OPEN CITIES

DELIVERABLE 6.24
Open Sensor Network Platform - d

Project Acronym Open Cities

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Deliverable 6.24 Open Sensor Network Platform - d

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3	25/09/2013	A. Sfairopoulou, M. Palacin	DotOpen, M. Palacin	Apps statistics
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6	23/10/2013	M. Oliver, X. Binefa	UPF	General review, conclusions

Statement of originality:

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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1 INTRODUCTION

The main objective of Deliverable 6.24 is to present the second version of the Open Sensor Network Platform (OSNP) that has been designed and implemented within WP6. This report describes the new architecture and features of the new Platform and shows the new datasets that have been introduced. In addition, the report evaluates the WP6 success in terms of impact by measuring whether the indicators have achieved the expected values.

When we finished the first version of the OSN, we realized that new improvements were required, in order to adequate the platform to some current trends. We evaluated whether it was better to do a new update or to implement a new platform. Finally, we decided that best option was to implement a clean-slate version of the platform, but using the acquired best practices from the former one.

It is remarkable that the new version of the OSNP facilitates the introduction of new datasets and provides a more attractive user web interface. Over this period we have organised many Apps Challenges that have helped disseminate our project and have encouraged the implementation of Apps using Open data. We expect that this portal and the organisation of Apps Challenges continue with the same success, or even more, beyond the end of the Open Cities project.

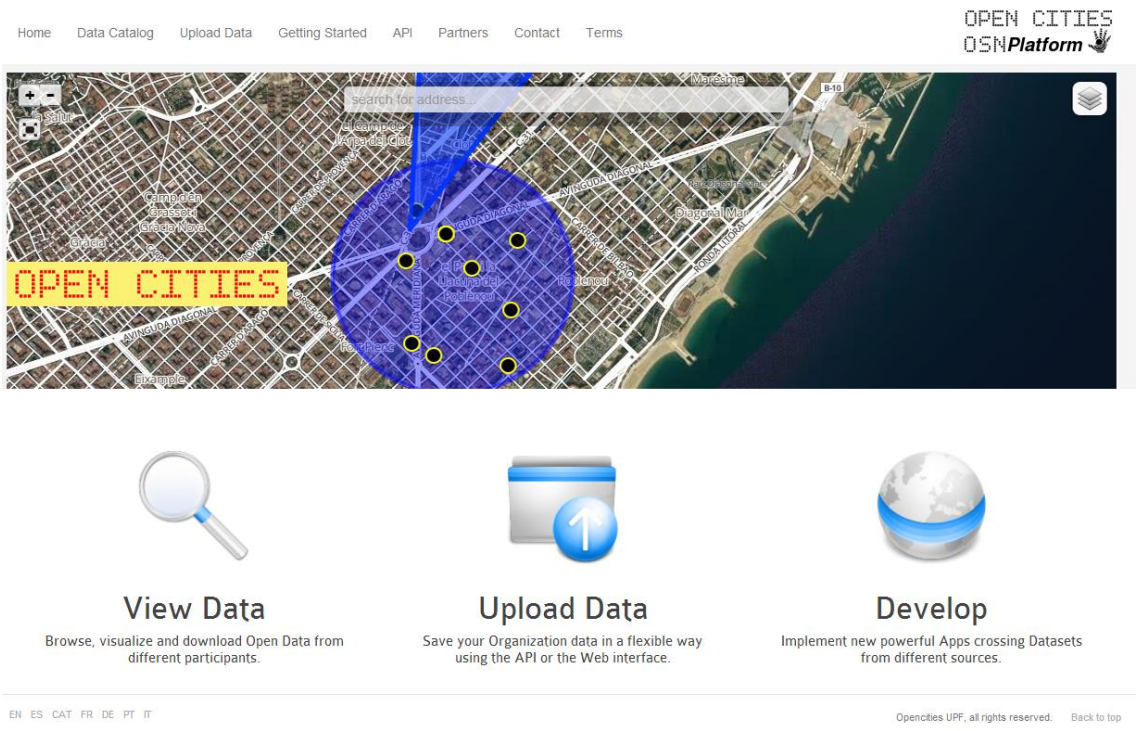


Figure 1.1 OSN version 2 Web Portal (landing page)

2 OSN PLATFORM: CONTINUOUS IMPROVEMENT

This part of the deliverable addresses the technical aspects related to the Open Sensor Network Platform (OSNP) version 2. As for the former version of the OSNP, the main objective of version 2 is to store sensor measurements and to deliver them in standard formats to the apps developers. The overall structure of the platform is basically the same but we have added new components to improve the capabilities of the previous platform in many aspects.

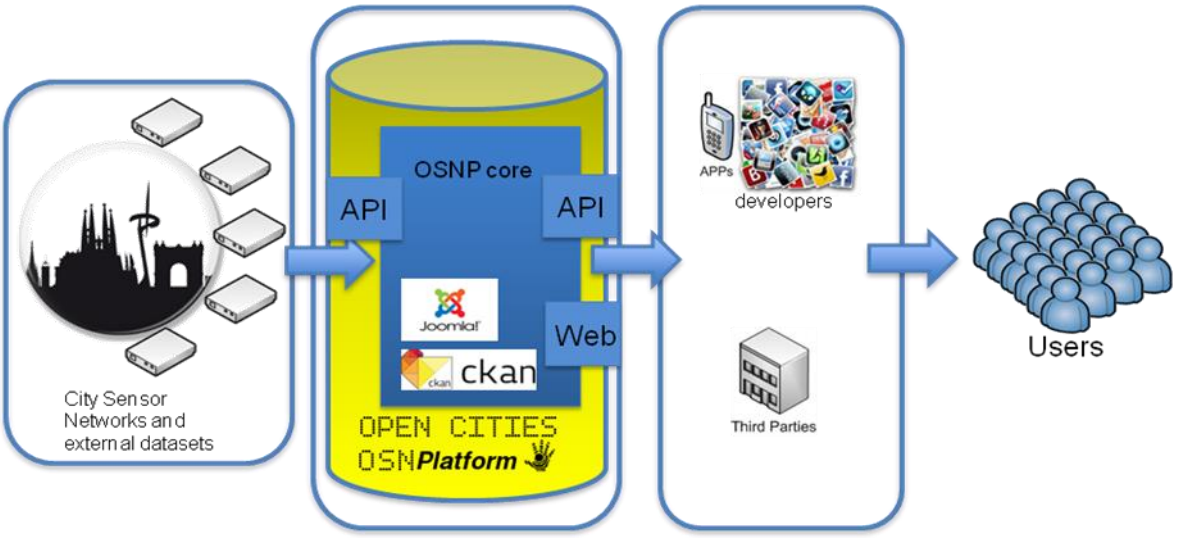


Figure 2.1 OSN Platform blocks

In Figure 2.1 OSN Platform blocksFigure 2.1 we can see the different distributed components that form the whole architecture: the core system, the high speed database, the CKAN metadata repository and content management system (CMS) to manage the web content. In the same figure we can also observe the city sensors that feed the platform through a public API and the data consumers (Apps developers and third parties) that connect to the platform via the offered API or the web interface.

2.1 A NEW PLATFORM

As we have previously mentioned, we decided to create a new version of the OSNP for several reasons. We realised that if we had just updated the former version, we would have had problems to adapt the system to future requirements. In addition, during these last two years new software tools have appeared and we encountered problems to adapt the old version of the platform to integrate them.

Therefore, we decided to create a new long-term platform that could better adapt to the future necessities of the Open Data ecosystem. One of these improvements is related to the adoption of

CKAN as datasets manager engine. We did so because CKAN has become the *de facto* standard of Open Data and because it offers us higher flexibility to internally manage users, organizations and datasets (see

Figure 2.2).

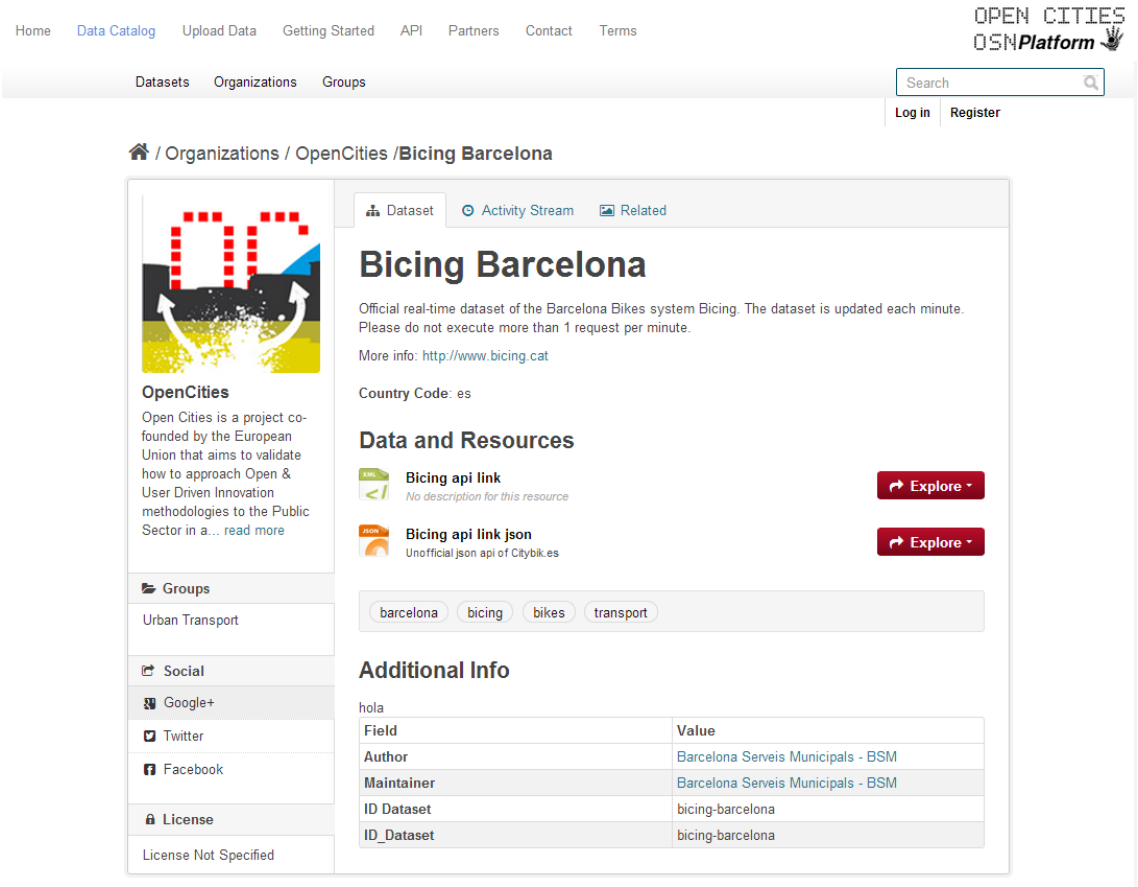


Figure 2.2 OSNP with CKAN integration

Another major change of the platform is the development of a new API for uploading and downloading Opendata datasets. This new API offers geolocation support to search datasets based on a geographic policy. Moreover, the platform has native support for downloading datasets in standard geolocated formats like GeoJSON (based on Json) and KML (based on XML) and it offers a tool to visualise the information through its web interface (see

Figure 2.3).

Furthermore, we have redefined the web user interface (WUI) using Joomla as CMS (Content Management System). Joomla facilitates the task of modifying the web style and of aggregating new web contents to the site. We think that the WUI is a critical part of the system because it is responsible of interacting with the users/developers. Therefore we have chosen a responsive web template that adapts to the different type of devices (desktop, laptop, tablet or mobile) and that facilitates browsing through the different menus.

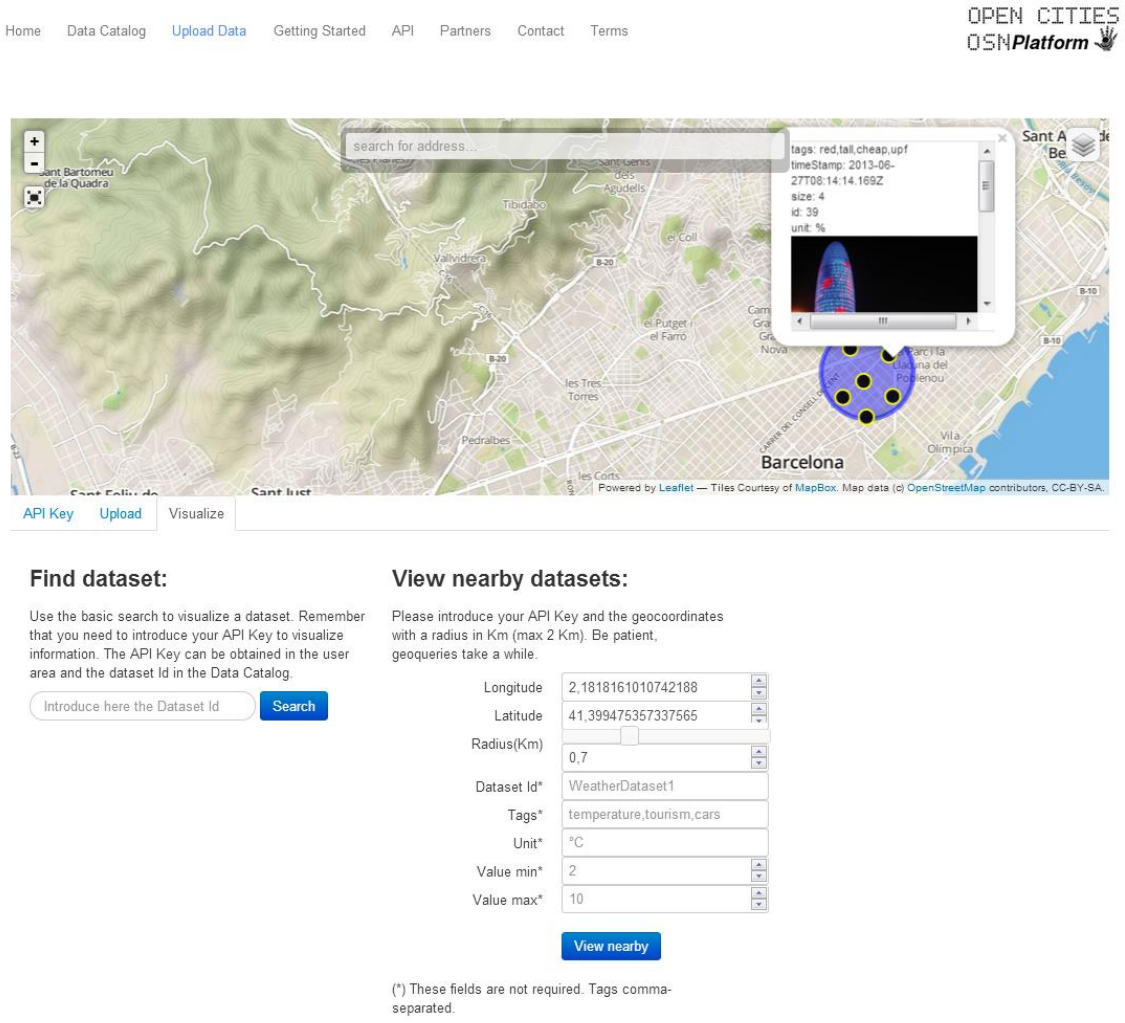


Figure 2.3 OSNP visualization web tool

Finally we have implemented a brand new statistical system. In the former platform we only had statistics based on a basic log system and on Google Analytics. In the new version we have a complete Analytics system based on a secured API that provides information about what each user has done and what datasets each App is downloading.

However, we maintain lots of things that worked properly in the former version, as the cloud and the support systems. We continue using the UPF cloud system because it has proved to be a safe and convenient solution, providing a stable environment to deploy large architectures.

In Table 2.1, a list of the major features of the new version is shown:

Table 2.1 OSNP version 2 features

Feature	Description
CKAN engine	The CKAN Opendata system has been adopted by the system to manage and pre-visualize the registered datasets. In addition it facilitates the management of the different categories and organizations that maintain the datasets. Moreover CKAN provides an API for downloading metadata information and RDF support
GeoLocation engine	The GeoLocation engine forms part of the OSNP core and it is the responsible of storing the different datasets adding geographic support. It provides a powerful API to search and download datasets based on given geographic coordinates. The engine supports GeoJson and KML formats
CMS	The Joomla CMS provides the required tools to create an elegant web front-end that adapts to the different devices (desktops, laptops, mobiles and tablets). With the CMS we can rapidly change the news and contents of the web site without disturbing the CKAN and Engine performance. In addition it facilitates the update to new web templates and provides support to thousands of interesting plugins such as the multi-language plugin.
Analytics API	The Analytics API is a WebService-REST with JSON support that provides the necessary information to know the usage of a certain dataset or what are doing the different apps. The Analytics API is not public and it can be accessed only by the administrators using credentials

3 IMPACT OF THE OSN PLATFORM

This section describes the impact of the OSNP in terms of number of datasets and users following the project. Here we identify which sectors are more likely to store datasets and we present relevant statistics extracted from the website or the Twitter account.

3.1 OFFERED CATALOGUE

Here we show the dataset distribution according to the different family groups that have been published in the platform. The datasets are stored in different sectors following this distribution (see Table 3.1 last update October 2013):

Table 3.1 Datasets distribution in sectors

Sector	Number of datasets
Arts and recreation	1
Business Enterprise, Economics, and Trade	1
Demographics	3
Environmental	1
Tourism	19
Urban Transport	25
TOTAL	**50**

It can be observed that dynamic data obtained is more likely to belong to the Urban Transport and Tourism sectors. Between both of them more than 90% of the total stored datasets are covered. This is a clear insight that cities prefer to open information on mobility and tourism, as they consider these sectors more strategic and interesting for future application developments.

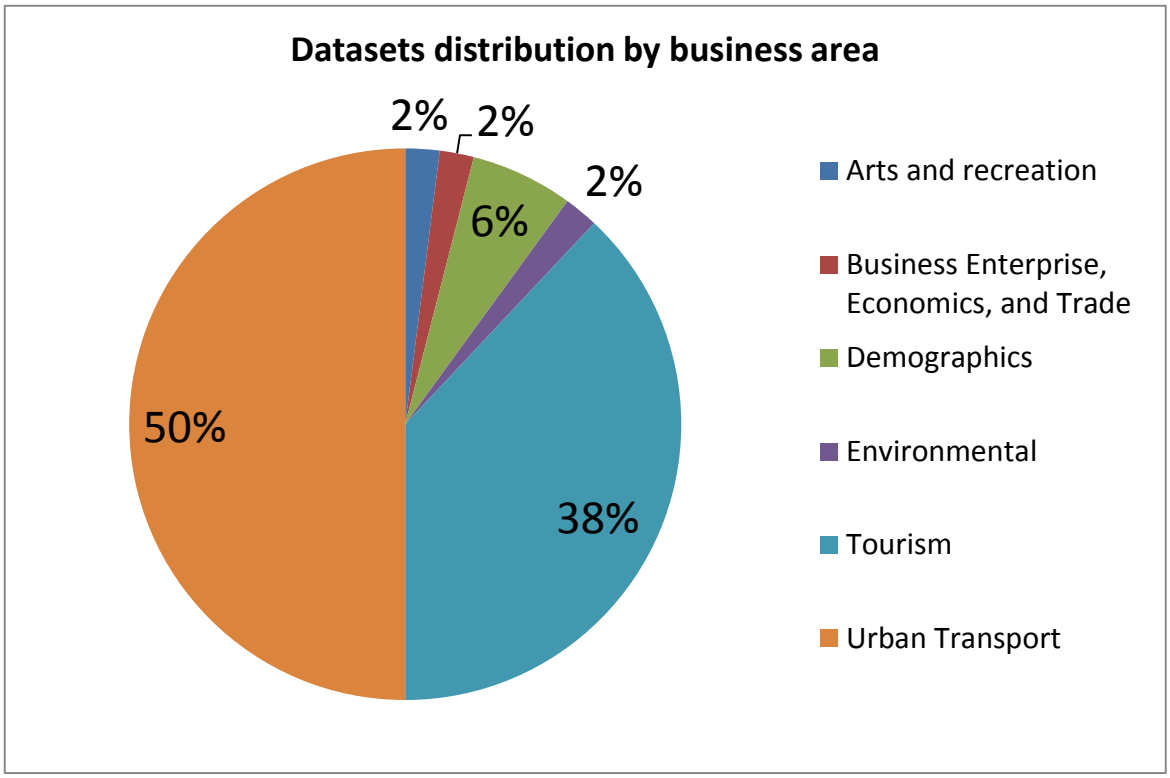


Figure 3.1 Datasets distribution by sectors

3.2 STATISTICS

This section shows the impact of the OSN Platform. To measure it, different statistics provided by the Google Analytics service of the OSNP Web Portal and the social impact associated with the number of Twitter followers have been collected.

3.2.1 GOOGLE ANALYTICS

As a total number of visits, the portal has reached 2,183 visitors. Therefore, the portal statistics show that visitors are returning 53.2%, instead of the 57.5% of the times. This decrease can be attributed to the creation of apps, which link directly to the resource; therefore, the developer does not need to visit it again and search through the webpage site.

There have been 14,146 pages served to unique visitors, 5,000 pages more than in the last report. This is translated to an average visit of approximately 6.5 pages per visitor when the portal is reached. The average number of visits is approximately the same as for the older platform; the average time spent per unique visitor browsing through the page, though, has decreased to 5:25 instead of the 5:52 that reflected on the previous report. We believe this to be caused by the fact that the portal is much more usable

since the last upgrade in September, and so developers understand how to use it in less time.

The next figure shows a summary of visiting countries, showing with the dimension of the circle the number of visits ranging from 1 to 957, case of Barcelona where we have conducted some events and have had a direct impact in the number of local and national visits.

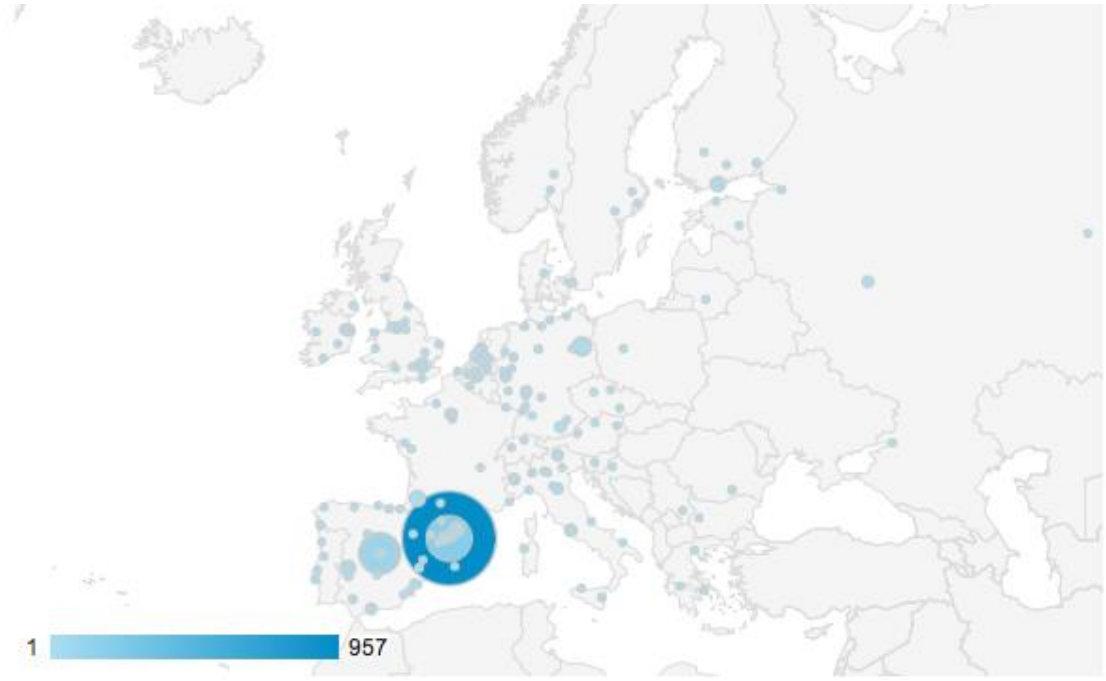


Figure 3.2 Most active cities visiting the OSN platform

The portal language item, as configured in the browsers consulting the OSN portal, allows approximating and extracting the most common profiles of developers and users that have browsed the webpage.

English is the top language, as expected, with a number of 824 visitors with this language defined in their browsers. Spanish and Catalan are the second and third language in our portal, with 790 visitors and 228 visitors respectively. Other important languages defined are German with 54, Italian with 49 and French with 21 visitors.

More languages are to be seen, such as Russian, Portuguese, Dansk, Finnish and Swedish, but in a smaller amount. As we can compare in the next two figures, first the old one from previous deliverables and the new one from this last year. If we compare them, it can be appreciated that English dominates both graphics and that Spanish and Catalan follows it. In the last year French users have started to look at the portal, which can come from the Hack@Home challenge around Europe.

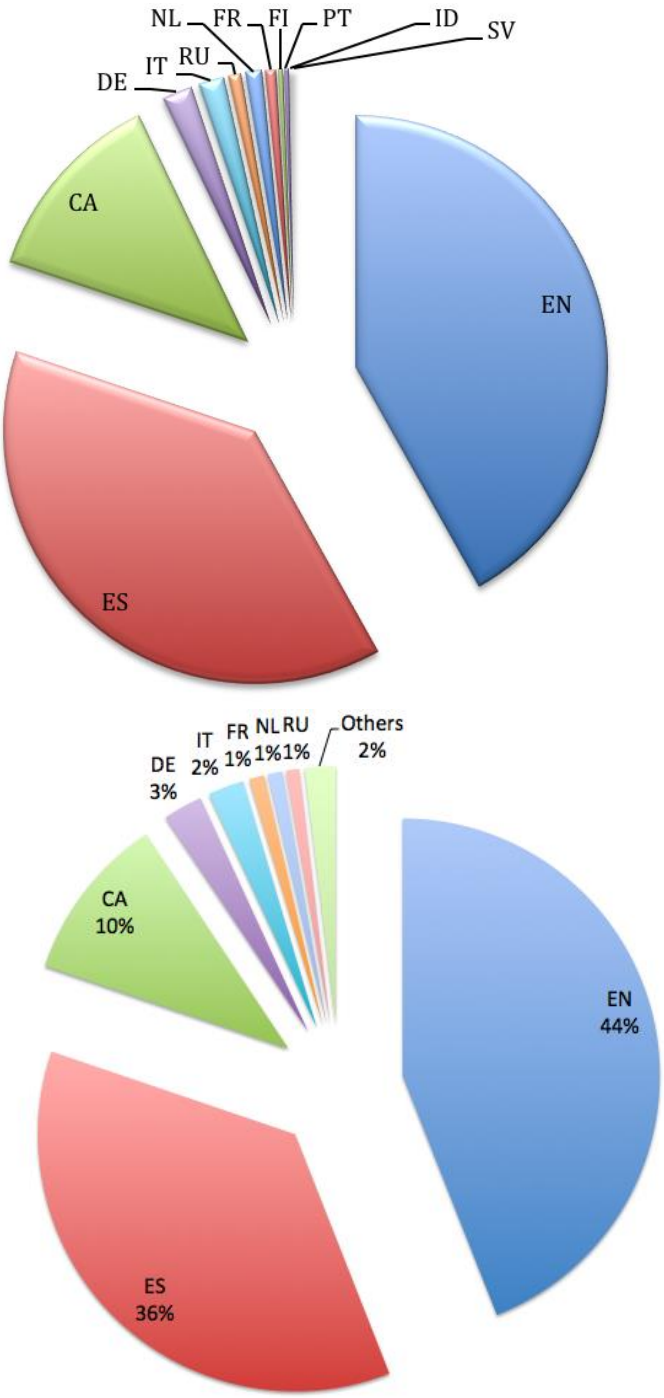
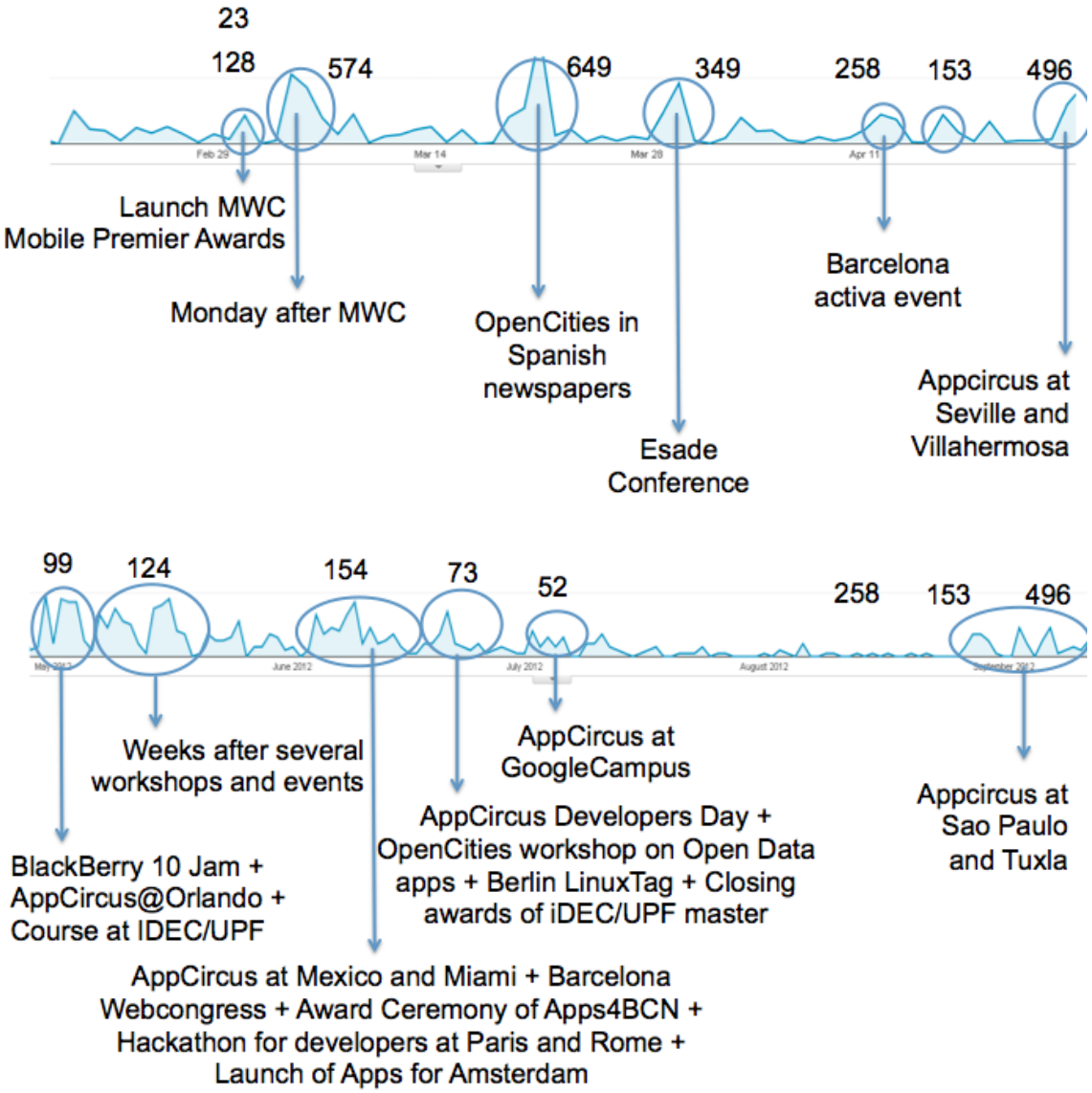


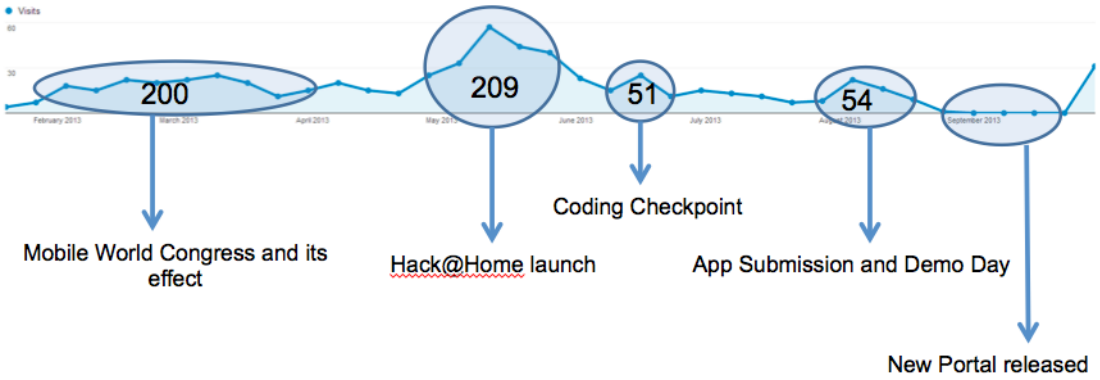
Figure 3.3 Visitors defined browser's languages. Top image is from previous report, bottom image is from the current report.

The impact on the amount of the visitors can be also obtained from the analysis of visitors related with the workshops, conferences and other events about the Open Cities project.



The correlation between Open Cities' events and the number of new visitors shows that when they take place there is a huge number of visits, but once they finish the number of new visitors decreases and only the ones who already now the OSN Portal continue visiting the site. The launch at Mobile World Congress 2012 was an important kick-off to the project, as after the Congress those people shared what they had seen with others actors within their professional networks.

Another interesting point is the correlation between the number of new visitors and the Hack@Home challenge organised within the project. The next figure shows a clear influence:



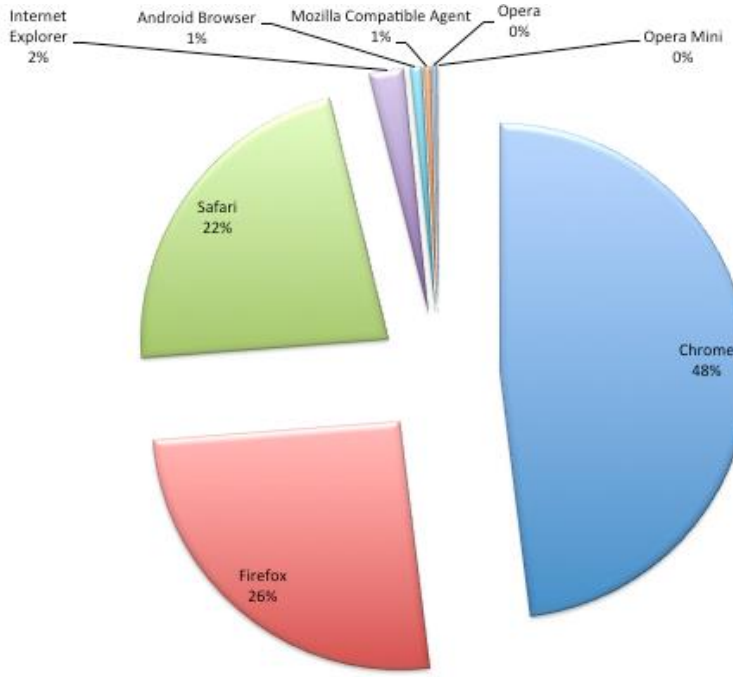


Figure 3.4 Visitor's browser choice

Figure 3.4 denotes that the people visiting this portal can be classified among early adopters. To support our statement of tech-users, we include the data evaluation of W3schools selecting the start of the portal in February 2011 (Figure 3.5, left) and the last updated statistics in August 2012 (Figure 3.5, right). Figure 3.5 shows the browser's evolution during this period. As we can see, here Safari has not a big use among the Internet community, and Chrome is reaching one year after the same percentage.

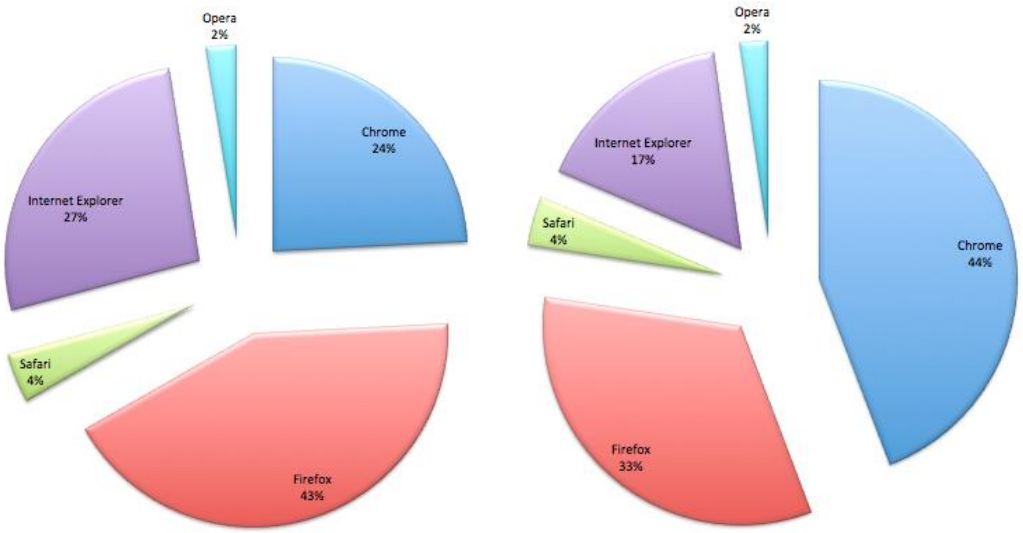


Figure 3.5 Visitor's browser choice, left February 2011 and right August 2012 (source: W3schools.com)

3.2.2 SOCIAL IMPACT: TWITTER

Figure 3.6 Twitter opencitiesosn front view

Currently there are 232 followers (90 users in the last report); therefore 142 new users have been following the news of the OSN platform and therefore the news and

comments on Open Data and Open Government, which have been used adding the hastags #opengov and #opendata in some twits.

The “platform” have twitted 302 times with news about the events, sharing images from them to be spread over the community. Figure 3.7 shows some of the OSN portal images shared on the twitter account.

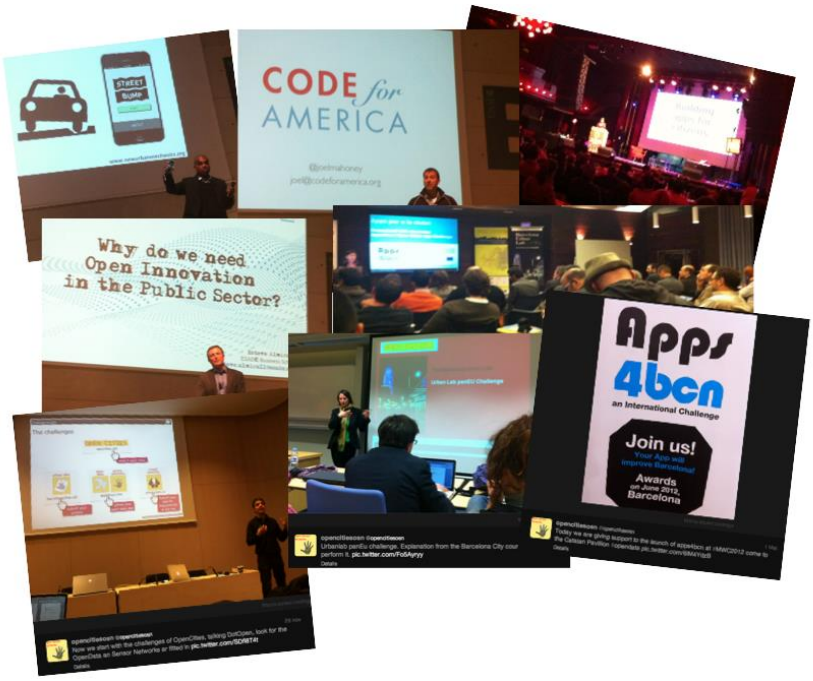


Figure 3.7 Twitter opencitiesosn shared images examples

Connection with users is really important and has been improving since its beginning. The next figure shows that some of the tweets are retweeted or bookmarked by other twitter users.

Figure 3.8 Twitter opencitiesosn interaction since the end of August 2013

4 APPS CONSUMING OPEN DATA FROM THE OSNP

This chapter describes the impact generated by the OSNP in the developer communities and in the Apps ecosystem. In order to attract developers to the Open Cities project, many Apps events called “Challenges” have been organised, with the aim to encourage developers to feed their mobile Apps with Open Data from our platforms.

In addition, WP6 releases a new version of the “mashup” showcase that consumes Open Data from the OSNP. This updated “mashup” can be used by developers as a tutorial to help them in the development of their own mobile apps.

4.1 MASHUP SHOWCASE

Within the Task 6.3 “Mobile Sensor Data Mashups”, an ‘Urban transport and tourist information’ app mashup has been developed. The main objective of this app is to show how to implement a mashup using different datasets provided by the latest version of the Open Sensor Network Platform (OSNP), updated during 2013, and thus fostering the development of Open Data mashups.

The app has been developed using the Android platform. It aims to provide different kinds of information related to the urban transport and the main tourist sights of different European cities. The app has two main user interfaces: a map and an augmented reality viewer. Both of them allow the user to select different information layers to be shown over these interfaces.

The app is an extension of the app implemented in the previous years of the project. The main modifications provided within this new version are the following:

- Shift from the old version of the Open Sensor Network Platform to the new one. This modification implies updating the different datasets connections and data formats.
- Extension of the app in order to support multiple cities.
- Add datasets of other European cities. This new version uses datasets from Barcelona, Amsterdam, Helsinki, Paris, Berlin, and Rome.

The app uses and shows users different types of datasets; some of these are:

- Information of bike services, detailing the number of bikes and parking slots of each bike station.
- Information of bus, metro and taxi stations.
- Tourist sights information.

A step-by-step guide about how to implement a mobile mashup using the datasets provided by the OSNP has been prepared in “Deliverable 6.6.33 Sensor Data Mashup version -c”. Moreover, the source code of the application has been published in Google Code using Apache 2.0 license, so that it can be downloaded and browsed.

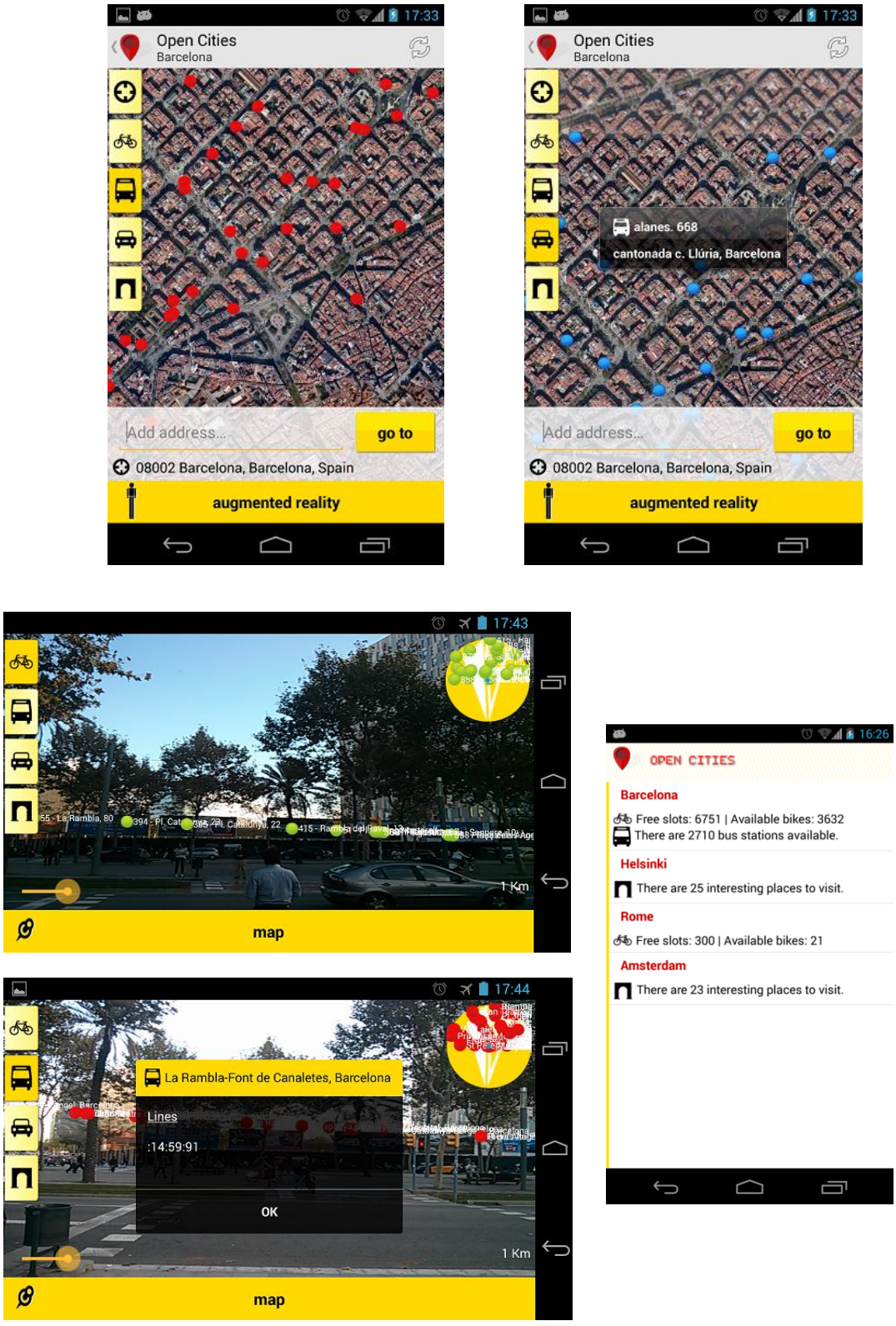


Figure 4.1 Mobile Sensor Mashup

4.2 MOBILE APPS: WORKSHOPS AND CHALLENGES

This section describes the different events in which we have participated. Some of the events were exclusively focused on advertising the Open Cities project while some others were focused on interacting with a certain community. Following, we describe the different events with WP6 participation. Deliverable 7.7.52 gathers a complete list of events promoting the Open Cities project.

Table 4.1 List of organized events

Date and place	Event description	Organizing partner
27/2/2013, Barcelona	Mobile Premier Awards: Annual event organized by AppCircus focused on best apps of the last year	Dotopen
8/5/2013, Berlin	Re:publica, Berlin presentation of new Open Data Tourism hack-at-home	Dotopen
8/5/2013, Berlin	Workshop on Open Data during re:publica	Tempos21, UPF
8/5/2013, Helsinki	Tourism-related workshop	Forum Viriun
22/5/2013, Barcelona	Forum on Tourism and ICT, presentation of Urban Lab and Open Data App Challenge	Barcelona Activa
27/5/2013, Barcelona	Presentation of Open Cities tourism challenge and opportunities for local SMEs on local informal event	Barcelona Activa, Dotopen, ESADE
13/6/2013, Barcelona	Appcircus@Sonar i+D	Dotopen
24/6/2013	Berlin Opendata Day (BODDy13)	Fokus
31/6/2013, Barcelona	Appcircus Apps&Cultura	Dotopen
4/9/2013, London	Campus London - leaflets	UPF
31/10/2013, Barcelona	Hack@Uni	UPF

Table 4.2 Mobile Premiere Awards 2013

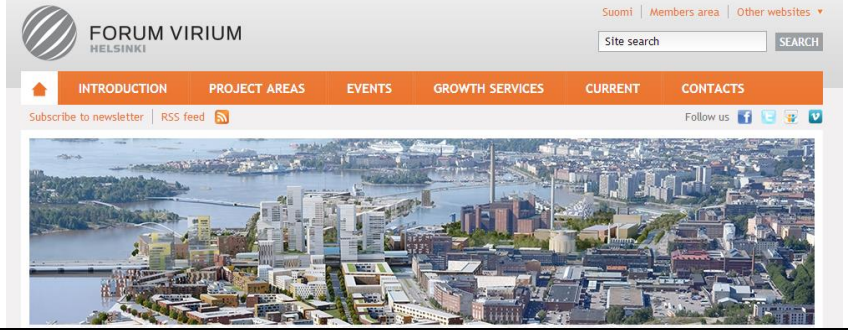
Event	**Mobile Premiere Awards 2013**
Image	
Place	Mobile Premiere Awards 2013, Barcelona
Date	February 25, 2013
Type	Final ceremony for appcircus winners and app developers
URL	http://www.mobilepremierawards.com/

Event	Mobile Premiere Awards 2013
Number of participants	500
Description	The Mobile Premier Awards is the largest cross-platform app showcase in the mobile industry, providing a point of reference for the startup and app community during the Mobile World Congress. The 7th edition of the Mobile Premier Awards took place in Barcelona on February 25th 2013 and featured winning apps from Appcircus events and Appcircus challenges from 2012.

Table 4.3 Re:publica 2013

Event	Re:public 13
Image	
Place	Re:publica conference 2013, Berlin
Date	May 8, 2013
Type	International conference
URL	http://re-publica.de/en
Number of participants	130
Description	Session held on Open Innovation in the cities where the new OpenCities challenges were officially announced and launched. Session followed by workshop on “Creating your app with Open Data” regarding mashups and OSN.

Table 4.4 Forum Virum Workshop

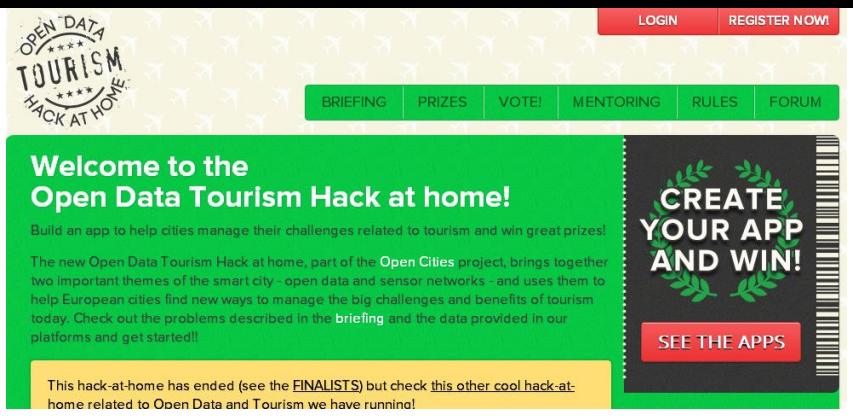
Event	Forum Virum Internal Workshop
Image	

Event	Forum Virum Internal Workshop
Place	Helsinki
Date	May 7, 2013
Type	Internal workshop by Forum Virium
URL	
Number of participants	30
Description	Presentation of the new challenges on Tourism related workshop.

Table 4.5 TurisTIC 2013

Event	TurisTIC
Image	
Place	TurisTIC Forum, Barcelona
Date	May 22, 2013
Type	Forum on tourism and ICT
URL	http://forumturistic-cat.bdigital.org/
Number of participants	300
Description	Presentation of the new challenges on national forum around Tourism and ICT, with SMEs and policy makers.

Table 4.6 Challenge presentation

Event	Presentation to SME
Image	

Event	Presentation to SME
Place	Barcelona
Date	May 27, 2013
Type	Presentation to SMEs
URL	n.d.
Number of participants	80
Description	Informal presentation of Open Cities challenges on SMEs

Table 4.7 Sonar App Circus

Event	Sonar App Circus
Image	
Place	Barcelona
Date	June 16, 2013
Type	Appcircus@Sonar+D
URL	http://www.sonar.es/en/2013/prg/sm/app-circus_75
Number of participants	70
Description	App competition (appcircus) during international music festival, Opencities leaflets announcing challenges were distributed

Table 4.8 Berlin Opendata Day 2013

Event	Berlin Open Data Day 2013 (BODDy13)
Image	
Place	Berlin
Date	June 24, 2013
Type	Berlin Opendata Day

Event	Berlin Open Data Day 2013 (BODDy13)
URL	http://berlin.opendataday.de/
Number of participants	n.d.
Description	The EU project "Open Cities" as a partner of BODDy13 performed an open project workshop. The show demonstrated what is possible with open data. Together with the rbb info radio the motto of the BODDy was discussed in a "future talk". See more at: http://okfn.de/2013/05/berlin-open-data-day-2013/#sthash.ioGo5E68.dpuf

Table 4.9 Apps And Cultura Final

Event	Apps & Culture Final
Image	
Place	Barcelona
Date	June 31, 2013
Type	Apps&Cultura final event
URL	http://appscultura.hackathome.com/
Number of participants	70
Description	Final ceremony and presentation of Apps&Cultura hack-at-home, a competition searching for apps related to culture and Barcelona. Developers, SMEs and Barcelona policy makers attended the event. Open Cities challenges were presented and many of those apps have later submitted to our challenges as they were eligible.

Table 4.10 Campus Party London 2013

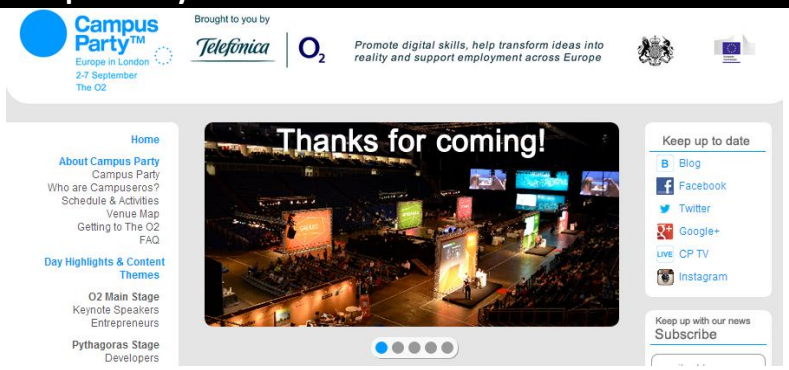
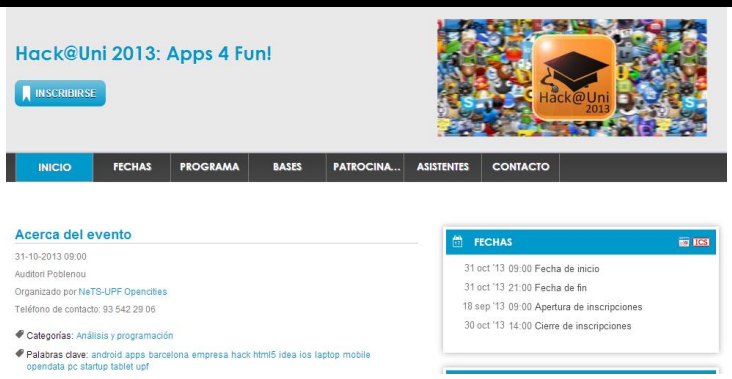
Event	Campus Party London 2013
Image	
Place	London, 02 Arena
Date	September 9, 2013
Type	Campus Party
URL	http://www.campus-party.eu/2013/index-cpeu.html
Number of participants	10000
Description	Distribution of Open Cities leaflets.

Table 4.11 Hack@Uni 2013

Event	TITLE
Image	
Place	Barcelona, Universitat Pompeu Fabra
Date	October 31, 2013
Type	Apps Challenge
URL	http://eventum.upf.edu/go/hackatuni2013
Number of participants	50
Description	Apps challenge addressed to university students. They have to create a mobile App to participate in the challenge. They have to use the OSN portal to download Open Data for creating their Apps.

PUBLISHED APPS

List of apps that have participated in the Hack@Home Open Cities Challenge; the result of the Hack@Uni event, organised at the UPF on October, 31st, is, thus, yet to be reflected:

Table 4.12 Open Cities Developed Apps

Application name	Description	Country	Application URL	Open Data
Ztl Alert Free	LZT Alert is a fast, smart and wonderful way to drive around with the full responsibility of the rules in force, in the streets of your city. Open the application with your Android smartphone, choose the settings and start moving in a car with an intelligent partner by your side, now and forever. It is a program of trips, reinvented that allows you to drive in peace, because the application itself warns you with an alert if there is close a camera where you cannot enter with the relative times of entry in the areas.	Albania	http://www.ztlalert.com	Yes
Traze	Traze is a worldwide mass-multiplayer urban game based on Open Data. It is designed to engage players in exploring, visiting, and battling in teams to conquer new places of every city in the world. Traze is a gamified tourist guide experience for visitors and a worldwide mass-multiplayer team-based mobile game playable both solo or cooperative.	Italy	http://www.trazeapp.com	Yes
GuideMeUp OpenCities	GuideMeUp Open Cities offers to the final user offline tourism guides based on opendata sources. Also offers to the user the abilitiy of custom guide creation where he can select and modify a subset of these guides which may share with others users (or travel mates).	Spain	https://play.google.com/store/apps/details?id=org.gmu.activities.alpha.opencities	Yes
Menja\'t Barna	Menja\'t Barna allows you to be a 2.0 Gastronomic critic. Barcelona is a very cosmopolitan city, and counts with a strong gastronomic offer. How can we locate a good place to eat a concrete dish of a gastronomic culture?	Spain	http://www.gotspots.eu/en/barna.html	Yes
You are Green Barcelona	The project is a mobile application (entertaining and friendly environment) for Barcelona tourists, which uses gamification and educational tools for environmental resources management of the city. At the same time, the tool shall promote the “most ecologically sustainable” offer of Barcelona and later, in Catalonia. The goal of the app is also to strengthen the data collection process of the application regarding the behaviour and motivations of a responsible tourist.	Spain	http://eduardgomez.com/annapp/index.html	Yes
Take a Hike!	Take a Hike takes you on semi-guided	Netherlands	http://www.gotakeahike.nl	Yes

Application name	Description	Country	Application URL	Open Data
	hikes through various parts of Amsterdam. You will have the opportunity to discover hidden gems located off the beaten track. Bring a sense of adventure - There are no set paths to walk through. You know where you are and where you're going. How you get there is up to you. Getting lost and finding your way has never been this much fun.			
Spot in Helsinki/Spot in Lisbon	This project comes in 2 flavours: - Spot in Helsinki is the most mature app. Thanks to the open data from the Helsinki city, it helps tourists and locals to find out about places and events. It is also connected to the API of the local transportation company in order to offer route calculation for public transportation. Furthermore, it allows to buy SMS tram tickets and even to order a cab with an SMS. The app is available in English, Finnish and Swedish.	Finland	https://play.google.com/store/apps/details?id=in.spotinhki	Yes
weatherguru	Weatherguru is an html5 mobile responsive app that allows you to discover the weather on your favourite venues for your outdoor activities. Discover Social Real Time weather and forecast Weather guru uses Metwit, Foursquare, Instagram, and Twitter APIs to show you what\'s happening in a venue.	Italy	http://weatherguru.metwit.com	Yes
Tourist & RE	The app offers the ability to browse and query maps containing detailed tourist information, but above all urban planning info, such as: building volumes, building projects achievable, environmental restrictions, boundaries reserves etc … in order to give full knowledge of the real estate investment opportunities for the area you are visiting. In particular, starting from the Roman hills, the project will extend over time to other European cities with the free participation of local authorities	Italy	https://play.google.com/store/apps/details?id=it.geofunction.touristandre	Yes
yourInstantApp	yourInstantApp (yIA) allows everyone to make its very own application on his own mobile device. It puts city open data to serve the citizen just the way he needs: it suits the city to the citizen. A yIA app gathers open data, mixes them, visualizes them and lets the user to interact with them. In 3 simple steps users can create a yIA app. Users can easily create, save, run and share applications.	Spain	http://miguelmsanchezm.com/yourinstantapp	Yes
CiteumArs	CiteumArs is an Open data Open-App, that reuses cultural and tourist open contents that are available in organizations such as museums and tourism offices, and publishes them in one or several apps to be updated immediately when the user makes changes.	Spain	http://compartia.net/citeum	Yes

Application name	Description	Country	Application URL	Open Data
Moovit	Moovit is the world\'s fastest growing crowdsourced app for public transport. With nearly 2 million users across more than 40 cities, Moovit helps you choose the best public transport route every time, so you can save time and ride in peace. Moovit integrates schedules and GPS data from transport operators with user-generated data to create the best real time information across all transportation methods (bus, train, tram)	Israel	http://moovitapp.com	Yes
Doctoralia	Find doctors and medical centres near to you. This app allows to find it and has got roaming capabilities across countries different than home country. Also, this app allows to book an appointment with doctor / medical center.	Spain	http://www.doctoralia.com	Yes
Sooligan	We all have hundreds of thoughts throughout the day. Many of these mind ramblings deal directly with something local and in-the-moment. These seemingly insignificant, but frequent, raves & rants are brief so people usually keep them to themselves. However, each of these thoughts can be extremely valuable local insight to another person in the city if only they were shared in the moment.	United States	http://www.Sooligan.com	Yes
Tales & Tours	Going on holidays far away? Starting a roadtrip with some friends? Next weekend on a citytrip? Bring your smartphone, download the Tales & Tours apps for iOS & Android, download some multimedia guides about places you visit, curated by local storytellers and professional contentmakers en learn the world around you.	Netherlands	http://talesandtours.com	Yes
QuesCou	QuesCou is a new way to find and instantly generate an incredible amount of content, activities and events that will keep the user informed and entertained. QuesCou is NOT a cultural agenda of Barcelona, it is a way to introduce artists and creators from many different areas, many of them strangers, feeding and increasing cultural network which is known as the city.	Spain	http://www.quescou.com/	Yes
Meet2Go	App that lets you go to parties or concerts with people with similar affinities.	Ecuador	https://play.google.com/store/apps/details?id=com.lamotora.meet2go&hl=es	Yes
Spotsuite	Spotsuite is a crossroads between knowledge and space, between tradition and the future, a place where latitude and longitude meet at the junction of knowledge, art and history. With Spotsuite, anyone can pinpoint on a map those places where something special has happened, whether in real life or in fiction. We call these special	Spain	http://spotsuite.com	Yes

Application name	Description	Country	Application URL	Open Data
	places “spots”, and each one can contain information in various formats, including text, images, sounds, videos, etc.			
TuristIQ	The tourist guides could be helped by our App to create and distribute gamified routes to the visitors of the city. They select (as editors) which places has more interesting and create a quest linking all the locations to deliver a memorable experience. The App supports the guide during its itinerary together with the tourist/participant/players.	Spain	http://turistiq.com/	Yes
Peoplewings	Peoplewings is the new social network for travellers , where people can chat between each other and share their home to the others travellers for a few days , without money exchange, because what the people are looking for is to meet new people from other cultures , practice languages, have a good time... For the locals it is like travelling without moving from their place and for the travellers it is a new way to travel and immerse how locals are living in their cities and discover the cities from a local point of view.	Spain	http://peoplewings.com	Yes
Onfan food	Over 50% of the time you go to a restaurant, you do not know if you will like what you will eat. If you are in any city or country you do not know, the problem gets bigger. Onfan is a mobile app. based on a crowdsourcing social network that helps citizens and tourists, find restaurants and cafes where to eat, bars, cocktail bars, or wine bars, delicatessens, bakeries and stores where you can taste local specialties in real time.	Spain	http://onfan.com	Yes

4.2.1 APPS DISTRIBUTION PER COUNTRY

The Open Cities Apps Challenge “Hack@Home” received 21 Apps submissions. This number is considerably shorter than the previous challenge (113), mostly because this new challenge is focused on only one subject, tourism. In addition, the quality of the apps received is higher, and all of them use Open Data to implement their services.

As in the previous challenge, Spain is the most important contributing country, with more than a half of the total submissions, followed by Italy and Netherlands, which sum together around 25%. One interesting point is the participation of developers from non-European Union countries (United States, Israel and Ecuador). This is a good indicator for measuring the generated impact of the Open Cities project around the world.

Table 4.13 Apps distribution per country

Country	Number of Apps
Albania	1
Italy	3
Netherlands	2
Spain	11
United States	1
Israel	1
Finland	1
Ecuador	1
TOTAL	**21**

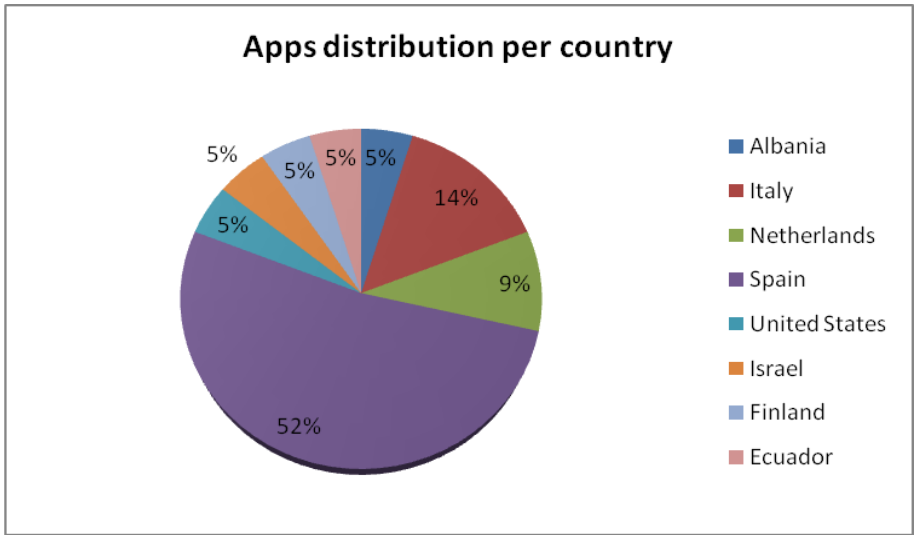


Figure 4.2 Apps distribution per country

5 SUPPORT TO THE HACK@HOME APP CHALLENGE

A second Open Data App Challenge, developed under the hack-at-home methodology and focused on developing apps related to tourism, was organised by the Open Cities project in 2013.

The 2nd Open Data Challenge was adapted on the basis of the experience from the first challenge. One of the objectives was to provide more support to the contest participants; with this aim, mentors from project partners were selected in order to provide contact persons; WP6 supported it by providing experts (mentors), both from UPF and from Tempos21, which gave feedback to app developers and helped evaluating the submitted apps together with the other mentors of the project.

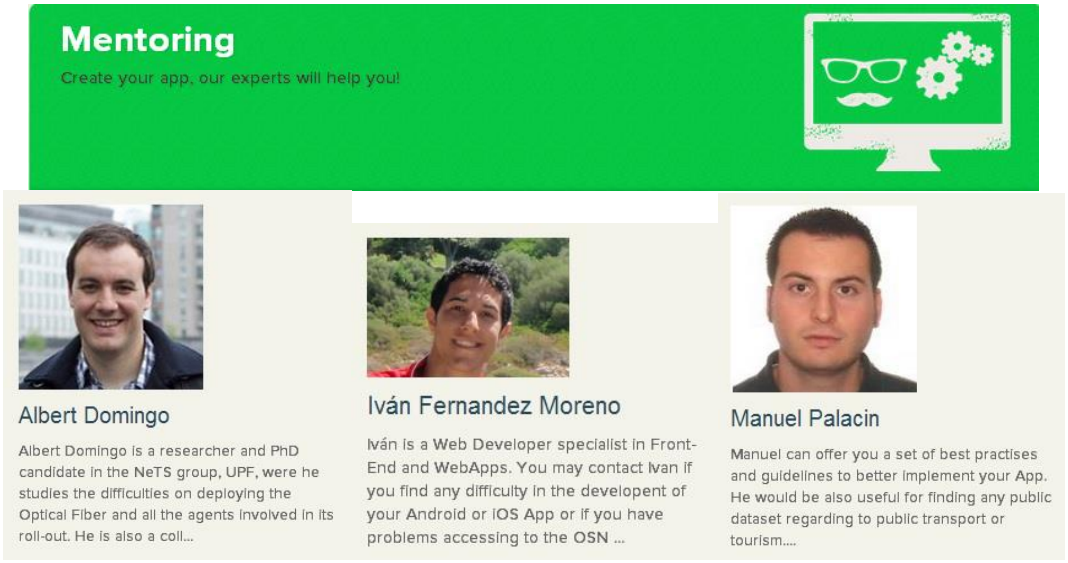


Figure 5.1: Mentors provided by the UPF, as work package leader (screenshot from the challenge website)

Additionally, as explained within this document, the Open Sensor Network platform (opencities.upf.edu) evolved to the 2nd version, so as to increase its functionality and potential for developers to use its data to create their apps. Additionally, some new datasets on tourism and transport were added, partly in collaboration with other project partners.

6 COMPLIANCE OF THE INDICATORS

One of the main priorities of the WP6 is to accomplish with the expected progress defined in the Indicator Development section of Deliverable 8.8.1. WP6 is evaluated through a set of indicators related with the number of celebrated challenges, the number of involved developers, the number of released applications and the number of users involved or impacted by the Open Sensor Networks WP.

The next tables enumerate each indicator and describe the status of each one:

Table 6.1 Indicator 30

Indicator ID	**30**
Indicator Name	Number of Open Sensor Challenges
Expected progress M11-M20	2
Expected progress M21-M36	3
Description	We measure this indicator by counting the number of events, workshops and challenges celebrated to promote the use of the OSNP to create new mobile Apps
Result	In the past we celebrated 2 workshops and 2 apps challenges. During this last year we have celebrated 2 more apps challenges: the Hack@Home and the Hack@Uni. Therefore we have celebrated 6 different events by month 36.

Table 6.2 Indicator 31

Indicator ID	**31**
Indicator Name	Number of developers participating
Expected progress M11-M20	120
Expected progress M21-M36	250
Description	We measure this indicator by counting the number of developers registered into the different Workshops and Challenges celebrated under the Open Cities WP6 framework
Result	It is difficult to differentiate between developer profiles and the rest, so we have considered all registered users as potential developers. In the past we had 980 registered users in the different celebrated events. However if we only focus on

Indicator ID	31
	developers profile we obtained around 180 (AppCircus developer Day) + 25 (UPF IOS Course) attendees. During this last year we have celebrated 2 more Apps challenges that add 21 (Hack@Home) and 11 (Hack@Uni) more developers. Therefore we finally obtain 1,217 involved developers in the Open Cities project

Table 6.3 Indicator 32

Indicator ID	32
Indicator Name	Number of applications
Expected progress M11-M20	10
Expected progress M21-M36	30
Description	We measure this indicator counting the registered apps into the different Apps Challenges
Result	In the last review we received 113 apps submissions. Out of these 113 apps, 48 apps are using Open Data. Currently we have received 21 more Apps from the Hack@Home challenge (all of them are using Open Data), plus 11 more from the Hack@Uni challenge. Therefore, we have obtained a total of 145 apps (80 of them using Open Data resources).

Table 6.4 Indicator 33

Indicator ID	33
Indicator Name	Number of users involved
Expected progress M11-M20	1,500
Expected progress M21-M30	10,000
Description	We measure this indicator by counting the number of application downloads from the different Apps Markets. To obtain the total number of users we have created an anonymous survey to the apps developers of the Challenge.
Result	According to the preliminary information from the survey sent by DotOpen to the Apps developers, we obtained: • 17 developers from the 113 submissions have answered the survey and they accumulate more than 155,136 downloads. • As an example: FGC App for Iphone and

Indicator ID	33
	Android has more than 10,000 downloads. If we analyse (based on AndroidMarket and AppleStore) the current received apps we obtain: • LTZ Alert has been downloaded between 1000-5000 times • Spot In Helsinki has been downloaded between 1000-5000 times • Doctoralia has been downloaded between 100,000-500,000 times Therefore by the month 36 this indicator has been reached by far.

Table 6.5 Indicator 34

Indicator ID	34
Indicator Name	Use of common methodology
Description	Description of synergies between different WPs
Result	Both WP4 and WP6 share a common procedure to obtain datasets (initial survey) from the public entities and to celebrate events and Apps challenges. We are coordinated in a way that efforts can help both parties.

Table 6.6 Indicator 35

Indicator ID	35
Indicator Name	Use of a shared platform
Description	Description of how different WPs share common tools and systems
Result	Since the beginning of the implementation WP4 and WP6 have joined forced to create an integrated solution. WP6 OSN Platform is directly connected with the WP4 Open Data Platform through a Web Service API and datasets are replicated. In addition both platforms are currently using CKAN which facilitates the harvesting of datasets.

7 TIMELINE

The preparation of this deliverable, in its "d" version, started with the "a" version, continued with the "b"and "c" versions and has followed the foreseen work plan:

Table 7.1 Work plan description

D6.2	Open Sensor Network Platform	ESADE	Barcelona	Amsterdam	Dutch	Cap Digital	Institut Telecom	Berlin	Fraunhofer	Atos Origin	UPF	DotOpen	Tempos 21	
D6.2.1	Analysis of OSN platform requirements										x			
D6.2.2	Analysis of available tools and technologies										x			
D6.2.3	Platform definition										x			
D6.2.4	UML modelling										x			
D6.2.5	Communicatinon & interfaces requirements										x			a
D6.2.6	Data format definition								x		x			
D6.2.7	Integration meeting with Fraunhofer FOKUS								x		x			
D6.2.8	Platform fine-tuning for compatibility with WP4								x		x			
D6.2.9	Compose deliverable report	x	x	x	x	x	x	x	x	x	x	x		
D6.2.10	Platform implementation			x							x			
D6.2.11	Distributed data base implementation										x			
D6.2.12	Web interface creation										x			
D6.2.13	Integration with WP4 Open Data Platform								x		x			b
D6.2.14	Documentation through a Wiki Page								x		x			
D6.2.15	Dynamic data request to municipalities	x	x	x	x	x	x	x	x		x			
D6.2.16	Compose deliverable report	x	x	x	x	x	x	x	x	x	x	x		
D6.2.17	Dataset Upload via Web interface										x			
D6.2.18	Web integration with Drupal										x			
D6.2.19	Servers moved to a Cloud environment										x			
D6.2.20	Mashup development coordination										x		x	c
D6.2.21	Followup of OpenCities Apps Challenge										x	x		
D6.2.22	New partnership enrolment	x	x	x	x	x	x	x	x		x	x		
D6.2.23	Compose deliverable report	x	x	x	x	x	x	x	x	x	x	x	x	
D6.2.24	Analysis of requirements for the OSNP v2.0										x			
D6.2.25	CKAN module integration										x			
D6.2.26	Geolocation engine, maps & analytics API										x			
D6.2.27	Web integration with Joomla										x			d
D6.2.28	Mashup development coordination										x	x	x	
D6.2.29	Followup of 2nd OpenCities Apps Challenge	x	x	x	x	x	x	x	x		x	x		
D6.2.30	Compose deliverable report	x	x	x	x	x	x	x	x	x	x	x	x	

As it can be seen in the Gantt diagram the following points have been accomplished:

Table 7.2 Gantt diagram

		May11	Jun11	Jul11	Aug11	Sep11	Oct11	Nov11	Dec11	Jan12	Feb12	Mar12	Apr12	May12	Jun12	Jul12	Aug12	Sep12	Oct12	Nov12	Dec12	Jan13	Feb13	Mar13	Apr13	May13	Jun13	Jul13	Aug13	Sep13	Oct13	
D6.2	Open Sensor Network Platform	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36	
D6.2.1	Analysis of OSN platform requirements																															
D6.2.2	Analysis of available tools and technologies																															
D6.2.3	Platform definition																															
D6.2.4	UML modelling																															
D6.2.5	Communicatinon & interfaces requirements																															a
D6.2.6	Data format definition																															
D6.2.7	Integration meeting with Fraunhofer FOKUS																															
D6.2.8	Platform fine-tuning for compatibility with WP4																															
D6.2.9	Compose deliverable report																															
D6.2.10	Platform implementation																															
D6.2.11	Distributed data base implementation																															
D6.2.12	Web interface creation																															
D6.2.13	Integration with WP4 Open Data Platform																															b
D6.2.14	Documentation through a Wiki Page																															
D6.2.15	Dynamic data request to municipalities																															
D6.2.16	Compose deliverable report																															
D6.2.17	Dataset Upload via Web interface																															
D6.2.18	Web integration with Drupal																															
D6.2.19	Servers moved to a Cloud environment																															
D6.2.20	Mashup development coordination																															c
D6.2.21	Followup of OpenCities Apps Challenge																															
D6.2.22	Enrolment of new partners																															
D6.2.23	Compose deliverable report																															
D6.2.24	Analysis of requirements for the OSNP v2.0																															
D6.2.25	CKAN module integration																															
D6.2.26	Geolocation engine, maps & analytics API																															
D6.2.27	Web integration with Joomla																															d
D6.2.28	Mashup development coordination																															
D6.2.29	Followup of 2nd OpenCities Apps Challenge																															
D6.2.30	Compose deliverable report																															

8 CONCLUSION

This deliverable concludes with the implementation of the second version of the Open Sensor Network Platform. This new platform offers more flexibility to upload and publish new datasets. In addition, the new platform enhances usability issues, facilitating browsing and using the information within. This version is expected to attract more cities as data feeders and more developers as data consumers.

Regarding the numeric figures, the new platform stores more datasets than the former version and adds more possibilities to "play" with the data such, as the CKAN API or the GeoLocation Engine. Another interesting aspect is the introduction of an Analytics System that will help the administrator to better understand what developers are doing and what the usage of the datasets is.

Regarding the dissemination of the project, WP6 has participated in many events and it has organized two successful Apps Challenges. In these challenges the developers have had the opportunity of testing the OSN Platform to download Open Data and they have nurtured the mobile ecosystem with innovative applications.

Finally we can conclude that the targeted impact has been outperformed, both in terms of platform usage and number of developers and users involved, which has been reflected in the amount of apps presented to the challenges.

8.1 LONG-TERM SUSTAINABILITY

One of main objectives of the project is life of the solutions developed beyond its extent. As a very market-oriented institution and research group, we have analysed such transition for the last months of the project, in order to establish a wok plan to valorise the work done, and to transfer it to an adequate actor, and in an adequate way.

Thus, we are currently considering the following scenarios (not mutually excluding):

- Jointly exploit the platform with a third party. An agreement is currently being negotiated with the company Planol.info, based in Barcelona, with commercial relations with public administrations in Spain, France, Italy and Brazil.
- Create a spin-off to exploit it, through licensing the technology.

Regarding the generated software of the OSN Platform, an open-source package will be released, so it can be used by Third-Parties to deploy their Open Data initiatives.

Software repositories like GitHub (https://github.com/) are good places to publish this kind of projects and to obtain support from the developer community.