

CASE STUDY

Bologna

The MaaS upgrade



**Integrated
Multi-modal
Mobility
Solutions**

Context and rationale

Bologna is the capital and largest city of the Emilia-Romagna region in Northern Italy. It has nearly 400.000 inhabitants. The metropolitan area including the city and its functional urban area has about 1.000.000 inhabitants. It is one of 13 Italian metropolitan areas which receive specific funding and support from the Italian government because of their importance for the country's development. The university plays an important role within the city, which is also characterised by high-level culture, historic architecture, cuisine, and industry. A Sustainable Urban Mobility Plan (SUMP) was elaborated and adopted at the level of the metropolitan area (Metropolitan City) in 2019. Within Bologna's city administration there is a dedicated mobility department, which is collaborating with the Urban Planning, Environment and Economy Departments in terms of mobility planning at the city-level.



Initial challenges and needs

Barriers faced:

- Technical barriers, time lags or gaps in real-time information collection and transmission;
- Technical difficulties in integrating systems of different service providers: payments, cultural activities, local transport, data collectors/processors;
- Legal issues regarding public-private partnerships (PPP), GDPR/privacy issues, compliance with NIS2 Directive (cybersecurity);
- Limited user skills and aptitudes for use of mobile systems, esp. among elderly;
- Technical barriers for users: generation/type of smart phone required to use system;
- User attitudes & behaviour—resistance to shifting to public transport, mobile apps and payments;
- Difficulties in engaging private mobility providers to work with public transport providers, due to competition and reluctance to share data;
- Private companies are interested in innovative products and services driven by profit but may not consider the value of inclusivity and social cohesion.

Innovation developed

To address growing mobility challenges and improve air quality, the Municipality of Bologna seeks to introduce a more advanced **Mobility-as-a-Service** (MaaS) initiative, building on and integrating investments foreseen under the SUMP (2019) (tram, trolleybus, electric public vehicles, ZTL Ambientale, Green Area, sharing-mobility), the ROGER App, and funded under ROP ERDF 2014-2020 and NOP METRO actions for sustainable mobility in urban areas. The main objective is to reduce private vehicle use in favour of public transportation and all forms of sustainable mobility that are present at the regional level, while also making the service more user-friendly and socially inclusive—in line with the specific objectives of the SUMP, which foresees implementation of MaaS. The mobility innovation is an upgraded Regional MaaS system, managed by operators that have signed commercial agreements, reaching level 4 Integration.

The system includes various components and features:

- Adaptive MaaS—multimodal travel planner that can be personalised to the user's profile providing a dynamic offer of local public transport and mobility services depending on needs by location and time;
- Realtime infomobility and interactive maps, including color-coded information on bus occupancy;
- Dematerialised travel tickets available through integrated and/or unified payment systems with personalised bundles and all-inclusive mobility subscriptions;
- Promotions, reward systems, incentives: a) for users with rewards, bonuses, cashback, gamification based on calculation of carbon footprint; b) for MaaS operators with subsidised fees, discounts for sustainable/inclusive solutions sold;
- Multilingual App: for foreign visitors and residents;
- Integration of Culture Card and event ticketing: for access to cultural facilities and events in the metropolitan area and other platforms of tourism at the regional level.



Front-end: Mobile App (ROGER)

- NFC-HCE Technology for Mobile ticketing;
- Payment interfaces: onboard card reader, SIM sensors (but users can still buy tickets via kiosks, traditional retail outlets);
- Sensors and data collection system (sniffing WiFi to detect occupancy of buses, GPS trackers of public transport, AVM);
- Integration layer with Data Sharing (DS) and Service Repository Facilities (SRF) connection to National Access Point (NAP).

Back-end: Digital Platform (LEPIDA)

- Platform collects and transmits data;
- Commercial contracts with service providers (transport and other) provide basis for data sharing;
- Integration of systems at the regional level with NETEX/SIRI protocols;
- Infomobility monitors at bus-stops;
- Call centre.

Lessons learnt along the FastTracking way

Bologna's Deployment Plan was developed on the basis of an already quite detailed proposal, yet the savings of time and effort resulted from the fact that the FastTrack methodology and approach provided a structure and framework that helped to more clearly understand the elements and inputs for a SWOT analysis with clear benefits for the overall management of the project. This means that once funding does become available, Bologna will be able to start the project much more quickly, since many of the issues have already been addressed in this deployment plan. In other words, FastTrack has contributed to **savings of time and effort** (for internal personnel), a **reduction in the need for external consultants** (savings in cost), and the **availability of better data and information** for decision-making processes concerning the project (savings in effort).

Through participation in the programme, it was possible to gain further insights for example, to learn about the MaaS experience in Antwerp, Budapest

and Stockholm and to learn about smart contracts, scalable cloud solutions for sharing mobility data, and conducting living and virtual labs.

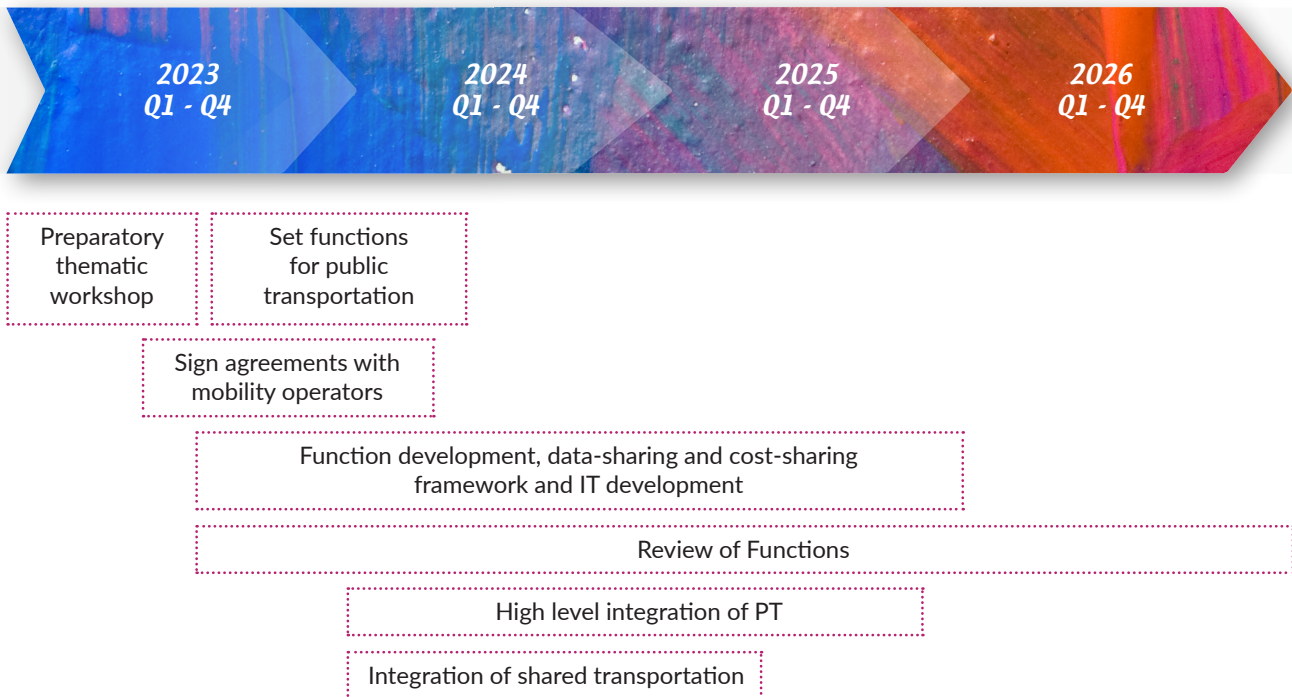
Regarding social inclusion and accessibility, while the physical limitations of people with mobility or visual impairments are generally clear and addressed, the lack of digital skills or access to devices or payment cards (digital divide) and lack of language understanding (cultural divide) of public transport users are not always taken into account—the latter aspects were highlighted by the Stockholm representatives.

Acceleration factors

- Political buy-in;
- Right cooperation framework, build trust amongst partners;
- Define right scope of the MaaS, think along the necessary combinations of services.



Timeline - The deployment road ahead



Read more

Deployment Plan

SUMP: <https://pumsbologna.it>

SPINE project: www.spine-project.eu

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