ELVITEN

Recommendations for Service Providers emerged after COVID-19

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

Table of contents

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

0 Introduction

In spring 2019, after 18 months of preparatory activities, the partners of ELVITEN deployed the demonstration phase in six European cities. Their goal was to collect data from the pilot cities to demonstrate how electric light vehicles (EL-Vs) can be used in urban areas and be integrated into the existing transport network.

The partner of the project did not know that, within a few months, pilot experimentations would become a privileged observatory to understand the effects of the pandemic on the users' behaviour and new mobility needs of European citizens. Thanks to the analysis of the data collected in the pilot cities, it was possible to obtain useful indications on how the EL-Vs services responded to users' needs and to adapt them to the new scenario designed by COVID-19.

This document is intended to offer to light electric mobility service providers some recommendations that take into account the results and experience acquired within the ELVITEN project, reviewed and integrated in the light of the evidence, trends and market drivers observed during the pandemic period.

The needs and habits of users have been profoundly changed by this pandemic and will have repercussions for years to come. Our belief is that these lessons learned can be useful elements to adapt the different services and business models analysed in ELVITEN to the new context, which will affect urban transport systems at least in the short and medium term.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

1 The ELVITEN project

The ELVITEN project started in November 2017 and lasts 36 months.

Its vision is proposing replicable usage schemes, consisting of support services, ICT tools and policies, to boost the usage (ownership or sharing) by private and professional users of all categories of EL-Vs (bicycles, scooters, tricycles and quadricycles) and to demonstrate them in 6 European Cities (Bari, Berlin, Genoa, Malaga, Rome and Trikala) with three principal objectives:

i) to make users more familiar and facilitate them to use EL-Vs instead of ICE vehicles for their private transport and for light urban deliveries.
ii) to collect information sets made of real usage data, traces from dedicated ICT tools, and users' opinions after real trips.
iii) to generate detailed guidelines and business models for service providers, Planning Authorities, and manufacturers to make EL-Vs more attractive and more integrated in the transport and electricity networks.

1.1 ELVITEN Demonstrators

ELVITEN project is running long demonstrations of light electric vehicles (EL-Vs) usage in six European cities [1]:

- Trikala offers five 3-wheeler vehicles (L2e-P) for long-term sharing by delivery companies and five 4-wheeler (L6e) vehicles for short-term sharing since April 2019. The city also offers 18 L1e-A electric bicycles for short-term sharing since September 2019.
- Hubject in Berlin is offering 10 eScooters (called ZeroScooters) via a long-term sharing scheme.
- Malaga offers 40 L1e-A vehicles for long-term sharing and 15 e-hubs are installed in the parking lot of the Tabacalera.
- Bari offers 10 L1e-A vehicles for short-term sharing and has installed 10 e-Hub parking positions near to the city centre at "Caserma Rossani". 65 L1e-A vehicles are offered via long-term sharing scheme to commercial activities operating in food delivery such as pub and restaurants, to the Polytechnic University of Bari, to the Municipality of Bari Acquedotto Pugliese, to the Port Authority, to the University of Bari and to the Municipality of Rutigliano.
- Rome offers 60 L1e-A vehicles for long-term sharing to employees of public and private companies.
- Genoa offers 10 3-wheeler vehicles (L2e-P) for long-term sharing to members of their Regional Support Group through a loan for free. Private EL-Vs are also invited to join the demonstrations and currently 11 private EL-V vehicles have joined. 3 charging hubs are implemented in the city centre near the two biggest train stations.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

During the demonstrations, the data will be continuously checked for quality and completeness and they will be successively used in the analysis phase where the studies of the logged trip data will shed light on the real driving patterns of EL-Vs in each city and on the most used locations for parking and charging.

Photo 1, 2: L1 vehicles in Bari

Photo 3: The ZeroFleet in Berlin

Photo 4: 3-wheeler vehicle in Genoa

Photo 5: 4-wheeler Duferco vehicle in Genoa

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

Photo 6: L1e-A RadRhino 2017 ebike in Malaga

Photo 7: L1 vehicle in Rome

Photo 8: 4-wheelers L6e vehicles in Trikala

Photo 9: 3-wheeler L2e-P vehicle in Trikala

1.2 ELVITEN business models

The demonstration of EL-V services and ICT tools led to the identification of a set of specific Business Models indicating how to deliver a higher impact on users, hence making the usage of EL-Vs financially and socially more convenient than using a conventional ICE vehicle.

The 12 Business Models selected are shown below:

1. *Integrated charging and reserved parking service (for all EL-V categories)*: it offers charging points with assigned parking spaces. These parking spaces are designated to EL-V only.
2. *Self-sustainable sharing and/or rental service (for all EL-V categories):* this service acts as a self-sustainable sharing and/or rental service for all EL-V categories.
3. *EL-V leasing to last-mile delivery carriers:* leasing of EL-V to companies/organisations which provides last mile delivery (mostly postal companies).
4. *Electric bicycle sharing service addressed to citizens, with focus on security:* it enables citizens to use electric bicycles for their transportation and has a focus on the security of the bikes.
5. *EL-V sharing service addressed to city employees*: it offers an EL-V service to city employees for commuting or transportation.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

6. *Electric bicycle sharing service addressed to tourists*: this service enables tourists to use electric bicycles for their transportation and/or leisure activities.
7. *Network of charge points offered by private operators:* this ICT tool provides a network of charge points in a certain area.
8. *Incentive mechanism for EL-Vs owners or sharers for virtuous behaviour (gamification):* this ICT tool provides EL-V sharers or owners with incentive mechanisms for virtuous behaviours.
9. *Electric bicycle sharing service addressed to large companies' employees:* it enables employees of big companies to use a sharing system of EL-Vs for commuting.
10. *Easily portable, closed modular stations allowing the storage and charging of electric bicycles:* it enables EL-V owners to store and charge their electric bikes.
11. *Ready-made booking & management platform providing real-time information on available EL-Vs and smart e-ticketing coordinated with multimodal offering:* this ICT-tools allow companies to implement a booking and management system for its EL-Vs while having real-time information and a smart e-ticketing coordinated with multimodal offering.
12. *Dashboard with real-time info-mobility analytics, tracking and certification of trips, addressed to City authorities:* this ICT-tool provides a dashboard with real-time information and mobility analytic, tracking and certification of trips, addressed to sharing/rental companies or city authorities.

The business models above are described in detail in the Deliverable 7.1 of the ELVITEN Project [2]

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

2 The electro mobility sector during the emergency phase

In the last months of the ELVITEN project, COVID-19 has changed the public perspective and the behaviour of mobility markets behaviour across the world. After the initial alarm, millions of people have been confined inside their homes without being able to go out but to carry out basic activities. This situation can certainly change the electromobility market status-quo, as it is shown in several studies analysing demand variation during COVID-19 crisis. At the beginning of the COVID "crisis" and before the mandatory lockdown, we observed an increase of the demand of electric bicycle sharing services. For instance, Billy Bike, in Brussels [3] has doubled its demand. In New York, provider City Bike increased its usage rate by 67% [4]. Providing individual transport, easy disinfecting and open-to-the-air vehicles, EL-V sharing services have become more attractive to the public. Also, fear to use public transport is steadily redirecting demand from these services to EL-Vs.

Public transportation is changing because of population fear to contagions. Furthermore, restrictions have been implemented to ensure public safety. Reducing public transport capacity, mandatory use of facial masks or respecting social distancing in every public transport mode are some of these measures. They mean increased inconvenience for the user, who is forced to look for new alternatives for daily commuting or usual transport. Alternatives such as vehicle sharing services reduce exposure to the virus while being less restrictive and more convenient. These characteristics make the user more willing to use these services. The graph below visualises the demand for public transport services in Madrid, Spain during the COVID-19 crisis:

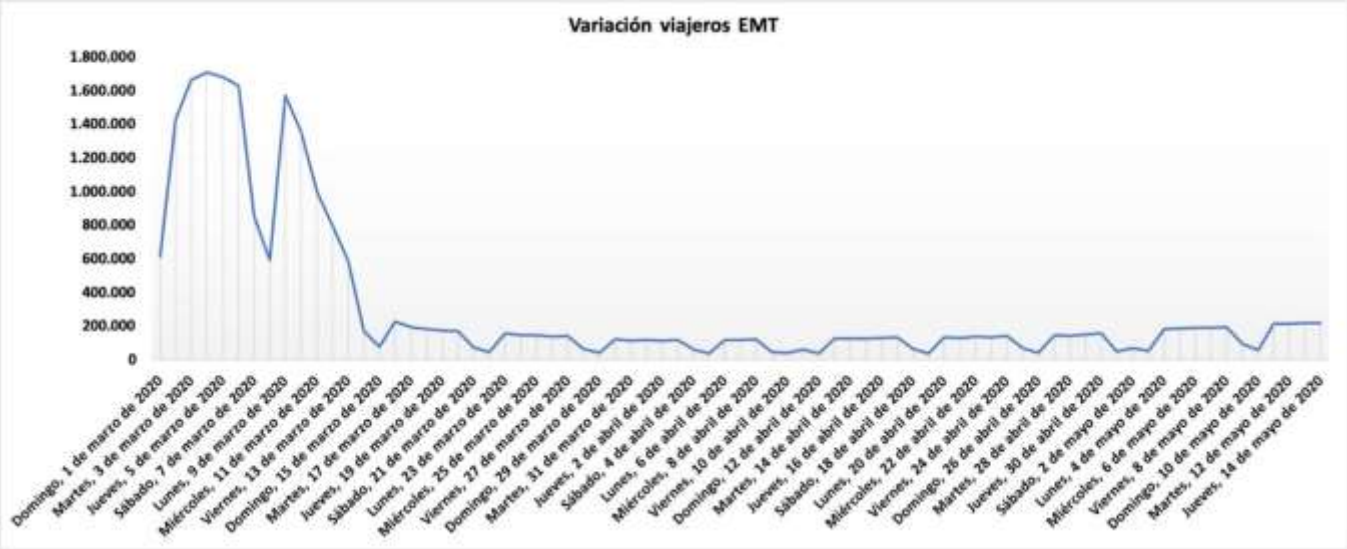

Figure 1: Demand of public transport services during COVID-19 crisis in Madrid

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

Also, after the COVID-19 crisis, the global EL-V market is forecasted to grow, especially in developing countries as India, where 30 to 40 percent of electric scooters are expected to be electric in the next 7 or 8 years [5]. In the first affected country by COVID-19, China, the charging stations sector has grown its new installed infrastructure by 513,000 public and 714,000 privately-owned charging stations, an increase of 43.8 percent compared to 2019 [6]. Not only in developing countries but also in developed ones, EL-Vs are forecasted to become a main actor in mobility, increasing their share from 5-10% to 30% [7]. EL-V markets are becoming more attractive for both private and public transport; their business attractiveness has therefore increased in comparison with the pre-COVID-19 context. In the following graph, we show the public e-bike sharing service demand in Madrid, where there is a clear trend emerging:

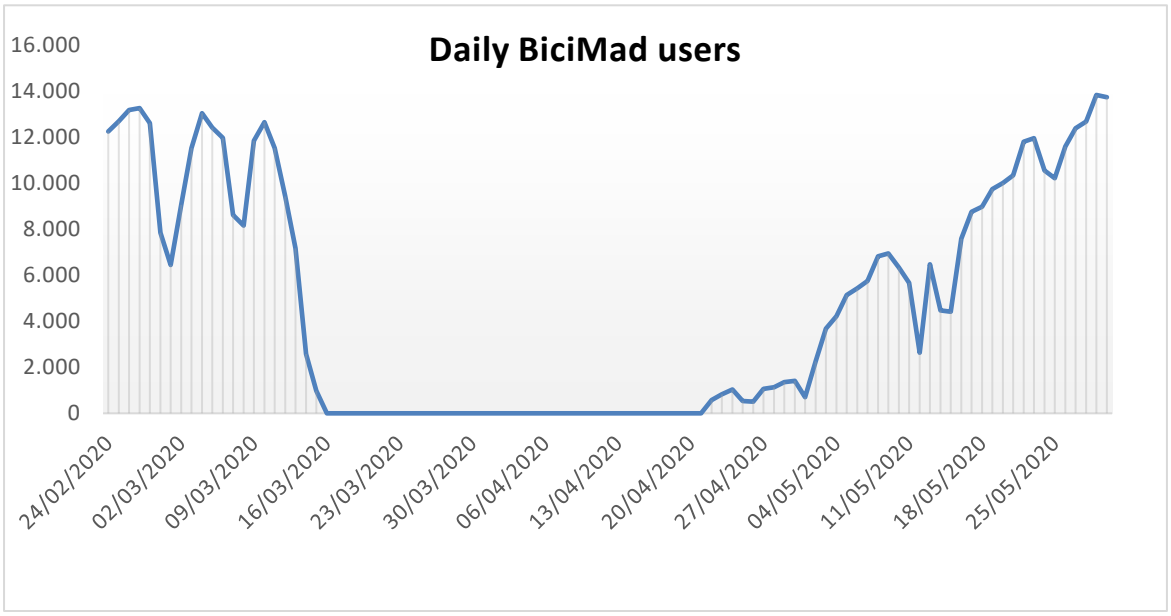

Figure 2: Public sharing service demand in Madrid during COVID-19 confinement

In this scenario, the different European mobility service providers are reinventing themselves to make their services more suitable to customers' needs. For example, Sharengo, the Italian company founded to allow the sharing of electric cars in the city, has promptly developed a new proposal to adapt to the disruption brought to the sector by the coronavirus pandemic and launched MySharengo, which allows the long-term rental of cars. Unlike car sharing, where you take the car and leave it after the race, with MySharengo you can rent a car for a time ranging from a month to a year. The car will be delivered sanitized and equipped with a kit, which includes the Sharengo Card, with which you can open and close the vehicle, charging cable, user and maintenance manual of the car, disinfectant gel, reflective vest and emergency triangle. [8]

As an example of the implementation of mobility as a service, a new way to plan your urban travel by booking all the necessary means of transport from a single platform and paying by subscription or forfeit, can be mentioned Helbiz, the Italian company that launches Helbiz Unlimited, the first subscription in Italy for sustainable mobility that allows you to pay for the rental of scooters and electric bikes in a single solution. [9]

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

The pandemic has also affected the purchasing power of households, so service providers will also face an additional challenge: making their services accessible to a population in economic difficulty. According to industry experts, each household spends around 20% of its assets on transport every year. [10]

In fact, in the immediate post lock down period, it was seen that within the automotive market there was a collapse in sales, but the first market that registered a surge was that of EL-Vs, supported also by national incentives. [11]

Photo 10, 11: ELVITEN private fleet vehicles in Genoa during COVID-19 situation

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

3 The impact of the pandemic on ELVITEN pilot cities

The COVID emergency occurred when ELVITEN demonstrations were entering the final quarter of their term, and of course they were impacted as well. In all pilot cities the demand has suffered the effects of confinement and COVID-19: the following table shows a clear trend in the numbers of trips during and post confinement:

City	Average trips/month (start pilot- Feb 2020)	Trips in March 2020	Trips in April 2020	Tips in May 2020 (until 27th)
Bari	326	269	10	737
Berlin	328	277	293	267
Genoa	218	260	214	97
Malaga	377	578	165	336
Rome	571	764	318	752
Trikala	511	593	454	838
Total	**2,229**	**2,741**	**1,454**	**3,027**

Table 1: Demand analysis in ELVITEN pilots during COVID-19 situation

During the confinement, demand drastically dropped due to the interdiction for citizens to leave their homes and mandatory telework when applicable. However, once restrictions began to lift, demand increased to surpass the average pre-COVID-19 scenario in more than 800 trips per month. This data supports the hypothesis previously described, showing that users are more interested on EL-V services because of EL-Vs characteristics and the possibility of maintaining social distancing while commuting or undertaking daily trips. This trend will keep increasing services demand once restrictions are completely lifted in each urban area where ELVITEN vehicles are deployed.

Not only the current situation helps the EL-V market grow but also their environmental impact, which is a big social challenge which EL-Vs can contribute to: EL-Vs have lower emissions and their CO_2 emissions are decentralised. These advantages are also coupled with remarkable economic benefits, because a EL-V is cheaper than a motor vehicle and its maintenance and operation costs are also lower. This makes EL-Vs a very promising alternative to public transport and private commuting. To sum up, the main COVID-19 effects on EL-Vs markets that are emerging are as follows:

- Increasing demand for EL-V sharing systems.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

- EL-Vs allowing easy disinfecting in individual transport.
- EL-V market growth, especially in developing countries.
- EL-Vs as a suitable alternative to public transport and commuting.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

4 Emerging business models and operational requirements

The crisis linked to the Covid-19 emergency is likely to have permanent effects on existing urban mobility systems. This is true both in the medium term, with the need to adapt to the safety requirements defined for the post lockdown phase and subsequent phases, and in the long term, when we will have to verify the real impact of the crisis on the behaviour of citizens, which will be consolidated over time.

The data collected in the pilot cities during the demonstrations confirmed the trends that are taking place at European and global level and this situation has favoured the birth of new business models and has led to the evolution of ELVITEN business models.

The framework outlined is part of a context in which players continue to offer a wide and innovative range of services that meet the needs of citizens. The development and the success of the individual models will depend on the ability of players to identify and meet society's emerging needs.

Several ELVITEN business models (identified in previous chapter 2.2) need to be adapted to the new scenario.

4.1 EL-Vs short term sharing services

The service that can provide added value to all short term sharing business models is the sanitization of vehicles and charging columns: this service must not only be understood as compliance with all the regulations that came into force following the emergency, but must also include all those measures that can be further appreciated by the customer as a mean to provide reassurance and enforce his/her feeling of safety.

In particular the business model #4 "*e-bikes sharing service addressed to citizens, with focus on security*" can be integrated with safety aspects i.e. not only to consider aspects related to vehicle and infrastructure security from third party damage but also to include aspects related to customer safety. Obviously that business model can be applied not only to e-bikes, but especially to closed means of transport, such as four-wheeler El-Vs and e-cars, through the implementation of increased cleaning /disinfection measures based on WHO recommendations.
Therefore, some new operational requirements related to this emerging business model could be:

- provide cleaning supplies and masks for drivers.
- provide automatic sanitization of open vehicles stationed inside enclosed charging/parking stations.
- shared vehicles must be sanitized after every ride (at least the seat and parts touched by riders) especially if they are covered vehicles.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

- Health safety commitment implemented in the rider and driver apps.
- require drivers and riders to wear face masks or coverings during rides (not needed for open vehicles unless national law requires it).
- require users to provide their own helmet (if one is required); but shared helmets (with specific cleaning/disinfection after each use) could be rented for an additional fee.
- promote/enforce use of personal accessories (e.g. helmets), according to local regulations.
- drivers could be asked to take selfies with masks before accepting rides on closed shared vehicles (according to local regulations, probably not needed for open vehicles like e-bikes).

The same measures can be considered also for the other sharing services, such as business models #2 *"Self-sustainable sharing and/or rental service", #5 "EL-V sharing service addressed to city employees", #6 "Electric bicycle sharing service addressed to tourists", #9" Electric bicycle sharing service addressed to large companies' employees".*

4.2 EL-Vs long term rental services

An ELVITEN business model, #2 "*Self-sustainable sharing and/or rental service* " could evolve in a different direction. Many people are trying to use more individual modes of transport, moving away from using public transport, which is characterised by low capacity. At the same time, the COVID-19 is creating new health worries for the whole concept of sharing, especially for the car segment because the travellers are in an enclosed space and could be difficult to ensure frequent sanitization for short trips.
So, it will be necessary to rethink the sharing business model, moving from short-term to longer-term sharing models.
The long term sharing of vehicles is a perfect solution for the current scenario: it allows to avoid the personal contact of public transport. This service also reaches those who have never thought of these vehicles as a real alternative to their mobility. To try to respond to people's needs and being aware that a purchase today can weigh on the private economy, a flexible rental service could be the solution.
Some new operational requirements related to this emerging business model could be:

- provide rental location with enough space for rental process at distance.
- shorten rental process as much as possible.
- provide more options for vehicle with enough loading capacity since they will be used more for grocery shopping and necessary transports than for work and leisure activities.
- allow the booking of the service through APP (have users send their documents digitally (driver's license and ID).
- integrate service offerings from per minute with offerings per daily/weekly/monthly rental (it is important also keep the rental per minute because of people that use this service rarely).
- integrate with sanitation services.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

A widely adopted business model during the COVID-19 pandemic is #3*"EL-V leasing to last-mile delivery carriers"*. Also, ELVITEN pilot cities show that there is a dramatic increase in delivery services, due both to the boom in e-commerce and to the travel restrictions that caused a high request for home delivery services. Experts agree that the return to "normality" will be gradual and in any case not "total". Many of the habits taken by people in the lockdown will be maintained, so this business model will be interesting also in the future.
It is characterized by some operational requirements:

- Providing a personal EL-V for each delivery carrier (where possible, or otherwise thorough cleaning between users).
- Providing automatic sanitization for open vehicles after each shift.
- Supporting formal regulation (es. access to city centre, economic incentives…) and soft instruments (es. green certification).

4.3 EL-Vs Dedicated Infrastructures

In order to ensure compliance with the rules of sanitisation and social distancing, the business model #1 " *Integrated charging and reserved parking service"* can also be complemented with precautions that allow a safer management of parking spaces, both in terms of space and time.
The direction to follow is to move towards the creation of intelligent car parks, able to communicate the availability of parking spaces and provide additional information useful for monitoring urban traffic. The service could also make possible to book parking spaces with charging points using timeframe approaches according to a logic that allows to avoid crowding and a sanitization of the spaces.
These functionalities may also be useful for monitoring and improving city mobility. In fact, the Municipality will be able to verify that each stall is legally occupied, by verifying that payment has been made, and that the actual duration of the stopover corresponds to the time booked.
The possibility for local authorities to actively monitor parking traffic via computer systems will result in a drastic reduction in management and control costs.
Some new operational requirements that could be related to this business model could be:

- Usage rules management.
- Provide sensitization tool or disinfecting service of parking spots every time they are used.
- Booking and brokering services to enhance user experience for usage of EL-Vs, charging points and parking spaces integration.
- Changing service offering from metered use to monthly/yearly rental.
- Bike racks
- Corners to store and charging bike batteries inside bar/café (in shelters as already happen for PCs)
- Wall-box to charge ELVs different form pedelec in private spaces with public access

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

4.4 Transport Ecosystem Governance

Also the business model #8 " *Incentive mechanism for EL-Vs owners or sharers for virtuous behaviour (gamification)*" can better adapt to the current post-lockdown situation: currently this service allows companies and sharing services to add a new feature to their business, including benefits for the final user if they make a good use of their service and reduce the carbon footprint by using an environment friendly transport mode, but in the future it could also include incentives linked to virtuous behaviour of users in relation to the correct sanitisation of vehicles.

The business model #11 "*Ready-made booking & management platform providing real-time information on available EL-Vs and smart e-ticketing coordinated with multimodal offering*" is becoming more and more important also in a MaaS (mobility as a service) perspective. The COVID-19 pandemic may have put a temporary halt on our mobility, but it has not steered us away from building more connected and resilient communities. If anything, it is the opposite. Data will serve as a powerful tool in enabling strategic and timely decisions in this ever-evolving landscape. Maas can provide unique value in a new world of social distancing, increased working from home, changed transport assets and commuters turning to increasingly varied and disparate transportation options. [12]

The pandemic has made real-time data availability more urgent. The business model #12 *Dashboard with real-time info-mobility analytics, tracking and certification of trips, addressed to City authorities* becomes increasingly important as having the ability to constantly monitor the data collected in the dashboard allows governance to analyse how users' travel behaviour changes and consequently allows services to be reorganized according to users' needs.

Some ELVITEN pilot cities had predicted the importance of this business model by installing e-hubs near exchange stations (e.g. train stations), however smart e-ticketing coordinated with multimodal offering has not yet been implemented, even if local administrations believe it is a service to be implemented in the future.
The most important operational requirements need are apps for online booking and payment.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

5 Conclusions

Mobility needs to reinvent itself in some way to adapt to the upcoming challenges arising from COVID-19. Operators, software developers, vehicle manufacturers, public services and public authorities will all have to be creative to find ways to address a wide range of social, technical, and commercial problems created or exacerbated by the pandemic.

The main aspects that service providers must consider are:

- Safety and hygiene: hygiene is perhaps the most significant psychological barrier to the use of shared mobility in this era of COVID-19. In the next future, those who manage to convince users that their vehicles are the safest will have a significant advantage over those who may not have the resources to do so.
- Strategy: shared mobility services will, at least actually, only serve the local population. This is an important change for some operators who were heavily dependent on revenues generated by tourists. Now it might be useful to shift from short-term offers to monthly subscriptions to maintain a low cost per trip for all new regular users.
- Integration: technological innovations such as platforms for the integration of mobility services, and market innovations such as sharing services (cars, bikes, and scooters) can and should contribute to the development of sustainable mobility provision for all citizens.

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

References

[1] «ELVITEN Deliverable 4.1, ELVITEN set-up and first demonstrations activities, October 2019».

[2] «ELVITEN project,» [Online]. Available: https://www.elviten-project.eu/en/.

[3] «Number of electric bike journeys has doubled, says Billy Bike,» *The Brussels Times,* 04 2020.

[4] J. Hazan, P. Marteau e B. Fassenot, «« Toutes les conditions sont réunies pour un retour irréversible de la suprématie de la voiture individuelle »,» 06 05 2020. [Online]. Available: https://www.lemonde.fr/idees/article/2020/04/26/toutes-les-conditions-sont-reunies-pour-un-retour-irreversible-de-la-suprematie-de-la-voiture-individuelle_6037800_3232.html.

[5] «ET Auto,» 06 05 2020. [Online]. Available: https://auto.economictimes.indiatimes.com/news/industry/indias-electric-story-to-continue-to-be-dominated-by-light-mobility-post-covid-19/75284206.

[6] «Renewable Energy World,» 06 05 2020. [Online]. Available: https://www.renewableenergyworld.com/2020/03/30/covid-19-brings-the-growth-of-chinas-charging-station-sector-to-a-month-long-halt/#gref.

[7] K. Heineke, B. Kloss e D. Scurtu, «Micromobility: Industry progress, and a closer look at the case of Munich,» McKinsey Center for Future Mobility, 2019.

[8] «Sharengo,» 2020. [Online].

[9] «Helbiz,» 2020. [Online].

[10] K. Huhtala-Jenks, Head of Ecosystem & Sustainability, MaaS Global.

[11] J.-L. Di Paola Galloni, Corporate Vice-President Sustainability and External Affairs, Valeo Group (TBC).

[12] «Airquality news,» 2020. [Online].

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926

About ELVITEN project

The vision of **ELVITEN** (***Electrified L-category Vehicles Integrated into Transport and Electricity Networks***) is to propose replicable usage schemes, consisting of support services, ICT tools and policies, to boost the usage (ownership or sharing) by private and professional users of electrified L-category vehicles (bicycles, scooters, tricycles and quadricycles) and to demonstrate them in six European Cities: **Bari, Berlin, Genoa, Málaga, Rome**, and **Trikala** with three principal aims:

- to make users more familiar and facilitate them to use electrified L-category vehicles instead of ICE vehicles for their private transport and for light urban deliveries,
- to collect rich information sets made of real usage data, traces from dedicated ICT tools, and users' opinions after real trips,
- to generate detailed guidelines and business models for service providers, planning authorities and manufacturers to make electrified L-category vehicles more attractive and more integrated in the transport and electricity networks.

Our values:

- Commit to more innovative and more sustainable transportation in Europe.
- Support shared electric mobility for urban travellers and delivery companies.
- Pursue smooth market deployment for a greener urban future.

Our work:

- Demonstrate the advantages of EL-Vs in six European cities.
- Integrate existing charging stations into in a wide, open platform for users.
- Incentivise the use of EL-Vs for occasional and regular urban travellers through easy-access tools.
- Analyse trip and user data to make recommendations available to public authorities in other European cities

Website: www.elviten-project.eu

Email: info@elviten-project.eu

Twitter: @ELVITEN_EU

Instagram: @elviten_project

LinkedIn: ELVITEN

YouTube: ELVITEN_EU Project

This project has received funding from the EU's Horizon 2020 research and innovation programme under GA no 769926