Multi-Modal Mobility and MaaS made simple: the Essential Guide to OMMT

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Executive Summary

Providing integrated door-to-door mobility services requires cooperation among multiple transportation modes and service providers. Unfortunately, achieving the **interoperability and integration of the different technical systems presents a significant obstacle**.

OMMT (Open Multi-Modal Toolkit) is an **open toolkit** available to public and private transportation Service Providers that voluntarily agree to commercial partnerships to deliver seamless, end-to-end mobility experiences for customers. It is addressed to Public Transport Operators and to providers of Rail, Bus, Ferry, Vehicle Sharing, Parking and Ride-hailing services.

OMMT enables Service Providers to **bypass expensive and unique system integrations** that cannot be easily replicated. By adopting standardized, internationally recognized, secure, and tested specifications, Service Providers can speed up their entry to the market, lower the costs of implementation, and safeguard their investments.

OMMT is designed to **minimize the need to modify existing IT systems**. It does not necessarily call for new IT infrastructure investments. The model is adaptable and flexible, **supporting a variety of business models**. It enhances the user experience by offering various options such as booking in advance, purchasing digital tickets (either integrated or separate), as well as pay-as-you-go and account-based travel options.

OMMT also facilitates **international collaborations and cross-border travel**. It supports multiple models recognized by EU (single multimodal contract as well as combined and separate multimodal tickets). Its open nature is aligned with the EU MMTIS Directive. OMMT can help the realization of the EU vision of cross-Europe multimodal mobility.

OMMT bridges and **can work together with key mobility standards**, including Transmodel, OJP, NetEx, SIRI, GTFS and GBFS. In fact, it does not deal with journey planning nor with the exchange of timetables and fares. Its focus is on enabling the dynamic digital interactions that support dynamic offers, reservation of resources, secure validation and control, account-based travel, and fair sharing of revenues among providers.

Mobility authorities and industry stakeholders are encouraged to view OMMT as a valuable tool that can streamline and expedite the provision of integrated mobility services to the public.

The roadmap to door-to-door multimodal mobility and MaaS: rewards and challenges

An unprecedented transformation is taking place in mobility, powered by digital technologies.

Key drivers of the transformation include:

- New mobility services, such as ridesharing and vehicle-sharing
- The push towards sustainable and inclusive mobility
- Innovative paradigms, like Mobility-as-a-Service (MaaS) and Demand Responsive Transport
- Users' raised expectations of more user-centric and seamless services
- The evolution (or, in some cases, disruption) of traditional approaches to ticketing

As far as ticketing is concerned, a key trend is the **dematerialisation** of transportation contracts. Increasingly, the proof of entitlement to travel and any records of travel are held in a central system and not on physical media held by the passenger, such as a paper ticket or a smart card. To prove their entitlement to travel, passengers need a unique identifier linked to their e-ticket or account. This can be a cEMV payment card, an identifier communicated via smartphone (via display, NFC or Bluetooth), or a home-printed barcode.

Traditional integrated multimodal offerings are usually limited to a region (or country) and managed by a single Transport Authority. Dematerialisation reduces the dependencies from legacy equipment, offers more flexibility and opens new opportunities.

However, the advancement of Mobility as a Service (MaaS) and the broader concept of digitally enabled seamless door-to-door mobility have been hindered by **several obstacles**. These include:

- The need to align the objectives of various stakeholders and establish business models that are economically viable.
- The presence of disjointed and incompatible processes and technological systems.
- Lack of common technical specifications that span the complete range of door-to-door mobility services.

OMMT helps overcoming the above challenges. It facilitates the integration of various transportation modes and service providers with minimal technological effort. Instead of prescribing a single business approach, OMMT is designed to be adaptable and versatile. This flexibility allows different entities to craft commercial agreements that are beneficial to all parties involved.

In fact, there are different ways to enable an integrated passenger experience, encompassing multiple mobility providers and modes**. Five main models** can be identified.

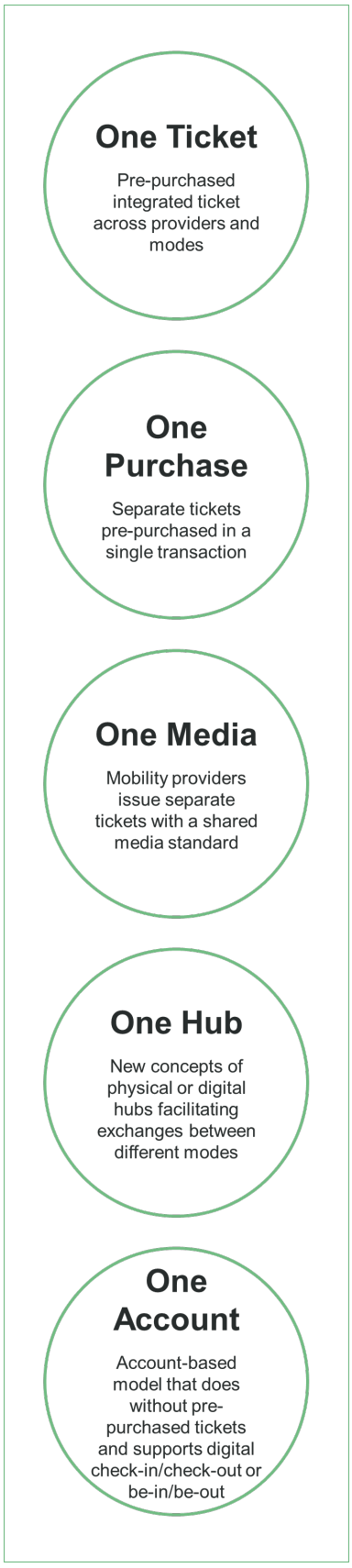

Figure 1 - The five Integrated Experience models

An outline of the five models follows.

One Ticket

Customers buy in advance a single ticket that can be used to travel with different providers and modes.

One Purchase

Customers buy in advance, in a single transaction, separate tickets and use them to travel with different providers and modes.

One Media

Mobility providers issue separate tickets with a shared media standard, for example a barcode, that is used as a fulfillment for allowing the passenger to access the mobility services.

One Hub

This model is not directly linked with ticketing aspects, but it refers to the creation of physical or digital hubs that facilitate the exchange between different modes; especially useful when sharing mobility is involved.

One Account

Customers do not need to pre-purchase tickets. Mobility services are charged to their account, that can be either a general payment account (open-loop) or an account dedicated to mobility services (closed-loop).

What is OMMT and how it can help

The problem

In order to provide digital integrated door-to-door mobility services, multiple transportation modes and mobility operators have to cooperate. But the intent to cooperate is not enough. Achieving interoperability among processes and systems of the mobility operators is required and is often the key roadblock. Realising such interoperability requires **organisational cooperation in processes** based on joint agreements, as well as **enablers of technological interoperability**.

The exchange among operators of static data, such as timetables and fares, does not solve the problem. **Dynamic digital interactions are required** to enable, for example, dynamic offers and prices, reservation of seats, secure validation and control, account-based travel, fair sharing of revenues among providers.

OMMT: what is it?

OMMT provides a set of **open digital specifications and services** that enable digital interactions among Service Providers and simplify the implementation and operation of key components of multimodal door-to-door mobility, including booking, validation, inspection, and revenue settlement.

How OMMT helps

OMMT allows Service Providers to avoid costly, non-replicable, custom-fit integrations among their systems. Adopting **common, international, secure and proven specifications** reduces time-to-market, optimizes implementation costs and protects investments.

OMMT is designed to minimize (and in some cases eliminate) the effort required to adapt the IT systems. It does not necessarily require investments in new IT infrastructure. It is versatile and flexible. As described in the following, it supports multiple MaaS

models and enables door-to-door mobility user experiences that may include reservations, pre-purchasing of digital integrated or non-integrated tickets, as well as pay-as-you-go and account-based mobility. It enables international partnerships and cross-border travel.

Far from being a monolith, OMMT is a **fully modular model**, which makes possible the adoption of individual components or of the full model. It is intended to cooperate with other solutions and industry standards.

Moreover, OMMT is grounded on specifications and solutions that have already been adopted internationally by mobility providers.

In summary, **OMMT benefits include**:

- Common, secure and scalable model that minimizes the effort required to Service Providers and protects investments.
- Support multiple types of integrated mobility experience and multiple MaaS delivery models.
- Simplify the design and implementation of multimodal / MaaS offerings through modular, integrated, standardised, scalable components.
- Facilitate the adoption by the mobility ecosystem through open specifications and simple implementation guidelines.

OMMT components: overview

OMMT assumes that a commercial agreement has been established among Service Providers to offer integrated mobile services to customers. The modular and open nature of OMMT allows to easily implement such agreements, as well as any updates, for example adding new participating Service Providers.

OMMT includes five components:

1. **OMMT.Plan**
2. **OMMT.Book**
3. **OMMT.Move**
4. **OMMT.Sync**
5. **OMMT.Share**

They are **modular** (ie each one can work independently of the others) and **integrated** (ie they work nicely together if more than one is adopted).

The five components of OMMT provide solutions, respectively, for the following key capabilities required for providing digital door-to-door mobility services:

1. **OMMT.Plan** provides multi-modal location data and supports the exchange of timetables and fares.
2. **OMMT.Book** streamlines the process of creating and managing offers and orders that span across various service providers.
3. **OMMT.Move** grants customers a secure, digital representation of their travel rights, enabling them to utilize various mobility services while allowing providers to confirm and inspect service entitlements.
4. **OMMT.Sync** ensures the real-time exchange of updated information regarding order status and customer journey details among service providers.
5. **OMMT.Share** enables the fair distribution of revenues among service providers, with adjustments based on the actual service usage.

RESOURCES

Together with this Essential Guide, UIC makes available:

- OMMT Overview Guide, a detailed, comprehensive introduction to OMMT, that includes a description of the technology solutions on which OMMT is based, examples of real-world implementations, use cases and overview guides tailored for each type of Service Provider (Rail, Public Transport, Bus, Ferry, Bike / Scooter / Car Sharing, Taxi / Ride-hailing, Parking).
- OMMT Technical Guidelines, including an introduction, a technical description and guidelines for OMMT adoption tailored for each type of Service Provider, that helps to evaluate the effort required for adopting OMMT.
- Detailed, in-depth technical specifications, with all the information needed for implementation.

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