



MobiWallet – CIP- G.A: 621027



MobiWallet

Mobility and Transport Digital Wallet

Final Report

Period: February 1st, 2014 – July 31th, 2016

Distribution	Public
Version	V3
Number of Pages	51
WP/Task related to the document	WP1/T1.1
Author(s)	Indra
Partner(s) Contributing	All consortium partners
Document ID	<i>MobiWallet-T1.1-IND-MGMT-Progress-Report-2-v3</i>
	<i>MobiWallet-T1.1-IND-MGMT-Progress-Report-2-v3</i>
Abstract	<i>This document includes a comprehensive summary of works performed, results, conclusions and impact of the project</i>

Table of Contents

1	EXECUTIVE SUMMARY	4
2	SUMMARY DESCRIPTION	5
3	MAIN ACTIVITIES AND RESULTS	9
3.1	STRUCTURE OF THE PROJECT	9
3.2	WP2: USER REQUIREMENTS AND INTEROPERABLE MOBILITY SERVICES	9
3.3	WP3: INTEROPERABILITY FRAMEWORK (TOP-UP ANYWHERE, TRAVEL EVERYWHERE)	11
3.4	WP4: DEPLOYMENT, DATA ANALYSIS AND IMPLEMENTATION OF PILOTS.....	12
3.5	WP5: MONITORING AND EVALUATION OF RESULTS	15
3.6	WP6: DISSEMINATION, EXPLOITATION AND BUSINESS PLAN	16
4	UPDATE OF PILOTS AND FINAL NUMBERS.....	18
4.1	SPANISH PILOT	18
4.2	ITALIAN PILOT.....	21
4.3	UK PILOT	26
4.4	SERBIAN PILOT	28
5	IMPACT OF THE PROJECT	1
6	DISSEMINATION ACTIVITIES.....	2
7	WEBSITE AND CONTACTS.....	13
8	SECTION A: DISSEMINATION ACTIVITIES	1
9	SECTION B: EXPLOITATION PLANS.....	5

Final publishable summary report

1 Executive summary

MobiWallet (Mobility and Transport Digital Wallet) is a project started in February 2014 and finished in July 2016. It was funded by the Competitiveness and Innovation Programme (CIP) with the **aim to provide, deploy and validate solutions for Interoperable Fare Management**, providing transport users and cities with new technologies, promoting smarter, cheaper and more sustainable mobility, and fostering the transition toward smart cities. The main goal of this European R&D project was to encourage modal shift and facilitate ease of use of multiple transport options by tearing down interoperability barriers and taking advantage of the latest ICT advances and Smartphone capabilities. This is expected to have a positive social and environmental impact, as it is expected to encourage modal shift, and facilitate ease of use of multiple transport options, improve efficiency and reduce energy consumption, promote enhanced and sustainable mobility for all users, and improve cross border transportation capabilities.

MobiWallet's partners aimed at designing, developing and testing platforms flexible enough to be adapted to disparate realities so as to allow European citizens to pay for their travel regardless of the specific transit mode they opt for. Cutting-edge technologies for payment based on the web, NFC and 2D smart codes are used to extend the capabilities of the payment platforms. Information services and multi-modal travel time-calculating software have been considered so as to provide on-the-spot/on-the-go information and payment services to promote awareness of the availability of alternatives to individual conventional transport. In order to demonstrate these technologies and validate the benefits that they can have, four pilots from across Europe were selected in Santander (Spain), Tuscany (Italy), West Midlands (UK) and Novi Sad (Serbia). Different scenarios, technologies, services and transport modes were involved in each of them, but sharing the same approach, methodology and common vision of the project towards achieving interoperability at pilot level, and, ultimately, at cross border level.

MobiWallet project is coordinated by Indra, in collaboration with 14 companies and state bodies running the four national pilot programs in the cities of Santander in Spain (INDRA, Ayuntamiento de Santander, University of Cantabria, Banco Santander, TST), Florence and Pisa in Italy (INTECS, CNR, Aleph, GEST, Comune di Firenze), West Midlands region in the United Kingdom (Centro, TTR), and Novi Sad in Serbia (DunavNET, JGSP "Novi Sad", City of Novi Sad). The whole value chain is involved in each pilot in order to ensure an effective deployment in each pilot as well as ensure the sustainability beyond the pilot phase.

MobiWallet includes the participation of hundreds of users in the four pilot cities across and is collecting and analyzing their feedback to guarantee that the implementation of the technological solutions is well founded on the actual needs of the citizenship and that the solutions provided by these achieve the utmost impact in paving the way for the transportation systems of the future.

2 Summary description

MobiWallet (Mobility and Transport Digital Wallet) is a project started in February 2014 and finished in July 2016. It was funded by the Competitiveness and Innovation Programme (CIP) with the **aim to provide, deploy and validate solutions for Interoperable Fare Management**, providing transport users and cities with new technologies, promoting smarter, cheaper and more sustainable mobility, and fostering the transition toward smart cities. The main goal of this European R&D project was to encourage modal shift and facilitate ease of use of multiple transport options by tearing down interoperability barriers and taking advantage of the latest ICT advances and Smartphone capabilities. This is expected to have a positive social and environmental impact, as it is expected to encourage modal shift, and facilitate ease of use of multiple transport options, improve efficiency and reduce energy consumption, promote enhanced and sustainable mobility for all users, and improve cross border transportation capabilities.



Figure 1. Main objectives and impact of MobiWallet

MobiWallet's partners aimed at designing, developing and testing platforms flexible enough to be adapted to disparate realities so as to allow European citizens to pay for their travel regardless of the specific transit mode they opt for. Cutting-edge technologies for payment based on the web, NFC and 2D smart codes are used to extend the capabilities of the payment platforms. Information services and multi-modal travel time-calculating software have been considered so as to provide on-the-spot/on-the-go information and payment services to promote awareness of the availability of alternatives to individual conventional transport. In order to demonstrate these technologies and validate the benefits that they can have, four pilots from across Europe were selected in Santander (Spain), Tuscany (Italy), West Midlands (UK) and Novi Sad (Serbia). Different scenarios, technologies, services and transport modes were involved in each of them, but sharing the same approach, methodology and common vision of the project towards achieving interoperability at pilot level, and, ultimately, at cross border level.

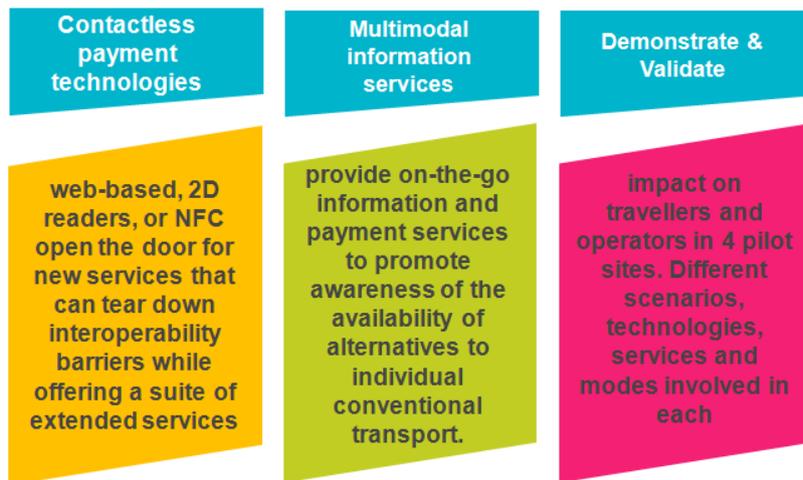


Figure 2. MobiWallet features

MobiWallet project is coordinated by Indra, in collaboration with 14 companies and state bodies running the four national pilot programs in the cities of Santander in Spain (INDRA, Ayuntamiento de Santander, University of Cantabria, Banco Santander, TST), Florence and Pisa in Italy (INTECS, CNR, Aleph, GEST, Comune di Firenze), West Midlands region in the United Kingdom (Centro, TTR), and Novi Sad in Serbia (DunavNET, JGSP "Novi Sad", City of Novi Sad). The whole value chain is involved in each pilot in order to ensure an effective deployment in each pilot as well as ensure the sustainability beyond the pilot phase.

MobiWallet includes the participation of hundreds of users in the four pilot cities across and is collecting and analyzing their feedback to guarantee that the implementation of the technological solutions is well founded on the actual needs of the citizenship and that the solutions provided by these achieve the utmost impact in paving the way for the transportation systems of the future.

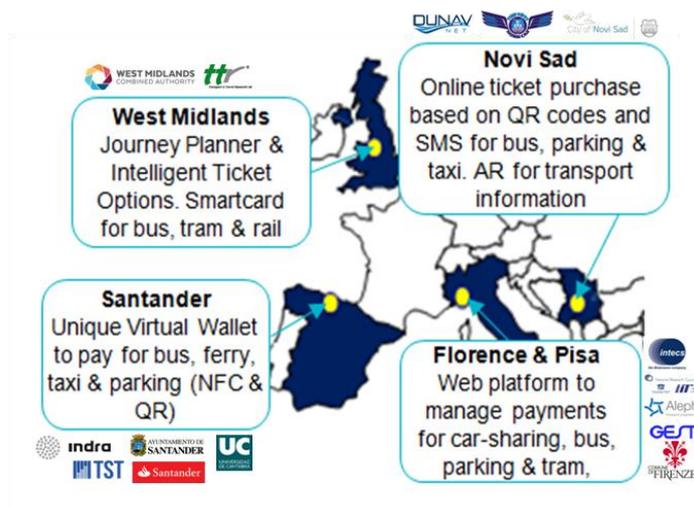


Figure 3. Pilots and partners

Since the beginning of the project (February 2014) until the end (July 2016), several activities have been performed in order to progress in the achievement of the project's objectives. The structure of the project was as follows:

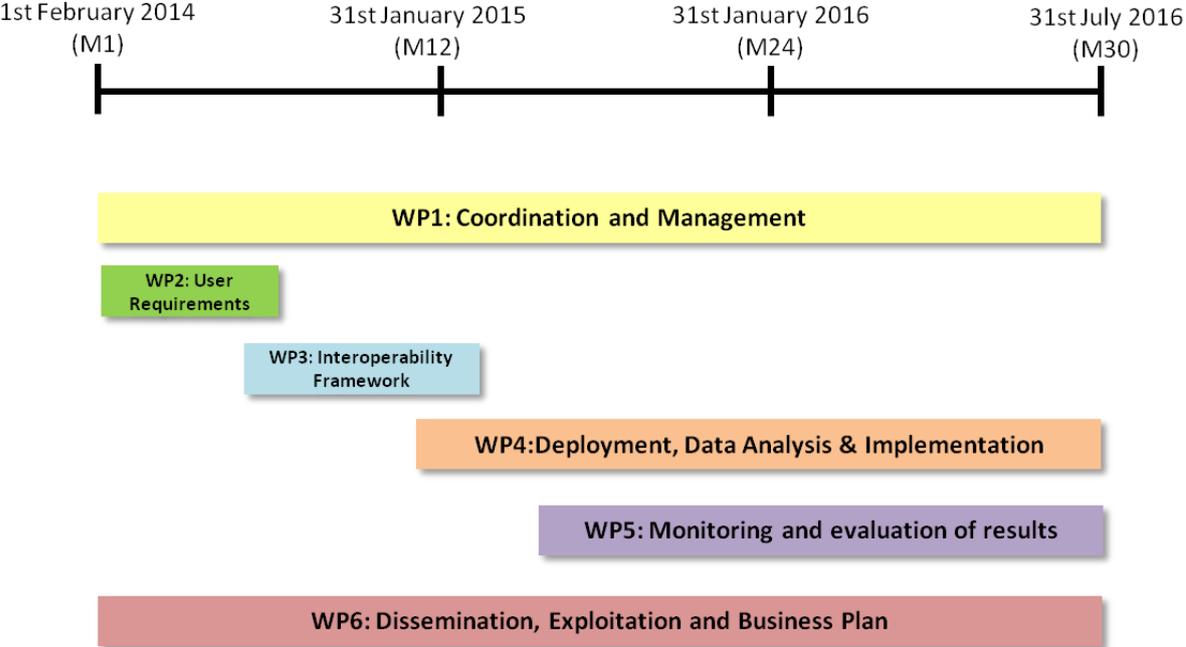


Figure 4. Overall work plan

The works started in **WP2: User Requirements and Interoperable Mobility Services**, defining the specifications and conditions for the deployment of the interoperable payment system in each of the pilots, taking into account the existing infrastructure. It also defined a common methodology for the deployment and validation of all pilots taking into account the standard ISO 24014 and defining indicators to ensure a similar approach was used for all pilots.

With this common methodology and knowledge of the existing systems to integrate in each pilot, the partners continued working in the definition of the entire set of activities to perform during the following trial stage and the necessary customization activities that should be done in each service and at pilot level in order to provide interoperability capabilities. These works, performed within **WP3: Interoperability Framework (Top-Up Anywhere, Travel Everywhere)** aimed at covering the basis for interoperability, a capability transparent to the end user that should allow travellers to utilize a unique technical solution to plan and travel through the different modes involved in each pilot, and ultimately, to foster seamless mobility and payment of transport services across the different pilots.

The deployment in the test sites started from M18, and gradually the different services were put into operation and started to be used in the pilot cities in Spain, Serbia, UK and Italy. The deployments, performed as part of **WP4: Deployment, Data Analysis and Implementation of Pilots**, used as an input the results of WP2 and WP3, while its performance served in WP5 to draw the main conclusions and to generate the business plans and large scale uptake in WP6. The interoperability solutions implemented within each pilot were tested by volunteers followed an incremental approach, including gradually more functionalities and improvements to enhance user experience. Apart from individual pilot testing, several use cases of pilot-to-pilot interoperability were proposed and implemented to

provide seamless mobility and payment of transport services across the different pilots. This makes possible that users from one pilot can buy tickets for transport in another city, either via the same application or by providing simple access to apps used by other cities without the need of registering again and even using the credit available in the transport virtual wallet of their city. During the project life, three demonstrations were organized in M18, M24 and at the end of project. These allowed to demonstrate the status of the implementations done within each pilot, as well as to exchange information, experiences and lessons learnt among pilots, as well as identifying synergies among them and potential pilot-to-pilot scenarios.

Finally, the data collected from the operation of the pilots and the testing of the volunteer users was evaluated under **WP5: Monitoring and Evaluation of Results**. This Work Package focused on the evaluation of the four MobiWallet pilots in order to evaluate & assess the data collected in the pilots undertaken in WP4, their effectiveness and potential for a full-scale deployment in European cities, and achieve a standardization of all the conclusions obtained and best practices. The evaluation approach was developed through the early stages of the project, when the evaluation plan and methodology was drafted, including the tools and aspects that would be evaluated in later stages of the project: functional system testing, balanced-scorecard monitoring of KPIs, focus groups with users and operators, on-line surveys, structured symposium with project partners, process evaluation, and impact evaluation.

In parallel, and since early stages of the project, **WP6: Dissemination, Exploitation and Business Plan** conducted a wide number of dissemination activities in order to make people aware of the existence and aims of MobiWallet project. This included the design and production of supporting multimedia material, and the attendance to multiple events, including POLIS conference and Transport Research Arena, in which a MobiWallet conference was organized as a satellite event. Most events and dissemination activities were aligned with the dissemination strategy to target transport operators and end-users that will be the beneficiaries of Mobiwallet results. Also during this last period the dissemination at local level was reinforced in order to increase number of users and transactions. Within this tasks, the partners have also defined the strategy to exploit and sustain the outcomes of the project, at individual, pilot and project level.

3 Main activities and results

3.1 Structure of the project

Since the beginning of the project (February 2014) until the end (July 2016), several activities have been performed in order to progress in the achievement of the project's objectives. The structure of the project was as follows:

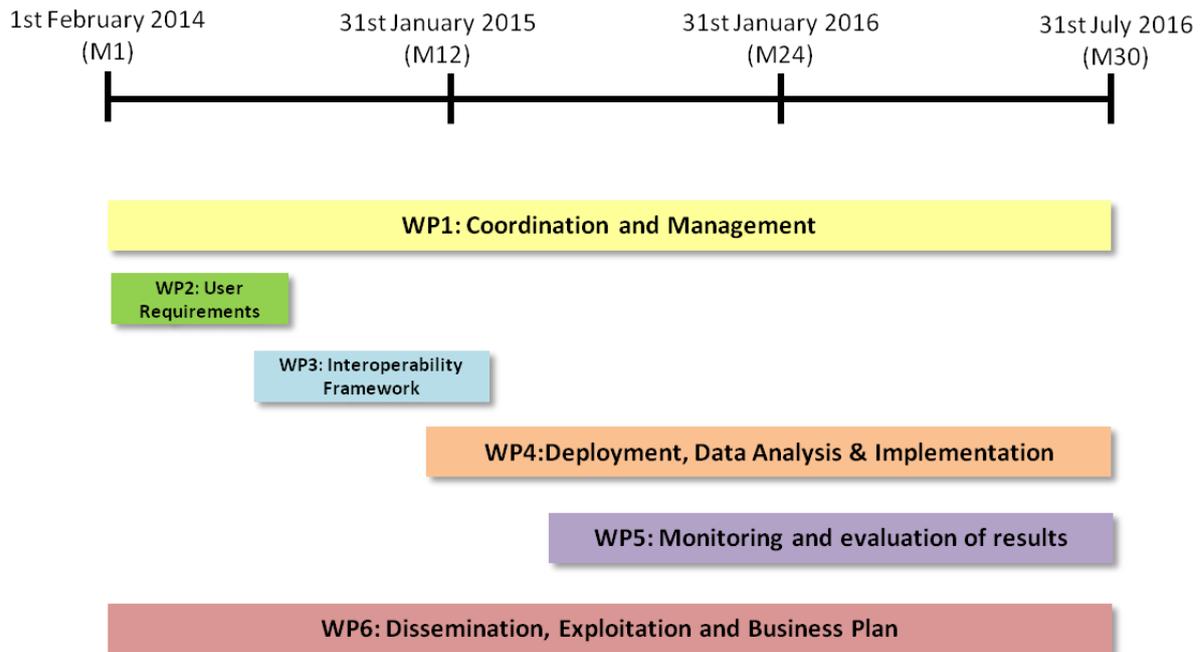


Figure 5. Overall work plan

The main activities and results for each technical work package are detailed in the following sections.

3.2 WP2: User Requirements and Interoperable Mobility Services

WP2 was aimed at defining the specifications and conditions for the deployment of the interoperable payment system in each of the pilots, taking into account the existing infrastructure. It also defined a common methodology for the deployment and validation of all pilots taking into account the standard ISO 24014 and defining indicators to ensure a similar approach was used for all pilots.

As a result of WP2, the following achievements were accomplished

- A pilot description/overview was provided for each of four pilot sites located in Spain, Italy, UK and Serbia and overview of the current state of the infrastructure, transport modes and payment options. Definition of the final pilot functionalities was also specified, including features to be implemented.
- A common methodology was set for the pilots indicating processes, tools and methods to be used during the implementation and deployment phases that will ensure intelligent fare management

solutions and provide an interoperable fare management system aligned with requirements of ISO24014 standard.

- Pilot features were aligned across all pilots and their overlap was identified. This was taken into account when defining the interoperability framework and associated implementation and development plans. A common methodology for the evaluation was defined based on the Balanced Score framework (Figure 6) representing a strategic planning and management system which aligns business activities to the vision and strategy of organisation and this is adapted to suit the MobiWallet where the organisation was viewed as a pilot site. The performance was monitored against strategic goals previously defined. Additionally, general rules were identified, such as development methodology based on SCRUM, when and how the evaluation to be performed, tools to be used, communication mechanisms, legacy component integration, requirements for the organisational structure etc. Each of the pilot sites defined targets and goals as well as the Key Performance Indicators to be used for evaluating their fare management solution and indicating required tuning for the commercial product competitive on the market and providing benefits to the end users and other stakeholders. Part of the activities focused on ensuring that all the critical points within the pilot sites provide standardised interfaces so that the flow of information between the sites could be achieved.
- Results also included defining the deployment and implementation plans for each of the trial site. In particular all pre-deployment tasks were identified and organisation of the work teams was defined. Additionally, parts of activities were focused on identifying adaptations required in each pilot to adjust the solutions to the MobiWallet interoperability framework in the context of ISO24014 standard. Also, detailed activities were identified in terms of adapting the current infrastructure to the final pilot functionality including the legacy components as well as indicating new modules to be developed. Using this information, a detailed implementation plans for all the pilots were produced, including pre-configuration activities identified across all pilot sites, the definition of roles and users, data management strategy defining the policies on how to handle the data being collected and used within each of the pilot. Furthermore, details on the training plan and marketing material for the operators and pilot users were defined. Using this material, it was later possible to train transport operators and other users of the system to deploy the services developed within MobiWallet pilots.

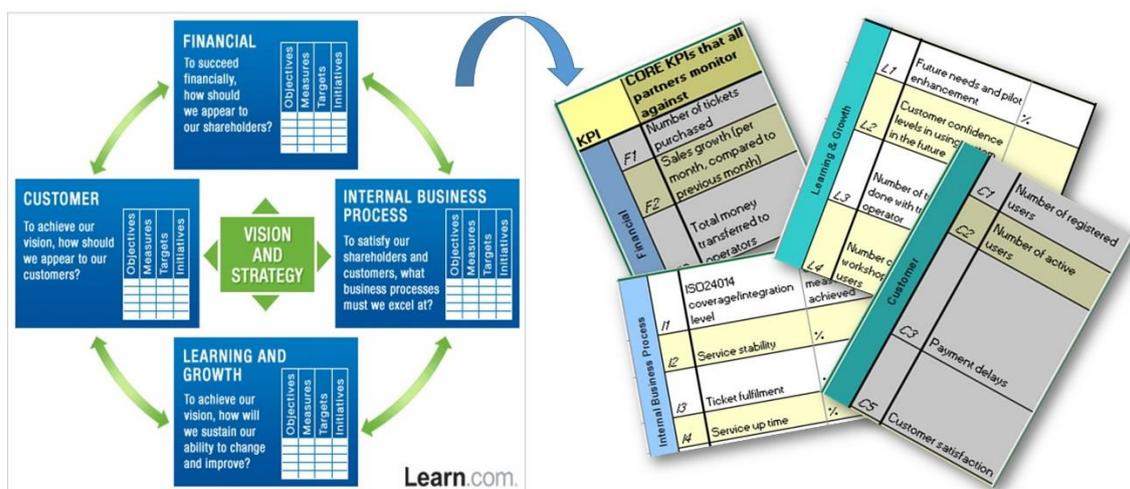


Figure 6 Balanced Score Card Model (source: <http://www.vectorstudy.com/management-theories/balanced-scorecard>) and its translation into concrete set of KPIs

3.3 WP3: Interoperability Framework (Top-Up Anywhere, Travel Everywhere)

The activities related to the WP3 Interoperability Framework were aimed at covering the basis for interoperability. This capability transparent to the end user, should allow travellers to utilize a unique technical solution to plan and travel through different modes involved in the pilot, and ultimately, to foster seamless mobility and payment of transport services across the different pilots.

The outcomes of previous WP2 were taken in account and used as an input for the definition of the initial activities of this WP, while the obtained results were utilized by the following WP4 and WP5 (deployment and monitoring of pilots respectively). Relation between the WPs above mentioned, this WP and its related tasks is depicted in Figure 7 below:

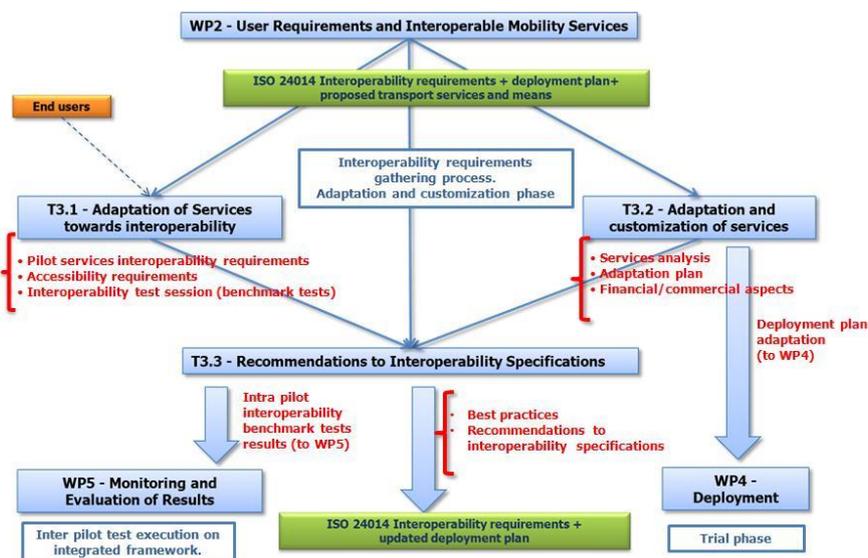


Figure 7. WP3 structure and relation with the other WPs

Firstly, the concept of interoperability was defined from a technical and from an economical & commercial perspective. Within the scope of MobiWallet, the project identifies two types of interoperability: *Intra-pilot interoperability*, which would be achieved if pilots are able to interoperate the different transport operators within their cities; *Inter-pilot interoperability*: which will be pursued through the definition of a set of interoperability scenarios in which to test the inter-pilot interoperability approach proposed by the project.

The definition of the interoperability, both at intra and at inter pilot level, followed these three major points:

- What to do: definition of the concept of interoperability. Identification of all information and capabilities related to transport services involved in the project as well as estimate the level of interoperability which could be reached. This stage also addressed all potential barriers and

limitations (i.e. legal, financial, technical etc.) and evaluated the possibility to utilize specific contingency plans.

- How to do: starting from a set of use cases scenarios and related requirements, identification and definition of the whole set of the technical activities to perform in order to reach the interoperability.
- Evaluation of the results: measurement of the reached level of interoperability through a set of benchmark tests defined by use cases and IFM standard requirements (mostly ISO 24014).

The WP3 results can be summarized in:

- Definition of a common architecture (MobiWallet integrated Framework) which allow pilots services to work in cooperation mode and at same time minimize (or in some cases, bypass) the legal, financial, technical barriers identified during the first stages of the WP (Figure 8):

The "pilot to pilot" approach

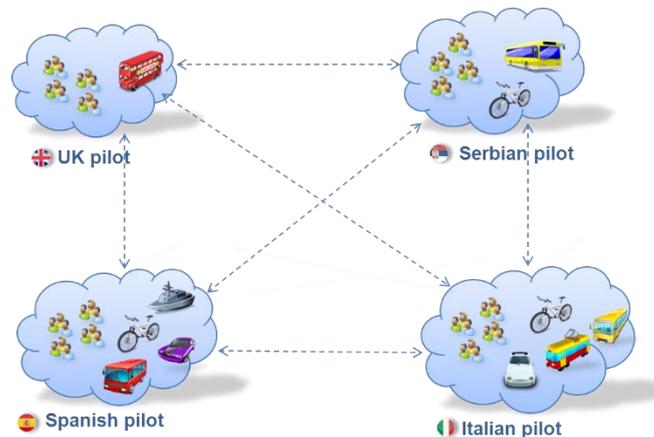


Figure 8. MobiWallet Integrated framework

- Definition of the entire set of activities to perform during the following trial stage. Identification of necessary customization activities that should be done in each service and at pilot level in order to provide interoperability capabilities. They were detailed and described in terms of resources (HW, SW) and deployment plans, including data model, roles, web service definition, details of payment system etc.
- Measurement of the level of interoperability (benchmark tests).
- Identification of a set of recommendations and best practices.

Finally, this WP addressed specific requirements concerning disabled end-users and identified specific recommendations concerning the accessibility of the proposed transport payment services.

3.4 WP4: Deployment, Data Analysis and Implementation of Pilots

This WP was focused on deploying the 4 pilot services in the different selected cities in Spain, Serbia, UK and Italy. The deployments used as an input the results of WP2 and WP3, while its performance served in WP5 to draw the main conclusions and to generate the business plans and large scale uptake in WP6.

The interoperability solutions implemented within each pilot were tested by volunteers followed an incremental approach, including gradually more functionalities and improvements to enhance user experience. Intense meetings and discussions were held with the different operators involved in each pilot in order to develop solutions complying with legacy systems and current financial processes. The key features of each of the pilots is presented below:

- **Santander**: the pilot is based on the concept of a unique “Virtual Wallet” and the use of Smartphones to manage the credit of the Virtual Wallet and perform payments in the different transport modes involved in the project. The pilot involves most transportation services existing in the city of Santander, from taxis and private vehicles to buses and Ferry. The key element of the system is a Unique Mobile App that allows the user to pay for the different transport modes involved using the credit available in a Virtual Wallet. The App communicates with a number of Web Services and data base to perform all operations. A Payment Gateway has been integrated to top-up the virtual wallet using user’s credit card, and a compensation mechanism is in charge of managing user’s payment and transfers to each operator (“clearing”). The medium for payment includes both the App developed and a NFC tag stucked at the back of the phone and capable of communicating with many NFC-enabled mobiles. The approach used in each mode is slightly different, set by each operator’s requirements, but all of them are capable to use the credit available in the Virtual Wallet to pay for the different services. The solutions deployed for the validation in ferry and bus rely on the use of the NFC tag as a mean to identify users and know their credit available, while a QR-code based functionality allows to use the Virtual Wallet for performing post-payment in parkings and taxis.
- **Tuscany, Pisa and Florence**: the pilot system provides an integrated platform that allows end-users to access a wide-set of transport services and related payment modes. Citizens, commuters and tourists can now buy public transports tickets much easier via virtual payments, as well as share their private cars through a car-pooling scheme, helping to make sustainable journeys more easy and possible. The pilot includes several payment modes (PayPal, user’s mobile credit, credit cards etc.), different technologies (web, Android apps) and different types of tickets (SMS, QR-code). No physical media is used to issue tickets, instead the only requirement for users is internet access and a smartphone. The platform SIMIS is web based and provides payment services directly (via a common browser) or through specific Android apps developed by Italian partners. Users can utilise specific apps for payment of the transport tickets in Scandicci (MobiTickt for the Park & Ride capability) and the PisaBus app (for Pisa urban bus ticketing). All these three components work in synergy and exchange all necessary information of the provided ticketing services through a set of web interfaces (API) provided by SIMIS. Such interfaces also allow for great interoperability of the Italian solution with the other three pilots in MobiWallet consortium.
- **West Midlands**: the solution implements a fares management engine that supports customers in selecting the most appropriate fare for their specific journey needs. The fares engine has been integrated into both the ‘Swift’ smartcard back office infrastructure and the Network West Midlands ‘Journey Planner’ to offer a complete public transport mobility solution, linking journey planning through to fulfilment and payment. This allows customers to 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 has a ‘hindsight’ best ticket ‘push-out’ function that is used to inform customers of the most suitable travel product that they could have

purchased based on journey history for the day, week or month. Whilst this functionality is for education purposes initially it should be seen as significant step towards the delivery of a capped fares solution.

- Novi Sad:** conducted a pilot implementing a ‘one-stop’ mobile phone application for public transport - this incorporated payment, ticketing and journey planning. A range of different tools were used to achieve this including QR codes, optical validation and an innovative ‘augmented reality’ user interface. The system interface provided the user with an integrated transport service covering buses, car parking, taxis and bike hire. The back office system ensured an interoperable payment and ticket system collected fares and dispersed them to participating transport providers. The system also offers added-value services through an augmented reality supported interface including: online ticket purchasing using different payment channels, real time bus departure information, air quality information, bicycle rental station information etc. The online ticket purchasing function was designed to be versatile and support different payment methods. These include cash vouchers, mobile account-payment, SMS payment and a virtual wallet for the taxi service.



Figure 9. Deployments for different pilots' sites

MobiWallet includes the participation of hundreds of users testing the systems deployed. Therefore, works performed within WP4 include also user recruitment, organizing different campaigns to engage volunteers in each pilot. Workshops were organized with end-users (travellers and operators), and manuals were provided to them in order to ease their experience using MobiWallet. The feedback received from end-users (both travellers and operators) after first months of testing, allowed to do improvements in the systems before the end of project.

Finally, several use cases of pilot-to-pilot interoperability have been analyzed and implemented to provide seamless mobility and payment of transport services across the different pilots. This makes possible that users from one pilot can buy tickets for transport in another city, either via the same application or by providing simple access to apps used by other cities without the need of registering again and even using the credit available in the transport virtual wallet of their city.

During the project life, three demonstrations were organized in M18, M24 and at the end of project. These allowed to demonstrate the status of the implementations done within each pilot, as well as to exchange information, experiences and lessons learnt among pilots, as well as identifying synergies among them and potential pilot-to-pilot scenarios.

3.5 WP5: Monitoring and Evaluation of Results

WP5 focused on the evaluation of the four MobiWallet pilots in order to evaluate & assess the data collected in the pilots undertaken in WP4, their effectiveness and potential for a full-scale deployment in European cities, and achieve a standardization of all the conclusions obtained and best practices.

The evaluation approach was developed through the early stages of the project in collaboration with Pilot Evaluation Coordinators representing each of the four sites. An interim evaluation was completed in October 2015 which covered progress on (i) **functional system testing**, (ii) **balanced-scorecard monitoring** of KPIs, (iii) **process evaluation**, and (iv) the proposed **impact evaluation**.

The final evaluation used the following data collection approaches:

- **Focus groups** of both users and of delivery stakeholders within each pilot site
- **Standardized surveys**: snapshot questions, pre-trial questionnaires and post-trial questionnaires used in each location for impact and process evaluation.
- A '**structured symposium**' discussion with project partners was held at the end of the project to gather additional reflections and perspectives on the work carried out. The symposium helped to identify any key points and recommendations or the purposes of MobiWallet Evaluation.
- **Month-by-month Balanced Scorecards** to track pilot performance against the key performance indicators defined in WP2.
- **System data** which showed user behavior and activity

The results from WP5 are summarized below as an overview to the evaluation outcomes.

- The pilots were by and large successful in their development and deployment of the target technologies across at least three modes in each pilot city. User testing was conducted throughout and at the end of the trial. Feedback from both project delivery partners, wider stakeholders (public transport operators and city authorities), and system users was gathered at various stages throughout the trial via survey and focus groups.
- Whilst we were not able to measure the direct impact on modal shift due to the range of technologies and variety of modes involved, there were instead a number of indicators which point towards the increased likelihood of modal shift. Users found the new methods of payment preferable to previous methods, and the vast majority of participants would be keen to use the new methods in the future, with over 80% saying the payment methods were an improvement on previous methods.
- All project partners also rated the project as a success in terms of developing and deploying technology that improved local transport systems and created significant stepping stones towards larger scale interoperability in the future. The most useful component of the study was felt to be the key lessons learned from the project in terms of the key barriers which need to be addressed if large scale interoperability is going to be achieved across the EU in the future. The two main barriers highlighted were in a common low commission financial transaction mechanism that allows transport users to transfer money from personal accounts in one country to transport operators in another country through a user friendly mechanism such as apps or SMS payment.

There were a number of **key lessons learnt** from the delivery of MobiWallet at both the pilot and programme level. For clarity it is useful to break these into a few key areas as follows.

Programme management

Careful consideration of project requirements at the pre bid stage including resource requirements, technical requirements, and technical expertise requirements is essential to later successful delivery. MobiWallet partners experienced a range of challenges including not having the correct expertise within the team, not having allocated sufficient dedicated resource to the project (instead allocating workload to already busy roles), and not having had a clear understanding of the tasks and expectations of their role within the project at the beginning. Spending more time carefully considering this, involving technical experts at the beginning, and taking the time to approach and recruit ALL of the necessary partners at the beginning is key to avoiding significant challenges later.

Technological development

Conducting a reasonable audit of existing technology at the pre bid stage can also avoid significant challenges later on. For example some partners were forced to use NFC technology which could have been better due to technology used by local public transport operators. Further, the assumption that all NFC smartphones had the same NFC chip technology was incorrect as this varies, forcing further technological adaptation. Examining local public transport operator technology will be helpful in selecting the right partners who can match the technological aspirations of the project. There are also a number of specific technological recommendations on the type of NFC to use and advices when using NFC tags, the financial mechanism, the combination of cloud storage and unique user ID to perform the payments, the communication among platforms at backend etc, that are detailed in the deliverables and reports generated within this WP.

Non-technological barriers

The largest barriers to success were in a low commission financial transaction mechanism to allow payment to transport operators as well as data sharing among operators. Financial and legal aspects of these systems need addressed before any large scale interoperable solutions can be developed, including agreements among operators and also with bank entities. A framework to enable their networks to interoperate and to establish commercial agreements among parties requires a deep involvement of all parties (in a timeframe and scenario beyond pilot testing) and usually a third party to act as intermediary among them. This created significant barriers and time delays to the interoperable component of the project and may need a separate focused project to address.

3.6 WP6: Dissemination, Exploitation and Business Plan

The scope of WP6 has been threefold:

- to plan, organize, perform and control the dissemination activities of the whole consortium;
- to define the strategy to exploit the final products coming from the Project ensuring a lasting impact of its activities;
- to stimulate large scale uptake and develop sustainability plans.

The dissemination planning and execution started at the very beginning of the project and, in the first months, several efforts were done to make people aware of the existence and aims of MobiWallet project. This included the design and production of supporting multimedia material. In particular, the dissemination team worked at: creating the Project Logo and a common Project image, to be uniformly used across all the dissemination channels;

- creating Project brochures and presentations, which were updated regularly
- setting up and maintaining the official project website <http://www.mobiwallet-project.eu/> and official accounts on most popular social media, such as Twitter and YouTube;
- starting a continuous monitoring of relevant literature, resources and events in both scientific, technical and social domains.

Scouting of conferences and fairs of interest was performed as well; this allowed selecting the most favourable events, also taking into account project timings and milestones, resulting in an optimal use of the resources made available for dissemination. The focus was put in the three pilot demonstrations and in attending events important for operators, policy makers and stakeholders, such as Polis 2015. Major dissemination event was organized in April 2016 in Warsaw as a satellite event of **Transport Research Arena** (TRA 2016) where a stand was also organized for the full length of the conference. Within the dedicated conference of 3 hours organized by MobiWallet consortium, the partners had the opportunity to show the deployments and results of the pilots and the project reached so far, and share experiences with the transport experts of the audience.

The participation to these events and the achievements of project milestones were also made publically available through press releases, news and the preparation of a 6-monthly newsletter. The newsletter reached hundreds of professional and stakeholders and presented update from MobiWallet pilots as well as special themes, such as participation to conferences and expos or joint workshop with sibling projects. Indeed, clustering actions have been kept in utmost consideration, also following the comments received from the reviewers after the first project review. A good contact point was found with CIP PSP Project HoPE.

Besides these dissemination activities, WP6 addressed the planning of exploitation and the definition of strategies for sustainability and large-scale uptake

In particular, since the very beginning, the consortium started gathering the business motivation of each of the partner involved, focusing on the expected results of the project. In this way, it was possible to identify business models and classify them at high level as *Scientific*, *Industrial*, and *Public Authority Business Model*, according to partners' interests. This preliminary analysis of business models allowed the partners to focus on specific business cases as the project results grow mature and mature. Each of the partners identified the product/service/outcome for which they were detailing the business case. They also provided a description of the product/result, key technologies, diagram description, benefits and objectives and investment costs. A detailed analysis of investment, taking into account the costs and the expected sales, as well as other assumptions related to each entity core business and expectations (and also Net Cash Flow and Analyses of Investment) has been included for industrial partners, since these organizations aims to obtain economic benefit. Nevertheless, non-profit organizations such as cities and research centres used other social indicators and elements to analyse their investment in the project. Finally, the partners have carried an assessment of how the successful the pilot execution has been in addressing the business, taking into account the initial expectations.

Similarly, the activities for large scale uptake and for sustainability of the proposed solution – also beyond the project time-frame – have started by gathering all individual exploitation plans by each partner and detailing sustainability plans at pilot level. It was then possible to analyse the services provided in each pilot and understand their strengths and their weaknesses. In particular, constraints, opportunities and threats at pilot level were identified and a plan towards large scale uptake was prepared, also encompassing a SWOT analysis. After this step, the partners of the consortium have worked to combine sustainability plans with a deep analysis of success and issues that the Consortium faced during the project activities.

4 Update of pilots and final numbers

This section gathers the latest updates of the pilots, including final numbers presented to the European Commission during the 3rd Reporting Period Review (September 2016).

Although the pilots were supposed to end in July, in agreement with the EC the partners maintain the pilots live until September, in order to give travellers the opportunity of using more the systems, and therefore collect information more valuable from them for the evaluation. Systems were kept in operation, not needing additional development efforts, and as much information as possible was collected for the evaluation before end of July, leaving final numbers and conclusions for September.

4.1 Spanish Pilot

By mid-September, the key figures were:

- 112 Users
- 1.078 € transferred to operators
- 105 top-up of virtual wallet, 246 of bus bono
- 1.116 transactions (validation in bus + payment of parking, taxi and ferry)

Bus and Ferry were in operation since November 2015, with a limited number of volunteers using the system. The objective was to detect possible failures with the system, specially those that could affect payment and financial transactions. The system was compatible only for mobiles compliant with NFC MIFARE Classic 1K.

The number of users increased in the next months and two new modes were included in the pilot (taxi and parking). In May a problem was detected with the NFC tag, observing that for some models, independently of the NFC compatibility of the phone but depending on the metal composition of the phone, the bus validators were not able to read/write on the tag, neither the totem that was being developed within the project. At this point, the partners slow down the recruitment activities, while performed several test with different tags and anti-metal material (see as reference: <http://www.cfe.com.tw/2-absorber/crown-ferrite-absorber-flexible-absorbent-material-fam.pdf>) and once the situation was solved and new tags with an antimetal layer were received, configured with bus operator card map, and printed the logo and ID, recruitment continued. At this point, the consortium made extra effort to increase the recruitment (such as organize workshops with users) and provide incentives to new users. It is also very relevant that at the same time (July 2016), the totems developed were also installed, once the tag problem that also affected them was solved, allowing non-compatible NFC phones to participate in the trials and therefore opening the pilot to all types of phones.

This situation can be observed in Figure 10 and Figure 11.

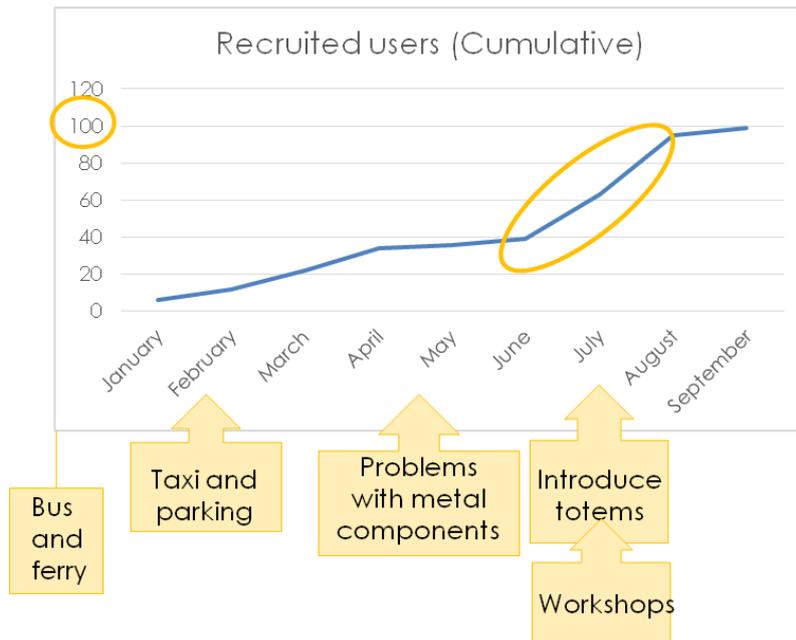


Figure 10. Spanish pilot: cumulative number of recruited users

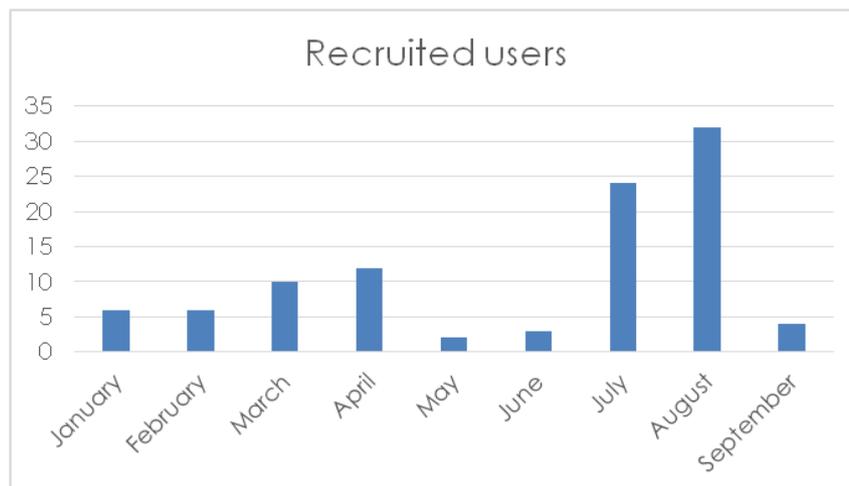


Figure 11. Spanish pilot: number of new users per month

Figure 12 and Figure 13 show the number of transactions performed by the users each month, as well as the money transferred to the operators, associated to the use of the services (number by mid-September). Two relevant things must be observed:

- By April, with approximately 30 users, the number of monthly transactions was aprox 140, most of them associated to bus validation (note that transfers for bus operators were not associated to number of validations, but top-up of the bus bono performed previously to validation)
- In July, as the number of users increased, the number of transactions increased accordingly, meaning that the volunteers that joined the project really used the system. The money transferred weekly reached the levels observed in Figure 13, observing less variations in the weekly payments than before.

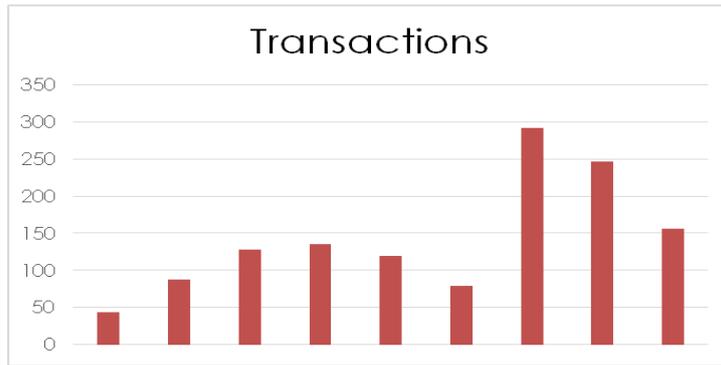


Figure 12. Spanish pilot: monthly number of transactions (validation + payment)

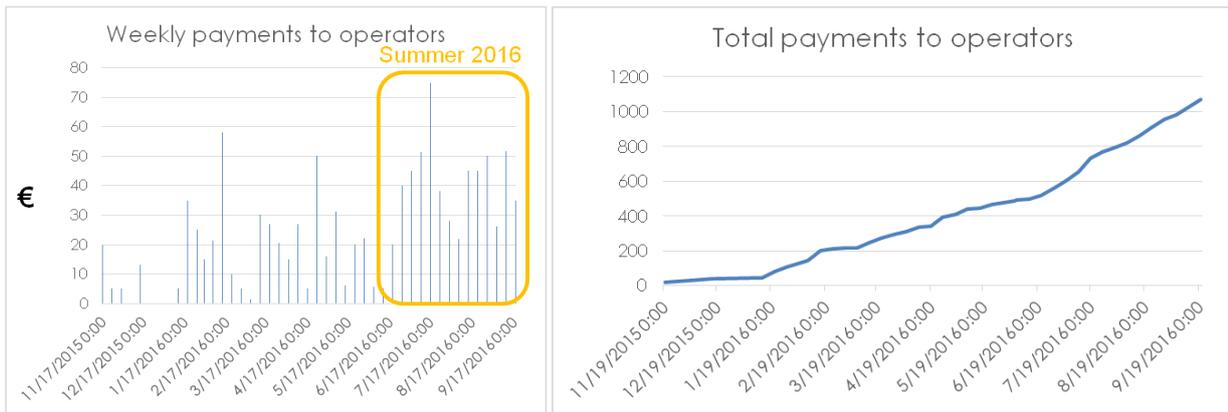


Figure 13. Spanish pilot: weekly payments to operators (left) and cumulative payment (right)

The distribution of revenues among transport operators shows that travelers have used mainly bus, which is the most used transport service in the city, among the 4 participating in the project.

Payments per operator

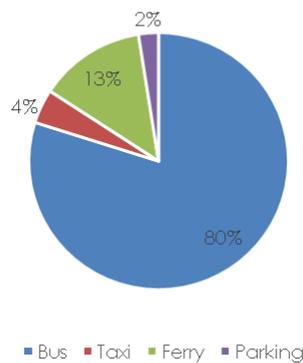


Figure 14. Spanish pilot: distribution of revenues among operators

Previous figures show that between July and August the number of users duplicated and the number of tickets purchased/validated almost triplicate the previous figures. This shows that **with an intensive recruitment campaign and making available alternatives for all phone models, the acceptance and usage of the volunteers increased rapidly**. It is also worth mentioning that the word-of-mouth communication has been found really important, since the first day of pilot, and for this it is crucial that the system works properly and the users are satisfied with it and willing to share the experience with their family and friends.

Latest Update

Finally, it is worth mentioning that during several weeks the iOS version of MobiWallet Santander was under evaluation by the *iTunes Store* Team (previously, it was needed to be installed manually not being possible to download it from the market in the case of Apple phones), being finally approved and published in the iTunes Market at the end of September.

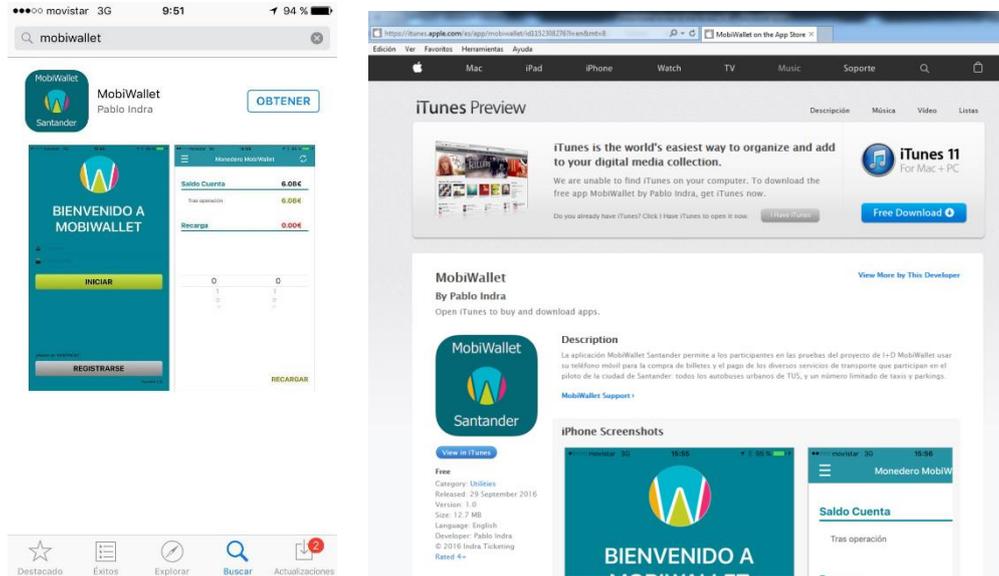


Figure 15. Santander App available in iTunes (view from phone – left; Web Page view-right)

This way, the App is prepared to be accessible to users of Android and iOS in future operation beyond pilot phase.

4.2 Italian pilot

By mid-September, the key figures were:

- 557 Users
- 447 tickets purchased

Results and growth (respect to March 2016):

- **116** registered users **(+50%)**
- **129** transactions **(+73%)**
- **240** shared journeys **(+400%)**

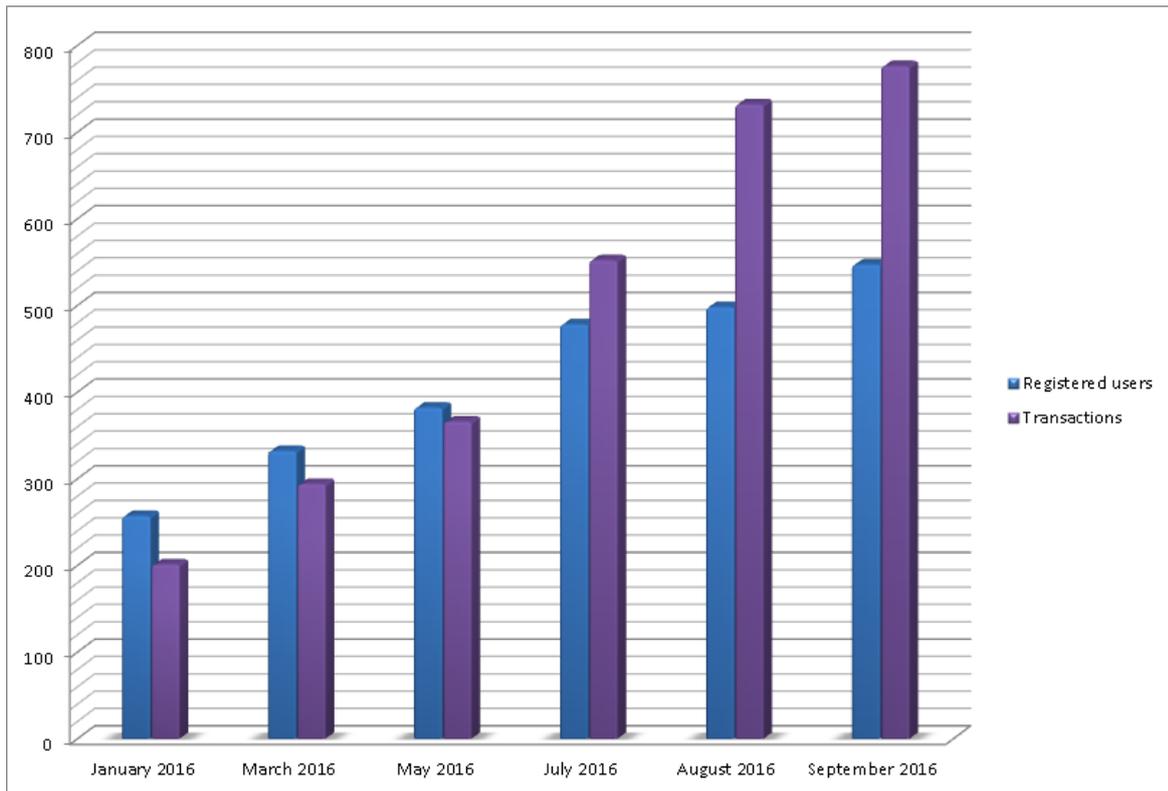


Figure 16. Italian pilot overall results (year 2016)

Detailed figures (source: SIMIS DB):

Figure 17 below depicts the details of users involved in the Italian Pilot. The data are obtained during the registration process once user registers to SIMIS or runs the Android apps for the first time. User's details ranges like age, education and employment status have been detailed in WP5.



Figure 17. Italian Pilot user's statistics details

Figure 18 depicts the urban tickets distribution. Data is directly obtained from the apps: once users successfully purchase an urban ticket, the Android apps send an appropriate message to SIMIS through the SIMIS REST APIs. The message contains the type of ticket (tram, bus, and park), the date and time and the userId. In addition the two apps ask also to the user to provide a feedback (from 1, lowest, to 5, the highest, stars). User's feedbacks, aggregated by transport mode, are depicted in Figure 19 and Figure 20.

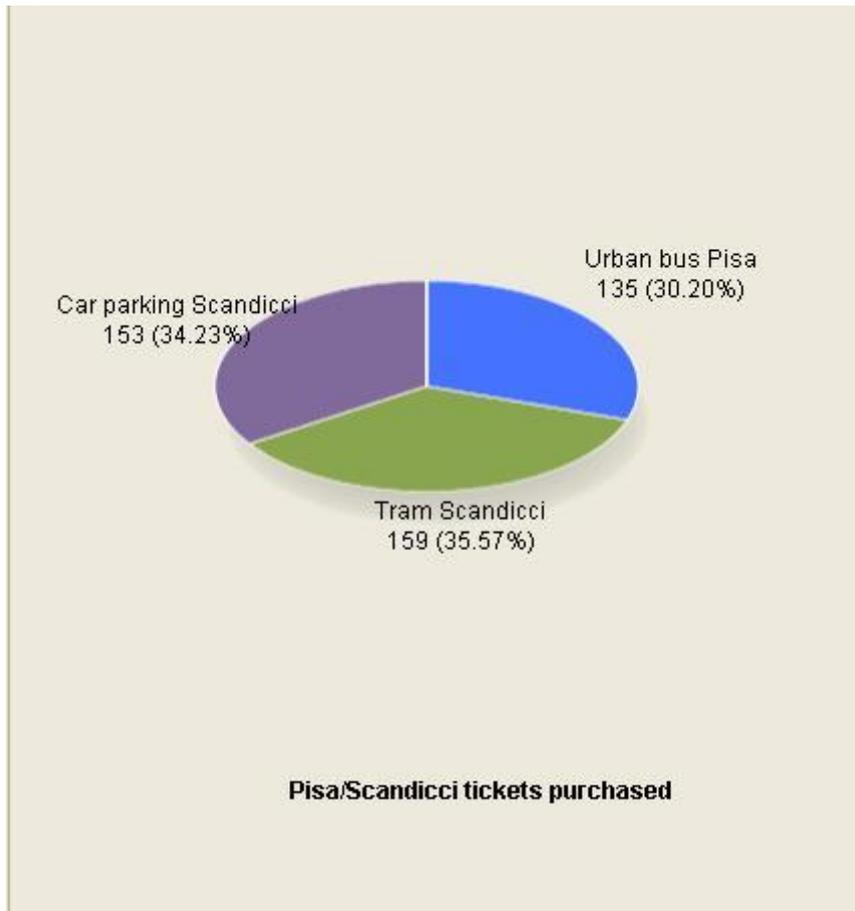


Figure 18. Italian pilot tickets details

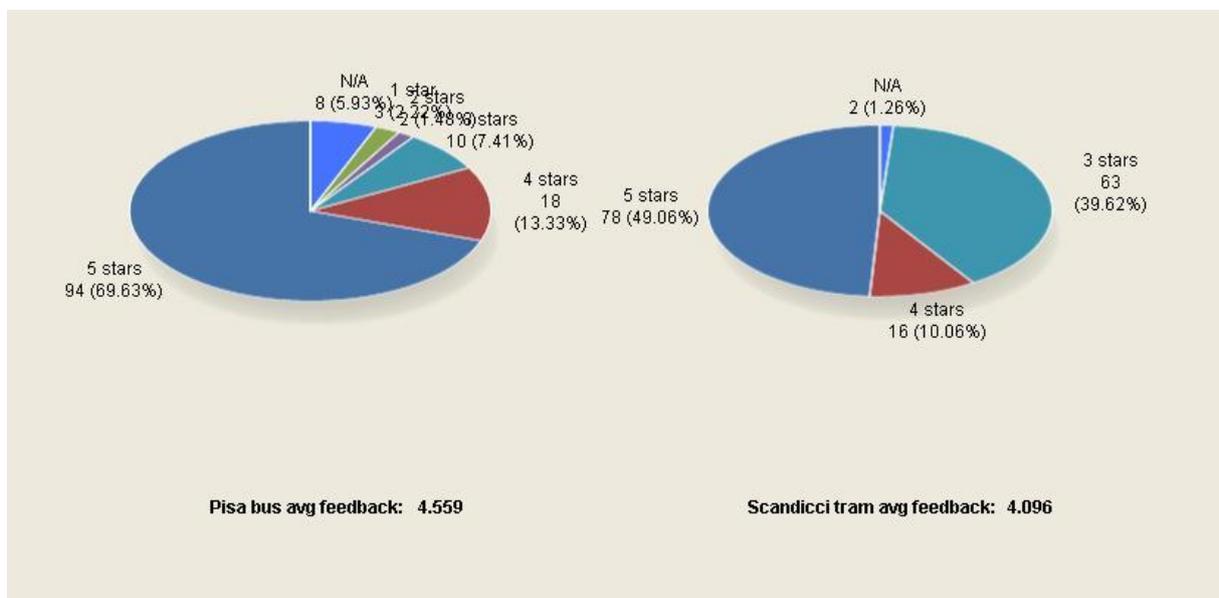


Figure 19. Italian Pilot user's feedback (urban bus transports)

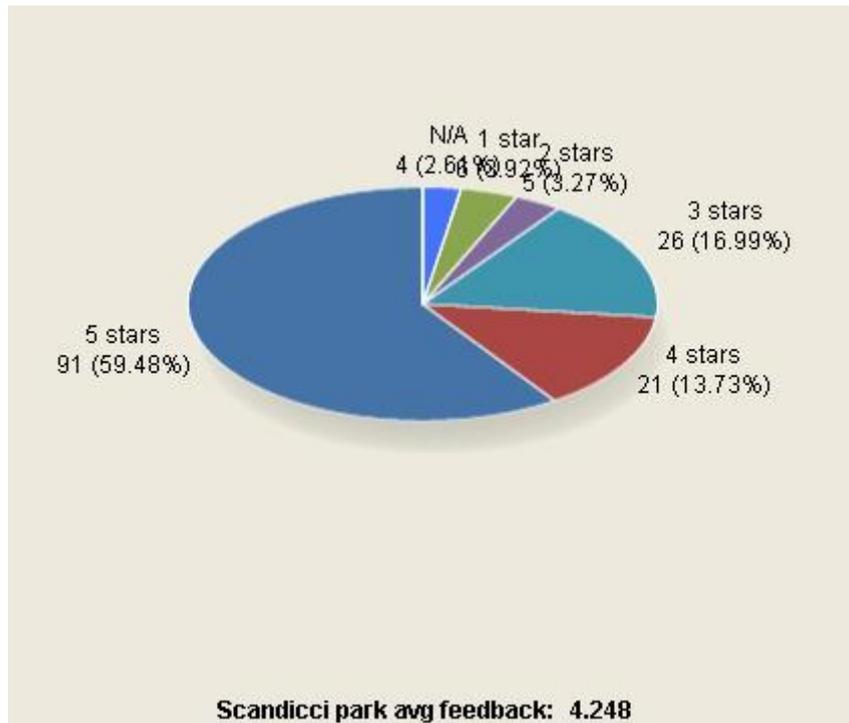


Figure 20. Italian Pilot user's feedback (car parking)

Finally, regarding the car sharing, Figure 21 depicts the journeys shared by Italian users aggregated by the distance (data obtained directly through car sharing functionality integrated in SIMIS):

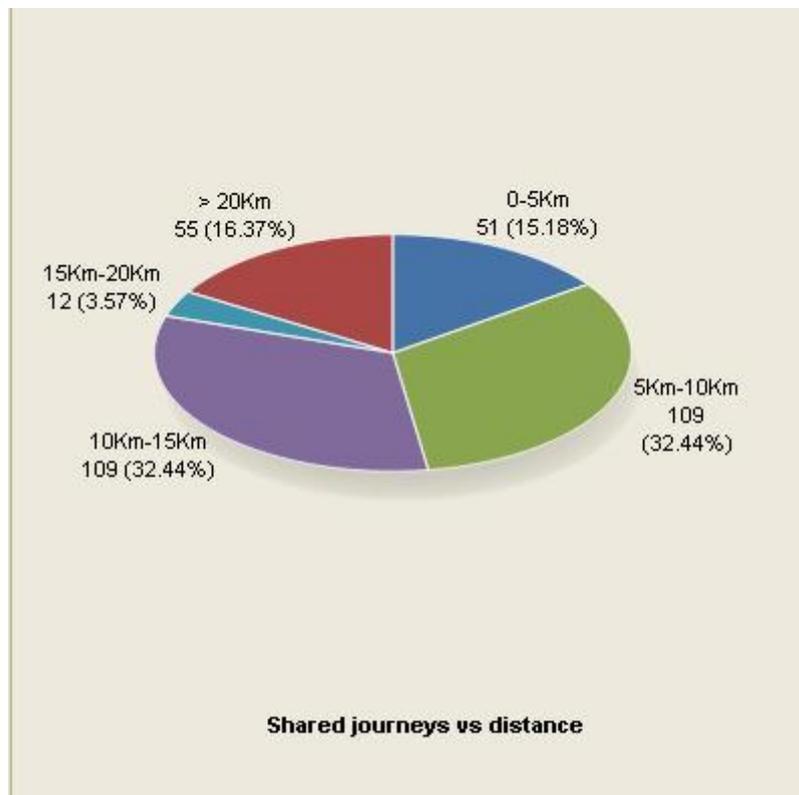


Figure 21. Italian pilot car sharing journeys vs. distance

4.3 UK pilot

Final numbers are depicted in the images below:

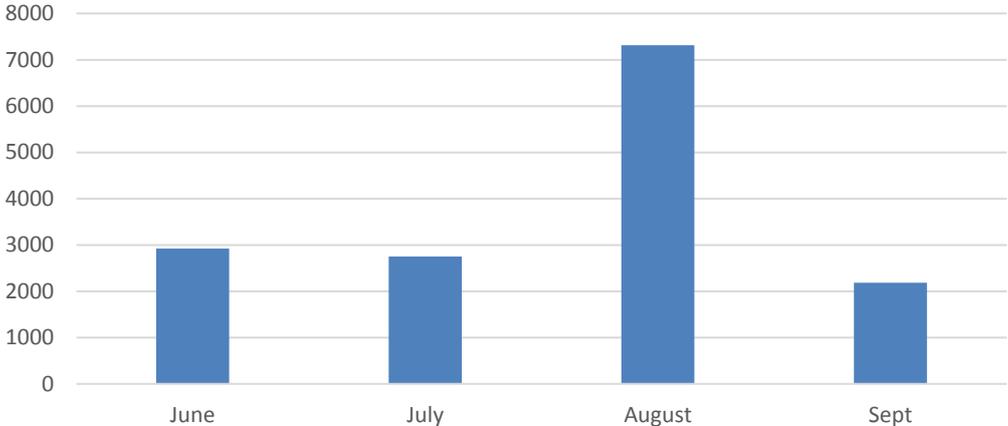


Figure 22. MobiWallet "Best Fare" Calculations

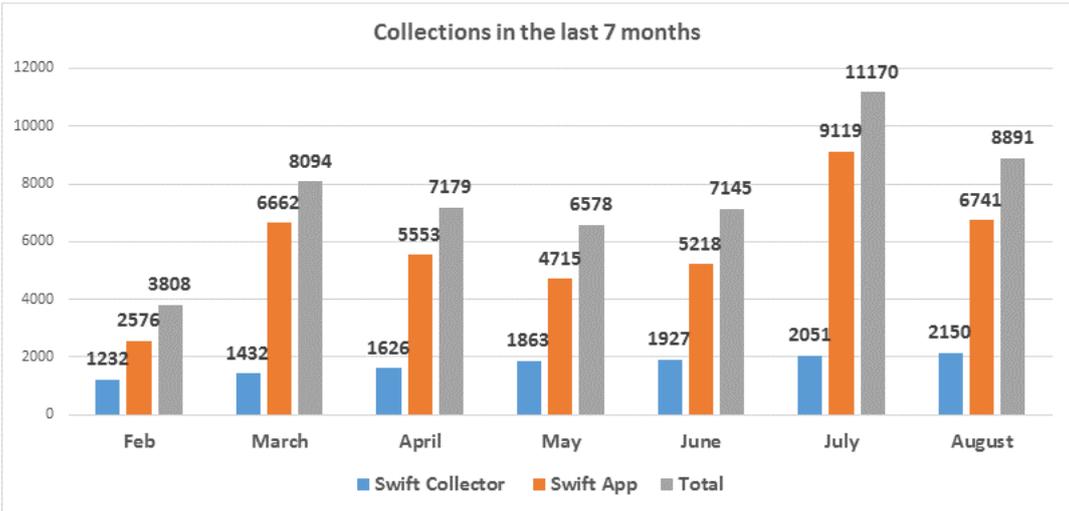


Figure 23. Collections in the last 7 months

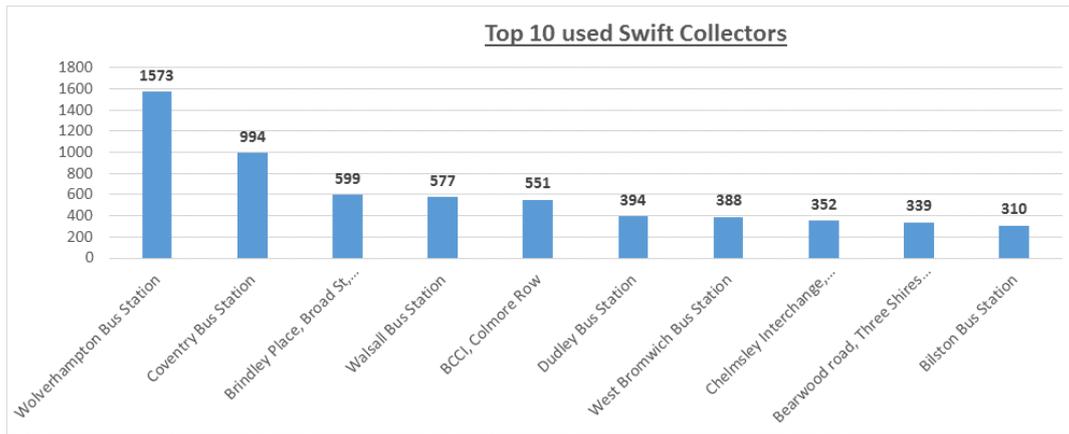


Figure 24. Usage of Swift collectors

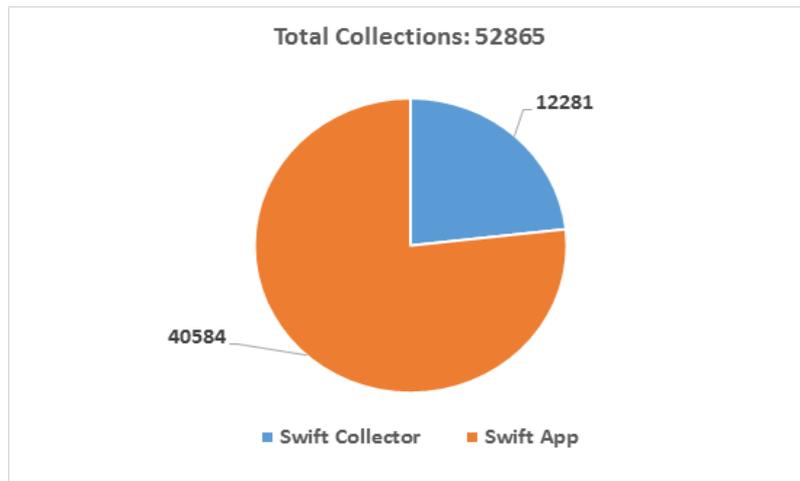


Figure 25. Collections

Swift Journeys 2016-17

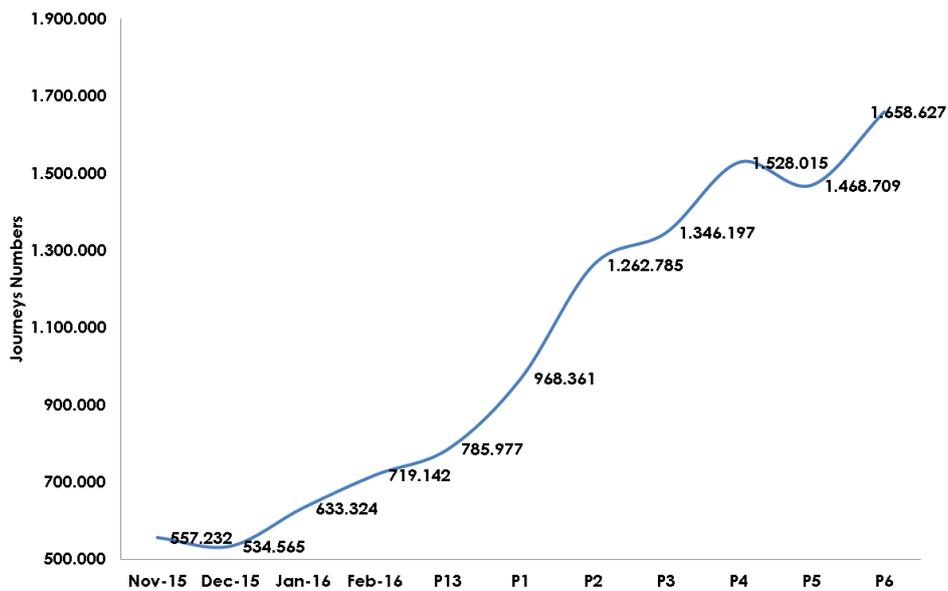


Figure 26. Growing of Swift journeys

4.4 Serbian pilot

By mid-September, the key figures were:

- 233 Users
- 483 transactions
 - 260 single bus tickets purchased
 - 93 bus package tickets purchased
 - 32 taxi rides
 - 98 parking tickets

The graph shown in Figure 27 illustrates the Serbian Pilot service use since its introduction in June 2015. This is presented through growth of the number of users and the number of total transactions conducted through the system for all transport modes. Also presented on the graph is the timeline of introducing the new pilot functionalities, incentives schemes and dissemination/promotional activities.

The service started just before Summer 2015 with included bus transport mode and added value services, however, there were delays with the introduction of the Telekom payment channel due to various administrative issues. Regardless, Serbian pilot partners provided a number of community workshops throughout the city to promote the new pilot and invite citizens to take part in evaluating the service as volunteers. The first users of the app were engaged and although no payment was possible they were able to use the added value services – the bus arrival time and air pollution data. The rental bike service initially planned to be offered through the pilot was only integrated at the information service level. Adaptations were required due to incompatibility of technologies that would incur costs and require resources not initially planned within a project.

The technical implementation of the Telekom payment channel (direct carrier billings) was completed in line with the plan, but due to administrative problems, it was not possible to activate this channel and the solution was found through introduction of cash vouchers in order to enable commencement of the pilot evaluation stage with volunteers.

At this point, upon introduction of cash vouchers Serbian partners continued with promotional activities at smart city promotional events which brought us new users.

The parking service mode based on sms payment was introduced at the start of 2016 and this together with the free cash vouchers provided to volunteers brought more users and more transactions. In April, finally the Telekom payment channel was introduced and improved the user interface which again increased the number of users and transactions. The final introduction of the taxi service and virtual wallet at the end of June enabled us to finally offer the payment services for three transport modes through the mobile app. In order to further promote the service and engage more users a new incentive scheme for the taxi service was introduced supported by promotional activities on social networks and through email lists and focus groups.

Due to changes in law in 2015 which introduced stricter requirements from legal entities with respect to offering payment services activation of implemented e-commerce services was prevented.

New legislations do not allow companies to sell the third party services. Even during the pilot it was needed to register officially as a payment institution since the money flow had to be established. For these reasons most of payments were based on pre-payments. Here is explained how payments to operators were performed:

1. Bus: Purchase of cash vouchers provided direct transfer of the money to the bus operator.

2. Bus: Telekom DCB – user payment through mobile phone billing (use of cash vouchers to clear the payments)
3. Taxi: Virtual wallet based payment of taxi service required buying on-line vouchers for the service use and Serbian Pilot provided an additional 30% gratis payment to each user of the taxi service to incentivise user engagement.
4. Parking: sms payment through mobile operator – direct transfer to the Parking Service.

The service use through the number of transactions per each mode is illustrated in Figure 28.

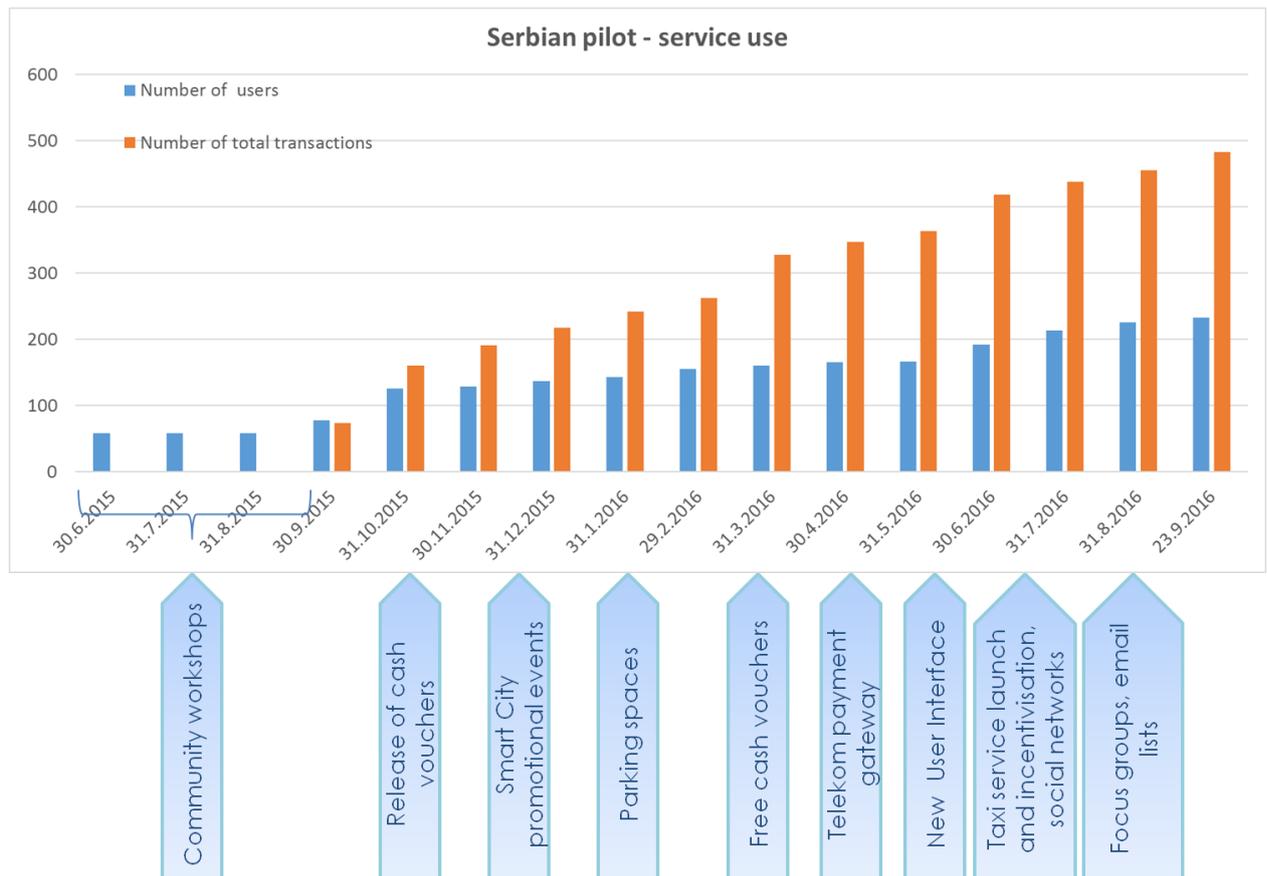


Figure 27. MobiWallet Serbian Pilot – service use since its introduction in Summer 2015 showing number of users and number of total transactions in relation to introduction of new functionalities as well as promotional and dissemination activities

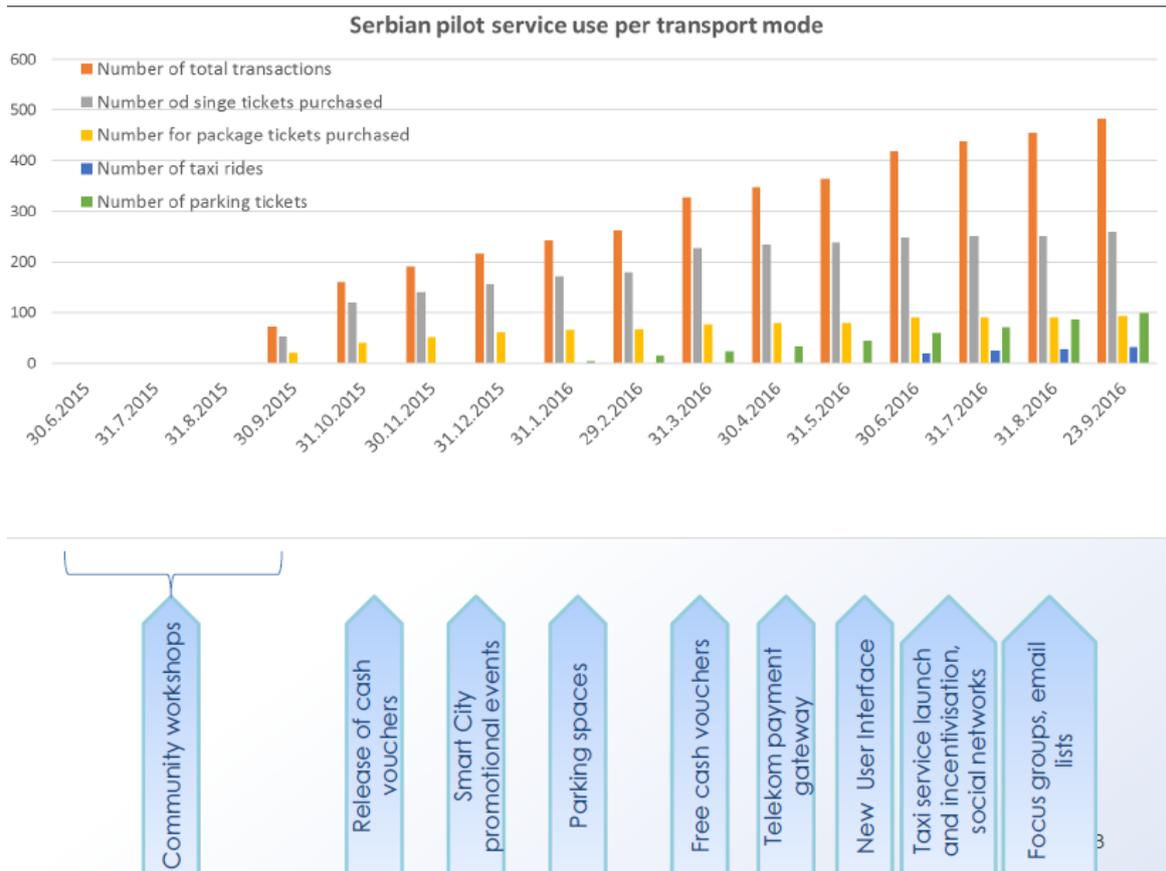


Figure 28. Serbian Pilot service use per transport mode

The distribution of revenues among transport operators shows that travelers have used mainly bus, which is the most used transport service in the city and also, this transport mode was the first available through the mobile app.

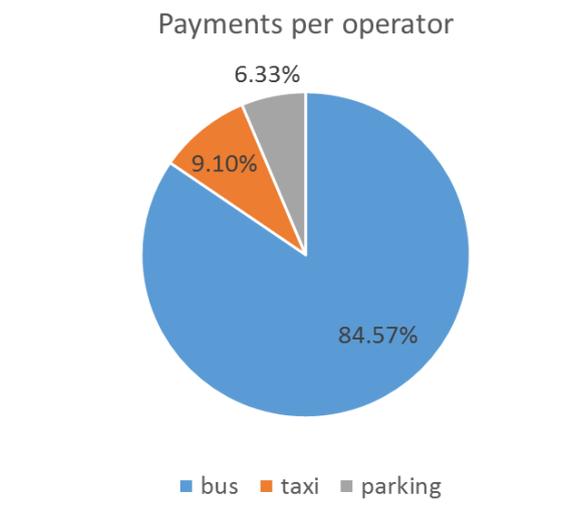


Figure 29. Serbian pilot: distribution of revenues among operators

5 Impact of the project

The project has successfully developed and put into operation 4 pilots across Europe, involving at least 3 different modes each. The system running in each of the pilot cities allows paying for the different transport modes, public and private, providing interoperability among the modes involved. The implementations had to face different challenges, such as cope with different business model and interest of each operator, changes in management of the agencies or political changes, difficulties to integrate with current solutions without modifying them, as well as solving different financial and legal issues.

More than 800 users have been using the system for the past months. The impact on them has been evaluated through online surveys and focus groups, obtaining indicators such as: 70% of users are satisfied with the overall ticket selection and purchase process, while 80% of users across the four pilots said they would recommend the MobiWallet system to others. 84% of users noticed a slight improvement, an improvement or significant improvement in comparison to the previous system, and also a percentage of them indicated an increased willingness to use more sustainable modes (namely cycling, bus and car sharing) following the MobiWallet trial.

Important efforts were done within the project in the definition of interoperability and how to approach it. At pilot level, there is one unique platform per pilot, and interoperability within each pilot is achieved from a technical and commercial perspective. At project level this was not feasible without changes on the operator's equipment and commercial agreements among them and also with financial institutions. The project decided to work on limited number of cases test cases, following a pilot-to-pilot approach, in order to analyze problems, solutions and extract possibilities and recommendations. As a result, developments have been done in all pilots to facilitate its users to use other pilots solutions with reduced effort (e.g. not need of registering again, access to services through the same interfaces, use credit available for the other country...).

Operators and users were involved in the evaluation since early stages, allowing to enhance the systems and provide new functionalities during project life time. During the whole project and specially during last months, and intensive effort of evaluation was carried out, allowing to extract conclusions, lessons learnt and recommendations from the different actors involved in the project: partners, administrations, operators, travellers. The feedback from users and operators shows that the solutions satisfy them in all pilots, and that a development at large scale, taking into account the lessons learnt from the project, will have a positive impact and be well accepted by the travellers and operators in all cases. Exploitation and sustainability strategies have been depicted, including market analysis, SWOT analysis and recommendations for large scale uptakes. Moreover, the partners have carried an analysis of business cases, detailing the expected results from the project and how the industrial partners plans to exploit them and obtain a return of investment.

Another relevant result is a "how to guide" in which the partners have collected a number of Recommendations and Best Practices aimed at stakeholders working in this area. It highlights key recommendations in a variety of important areas, most notably relating to technical and project management, planning and resourcing.

6 Dissemination activities

Dissemination activities were carried out under the scope of the WP6 “Dissemination, Exploitation and Business Plan”. The list of activities implemented during the project is as follows:

- Project brochure: At the beginning of the project a brochure was developed. This included a description of the project objectives, the consortium and the pilots.

The figure displays two pages of a project brochure. The left page is the front cover, featuring the MobiWallet logo and the title "MOBIWALLET Mobility and Transport Digital Wallet". It includes sections for "Project", "Pilots" (listing Spain, Italy, United Kingdom, and Serbia), and "Project Details". The right page is the back cover, featuring a diagram of the "European Interoperable MobiWallet Fare Management System" with categories like "Face Management System", "Collection Methods", and "Transport Modes". It also includes a "Consortium" section with a map of Europe and a list of "Partners" such as UC, Santander, Indra, Aleph, TST, GEST, and centro.

Figure 30. First project brochure

- Public Website: The project website (www.mobiwallet-project.eu) was set up at the very beginning of the project and was maintained and expanded with new content during the full duration of the project. Indeed, the website is divided into several sections. 4 sections are static and purely informative (Home, Project, Pilots, Consortium), 2 are designed to facilitate interaction between MobiWallet partners and external interested parties (Contacts, Newsletter), while the News section is dynamic and collects evidence of the project’s ongoing activities and the Repository section acts as a document holder for the public and private storage areas of the project. A new section has been added after the pilots entered in their deployment phases and gathers all the apps and services made available by the pilots. Dissemination media (i.e. videos and presentations) are also made available through a dedicated section of the website.

MobiWallet

Home Project Pilots Consortium News Repository MobiWallet Apps Media Contacts Newsletter search...

MobiWallet in Brief

Share 8 Tweet G+ Like

MobiWallet implements a vision where interoperability is no longer an issue, and cities can provide an electronic fare management system with unparalleled intelligence and functionalities that can be exploited by users and town hall officials alike. Coupled with a Smartphone-based electronic payment service and enhanced travel functionalities such as personalized trip planning service, the specific pilots deployed across Europe will demonstrate the benefits of a unified platform that can seamlessly process the payment schemes of a varied range of transport operators.

MobiWallet addresses Interoperable Fare Management solutions - an essential component in the continued growth and acceptance of the use of smart transport and the smart city - through four key impact areas: Encouraging modal shift and facilitating ease of use of multiple transport options with a focus on handicapped or disabled users, improving efficiency and reducing energy consumption, enhanced and sustainable mobility for all users and improving cross border transportation capabilities.

Ultimately, the protagonist in any smart transportation system is the citizen and it is improbable that any Interoperable Fare Management system will ever succeed without their input. Mobiwallet will include the participation of hundreds of users in four pilot cities across Europe (in Santander, Spain; Tuscany, Italy; West Midlands, UK; Novi Sad, Serbia) and will collect and analyze their feedback to guarantee that the implementation of the technological solutions is well founded on the actual needs of the citizenship and that the solutions provided by these achieve the utmost impact in paving the way for the transportation systems of the future.

MOBIWALLET: MOBILITY AND TRANSPORT DIGITAL WALLET.

Current status & achievements

30/09/2015

Become involved!

Download our Apps and start using MobiWallet

News

- Newsletter Issue #03 published!
- MobiWallet Workshop at TRA 2016
- Spanish Pilot Presentation

MobiWallet on Twitter

Tweets by @MobiWallet_EU

MobiWallet @MobiWallet_EU
Thanks for the recent follow @Slicked_pig @ConferenceRepub Happy to connect :) have a great Tuesday. -> Get ? community? aid=thankyou1...

MobiWallet @MobiWallet_EU
Thanks for the recent follow @Varadim_hostel @bernardocalsa!! Happy to connect :) have a great Tuesday. -> [Click here](#)

Private area

Hi Super User,

[Log out](#)

Figure 31. Home page of the official MobiWallet website

- Project presentations: Project presentations were prepared and made available through the website and Slideshare platform. They were released at several milestones of the project and served to give better visibility of the project and to provide updates about pilot execution. Besides a general presentation, specific presentations dedicated to each pilot were also prepared and published. Globally, our presentations had more than 10,000 views on SlideShare over the last year.

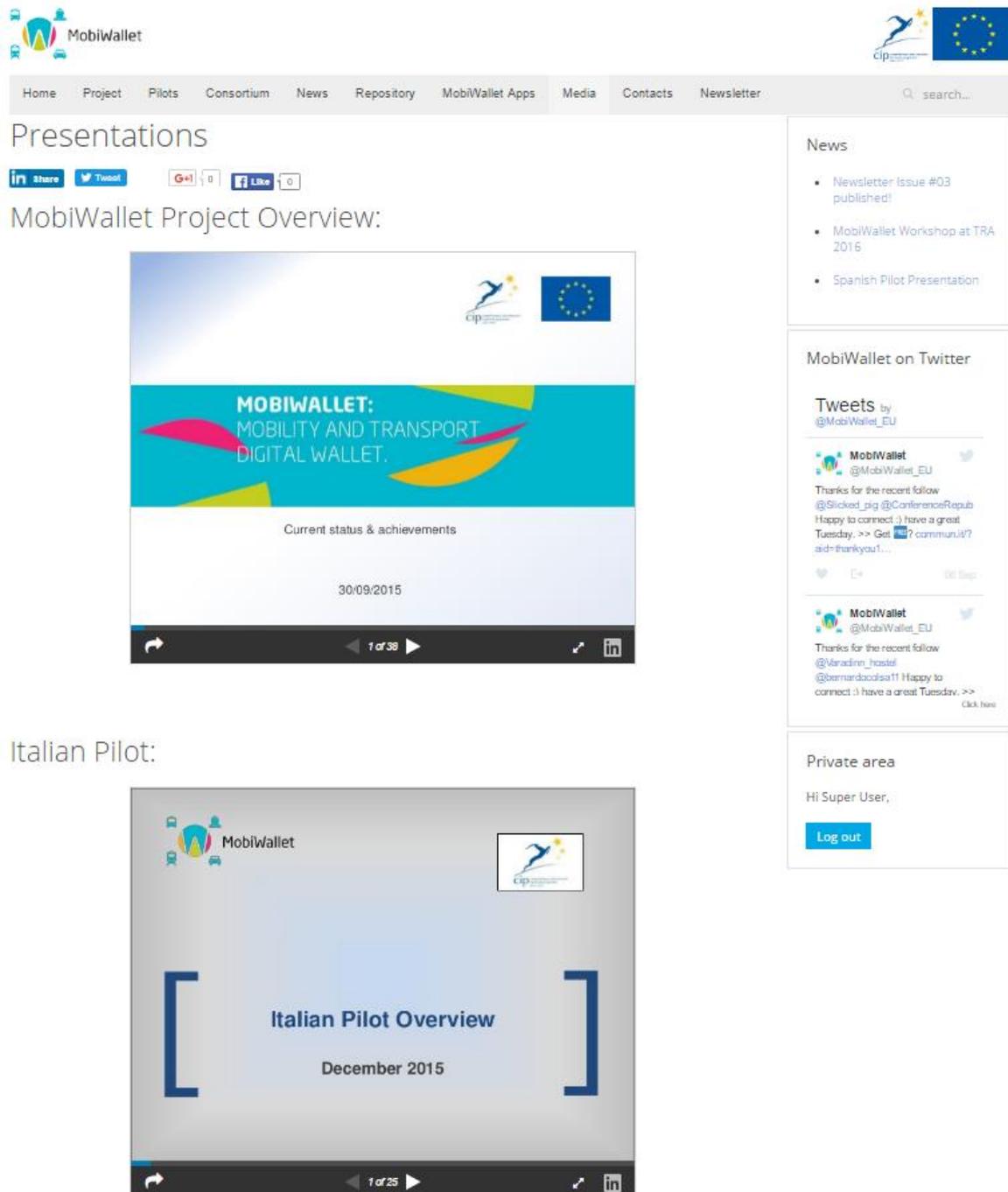


Figure 32. Presentations section in MobiWallet website

- Videos: Videos from the pilots were prepared and made available through our website and a YouTube channel dedicated to MobiWallet. A playlist for each of the pilot was prepared and helped the consortium to have better visibility; in addition, videos helped the users that were recruited to understand the services provided by each pilot and discover how easy was to make use of them. 15 videos are currently published.

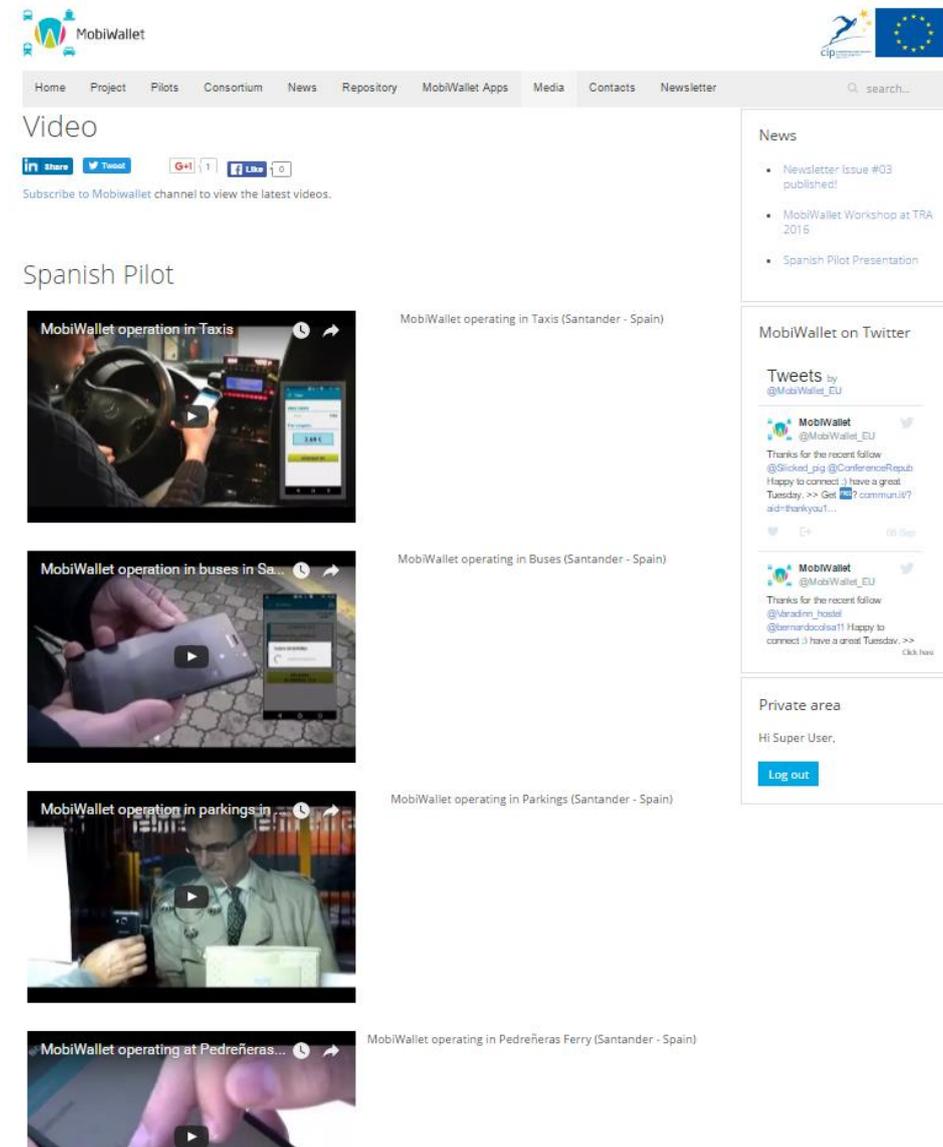


Figure 33. Video section in MobiWallet website

- Social Networks: Accounts on the most popular social network were set up, with the goal of building a community of professionals and stakeholders interested in MobiWallet. For these reasons, Twitter was the preferred social network and a community of more than 200 followers was gathered during the project lifespan. Other social networks like Slideshare and YouTube were also employed to share and broadcast multimedia content.



Figure 34. MobiWallet Twitter page

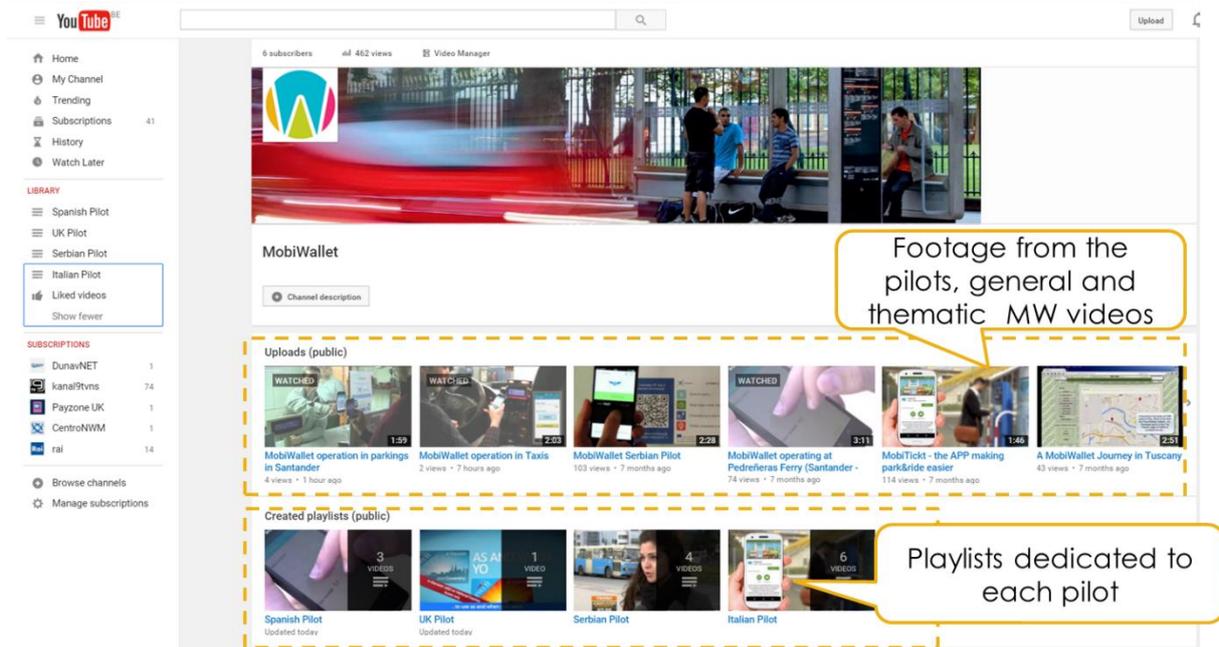


Figure 35. MobiWallet channel in YouTube

- Publication of 3 Newsletters: A six-monthly newsletter was issued after the pilots entered in the deployment phase and it is currently distributed to over 500 email addresses.



Figure 36. Third issue of MobiWallet newsletter

- Publication of 9 press releases in general media: Several press releases were launched by the coordinator and partners of MobiWallet project at key points of the project, such as pilot demonstrations and MobiWallet attendance to conferences and expos. In addition, RATP issued a press release when MobiWallet was awarded at Light Rail 2015 in London for the “Best

Customer Initiative”. Indeed MobiWallet was recognized *to make transport more intelligent facilitating interoperability thanks to new technologies*”. The global success of the press releases is witnessed by the echoes on social networks (especially Twitter) and on online media such as general, business and specialized newspapers.

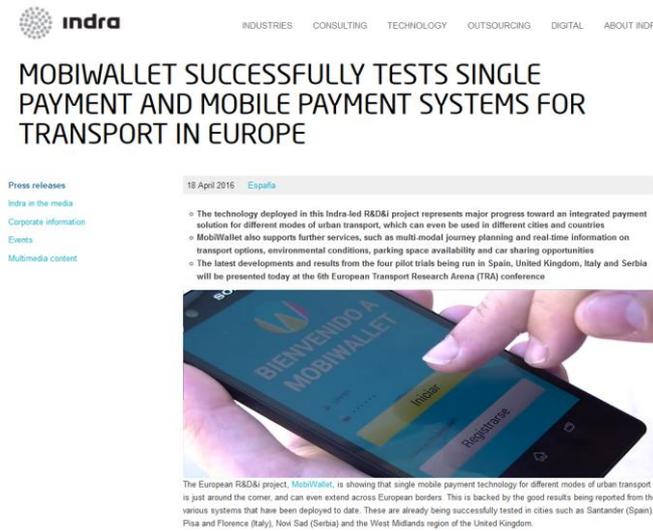


Figure 37. Press release in occasion of MobiWallet attendance at TRA 2016.



Figure 38. A press release was launched after GEST won Light Rail Awards 2015

LA NOVITA' NASCE: #MOBIWTIH_IT

Studenti al lavoro al Cnr

DIECI studenti dell'Istituto tecnico commerciale "Pacinotti" e del Liceo "Buonarroti" si sono ritrovati a lavorare fianco a fianco con i ricercatori dell'Istituto di Informatica e Telematica del Cnr (Iit-Cnr) e dell'Istituto di Scienze e Tecnologie dell'Informazione (Isti-Cnr) per la promozione di una campagna di divulgazione e reclutamento di utenti all'interno del progetto Europeo MobiWallet (<http://www.mobiwallet-project.eu>).

NELL'AMBITO dell'alternanza scuola-lavoro, i ragazzi "lavore-

ranno" per un totale di 6 settimane negli uffici del Cnr, progettando e realizzando mobiwith it (il nome della campagna), con i relativi logo, slogan, hashtag, e tutto il materiale divulgativo necessario all'iniziativa (volantini, poster, A3, magliette). Gli studenti sono anche chiamati a creare e gestire le pagine relative sui social più noti, oltre ad analizzare i dati raccolti con i questionari sottoposti agli utenti.

IL CNR, con la campagna Mobiwallet, dimostra come nell'ambito di un progetto europeo sulla

mobilità, si possano coinvolgere giovani studenti, formarli, e renderli parte attiva di un progetto di levatura internazionale. Proprio in questi giorni, gli allievi stanno facendo una campagna di marketing territoriale tra Pisa, Firenze e zone limitrofe, per promuovere l'iniziativa che hanno messo in essere in maniera egregia.

L'ATTIVITÀ di marketing prevede tra le altre attività quella di fare banchetti nelle zone universitarie per informare i "collegi più grandi" circa le novità nel campo della green mobility.



GREEN MOBILITY
Dieci allievi dell'Iitc "Pacinotti" e del Liceo "Buonarroti" fianco a fianco con i ricercatori

Figure 39. An article about Italian pilot initiative issued by the printed newspaper "La Nazione"

Publication of 7 articles in magazines and journals: Articles were presented at Engineering Conferences on transport and mobility (such as ICSUTE and IEEE ITSC) and in specialized magazine about transport (e.g. EURAILMAG) and bank & payments (e.g. AZIENDABANCA and SOLE 24 Ore).



- Participation in European conferences and events: MobiWallet consortium actively participated to many conferences and events across Europe. In particular, two main events were organized at consortium level with the participation of partners' representatives from all the pilots. The first one was Polis conference, held in Brussel in November 2015. A stand was set up for the whole duration of the conference and a talk on MobiWallet was delivered by a representative from CENTRO. Then, a second major event was the organization of MobiWallet

workshop as a satellite event of Transport Research Arena (TRA 2016) that was held in Warsaw, Poland in April 2016 . The workshop gave the opportunity to all the pilot representatives to show and demonstrate the solutions proposed and deployed in their pilot. Special attention has also been paid to interoperability among the pilots and the new possibilities of cross-border frictionless travel. MobiWallet workshop was held inside a conference room in the same venue of TRA 2016 (i.e. PGE Narodowy stadium) and was open to all TRA delegates. The workshop was advertised at our stand, also through the distribution of fliers. Such major events, which were organized and managed at consortium level, are complemented by a number of active participations to workshops, conferences and expos that many partners have attended autonomously but nevertheless providing general visibility to the project in a variety of contexts, from ticketing to sustainable mobility, from smart cities to IoT. A selection of such events is reported in Dissemination deliverable D6.1.3 “Dissemination pack (Third generation)”.



Figure 40. MobiWallet delegates at our stand at POLIS 2015

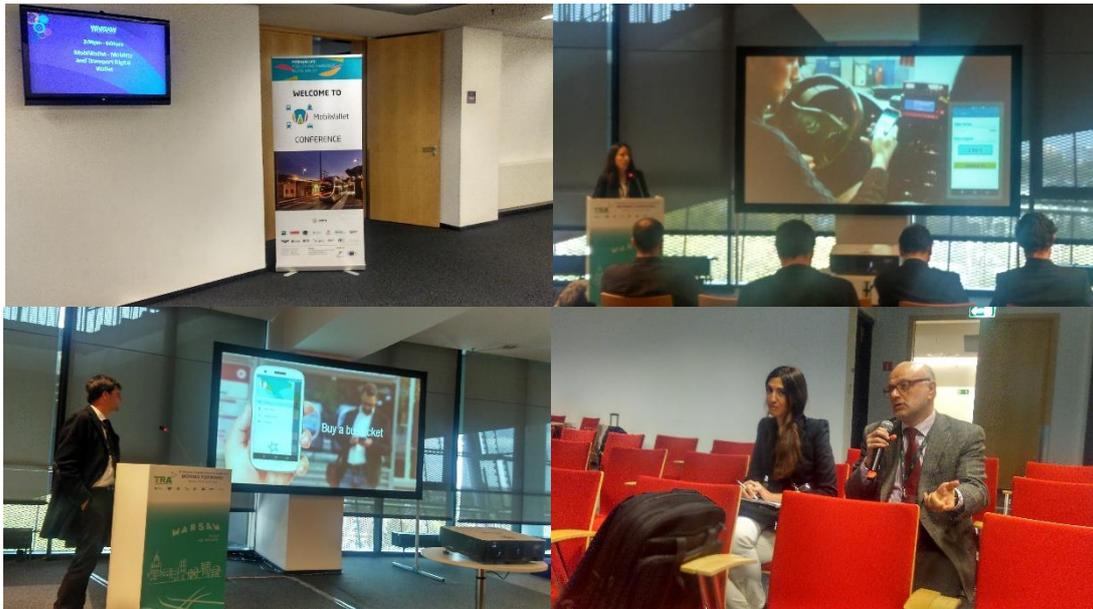


Figure 41. MobiWallet workshop at TRA 2016 (From left to right, from top to bottom: rollup at the entrance of MobiWallet workshop, Spanish Pilot demo, Italian pilot demo and Q&A sessions)

- Pilot demonstrations: Besides being milestones of the project, pilot demonstrations have been important dissemination events in which MobiWallet solution were showcased to interested audience including local stakeholders and operators. For instance, in January 2015, MobiWallet second demonstration was attended by Telecom Serbia, which might be an important actor for the large scale uptake and sustainability of the solutions proposed by the project at least at regional level.



Figure 42. MobiWallet partners at the 2nd demonstration event in Novi Sad Serbia – Demo of the Serbian Pilot and mobile app

- Clustering actions: Dissemination also took care of finding synergies with projects with similar or complementary scopes, which were scouted by the consortium and its partners. In particular, it was possible to exchange information, ideas and experience with HoPE project, a sibling project of MobiWallet, being financed by the same EC program. Indeed, MobiWallet delegates were invited to join and attended an international workshop organized by HoPE consortium (see: <http://hope-eu-project.eu/index.php/newsletter/hope-events/114-2015-11-26-international-workshop-karlsruhe-germany>)



Figure 43. MobiWallet brochures being distributed together with HoPE project material at the workshop in Karlsruhe, Germany

- Final Event: In September 2016, MobiWallet will celebrate its final event in Santander. The program will include talks and demos from all the pilots. In-depth discussion will also be provided about the lesson learnt, including the issues the consortium was able to address and the work that still has to be done in the roadmap towards interoperability at European level.



Figure 44. Brochure of the final event in Santander

7 Website and contacts

The following table presents the project logo, web page address and contact information. The next pages presents the list of contact details of all beneficiaries.

 <p>MobiWallet</p>	<p>Web & Social Media:</p> <p>http://www.mobiwallet-project.eu</p> <p>twitter.com/MobiWallet_EU</p> <p>www.linkedin.com/company/mobiwallet</p>	<p>Contact:</p> <p>coordinator@mobiwallet-project.eu</p> <p>jacid@indra.es ;</p> <p>lmerle@indra.es</p>
---	--	--

Table 1. List and contact details of beneficiaries for MobiWallet project

No.	Name	Short name	Country	Contact
1	Indra Sistemas S.A.	INDRA	Spain	Leyre Merle Carrera. Address: San Julian 1, 28108, Alcobendas, Madrid, Spain. Tel: +34 682 52 71 27
2	Universidad de Cantabria	UC	Spain	Luis Muñoz. Address: UC Av de los Castros s/n. 39005 Santander, Spain. Tel.: +34942201497
3	Ayuntamiento de Santander	SANT	Spain	Celia Gilsanz Gómez. Address: C/Los Escalantes 3, (Ribalaygua Building) 5 th floor, 39002, Santander, Spain. Tel: +34 942 200 600 Ext: 60491
4	Banco Santander SA	BSAN	Spain	Jesús Ruiz Martínez. Address: Av. de Cantabria, s/n, 28660 Boadilla del Monte, Madrid. Tel: +34 676477104
5	Tecnologías, Servicios Telemáticos y Sistemas, S.A.	TST	Spain	Aránzazu Sanz Merino. Address: Albert Einstein 12, 1 st Floor, 39011, PCTCAN, Peñacastillo, Santander, Spain. Tel: +34 942 760 540
6	Intecs s.p.a	INT	Italy	Giuseppe Biasu. Address: Via Umberto Forti, 6 Montacchiello (loc. Ospedaletto) – 56121 Pisa, Italy. Tel. +39 050 96 57 409
7	Consiglio Nazionale delle Ricerche	CNR	Italy	Davide Moroni. Address: c/o ISTI-CNR, via Moruzzi 1, 56124 Pisa
8	Aleph srl	Aleph srl	Italy	Andrea Giaccherini. Address: Via Giosuè Carducci 17, 50121 Florence, Italy. Tel: +39 055359734.
9	Gestione ed esercizio del sistema tramviario SpA	GEST	Italy	Valentina Ferrini. Address: Via dell'Unità d'Italia 10, 50018 Scandicci (Firenze). Tel: +33 055 7352207
10	Comune di Firenze	COMFI	Italy	Vincenzo Tartaglia. Address: via Mannelli 119i, 50132 Firenze, Italy. Tel: +30 055 262 4394
11	Transport & Travel Research Ltd	TTR	UK	Scott Davidson. Address: c/o Garrick Suite, 15 Market Street, Lichfield, Staffordshire, WS13 6JX, United Kingdom. Tel: +44 1543 416 416
12	West Midlands Combined Authority (CENTRO)	WMCA (CENTRO)	UK	Matthew Lewis, Address: 16 Summer Lane, Birmingham, B19 3SD, UK Tel: +44 121 214 7025
13	Društvo za konsalting, razvoj i implementaciju Informacionih i komunikacionih tehnologija dunavnet doo	DNET	SERBIA	Aleksandra Rankov. Address: Antona Čehova ½ ,21 000 Novi Sad. Tel: +381 21 528 493
14	Javno gradsko saobraćajno preduzeće Novi Sad	JGSP NOVI SAD	SERBIA	Milan Lojović. Address: Futoški put 46, 21000 Novi Sad, Serbia. Tel +381 628016767
15	City of Novi Sad	CNS	Serbia	Goran Secujski. Address: Trg Slobode 1, 21000 Novi Sad, Republic of Serbia. Tel.: +381214807710

Use and dissemination of foreground

8 Section A: Dissemination activities

List of all dissemination activities (publications, conferences, workshops, web sites/applications, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters).

Type of activities	Main leader	Title	Date/Period	Place/country addressed	Type of audience / size
Web	CNR	Creation of Web site and social media, continuous update of information	All project life	Not applicable (NA)	Transport stakeholders and general public
Flyers	INDRA	Project brochure	At the start of the project	NA	Transport stakeholders and general public
Presentations	ALL	Project presentations available in the web page and slideshare	Crated and updated during the project	NA	Transport stakeholders and general public
Videos	CNR	Videos available in youtube (15 videos)	Crated and updated during the project	NA	Transport stakeholders and general public
Media briefings	CNR	Newsletters (3 publications)	January 2015, October 2015, April 2016	NA	Transport stakeholders, R& D institutions
Article		Articles presented at ICSUTE Conference	2015	NA	Transport stakeholders, R& D institutions
Article		Article in transport magazine (EURAILMAG)	2015	NA	Transport stakeholders, R& D institutions
Article		Articles presented at IEEE ITSC	2015	NA	Transport stakeholders, R& D institutions
Articles	INDRA	Article in bank&payments magazine (AZIENDABANCA)	September 2015	Italy	General public

Articles	INTECS	Innovazioni e nuove tecnologie per la Smart City . Article in newspaper SOLE 24 Ore	November 2015	Italy	General public
Articles	CNR	Nasce #MOBIWITH_IT . Article in newspaper La Nazione	July 2010	Italy	General public
Conference	INDRA	MobiWallet final conference	September 2016	Santander (Spain)	Transport stakeholders
Conference	INDRA	ITS Spain: presentation	May 2016	Madrid (Spain)	Professionals from the transport sector
Press releases	INDRA	Press note of project start	Februray 2014	Spain, Italy, Serbia, UK	
Press releases	GEST	Related to GEST awarded as “Best Costumer Initiative” at Light Rail Awards in London thanks to MobiWallet.	October 2015	Italy	General public
Press releases	INDRA	Related to MobiWallet and Innovation Solutions by INDRA	October 2015	Spain	General public
Press releases	INDRA	Related to MobiWallet at TRA 2016	April 2016	Spain	General public
Press releases	Com. Firenze and CNR	Several press releases promoting MobiTickt	January 2016 and spring-summer 2016	Italy	General public
Press releases	Serbian partners	Press releases promoting MobiWallet	October 2015	Serbia	General public
TV	Serbian partners	TV inset – Radio Televizija Vojvodine: Autobuska karta iz “mobilnog novčanika” (eng. transl. Bus ticket from the Serbian MobiWallet)	April 2014	Serbia	General public
TV	Serbian partners	TV KANAL9, NOVI SAD: Za Novosađane novina – “Mobilni novčanik” (eng. transl. News for Novi Sad citizens – MobiWallet)	April 2015	Serbia	General public

TV	Serbian partners	TV RTV, Novi Sad: “Pod istim krovom” - MobiWallet pilot Novi Sad	October 2015	Serbia	General public
Radio	Ayto. Santander	Interview with Santander City Council Innovation Director, presenting MobiWallet	July 2016	Spain	General public
Exhibition / Stand by INDRA	INDRA	GreenCities & Communities	October 2015	Malaga, Spain	Professionals from the transport sector
Expo/Congress	AY SANT	"Possibilities of Collaboration in Smart City Projects" – Smart City Expo	18 November	Barcelona, Spain	Stakeholders and professionals from the Smart City domain
Exhibition/Stand by the consortium / Conference	CENTRO, INDRA, CNR + ALL	Polis Conference 2015	19-20 Nov 2015	Bruxelles, Belgium	Stakeholders and professionals for the transport and mobility sectors
Workshop	CNR	International Workshop on Multimodal Route Planning and Integrated Fare Management organized by CIP PSP Project HoPE	26 Nov 2015	Karlsruhe, Germany	More than 20 stakeholders and professionals for the transport sectors
Expo/Congress	AY SANT	Congreso Smart City Expo Puebla – Smart City Expo	17 Feb 2016	Puebla, Mexico	Stakeholders and professionals from the Smart City domain
Conference	AY SANT	4yh Smart City Conference	22 Feb 2016	Athens, Greece	Stakeholders and professionals from the Smart City domain
Networking sessions with diverse companies and stakeholders, highlighting TST's R&D involvement	TST	MWC - Mobile World Congress 2016	Feb 2016	Barcelona, Spain	Industry, project partners, citizens, policy makers
Seminar	Centro	Institute of Civil Engineers – Presentation Evening	10 Mar 2016	Birmingham, UK	Professionals from the Civil Engineering sector
Conference and exhibition	DunavNET	CeBIT 2016	14-18 March	Hannover, Germany	IoT Professionals

Conference and distribution of promotional material	TTR	Smarter Travel	17-18 March	Milton Keynes	>300 delegates focused on sustainable and intelligent mobility
Exhibition/Stand by the consortium / Satellite workshop	INDRA, CNR + ALL	Transport Research Arena -TRA 2016	18-21 April 2016	Warsaw, Poland	Stakeholders and professionals for the transport sectors
Congress	AY SANT	CEMR 2016 CONGRESS Council of European Municipalities and Regions	20-22 April 2016	Nicosia, Cyprus	Stakeholders from all over Europe
Workshop and exhibition	DunavNET	Smart IoT London	12-13 April 2016	London, UK	Professionals in IoT – Stand visited by > 400 people
Exhibition / Stand by INDRA	INDRA	ITS Spain	May 2016	Madrid, Spain	Professionals from the transport sector
Talks about IoT	TST	EBV Elektronik IoT Seminars	May 2016	Bilbao, Spain	Industry
Promoting IoT and novel technological facilitators	TST	W3C Day	May 2016	Gijón, Spain	Industry, stakeholders
Workshop and Seminars	TTR, CENTRO	Intelligent Mobility: Spring Seminar on Mobility as a Service (MaaS)	May 2016	Birmingham, UK	Stakeholders and professionals in sustainable and intelligent mobility
Workshop and exhibition	DunavNET	IoT Week	31 May – 2 June 2016	Novi Sad, Serbia	Professionals and stakeholders in IoT; >500 delegates
Workshop	AY SANT	Technical workshop on ICT Infrastructures and Services for Smart Cities	16 June 2016	Santander, Spain	Stakeholders and professionals in sustainable and intelligent mobility
Session “The challenge of managing data in the Smart Cities”	TST	Jornada Técnica Smart City	June 2016	Santander, Spain	City authorities, public authorities, industry and business sector

9 Section B: Exploitation Plans

The table below, included in *D6.2.1 Business Cases and Requirements Specification (Interim Report)*, presents how each partner plans to exploit the results of the project. More information on Business Models and exploitation strategies (including potential clients, estimation of cash flow and return of investment), are included in WP6 deliverables, being confidential information.

Type	Partner name	Specific Business Model	Expected Product / Services
Scientific (Research Institutions)	UC	Degree thesis	-“Implementation and analysis of web services over secure environments”. -“Implementation and development of generic clients for accessing secure Web services”.
	CNR	Creation of Spin-off	-For sensor node prototypes -For car pooling applications -Research unit devoted to embedded systems and computer vision.
		Sale of Patent Rights	-Software and devices for real time image analysis -Sensor nodes prototypes -Annotated image datasets -Models for decision support in mobility -Car pooling application -Car pooling data set
Industrial (SME)	Aleph	Direct Selling	Mobitickt app
	TST	Direct Selling	NFC and mobile terminal payment solution
	TTR	Consultancy and evaluation Services	Advising on IFM solutions across a range of modes and regional contexts. Offering independent evaluation services including market research, process evaluation and impact evaluation around IFM development.
	DNET	Direct Selling	mTicketingAR platform
Industrial (LC)	INDRA	Direct Selling	NFC Ticketing Solution, including APP, back-end and validation equipment
	INTECS	Direct Selling	- SIMIS platform - M2M GW. - Web APIs

	Banco Santander	Indirect Selling	-M-Banking wallets and mobility wallets integration -Partnerships with MobiWallet system operators
Public Authorities (City Authorities)	Santander	Added-value Services for citizens	Integrate new mobility services in Santander City Platform
	Florence	Added-value Services for citizens	Integrated payment method for mobility useful both for citizens and tourists
	Novi Sad	Added-value Services for citizens	-Unified payment of all the existing modes of transport in the city. -Connecting to the systems of other cities in the country and abroad
Public Authorities (Transport Operators)	CENTRO	New or improved transport product&services	Ticket/fares engine to enable customers to have the most appropriate fare for a specific journey
	JGSP	New or improved transport product&services	Electronic payment and tracking system
	GEST	New or improved transport product&services	-Offer citizens a service that can grow and become better thanks to users feedbacks -Open and facilitate the develop of the service at urban scale