SUMT Factsheet

INTERNATIONAL URBAN AND REGIONAL COOPERATION

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Rethinking the Curbside Digital Solutions for Sustainable Cities

Public space in cities is an extremely scarce and limited resource. Within this, the curbside represents an even narrower and highly contested strip of land, where the greatest number of needs, uses, opportunities, challenges, and projects converge. Cities face numerous reasons to manage the curbside effectively, including the ambition to strengthen sustainable mobility infrastructure (such as walking, cycling, and public transport), the need for increased road safety, the growing pressure of logistics, the demand for outdoor spaces for social interaction, and even the need to increase public revenues.

Forward-looking cities are also reimagining their public spaces to make them more resilient to climate change. Only through digital, advanced, and efficient management is it possible to pursue multiple objectives simultaneously, particularly those related to mobility. This significant challenge calls for the exchange of lessons among practitioners, drawing on both the expertise of those developing dedicated technologies and the real-world experiences of selected cities – diverse in size and context – from Europe, the US, and Canada.

Photo from presentation by Andrew Glass Hastings

The Open Mobility Foundation Experience

The Open Mobility Foundation (OMF) is a nonprofit organization founded in 2019 by cities that develops open-source tools for urban mobility. By providing a shared governance framework, OMF creates a trusted environment where cities, companies, technical experts, policymakers, and civil society can collaborate to design digital solutions that support public mobility goals. More than 300 cities and public agencies worldwide are currently utilizing digital tools and open data standards developed by the OMF. Among these, the Curb Data Specification (CDS) enables cities and private operators to create a digital image of the public space to test and scale dynamic curb zones, offering a standard way to express both static and real-time flexible regulations, monitor curb activity, and inform policies aimed at making curb space more accessible, efficient, and responsive to urban needs.

Key Lessons from OMF

- Digital infrastructures enable the effective management of public space and the pursuit of the public good, moving beyond an approach still reliant on analogue tools (such as physical signage or painted markings).
- The use of an open data specification enables the creation of permanent collaborative networks among cities and public institutions engaged in curbside management, providing a platform for evaluating, improving, and further developing digital tools.
- Collaboration between the public and private sectors – that is, between institutions and operators – through stable networks allows for the effective co-creation of open-source data standards and digital tools that are both efficient and economically sustainable.
- Cross-sector relationships create opportunities to build a shared vision for mobility, involving multiple institutional actors united by common objectives.
- Digital tools should also develop user-facing interfaces (for citizens, stakeholders, workers), to facilitate awareness and understanding of the policies and rules implemented.
- Sharing a standard open-data format among different institutions and operators enables the comparability of effectiveness and outcomes across various contexts, including at the international level.

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The Logistic Plan of Madrid (SPA)

The Spanish capital has developed an ambitious urban sustainability strategy, Madrid 360, in which mobility policies play a leading role. In the city, logistics account for 20% of traffic congestion, 17% of accidents, 21% of NOx emissions, and 74% of illegal parking; therefore, digital curbside management is essential. The logistics plan (Estrategia de distribución urbana de mercancías – DUM), active in the central area (SER), combines real-time monitoring technologies, flexible and variable pricing, and user apps capable of providing dynamic information, finalising payments, and booking loading/unloading spaces. The digitalisation of the curbside is also highly beneficial for citizens, including both residents and commuters, as it allows for the flexible specialisation of parking spaces and increased turnover, serving a wide range of needs.

Key Lessons from Madrid

- Logistics and parking management are connected processes and must be administered simultaneously to ensure widespread benefits.
- Differentiated pricing and the use of pricing as a lever are essential to organizing public space, facilitating virtuous choices in parking behavior, and prioritizing solutions that can reduce congestion in the most central and exposed areas.
- Once an initial start-up phase has been completed, participation in logistics management platforms may become mandatory for commercial operators. It is essential to maintain an open forum for addressing issues and implementing further measures that arise from dialogue with the sector.
- The strong digital infrastructure across the territory (cameras, sensors) enables the municipality to manage a large amount of data, useful for monitoring the situation in real time and for developing strategies that can be adapted along the way.
- The idea of developing an app to facilitate interaction between stakeholders and operators in the sector and the DUM system has been successful. The app offers advanced features such as booking loading/unloading spaces and making digital payments. These functions can also be extended to individual citizens.

Roundtable Discussion: Cities Dealing with Curbside Pressure

The roundtable discussion compared the real-life experiences of cities far apart and different from each other regarding the needs, opportunities, and challenges of implementing digital curbside management policies. San Francisco (USA), St. John's (CAN), Vitoria-Gasteiz (SPA) and San Diego (USA) took part, also revisiting the challenges of urban logistics and focusing on the electrification of the curbside.

Key Lessons from Cities

- Curbside management is a vital component of new sustainable urban mobility plans. It can be presented to the public as a set of strategies aimed at creating side "service lanes" where various mobility services are concentrated, such as shared mobility services, logistics parking, charging infrastructure, or even ecosystem services, including adaptation measures.
- The curbside management plan and the climate action plan should be aligned to broaden the opportunities for expanding the on-street charging network for electric mobility.
- It is easier to install charging systems off-street, in parking facilities, but in medium- to high-density areas, where homes often lack garages, it is necessary to support residents' transition to electric vehicles with on-street systems.
- Digital monitoring of parking occupancy during loading and charging operations is crucial to ensure turnover in the use of spaces throughout the day.
- Curbside electrification can represent an opportunity, but if left uncontrolled, it may also pose a threat to public-space transformation policies in favour of people, road safety, and alternative mobility.
- Subject to national legislation, it is possible to allocate loading/unloading bays to groups of local businesses and prevent their generalised use. This enables further optimisation of curbside management.
- Dynamic pricing policies are worth considering even in low-density cities or areas without intense pressure on the curbside or on electrification.

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