

## City of Lublin's experience in projects on urban mobility

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The development priorities of Lublin Municipality regarding the implementation of the smart city concept concern, to a large extent, aspects related to urban mobility. Lublin Municipality has gained experience through large investment projects such as modernising the public transport system, extending the accompanying infrastructure, or purchasing modern vehicles complying with the current emission standards. Furthermore, the municipality participated in innovative projects of international scope, becoming a perfect partner for testing new solutions.

### EIT Urban Mobility

As a member of the European Institute of Innovation and Technology for Urban Mobility (EIT Urban Mobility) community, Lublin Municipality had the opportunity to implement several projects of an international character. EIT Urban Mobility uses EU funds to promote educational, industrial and R&D projects. The budget allocated to these activities amounts to approximately EUR 1.6 billion, making it one of the largest publicly funded urban transport initiatives in the world.

### AI-TraWELL Project

One of Lublin Municipality's activities within the EIT Urban Mobility is the "AI-TraWELL" project. Its main objective is to develop a prototype tool based on artificial intelligence (AI), taking the form of an interactive chatbot. It will recommend personalised travel routes accounting for users' diverse needs and preferences.

The AI-TraWELL prototype application will combine the needs and preferences of users with real data enriched with forecasts on the available means of transport. The application differs from other solutions by aggregating all transportation means with statistical and subjective data introduced by application users, thus enabling a personalised solution delivery.

Enabling the use of these types of data required a thorough investigation of the factors influencing a user's choice of a particular transportation mode and an examination of the general travel preferences of citizens. In this two-year project, one of the activities regarded extensive social research carried out in four European cities (Lublin, Munich, Copenhagen and Istanbul). The study used diverse research methods, ranging from survey questionnaires to specialised tools developed by Gehl Architects (a world leader in urban design). One of the tools was the Maptionnaire. It is a research method characterised by the centralised data collection- qualitative, quantitative and spatial – through active maps. The addition of a spatial aspect to the research facilitated understanding people's preferences in everyday

travel. It made it possible to highlight key factors that influence the choice of specific travel routes. Complementary to Maptionnaire was the Public Life Survey, in which researchers carried out observational studies covering the same areas to analyse traffic flows at particular points and verify the type of activities that city residents engage in these areas.

In 2020, a prototype application was developed for Lublin and Munich. In 2021, building on extensive social research, we developed a tool for combining subjective data with objective data, enabling chat-bot algorithmic learning. At the end of 2021, an extended version of documents will cover strategies for commercialisation and exploitation of the AI-TraWELL solution in the future.

The project is carried out by an international consortium bringing together academia, tech companies and municipalities. The consortium consists of the University College London (ranked among the world's top universities), Fraunhofer Society for the Advancement of Applied Research, Münchner Verkehrs und Tarifverbund GmbH (MVG), Achmea, TomTom, ISBAK Istanbul IT and Smart City Technologies Inc., Open & Agile Smart Cities, Gehl Architects, Eindhoven University of Technology, and the cities of Lublin, Copenhagen, Munich and Istanbul.

### **CITYTHON Project**

The "CITYTHON" is another project implemented within the EIT Urban Mobility community by Lublin Municipality. The project's main objective was to organise an urban hackathon on broadly understood urban mobility. Furthermore, the project aims at creating a reference event in Europe to attract the best talents and create innovative mobility solutions.

The first edition of the project took place in 2020 in three European cities: Amsterdam, Barcelona and Lublin. Each city prepared three challenges for the participants of the event. For example, in the City of Lublin, the participants worked on solutions related to moving car traffic out of the city centre, accessibility of urban space, public transport and mobile services with particular attention to the needs of disabled and older people. The final challenge regarded optimising bus routes taking into account citizens' preferences. Within each challenge, the best team was awarded a cash prize. The winners also received the opportunity to present their solution at the Smart City Expo 2020 Congress in Barcelona.

The success of the first edition of the project translated into its continuation in 2021. In addition to the cities participating in the event in 2020 (Lublin and Barcelona), Hamburg, Bilbao, and Eindhoven have joined. The idea of the hackathon itself and the rules have not changed significantly.

In the case of the City of Lublin, the following challenges have been selected for 2021: Green Connection - developing a concept to connect green areas into a recreational and natural system, Green Ring Road - developing a green network (ring road) of the city, and Sustainable Transport Network - a multimodal transport hub as a way to optimise travel and reduce the "door to door" time.

The two editions of the CITYTHON project have shown the significance of such initiatives and the high demand of cities for creative prototype solutions.

## Multistage Design Thinking Project Support Project

“Multistage Design Thinking Project Support” was also implemented by Lublin Municipality within the EIT Urban Mobility. It aimed to create more sustainable urban mobility solutions by training public officials using the design thinking method. Design thinking as a set of cognitive and practical processes is widely used and popular among start-ups, creative industries and private companies due to its effectiveness in solving complex problems. Its solutions go beyond the application of technical knowledge. The workshop model adopted in the project was based on the D7 methodology developed by Prof. Ezri Tarazi, who assumed that any innovative project must be designed comprehensively, considering structured ways of defining the needs and elements to which the project is supposed to respond. As part of this method, participants conduct in-depth research on the project’s target audience and illustrate the solution from visualising it to building a business model.

Adapting the design thinking method at the city administration level, especially in traffic management and public transport, allowed participants to combine different approaches to solving contemporary and future problems related to urban mobility, enabling the creation of effective and user-oriented solutions.

An international consortium consisting of the following entities worked for the project’s success: Technion – Israel Institute of Technology, UnternehmerTUM GmbH, Zone Cluster Ltd. and the cities of Munich and Lublin.

## Project MOVE IT like Lublin – a Chisinau sustainable public transport sustainable development initiative

This project aims to reform the public transport management system in Chisinau by increasing public transport transparency using modern IT and technological solutions. The project also aims to build the competencies of human resources in the transport sector in Chisinau.

The Lublin Municipality implemented numerous smart city projects (e.g. Traffic Management System – ITS, Public Transport Management System) and transformed the functioning of public transport. As a result, Lublin’s public transport is now characterised by modern low-emission vehicles together with diversified and rich accompanying infrastructure (e.g. Electronic Ticket System, P&R infrastructure). Therefore, the City of Lublin provides significant support in the CoMobility project. The support takes the form of training and consultations in the field of implementing modern transport solutions.