobility needs and habits. We address this problem with a <b>Mobility Data Marketplace</b> that facilitates the exchange of mobility data and a <b>Mobility City Terminal</b> that allows cities to take control of their mobility data and use it to improve their city's mobility services. We enable this through data exchange, management and intelligence functionalities. Enabling the flow of data, produces social impact, economic and financial results. For example, registering and sharing mobility accessibility data empowers the city and businesses to reduce transportation poverty. The company main focus lies on public transportation, where Mobito helps city responsible to grant equal access to all. Other data categories this company focuses, include pollution and traffic data which help cities to measure and improve air quality.
How HiReach influenced their work / impacts and outcomes of the project	The interaction with the city host and the public bus operator in Valongo (Portugal) helped Mobito to confirm some of the assumptions that underlie the focus of their product. Three key learnings can be drawn. First, it is difficult to exchange mobility data and the methods of exchange are often manual and old fashioned. Second, mobility data often lacks standardization and is in a form that makes it hard to process. Finally, cities often lack the right infrastructure and skills to derive intelligence from such data and guide decisions. In this sense, <b>HiReach helped Mobito to find a pilot project with a Municipality in Portugal and exemplify the benefits of leveraging real time data to improve monitoring and decision making through a Mobility City Terminal</b> . In this pilot project, <b>Mobito sought to integrate data coming from local bus operators and developed a bus operator performance evaluation mechanism</b> . This mechanism delivers to city officials dynamically generated KPIs that track the performance of the operator. As a next step, Mobito will integrate contextual data, such as traffic data to be used in the resolution of disputes between city and operator.

#7 Mobito	
	Finally, Mobito will build on this use case by mapping information pertaining to mobility accessibility data and help the city to understand the coverage of their public transport from the perspective of vulnerable segments of the population.
Status	This company has <b>failed to move to the third and last stage of the programme</b>

#8 Nemi	
Country	ES
Solution	On-demand transport solution where PT lacks
HiReach focus	Main vulnerable group: People living in deprived areas Main territorial layer: peri-urban and rural areas
Brief introduction	<p>Nemi is a young mobility startup based in Barcelona that aims at improving mobility in low-density areas through software solutions for providing flexible public transport services.</p> <p>The project was born within the company Pildo Labs, in the framework of a European project funded by the GSA and the European Commission called "Galileo 4 Mobility", where five demonstrators of shared mobility services tested the benefits of using Europe's Global Navigation Satellite System. Within this project, at Pildo Labs Nemi was in charge of developing and implementing a platform for piloting an on-demand bus service in a small town of the metropolitan area of Barcelona.</p>
Hosting company	Region of south Salento (Italy)
Mobility solution developed during acceleration phase	<p>Providing regular bus services in low-density areas is very costly and does not provide a good alternative to private means of transport, making it a flawed model from both the public administration's and the user's perspective.</p> <p>Nemi aims to, on one hand, improve existing public transport lines with very little demand which are very difficult to sustain and can't provide a convenient service, and, on the other hand, reach areas where regular public transport systems cannot provide a viable solution, such as low-density areas.</p> <p>Nemi provides a full-stack application which enables the operation of demand-responsive public transport services. The platform consists of a system back-end — which hosts the routing algorithm — a mobile user app, a driver app, and a web back-office. The combination of these components allows citizens to book seats on vehicles which are operating different demand-responsive services, by indicating origin, destination and time of their desired trip. The available options are shaped by the virtual stops and schedule previously defined with the competent public authority. Once there is at least one request for a specific area and time, the optimal route to serve such request is computed by the platform and communicated to the user.</p> <p>Demand-responsive public transport not only increases efficiency of existing services by optimizing all the resources involved in their operation — vehicles, energy, money and time — resulting in shorter travel times and higher frequency, but it also allows to reach further, thus improving access to public transport.</p> <p>During HiReach acceleration phase, several developments were achieved. On the product side, all the components of the system have incorporated bug fixes and the front-end components have experienced UX improvements and the introduction of new minor functionalities. On the pilot side, new opportunities have arisen: apart from the possibility to connect small towns to the train station</p>

#8 Nemi	
	in Tricase (Italy), there is the possibility to partner with the public bus operator in the city of Lecce (Italy).
<b>How HiReach influenced their work / impacts and outcomes of the project</b>	<p>Nemi benefited from the involvement in HiReach as they have adapted their MVP/business models due to the contacts established during the acceleration programme with end-users. Indeed, Nemi disregarded the importance of some elements that have to be taken care in order to enter the market, such as mileage certification and payment features.</p> <p>Regarding impact on other major challenges that society faces, the public transport services operated with Nemi solution can save kilometres travelled by avoiding covering areas where no one is hopping on or off the vehicle, thus reducing congestion, energy consumption and emissions of CO2 and air pollutants. <b>The company has made the following approximate calculation with one of the lines that is currently being operated with our platform: in two months, and for a line which would have covered a distance of 3,920 kilometres if it operated under a regular scheme, around 2,040 kilometres and 442 tonnes of CO2 emissions were saved thanks to Nemi demand-responsive scheme.</b></p>
<b>Status</b>	This company has <b>successfully moved to the third and last stage of the programme</b>

#9 Neobility	
<b>Country</b>	RO
<b>Solution</b>	Low cost, rapid multipoint delivery system for urban areas
<b>HiReach focus</b>	<p>Main vulnerable group: Children and disabled people</p> <p>Main territorial layer: urban areas</p>
<b>Brief introduction</b>	<p>Founded in 2019, Neobility, is an urban mobility startup set out to improve life in the urban areas with a focus on alternative sustainable solutions and improving access to resources for all city dwellers.</p> <p>The company comprise a total of 14 persons (full-time plus externals) deeply passionate about improving everyone's day to day urban lifestyle.</p> <p>Half the team is focused on tech development, while the rest is supporting them with business, operations or marketing.</p>
<b>Hosting company</b>	Help Autism Association (Romania)
<b>Mobility solution developed during acceleration phase</b>	<p>Neobility seeks to optimise mobility solutions to increase accessibility for all social categories. This is done by, simultaneously, both working on human-transportation solutions as well as parcel delivery for vulnerable groups - both highly focused on minimum price points and maximum coverage areas.</p> <p>This is possible through the creation of on-demand pooled services (be it people or parcels) that create a compromise between speed and cost. By splitting costs between items on common paths with no fixed pre-planned routes Neobility software can achieve a low-cost service.</p> <p>The system works permanently with a previously existing fleet to optimise routes to meet the requirements with minimal "driving on empty" kilometers, taking into account each change in the system - be it new orders or new drivers coming onboard.</p> <p><b>The first HiReach pilot was called Neo.Delivery and focused on low-margin deliveries for Covid-impacted local businesses and NGOs supporting vulnerable</b></p>



#9 Neobility	
	<b>groups during difficult times - especially low-income families as well as autistic children.</b> These groups heavily relied on deliveries for survival during this period.
<b>How HiReach influenced their work / impacts and outcomes of the project</b>	<p>Even if <b>Neobility initially envisaged to offer a public transport service, the Covid19 situation made this goal impossible considering the programme tight timeframe. So the team, together with the HiReach SC, decided to use the platform and algorithms to support the new needs that appeared as a result of the crisis. HiReach members were particularly important to support Neobility during this product shift, offering valuable advice about go-to-market</b> to address the target vulnerable groups.</p> <p>During the MVP development stage, Neobility worked with over 70 businesses and 5 NGOs. One of the most heartfelt impact was helping out an NGO working with autistic children - "Help Autism". Neobility delivered special packages for children's day (1st of June) as well as special packages meant to help their parents.</p>
<b>Status</b>	This company has <b>failed to move to the third and last stage of the programme</b>

#10 Tandem	
<b>Country</b>	UK
<b>Solution</b>	Local taxi becoming shared mini-buses
<b>HiReach focus</b>	<p>Main vulnerable group: People living in rural and deprived areas</p> <p>Main territorial layer: peri-urban and rural areas</p>
<b>Brief introduction</b>	<p>Tandem is convinced that even if almost all mobility technology companies focus on huge cities, like Berlin, London or New York, more than half the population lives in smaller cities, towns and more rural areas. The company is therefore focused on building solutions specifically for those smaller geographies.</p> <p>Tandem is based in the UK and their first site is the county of Northamptonshire. Alex, CEO, has grown startups focused on similar communities before. Huw, CTO, is an experienced startup technologist and was most-recently CTO at HireUp (Australia's fastest growing startup in 2017). Tatseng, COO, has a range of commercial experience from his time in management consulting and early-stage investing.</p>
<b>Hosting company</b>	Lincolnshire County Council (LCC)
<b>Mobility solution developed during acceleration phase</b>	<p>Tandem partners with existing local taxi companies and offers software to turn their vehicles into shared, micro shuttles that operate on a demand-responsive basis.</p> <p>A key element of their service is that when nobody travels, there is zero cost. Taxis are only dispatched when there are passengers booked on to the service.</p> <p>Tandem works to ensure that passengers pay the same amount regardless of whether they're sharing with one person or seven other passengers, so that they can rely on a transport service every day.</p> <p>Their first customers are low-income, blue-collar workers trying to get to out-of-town employment sites where there are no buses. The transport services are focused on 'corridors' of demand – where there is a good chance of passengers being able to share, even where the overall population is small.</p>



#10 Tandem	
	It was agreed that Tandem will assist LCC to explore the potential to improve the front-end of CallConnect's existing web-portal. Some of the key features will include strengthening of core parts of the portal such as improvements to the booking page, registration signup, and possibly registration signup. The objective is to increase use of online booking as opposed to phone.
<b>How HiReach influenced their work / impacts and outcomes of the project</b>	HiReach has helped Tandem to see the opportunities to replicate their model across Europe, starting from Northamptonshire, where the project team has matched Tandem with.
<b>Status</b>	This company has <b>failed to move to the third and last stage of the programme</b>

## 4.2 Plans of the 5 startups that reached the final pilot and roll out phase

### Hoop

#### State of play

This Spanish startup will implement their car-pooling solution in the hospital El Escorial for their patients and their employees, to help them reach the hospital in a more convenient and efficient way. The service will be launched at the beginning of September, after holding a press conference during the month of July in order to inform about this innovative project of "Carpooling for hospitals" and producing several communication materials.

Hoop will launch a strong communication campaign to reach as many people as possible in a short amount of time, and then, together with the hospital, perform a good follow up in order to keep people motivated and engaged with carpooling. Impact of this initiative will be measured on a monthly basis and report the hospital with the results.

#### Expected involvement of the Hosting company

With the collaboration of Hospitals, Hoop will provide a carpooling service to their workers as well as to their patients, who live in nearby rural areas. Moreover, with the collaboration of several Municipalities, the startup will be able to extend the service for these rural residents not only when they go to hospital, but to go to work or to other surrounding areas too. This will increase their work-life balance as well as the area's residential attractiveness.

#### Outputs and expected impacts expected at the end of the acceleration programme

Hoop has noticed that the hospital board of directors is excited from being empowered in the mobility management of their workforce and patients and wish to incorporate this car-pooling solution in their "back to normal" strategy, following up the immediate impact of Covid19.

**Table 5: Hoop evaluation plan - expected KPIs for 2020**

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Number of users registered in the area (Accumulated)</b>	80	160	160	400	600	800	1000
<b>Number of rides shared</b>	20	30	30	200	300	400	500

Hoop expects that the car-pooling popularity will gradually increase, starting from 20 shared rides when the service is launched dedicated to the employees only (during the month of June), onto 500 shared rides per month by December 2020. Hoop expectations are that at least 5% of the hospital employees download Hoop, use the app regularly (above 5 times/month) and that a good user experience is achieved (measured through good feedback on customer care calls). Ultimately, Hoop desires to expand that implement a similar solution in at least 3 more public hospitals in Madrid that might be interested in replicating the business model.

## CityMaaS

### State of play

The new app is already in test flight beta testing and will be available in both Android and iOS app stores by the end of September 2020.

During the last stage of the HiReach Startup lab, CityMaaS will be finalising the deployment of CODIE (CityMaaS Optimised Dynamic Interface Engine technology) and the booking and ticketing systems as well as the Hosting company (the Portuguese company Valpi) dashboard.

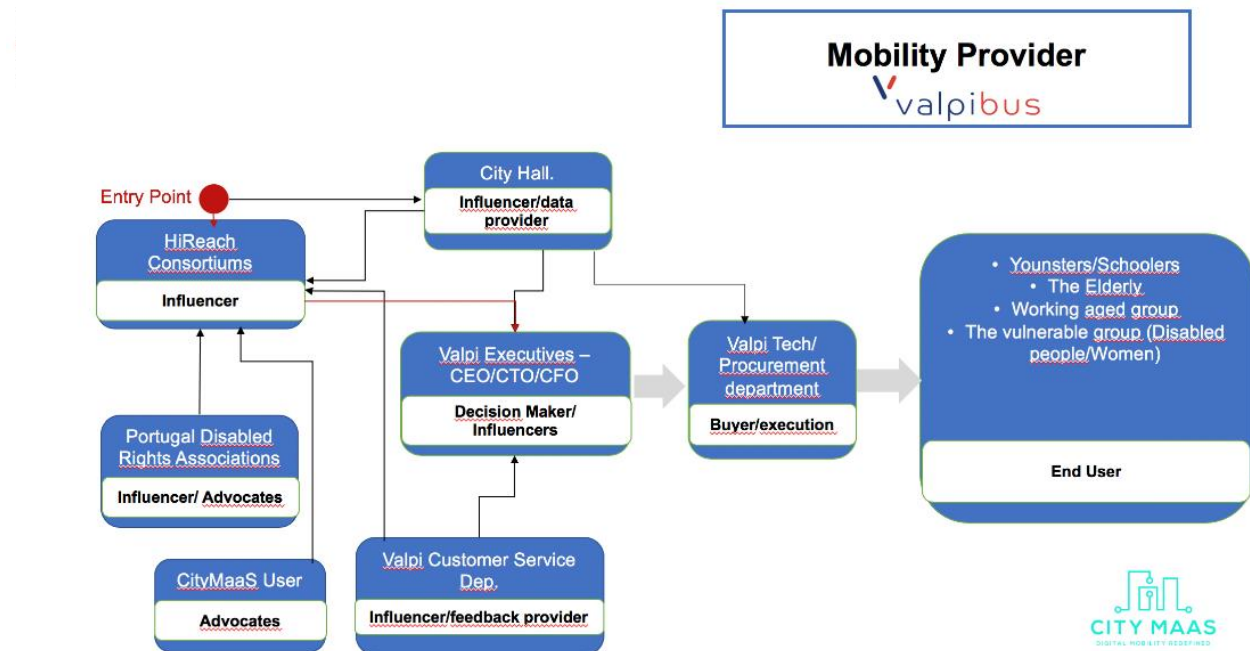
### Expected involvement of the Hosting company

In July and August, CityMaaS and their Hosting company plan to jointly elaborate a roll out plan to promote the app to all the PT Operator customers, through posters, stickers and word of mouth (via the driver) and its social media platforms namely Facebook.

CityMaaS has also produced a stakeholder mapping, identifying all the relevant actors involved in the acceleration programme for deploying a customised journey planner to Valpi's customers and adapted to vulnerable groups of users.

**Figure 11: Snapshot of CityMaaS UI**


Figure 12: CityMaaS stakeholder mapping



### Outputs and expected impacts expected at the end of the acceleration programme

CityMaaS expects to reach about 1,000 downloads, 200 active daily users and 50 daily trips booked through the app and to conduct surveys to understand the impact of the app in the everyday life of vulnerable groups of users.

## Dreamwaves

### State of play

The pedestrian app is currently in Beta stage, while the public transport routing, specifically developed during early stages of Hireach, stands at Alpha version. Dreamwaves goal is to bring the public transport version to Beta stage by the end of the pilot, scaling this solution from the current TRL3 to TRL5.

The most important activity in the roll out stage is to evaluate how much impact the app has on users lives. To do this, Dreamwaves will follow a user centred design methodology, always involving users as much as possible along the development cycle.

Another important activity in the roll-out phase is the scaling up of the machine learning to detect important feature and locations in buses and trams (e.g. the doors). The team will collect the new images themselves, so as to build a database and then use an online annotation service (such as Amazon mechanical Turks - <https://requester.mturk.com/>) to massively annotate all images in the database and create reliable models.

Stepwise, the work to be conducted during the pilot and roll out phase will start by extending the existing pedestrian navigation to include the possibility of combined

pedestrian and public transport routes. The resulting routes typically consist of a first walking leg (e.g. home to bus A), a PT leg (stop A to stop F) and a final pedestrian leg (stop F to doctor's appointment, for instance). To create these routes, Dreamwaves will leverage an existing routing product based on a REST API, specifically, TripGo (platform selected due to scalability i.e. TripGo is a platform that has datasets for many cities).

From this point onwards, on/off boarding assistance in public transport will be developed, by means of both a robust implementation phase, mainly consisting in making the machine learning detection more accurate. Following is a figure which illustrates the automatic recognition of specific features (such as doors) in public transports. The goal is to provide information about the location of these items to blind and visually impaired citizens, to help them use PT more autonomously.

**Figure 13: Dreamwaves automatic annotation of bus features**



Other objects-of-interest (OOI) that Dreamwaves will try to detect during this last stage of the Startup Lab are the buttons to open bus doors, ticket vending / validating machines inside the bus and letter sign on the bus to indicate the destination. The procedure consists of data collection, annotation with a high degree of accuracy, training and evaluation.

#### ***Expected involvement of the Hosting company***

The host company is the Hilfsgemeinschaft der Blinden und Seheingeschwächten Österreichs (Austrian association for the blind and visually impaired, HG for short). The HG will continue to support Dreamwaves, liaising the Austrian startup with groups of blind and visually impaired people. They additionally continuously help Dreamwaves to refine user requirements and will assist the company in running the interviews and observations. Since some of the employees of the HG are visually impaired themselves, they are very valuable to assess and detail the needs and requirements on the basis of their own experiences.

### Outputs and expected impacts expected at the end of the acceleration programme

In general terms, the impact of Dreamwaves product will allow that blind and visually impaired citizens, in particular, are more independent in their everyday mobility. For the **users**, easier usage of PT means **more independent mobility** and an easier life. Since the host's mission is **to help the users**, the happier and more independent they are is also a measure of success for them. For Dreamwaves, in particular, the **happier the users are**, the **more they will want to use the app** and more usage will directly translate in more revenue, as the underlying business model implies that the more people use the solution, the more they will be willing to pay.

During the Startup Lab, it is not possible to measure the success of the app to its full extent, due to Covid19 restrictions and the public lack of confidence in using PT services. Currently, blind and visually impaired people are reluctant to leave the house alone, because they cannot keep social distancing and Dreamwaves app does not directly solve that problem. Nonetheless, typical KPIs for blind and visually impaired impact identified by Dreamwaves would be the 'number of independent trips on public transports'.

## Childfy

### State of play

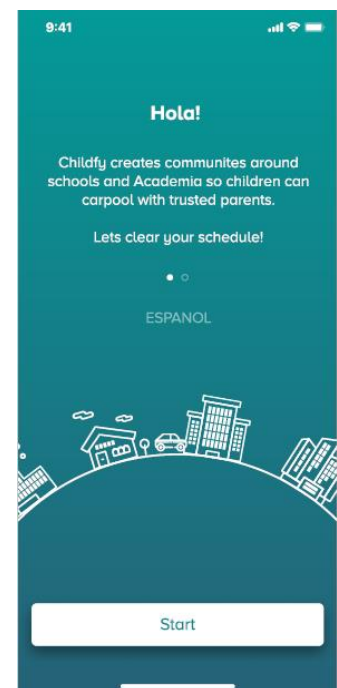
Figure 14: Snapshot of Childfy onboarding screen

After developing their first MVP in April/May that was later validated with over 25 Families and more than 15 schools and clubs, the Spanish Childfy will launch their first beta version of the mobile app for both operating systems iOS and Android during the second week of July<sup>12</sup>.

Before the official launch, the company will update the landing page, based on the new branding and the content using the support of a professional copywriter. Some infographics and dissemination materials will also be prepared.

Another element due to be addressed during this phase consists in the adoption of the General Data Protection Regulation (GDPR) for all the data and information that will be retrieved. This requires the development of certain functionalities to make sure that all the requirements are met.

Furthermore, during this phase, Childfy will continue further improving their product, based on the feedback gathered by the



<sup>12</sup> This startup has produced several news-items promoting HiReach, one of which can be found here: <https://www.laopiniondemalaga.es/malaga/2020/07/04/childfy-app-malaguena-compartir-trayecto/1176160.html>



families and centres and further explore and analyse the B2B approach of their business.

### ***Expected involvement of the Hosting company***

Childfy will define a protocol, together with several schools and academies, in order for them to invite families to join the Childfy community and start using the app. In concrete, Childfy plans to provide a vinyl sticker to all the centres that are part of the Childfy platform. This will serve as a proof that the centre is supporting families to achieve a work life balance while promoting a sustainable transport service.

The Hosting company, La Noria, is a social innovation centre from the regional local authority (Diputacion de Malaga) <https://www.malaga.es/lanoria/>. La Noria provides their premises to organise all meetings related to the pilot and the institutional support required to carry out the project. In addition to this, La Noria is a well-known institution working specifically with children and youth in Malaga. They help Childfy to build more trust among families and actively engage with schools, nudging the communities to participate in the pilot. Moreover, they also facilitate Childfy interaction with other key project stakeholders including the network of schools in the province of Malaga; connections with the regional local authorities including the Malaga City Hall; and lastly the parents associations.

### ***Outputs and expected impacts expected at the end of the acceleration programme***

The pilot will be implemented in Malaga province with a population of 571.026 inhabitants. There are 175.290 children enrolled in primary education (3-11 years old) and 76.000 in secondary schools (12- 15 years old), according to the Regional Government: "Junta de Andalucía" 2019. Therefore, the total target population covers more than 250.000 children and Childfy aims to target 4.000 children during the first year.

Progress will be measured based on a wide list of indicators, collected via online surveys and discussion groups, such as:

- Customer satisfaction from both families and children;
- Satisfaction from caregivers/drivers;
- Level of trust at the beginning and after each trip;
- User feedback on the usability and functionality provided by the app;
- Number of families using on foot and by car services;
- Travel and waiting time saved for families thanks to Childfy;
- Travel time for each of the services provided;

## **Nemi**

### ***State of play***

Ferrovie del Sud Est wants to test the convenience of Nemi solution for operating its first/last-mile bus services connecting train stations with low-demand coastal towns in Southern Salento (IT). The pilot will be split into two phases.

In a first phase, the bus service will cover coastal locations around the train station of Gagliano del Capo during the month of August and the beginning of September, when a higher demand from visitors is expected.



In a second phase, when the demand is expected to become lower, the service will move almost entirely towards the interior, along one or two circuits, to connect the stations with inner, surrounding towns.

The precise routes still have to be determined even if the Inner Area has already drafted a complete scheme for both the winter and the summer season. The scheme is part of the wider strategy that includes infrastructural interventions along the road corridors crossing the old towns/city cores with new PT stops (shelters), private vehicles' access restrictions and cycling facilities.

### ***Expected involvement of the Hosting company***

The key partners for the deployment of the pilot in the south of Italy are the Region of Puglia, which is the formal pilot host and member of the HiReach TakeUp Group, but also Ferrovie del Sud Est (FSE), the local railway and bus operator, and the association of municipalities "Inner Area Southern Salento – Cape of Leuca".

The Region of Puglia is the public authority responsible for both planning, regulating and funding public transport services in the region, including the ones managed by the Provinces. In the first stage of our collaboration, they provided Nemi with a number of studies and data sets describing passenger mobility in the region. Such information allowed the Spanish startup to understand the challenges in mobility that the region is facing and to evaluate the potential benefits of their solution in specific areas of the region of Puglia (the so called "inner areas").

Ferrovie del Sud Est is, at the same time, Nemi' customer and a key partner and supplier, because the startup wouldn't be able to provide a service to the final user without their resources and rolling stock. They will supply the vehicle and the driver/s in order to operate the bus service during the trial.

The municipalities of the Inner Area of Salento, on the other end, will facilitate the linkage to the local communities/end users, helping to raise awareness towards the new PT service.

### ***Outputs and expected impacts expected at the end of the acceleration programme***

Nemi and all the stakeholders that support the trials, have high expectations about the impact that the new solution can offer in terms of increased accessibility. To measure success, key KPIs were selected:

- A reduction of car trips with origin and destination in any of the towns connected by Nemi's flexible bus service;
- An increase in the number of bus trips in the whole of the towns connected by Nemi's flexible bus service;
- An improved accessibility to public transport and to the main services, tackling mobility poverty in the area especially for women and disabled people target population groups.

This impact can be measured through new surveys aimed at citizens in the area covered by the pilot. On the other hand, during the first phase of the trial, which will be run privately by FSE, Nemi expects to achieve the following benefits for their hosting Company:

- A reduction of kilometres travelled to meet the same level of demand of about 60% compared to a regular bus service, based on evidence from our existing services;
- A great reduction in fuel consumption, which will bring the operating costs down;

- A reduction of vehicle maintenance costs and repayment instalment.

During the second phase of the trial, in which the service will be subsidized by the Region of Puglia, Nemi expects to benefit the public administration through a reduction of the cost of providing the bus service or the possibility to offer a better service with the same budget. The performance of the pilot will be tracked using the following indicators:

- Number of registered users;
- Number of booked trips;
- Trip bookings per channel (app/phone call);
- Shortest, longest and average expedition time;
- Highest and average number of users;
- Average delay time;
- Number of kilometres travelled;
- Proportion of journeys executed vs. journeys offered;

This information will be generated within Nemi's platform and will be extracted, exploited and conveniently presented to provide useful insights to the Region of Puglia and all the stakeholders involved in the operation of the pilot.

## 5 Follow-up possibilities for startups via EU funding

Besides the recurring possibility of attracting private investors (e.g., business angels, venture capitalists) there is a wealth of opportunities for the Startup Lab teams to apply to funding programmes.

This strategy for post acceleration support will depend on the specific needs of the startups, that were jointly developed with the Startup Lab business coaches, preparing the teams for the phase-out period where no funding from HiReach are due. The relationship between the startups and the hosts were also designed to be maintained much beyond the project lifetime.

Nonetheless, one clear avenue for accessing to funding and support is **COSME**. The programme has a clear policy objective to support startups and SMEs, promoting entrepreneurship and addressing clear market failures. Startups, as very early-stage SMEs, can be funded through the COSME Loan Guarantee Fund (LGF), should the focus lie on loans below the EUR 150 000 threshold. There are also possible synergies created by making use of the Enterprise Europe Network (EEN) to ensure access to the SME Instrument business innovation coaching and mentoring services.

With over 600 members, the Enterprise Europe Network (EEN) can offer tailored services to SMEs, helping them to make the transition to sustainability. Building on this, the EEN may provide **dedicated Sustainability Advisors** and other sustainability services who assess the needs of SMEs and provide advice on investment in more resource-efficient and circular processes and infrastructure, finding relevant commercial partners, and encouraging peer-to-peer collaboration.

In the future, “as part of the wider piloting of the **European Innovation Council** (EIC) to promote disruptive innovation especially by SMEs, the Commission will allocate at least EUR 300 million in 2020 alone to high potential startups and SMEs for them to deliver breakthrough Green Deal innovation”. (Commission 2020a). The **European Institute of Innovation and Technology** (EIT) will ensure that its Knowledge and Innovation Communities (KICs) are more open to SMEs and will increase their opportunity to participate in local innovation ecosystems.

Moreover, the proposed Horizon Europe programme will build on its predecessor Horizon 2020 with new features and enhancements of existing elements in order to deliver greater impact in particular through the European Innovation Council (EIC). Startups evolving in the HiReach StartupLab are in a good shape to Strengthening the European Research Area (ERA) and apply to the new forthcoming calls.

## 6 Conclusions and recommendations

The European Commission wishes to improve the accessibility of vulnerable social groups such as the elderly, children, migrants, women, the disabled, the unemployed and people living in remote or deprived regions. HiReach assists the European Union in achieving this goal and the Startup Lab, in concrete, was capable of unleashing the potential of European startups to lead the twin transitions towards a sustainable and digital economy, as it was capable of involving them in the development of solutions to concrete transport poverty problems.

The first stages of the HiReach project enabled an in-depth analysis of capabilities and attitudes of different social groups regarding their available transport options. It was also studied and framed existing innovative organisational and operational frameworks, which are the backbone of transport options throughout Europe. All this bulk of knowledge was transmitted to the startups carefully selected for participating in the Startup Lab, through a dedicated mentoring programme, set up in order to nurture young entrepreneurs and empower them with the necessary skills to tackle the complex underlying problems of transport poverty. **The startups are the beating heart of HiReach and one of the legacies that will allow the project spirit to live much beyond its lifetime.**

Below one can see some final conclusions and recommendations that can be drawn from the experience of managing an acceleration programme on the specific topic of transport poverty.

### The startups profile and the methodology of the Startup Lab

**The 23 startups involved in the programme, and in particular the 10 that evolved during the acceleration phase**, were very diverse in terms of business model scope, size, age, and entrepreneurs' profiles, and draw on a diverse talent pool of women and men that have made a concrete effort to solve different transport poverty problems. Such diversity enriched the array of solutions to the myriad of transport poverty problems that affect different social groups and regions, which are equally heterogenic and wide.

However, the heterogeneity of the startups also raised some specific and operational challenges to the startup lab organisation team. One challenge that was pointed out shed some light about the difficulties of running acceleration programme in this format to a large number of startups that are in **very different levels of maturity**. Indeed, it is often difficult to design a curriculum for the acceleration programs that would fit all participants. One possibility could have been to split the teams into two groups, one more advanced who already has a solution and one who is still in the idea stage. As a future recommendation, there is thus a need to tailor the content to the needs of each of these groups, instead of catering to a general audience.

### Relevance of building on recommendations of previous work

The acceleration programme was simultaneously bottom-up and hands-on. Startups were matched with the pilot hosts of their preferences and worked in real-life assignments. By

welcoming startups, the hosts had the chance to cooperate with startups, helping to bridge some challenges and bottlenecks identified in the past by HiReach (c.f. D.3.4), namely to what concern the recommendation 1 for startups to “pursue combined transport solutions” and recommendation 3 to “compete or collaborate for innovative public transport and inclusive mobility services”. Similarly, HiReach also built on recommendation 2 and 4, respectively offering startups the chance to “look for additional funding and revenue streams”, by maturing their business model and “make use of open data”, by raising their awareness towards a wealth of open data applications that were compiled by UPB and made accessible through the open-source toolbox, available here: <https://hireach-project.eu/open-software-tools-apis>.

### The pilot case rationale

**During the Bootcamp**, 7 startups brought their own pilot and have concentrated in adapting it to the prioritised territories and social groups of HiReach. All other 16 ventures would be prevented from participating if the effort in guaranteeing a suitable hosting partner would not have been granted. This number shows the importance of supporting the startups and opening up new markets where they can eventually flourish. It also shows the **inclusiveness level of the programme designed by HiReach**.

All pilot cases, regardless of who gathered them, allowed the startups to provide evidences that their solutions are feasible and can solve transport poverty problems under real life scenarios or dry run tests. In a nutshell, entrepreneurs were called to guarantee that they can successfully balance the underlying business-proposition of their product or solution with the social impact that both the host and the HiReach consortia alike are keen to achieve.

On another level, it became clear that the issue of transport poverty is receiving more and more attention and awareness, as can be confirmed by the huge interest of prospective hosts in participating and welcoming startups in the context of the Startup Lab. This trend is likely to gain momentum with the realisation of the impacts of Covid19, which will certainly reshape transport poverty manifestations and raise new challenges to the entrepreneurs and transport-related communities.

### Methodology of the acceleration programme

The Startup Lab evolved for approximately 8 months, spanning through 3 different phases. It was longer than usual acceleration programmes run by IHV. To become effective, the structure of the programme included several ingredients that guaranteed a smooth progress of startup development.

The methodology of the acceleration programme was found very successful due to the supportive elements that granted a constant communication flow between all parties involved and due to the reporting obligations that were introduced by the Steering Team and that allowed to follow the status at all times.

The idea of **using real-case examples** was also found as a relevant cornerstone of the programme. It is often heard that startups involved in other similar programmes don't have a clear end-user in mind, whilst in this case the pilot hosts challenged the startups to adapt

their ancillary solutions to their particular needs. Startups were therefore **challenged to find the right balance between their own ambitions and capabilities, the needs of their clients (the hosting company) and the alignment with the HiReach spirit and policy**. Indeed, the pilot cases were fundamental to avoid that entrepreneurs develop artificial products/services, but actually contribute to solve real-life problems.

HiReach Startup Lab had several financial incentives throughout the programme. This element created a more competitive environment than usual in other acceleration programmes. To this respect, it is important to bear in mind that the **regular organisation of cohort's calls** is an example of a mechanism that allowed the teams to share common difficulties. From a pragmatic point of view, this sort of events proved to be a successful mechanism to raise the sense of belonging and specially to change the approach **from a competitive nature to a collaborative nature**.

Moreover, the project has not lost ties with startups that have not reached the final pilot and roll out phase. An *alumni cohort group* has been set up, assuring constant communication flows with the startups that have not reached the final phases of the programme, helping to raise the share of belonging with the project and trying to continue sharing knowledge about transport poverty that can be relevant for nurturing new ideas in this field.

### The startup-host matching process

Given the critical role of public authorities in nurturing viable transport poverty solutions, suitable to the citizens they represent, the matching process approach revealed to be a key ingredient for this kind of business acceleration programme. For future applications featuring hosting partners, some lessons and points for consideration were identified.

The **commitment of hosts**, including their flexibility and power to engage in the innovation process in question, is critical; a **flexible and iterative matching process**, divided in phases, to multiply matching possibilities, should increase the likeliness of effective matches that translate into a fruitful relation and pilot between startup and host; the **management of expectations** must be adjusted to the level of maturity of the startups, as the more diverse are the startups levels of development, the more demanding is such management.

### The scale of the programme

Because the topic of transport poverty encompasses multiple target groups and use cases, it is required that there is a sufficient number of startup and host cases in order to have a reasonable likeliness of appropriate matches. A European level acceleration programme like HiReach, featuring multiple potential hosts, allowed to reach such a minimal viable scale - initial matches could be found for every participating startup. To reach such scale, the participation of multiple partners or umbrella organizations (with a high capability to reach hosts with different needs) is necessary.

A European dimension is critical for increasing the chances for innovation. This applies generally to any future such innovation processes in the mobility field: the European dimension increases the chances for startups and hosts, compared to existing local (e.g. city level) approaches, like Smart City Hub (Berlin), Smart Open Lisbon, IdeaLondon Future Mobility Programme, Connected City (Turin), or corporate driven programmes like FIAT



Smart Cities Global, Porsche Accelerator by Conector, GROW Mobility, Techstars Smart Mobility, Moove Lab or Startup Autobhan.

### Preliminary outcomes and findings from startups work

The risk involved in the organisation of the Startup Lab was considerably higher than it is normally taken in other Research and Innovation actions (RIA), especially considering the relevance assigned to this activity. However, the benefits accrued were also considerably higher. The risks were minimized by the fact that the Startup Lab has followed a **structured programme** and participants were assigned with specific problems, instead of developing artificial solutions to fictitious problems. But if stakes were high, the benefits were equally tremendous.

Within a short timeframe, **B2Ride** and **Hoop** have both been capable of developing new algorithms for matching demand and supply and integrating special requests in their respective car-pooling platforms.

**Childify** developed a fully functional web-based platform that is being tested with a selected list of families and clubs/centres. **CityMaaS** has taken over the challenge of addressing a new business area and seize the opportunity to work in a cross-country environment, developing an inclusive and white label journey planner for a public transport operator. **Dreamwaves** have upscaled their previous unimodal solution for blind people to autonomously circulate with ease, thanks to machine-learning mechanisms that detect bus and tram obstacles.

**Lamiloo** rolled out a first pilot producing about 700 deliveries of pharmaceutical drugs to about 300 vulnerable citizens in the high-risk group over the age of 61 with underlying medical conditions. Similarly, **Neobility** have gone early to the market and ensured home-service deliveries to autistic children. **Mobito** embraced the challenge to work in a new country assisting the local authorities to guarantee the health of citizens according to the protocols for public transit. **Nemi** and **Tandem** have proof tested the economic and environmental savings of their on-demand and flexible PT service in rural areas in southern regions of Italy and in rural areas in the UK, respectively.

### Early responses to Covid19

Due to their inherent flexibility and readiness for actionable support, startups gave a very early **response in the current Pandemic crisis**. Bringing services to vulnerable people, like for instance Lamiloo and Neobility have done, is a significant and relevant impact of HiReach, raising the readiness levels of entrepreneurs who wished to alleviate transport poverty by bringing services to people.

This service is aligned with other services investigated before in HiReach, such as the case of the Village House Service Centre or the Buurtkar in Belgium (see project D3.2). The lean structure of the startups have made it possible to contribute to the appeal of the European Commission of alleviating the vulnerable populations who more dramatically felt the reduction in transport activity (Commission 2020b).

Startups by nature are easily adaptable and the ones we have engaged in our acceleration programme have reacted fast to setbacks such as the ones raised by the pandemic outbreak, adapting their products and steering their solutions to deal with Covid19 and the way this pandemic is affecting people's life, turning them even more transport poor.

Several examples could be identified, one of which was **Neobility**, a young company that was planned to intervene in Portugal and to help deploying a public transport service to passengers that otherwise would be prevented from being transported. Due to the lockdown situation, they changed their pilot from Neo.Bus to Neo.Delivery and started managing a hot meal delivery service in Bucharest and assisting children with autism, using the same algorithms and IT intelligence previously assigned to the bus passenger service. This is a concrete example of the resilience of the startups and of the agile work conducted by the steering team who managed the acceleration programme.

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## Document History

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0.2	24/07/2020	Tobias Kuttler (TUB)	First review
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