MobiWallet - Newsletter #01/2015

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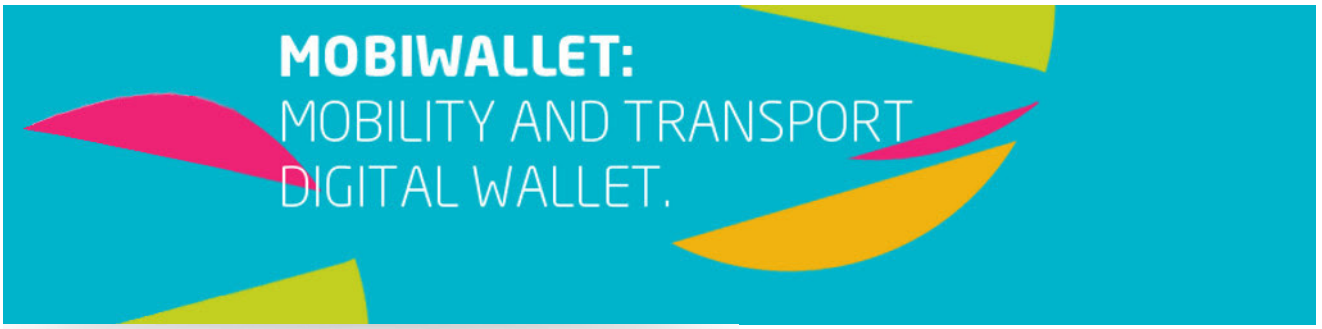


The advent of new user-friendly contactless payment technologies, such as web-based, 2D readers, or Near Field Communication (NFC) payments (smartcard and Smartphone-based) have opened the door for new services that can effectively tear down interoperability barriers in current fare management schemes while offering a suite of extended services for multiple transport products.

MobiWallet will exploit these technologies to address a range of scenarios highly relevant to the deployment of Interoperable Fare Management (IFM) systems throughout Europe. Focused on offering seamless intermodal mobility to entire cities and regions these IFM services will deal with multiple modes across great geographical areas and interoperate with disparate passenger transport services. This has benefits for both the users and the owners and enables the creation of a unified transport market capable of maximizing a city or municipality's mobility using basic market forces.

In order to demonstrate these technologies and validate the benefits that they can have, four pilots from across Europe; in Santander (Spain), Tuscany (Italy), West Midlands (UK) and Novi Sad (Serbia) have been chosen. Each pilot includes all the necessary stakeholders in the value-chain such as transport operators, public authorities, transport industry as well as a high number of end-users in order to ensure an effective deployment in each pilot as well as ensure the sustainability beyond the pilot phase.

Understanding requirements

One of the first aim of the project was to ensure the reliability and credibility of our project results, facilitating the stakeholders' acceptance and basing the project approach and methodology on International Standard ISO 24014 (Interoperable Fare Management System).

All the necessary information about the pilot sites and corresponding scenarios has been thus collected to identify and implement all the required services in each city and provide the technical and infrastructural support needed for various transport modes and payment options.

The issues that may arise when interconnecting different fare management services have also been identified. Based on a common understanding and agreement of all partners involved, the methods, tools and processes required for the realisation and the deployment of intelligent fare management solutions in all pilots have been defined.

ISO24014 Standard on IFM system in public transport has been selected as a guidance to ensure the same or a compatible approach in all pilots.

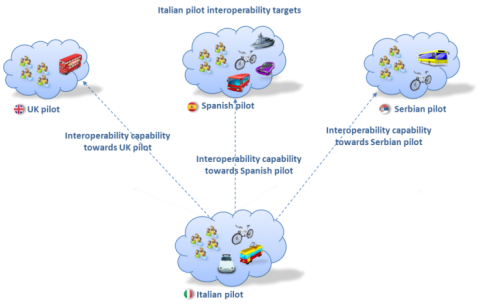
In particular, we have looked for adaptations actions required within each pilot to adjust existing solutions to the MobiWallet interoperability framework.
Balanced scorecards with a list of recommended key performance indicators (KPI) specified for each pilot have also been introduced, since they will be used for the evaluation of the pilots' respective fare management solutions as well as for tuning the system performance to create a commercial product.

All the plans have been made in detail for each pilot phase with all the project team roles, users and the approach to data management. In addition, the training plan for operators and pilot users has been created to ensure the correct and efficient deployment of the pilot service.

MobiWallet roadmap towards cross-regional interoperability

Technically speaking, Interoperability is the capacity of any given element or system to interact with other elements or systems without access restriction or any additional specific developments.
MobiWallet aims to interoperate all payments methods proposed by each pilot by providing a common, easily accessible, secure payment platform.

Due to the wide range of proposed technical features (web, specific smartphone apps, etc.) and different payment modes considered (NFC, credit/debit cards, QR-codes, etc.), the methodology followed by the Consortium towards the definition of an integrated platform followed a "pilot- to-pilot" approach instead of a "centralized" one: each pilot shares his own set of payment services with the users of the other pilots. The following figure represents the sharing of payment services provided by the Italian pilot towards the other pilots:
From an operational perspective, interoperable pilots require to be able to interact with a common credential holder. A credential holder in this context is an element that allows the user to be recognized as an authorized user of any given transport service. This element might be a physical element (ID card, multi-purpose ticker, badge…) or digitally stored data (NFC sticker, smartphones, QR codes…).



In order to unify the pilots operations in such a way that would allow to achieve the desired interoperability, a common set of basic functionalities for all transport systems have been identified as shown on the left.

This phase is being followed up by a definition of scenarios, use cases and a set of high-level inter-pilot requirements that will be used as a base for providing an interoperable platform.
All this process has been strongly influenced by requirements derived from the aforementioned ISO 24014 Standard.
From the user's perspective MobiWallet Consortium has defined a set of accessibility requirements in order to allow citizens to take advantage of the interoperability features. Those requirements take in special consideration disabled users in order to allow an easy interaction with the payment platform.

As an additional outcome of the project, MobiWallet will report to the ISO 24014 Standard in order to offer suggestions that might be used to enhance future revisions of it. In this context, MobiWallet will contribute with real deployment experiences, transport operators feedback, stakeholders' contributions and local authorities' vision.

Measuring success

The MobiWallet vision is of a future where smart ticketing interoperability is no longer an issue and cities can provide an electronic fare management system with unparalleled intelligence.

Hundreds of travellers across the four European pilot cities will participate in the MobiWallet city demonstrations. Data collected from these participants will help to identify growth and acceptance of the use of mobile ticketing solutions. Through careful evaluation pilot sites will be able to demonstrate the benefits of a unified platform that can seamlessly process payments from a varied range of transport operators and modes.

In order to measure the success of MobiWallet, a variety of evaluation activities are being undertaken. Those activities include testing of system functionality, monitoring site activity, assessing the most appropriate packages for the traveller and understanding the views of wider stakeholders (operators, cities and technology companies).

The initial activity is to build a set of baseline data to form a benchmark. Data collected during the pilot site demonstrations will then be compared directly with the baseline data to identify changes. A regularly updated balance scorecard system will be used by each city to collect data and reflect performance against KPI.

To support the general understanding, data will also be collected 'during trial' and 'post trial' to help identify whether the proposed technology would help to influence behaviour change.

Process and policy evaluation will help to measure the success of MobiWallet, to explain the reasons why something may have happened and how the situation could be improved and to suggest recommendations for the future. This will be used to assess project performance and identify stakeholder views on achieving the project objectives. Information from participants (project partners, trial participants and third party stakeholders such as transport operators) will be collected towards the end of the project via an online survey, a structured symposium and group discussions with selective audience groups.

Information and results obtained through the evaluation of MobiWallet and the success of the pilot cities will be synthesised into a final project report. This will document the project successes and provide the best possible reference document to outline lessons learnt through MobiWallet for other cities and region may follow with smart interoperable ticketing solutions in the future.

Updates from the Pilots

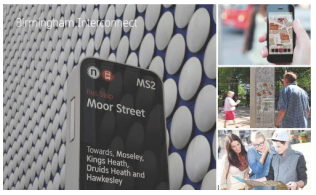
Spain

The Santander pilot (Spain) aims to demonstrate that the IFM solution put forth by Indra, Universidad de Cantabria, TST and Banco Santander can be adapted to a huge variety of transportation services, with wildly different operation needs and technological resources. Besides the logistical innovation, the pilot also presents the end-users with an attractive interoperable platform based on a ubiquitous device (their smartphone) with which to pay for all their transport needs. In this way the need to keep track of different operator's payment mechanisms will be greatly reduced , while the user will be provided with the information necessary to make advantage of the lowest transport fares for a given trip.

United Kingdom

Through MobiWallet Centro looking to develop a fares management engine that will support customers in selecting the most appropriate fare for the specific journey needs.

The system is currently ready for deployment over the next month in the first two transport modes (Buses and Ferries) to be included in the payment platform . Parking and Taxi payments will come over the following 6 months.



This fares engine will then be integrated into both the 'Swift' back office infrastructure and the 'Journey Planner' to offer a complete public transport mobility solution where a customer can plan a journey in real time, purchase a Swift product from a recommended list and transfer their purchase onto a Swift card using NFC technology through a mobile phone or ITSO technology through remote network readers.

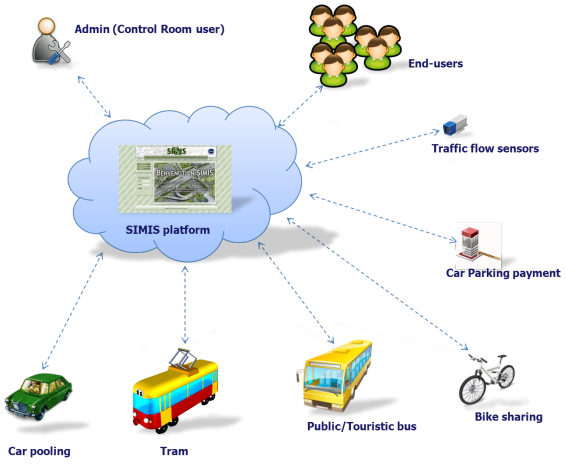
The fares engine will also have a 'hindsight' best ticket 'push-out' function that would be used to educate customers on the most suitable travel product that they should have purchased based on journey history for the day, week or month. Whilst this functionality is for education purposes initially it should seen as significant step towards the delivery of capped fares solution as the requirements needed to deliver this function are extensively the same. The integrated solution will be delivered through an impressive customer friendly interface suitable for both web and mobile access.

Italy

The Italian pilot will be developed towards a unique web platform with a set of transport and payment services both public and private. The Italian pilot aims to provide an easy to use integrated platform which allows the users involved (citizens, commuters, tourists) to plan a trip and purchase the ticket according to the selected transport means.

Deployed in the cities of Pisa and Scandicci (Florence), the trial phase will be accomplished involving public bus and tram services, car parking and bike sharing transport modes. In addition, the pilot provides an innovative car-pooling service in order to allow user to easily share car trips.

The intuitive graphical interfaces as well as the strong compatibility with existing web services undoubtedly provides a great value added to the technical solution proposed by the Italian cluster.



Beside the already integrated touristic bus and bike sharing transport modes, the Italian cluster have successfully finalized the integration and tested the car-pooling functionality. The solution will provide MobiWallet users to:

- share a trip (single/periodic) with their car
- find a car journey shared by another MobiWallet user and perform the booking
- beside the normal cash payment mode, perform the purchase of the trip via credit/debit card through a PayPal account.
- allows users to insert the journey's feedback.

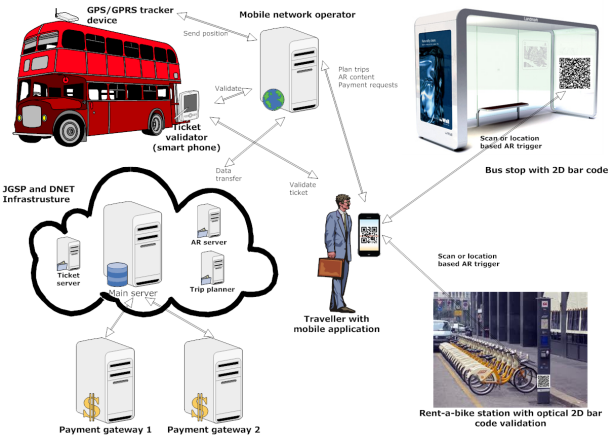
Serbia

The Serbian pilot will be developed and deployed in the city of Novi Sad with the aim to demonstrate the mobile payment in public transport through QR code, Augmented Reality (AR) and optical validation. The pilot will integrate two means of transport, specifically the buses and bikes from the rental bike locations, as well as the payment system for them.

Travellers will be able to purchase tickets using their smartphones and a dedicated application. Purchase of the tickets from smartphones will be initiated with 2D bar codes placed at the bus stops and at the bike rental locations. The application will also be able to show additional information about the traveller's location using the Augmented Reality (AR) concept. For example, at the bus stops, the information appeared on a smartphone can/will include the bus arrival times for each bus line passing through that bus stop, their routing information, tourist landmarks around that particular location as well as the environmental data such as the pollution. For the city bicycles, the information will also include the location of other rental stations and tourist landmarks around the particular route or renting location.

The ticket billing will be possible using multiple payment gateways such as mobile phone bills, PayPal, Visa cards, etc. The users will also be able to specify desired destination and the system will suggest the best-combined route to the destination using buses and/or city bicycles.

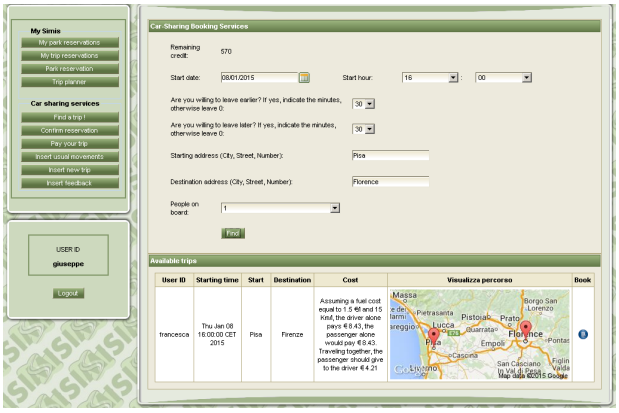
The validation of the purchased tickets will be performed with optical scanners placed inside the buses and at the city bike rental points. This will set the basis for improving the public transport system in all the cities in Serbia and provide at the same time a sustainable and efficient transport with an improved energy efficiency.



Pilot implementation for the first phase evaluation at the end of January is underway. The end user selection for the initial evaluation period is ongoing mainly including people from DNET, City of Novi Sad and the public transport company JGSP.

The first phase will enable travellers with the MobiWallet app to get the information about the bus position and its time of arrival to, just by scanning the QR code at a bus stop. All the necessary requirements for this functionality are already met:

- fleet management devices are placed on 12 buses to be used in the pilot



In the following months, the Italian cluster aims to deploy the sensors network, which detect the touristic bus traffic flow in the Via Pietrasantina parking in Pisa, with the support of Pisa Mobility Agency (PISAMO),as well as to implement and test the smartphone app for tram/bus and car parking purchasing in Scandicci (Florence).

- stickers with QR codes are already placed on all bus stops.

In addition to this, the payment gateway links for the mobile ticketing are close to completion. Mobile ticketing is being adapted for the bus tickets use case including the surveys for capturing the evaluation data. Validators are to be soon placed on the buses. We are currently deciding on the type of tickets to be offered through the system, taking into account the payment gateway commission.

News from MobiWallet Friends: SITE Project

In the SITE project (ERDF-funded through the INTERREG IV B Atlantic Area Programme) 9 partners, from 6 cities of Ireland, UK, France, Spainand Portugal, collaborated between 2012 and 2014 on their urban mobility strategies based on the development of smart ticketing tools.

One of the objectives of the SITE project was for partners to work together on the development of common interoperable smart ticketing products and address the barriers to interoperability of these new forms of payment. This was successfully achieved through the launch of a pilot project between public transport operators of San Sebastian and Gijón, from February to October 2014.

After several studies, the technology selected was based on mobile NFC phones. That media, identified as the most convenient for travellers, allows the secure emulation of the card throughout all its lifecycle. The service was available for 100 travellers using a Galaxy S3 Samsung mobile or Blackberry and for those with a Movistar or Euskaltel subscription. The exchange of the SIM card for a NFC - SIM card was necessary in all cases.
The service allowed users to topup their virtual card balance over the air into their mobile SIM card, as well as to use the mobile phone on bus Mifare readers as a contactless means of payment. This way, a user can travel in San Sebastian or Gijón public buses using the same mobile with the help of an Android application. They can top up, check their balance and select the city where they want to travel. Entering the vehicle, they present their mobile to the validating machine just as if it was a smartcard and the corresponding amount is deducted from the balance.

The SITE partners recommendation is to explore different solutions that do not depend as much on the telecom operator because this limits the ease of adoption by users. At this time, most of the experiences of NFC in public transport use the SIM as the Secure Element (to store the smartcard). This generates an excessive dependency on the telecom operators and SIM manufacturers. It is necessary to look for experiences to extend the NFC Solution to all users regardless of the telecom operator.

See: http://www.site-project.eu

Partner

Coordinator