

JOURNAL

PROJECT

VoxPop - People, Processes & Technology towards the digital transformation of the urban mobility system of Lisbon

📍 Lisbon, Portugal

TOPIC

Digital transition

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VoxPop has laid the foundations to roll out the digitalization of the mobility landscape of Lisbon

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The Innovators Alliance has laid the foundations for the definition of the data sharing framework by identifying the barriers, and started identifying relevant use cases. At the same time, the user requirements for the navigation support tool for vulnerable city users and the client observer app as well as the indicators for the mobility observatory have been identified. Finally, a market research has been executed with regards to the Urban Access Point.

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People, Processes & Technology towards the digital transformation of the urban mobility system of Lisbon (VoxPop) is a project that will foster digitalization and collaboration between private and public mobility stakeholders in the Portuguese capital. VoxPop is funded by the Urban Innovative Actions (UIA) initiative under the Digital transition topic. Several of the main outputs of the project has been the focus of the last months, generating important motion for the rest of the project implementations to come in the next period. More concretely, the Innovators Alliance, the navigation support tool for vulnerable city users, the client-observer app, the Urban Access Point and the Mobility Observatory have achieved important outputs.

Data-Sharing Business Model

The Innovators Alliance (IA) has identified the barriers and started the identification of use cases for data sharing between the members.

The IA is already rolling out and having the first important outcomes towards creating a trusted environment to exchange and share data. This exchange of data will stimulate innovation, economic development and support policy and decision making towards more social well-being.

As a first step, the barriers to data sharing have been identified by the Innovation Alliance members. These has been identified at individual level through a survey (20 respondent from 12 organizations) and interviews (17 interviewees from 11 organizations) and then discussed collectively in a dedicated workshop (15 participants from 10 organizations), ending in the following list of barriers:

The need to incur extra costs, human and/or technological, to process data;

- The lack of reciprocity or proportionality in data sharing;
- Uncertainty about data that may or may not be shared, from a legal perspective;
- The risk of sharing data with economic value for the business.

Secondly, data value mapping was initiated by identifying use cases among IA members. To initiate this identification, each member is currently undertaking internal brainstorming sessions to generate use cases with a view to improve their available processes, products, and services.

Urban access point (UAP)

Market research has been conducted including the definition and overview of the trends in data platforms in Europe as well as an overview of the business model and relevant regulations / standards such as DATEX II and MMTIS NeTEx. Relevant aspects are type and source of data, data format and frequency, access and quality issues as well as operational state in terms of end-user purposes and needs. As for the architecture of the urban access point, it can be comparable with the architecture of a National Access Point and working as a repository of links, not storing the data itself.

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5 stages Design Thinking



Integrating City Data

Enhanced service design through data analytics

Data analytics methodologies were discussed among project partners to define the data needs for the development of a set of advanced analytics (fine-tuned list of tier-1 analytics & data analytics models), aside from the Innovation Alliance, that will work as prototype to test the potential of the Alliance. This will allow the city to gather actionable insights by identifying challenges and opportunities related to mobility in the city of Lisbon. The challenges selected are located between the diagnostic and the predictive analytics layers, understanding the current status while paving the way for predicting what will happen in the future. An early implementation for the bike-sharing case has been done covering both the descriptive and diagnostic parts to answer to the problems and needs of various partners. Regarding the descriptive analysis, we studied the user profile and the accessibility level of each bike-sharing station. As for the diagnostic analyses, we studied the modal share, expansion of the current network with new bike lanes and stations. We also explored the relation between the weather conditions and the use of bikes in the city. In terms of potential analysis concerning the bike-sharing system, we will study the impact of events with a high number of participants which could impact on the demand for bike-sharing, correlations between the use of public transport combined with car parking in the city limits, as well as the identification of routes for potential improvement of the public transport offer.

Navigation support tool for vulnerable city users

User needs for the VRUs navigation app have been identified focusing on people with total or partial visual impairment and wheelchair users. For the user needs identification, the methodology followed was divided in four steps:

- firstly, a literature review was conducted including of the Pedestrian Accessibility Plan of the Municipality of Lisbon;
- secondly, the user segments to be approached were identified and the people interviewed;
- thirdly user journey mapping exercise was developed with the identified volunteers;
- as fourth and final step, a benchmark analysis of digital tools mentioned in the interviews was done (which included Lazarillo, Right Hear and Be My Eyes for people with visual impairment, + Acesso para todos and Route 4 U for wheelchair users as well as Moovit and Lisboa.MOVE-ME for all kind of mobility impairments).

The most important insight taken from this process was that VRUs need reliable and up-to-date data sets that the applications already in use can provide. Other findings from the interviews with wheelchair users specifically, are that these users rely more on available data to plan private vehicle routes, rather than on walking or public transport routes. These ensure greater accessibility on the route and users show a preference for using private vehicles because walking trips have many barriers. Regarding public transport, in addition to low accessibility, they feel socially confronted. Another problem they feel is the lack of enforcement in dedicated parking places and the lack of empathy from other users.

Finally, the recommendations of the analysis include the need for having information in real time, direct communication channels between the operator and the VRUs, integration of updated data sets on existing apps and more reliable data available.

Client-observer app

The requirements for the client-observer app were captured and are being analysed. It was a challenging process due to the difficulty in recruiting the Public Transport users fulfilling the predefined criteria due to the important change of mobility needs and habits during the pandemic period. The process started with a desk research exercise about mobility related feedback tools, continued with the recruitment of the participants of the group meeting, the interviews, and the workshop to end with the drafting of the user requirements.

In total, 33 participants from various age groups and areas of the city participated. It was concluded that speed but also predictability, are the most important factors, followed by comfort and safety. The metro was characterized as fast and more reliable and mostly used for work trips or trips at night and during adverse weather conditions, while the bus is less accurate/reliable in terms of times of arrival, it is more comfortable and pleasant and mostly used by people who prioritise these characteristics and for leisure or weekend trips. Micro-mobility was mainly assessed as a complementary mode while Ride-sharing services were declared as a good alternative when there is a disruption on the public transport network. As for the mobility apps, aggregators are used to find the best route, but the ones of the providers are used to be informed about the schedules. As for the mobility feedback apps the users are reluctant due to the effort needed and their low efficiency, highlighting that in order to provide feedback the process should be fast and easy and the notification received at the correct moment.

Finally, additional suggestions for the app were related to payment, driver review and share location capabilities, fidelity program, touristic information or request stop and S.O.S buttons in the app.

Urban Mobility Innovators Open Call

With regards to the open call, the rules and participation guide have been approved and the dissemination plan is being drafted. The workshops to collect challenges and priorities have been already executed and these are being drafted. The call will be launched soon. The biggest challenge is related to the open-source aspect of the solutions to be provided which is an important challenge for SMEs to participate since they will not keep the IPRs. This will entail the need to put efforts also on other types of candidates to participate, such as developers, research centres, activists, NGOs, etc.

Urban Mobility Observatory of Lisbon

Finally, with regards to the Urban Mobility Observatory (LUMO), a list of indicators for the observatory have been collected and will be validated by the strategic board. From a total of 230 indicators that were collected, 79 were relevant to VoxPop and will be the ones available in the observatory. The criteria for their selection were existence and availability of the data needed for their calculation, ease of calculation and inclusion in the observatory and importance for the assessment of the Lisbon Urban Mobility System.

The main categories are based on the Lisbon Strategic Vision for Mobility 2030, disaggregated in general indicators, pedestrian, public transport, road, cycle and interfaces networks, parking, urban logistics, school and tourist transport as well as road safety. Once these are finalized the methodology for their achievement or estimation will be defined.

All the above outputs allowed to the project partners to increase the visibility of the project, which was present in various relevant events during the last 2 months. Namely:

- Velo City 2021, 6-9 September, Lisbon, Portugal. Different ways of Bike Sharing.
 - Velo City 2021, 6-9 September, Lisbon, Portugal. Bike Sharing Service - Data Informed Decisions: The case of Lisbon's Bike-Sharing Scheme.
 - BMVI-Workshop series "Data Innovations for Smart Mobility in Europe" Workshop No. 3: - Managing the European Data Flow: Mobility Data Platforms and Interfaces, 9 September 2021. Innovators Alliance – data-sharing Ecosystem Co-creation process.
 - ITS World Congress 2021, 11-15 October, Hamburg, Germany - Cycle parking as an enabler of cycling in Lisbon: User-centred design in policymaking.
 - Civitas forum 2021, 20-21 October, Aachen, Germany. VoxPop Innovators Alliance – The City of Lisbon journey towards a sustainable and responsible public and private data-sharing ecosystem.
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