

# FIWARE: a boost for the Digital Economy

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OPEN APIs FOR OPEN MINDS

[www.fiware.org](http://www.fiware.org)

@Fiware 



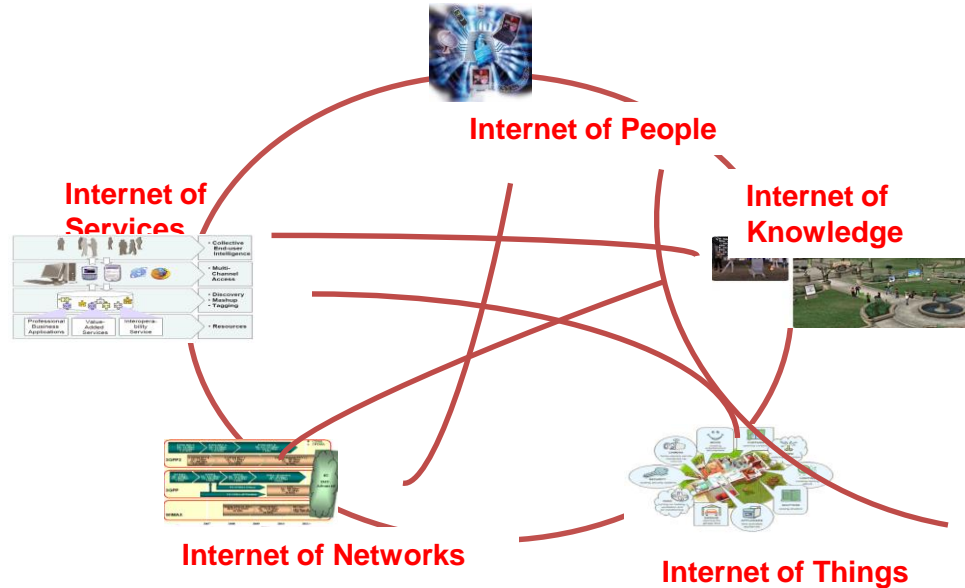
# Summary

- Towards FIWARE from the FI-PPP
- FIWARE for Smart Cities
- FIWARE industrial commitment

# The ICT world is changing

## Future Internet Applications ...

- The nature of ICT applications is changing .....



# The ICT world is changing

... Sources of changes relevant at application level ...

- **Service markets/ecosystems:** Availability of better services/components that should be used in the application
- **Individualization:** Customers increasingly strive for individualized / on-demand solutions and services; while “traditionally” systems were designed for a multitude of end-users belonging to the same class and thus following the same or similar processes (in fact current systems although can be parameterized they implement the same process) new systems should easily implement individualized processes as each end user might him/herself in different context of use from other end users
- **Big Data:** Big Data is a fact. Big Data materializes, from a technological point of view, that context changes enormously in very short time frames
- **Failures / Violations:** Due to the distributed nature and decentralized ownership and control of FI applications, SLA violations of used services, or even discontinuation of such services, may have significant impact on quality
- **Business models:** Business ecosystems and technology foster emergence of ever new business models and opportunities

# The ICT world is changing

## ... Living Labs ....

- The **living lab** is a research concept. A living lab is a user-centred, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region), integrating concurrent research and innovation processes within a public-private-people partnership.
- The concept is based on a systematic user co-creation approach integrating research and innovation processes. These are integrated through the co-creation, exploration, experimentation and evaluation of innovative ideas, scenarios, concepts and related technological artefacts in **real life use cases**. Such use cases involve user communities, not only as observed subjects but also as a source of creation.
- User centred research methods, such as action research, community informatics, contextual design user-centered design, participatory design, empathic design, emotional design and other usability methods, **already exist but fail to sufficiently empower users** for co-creating into open development environments. More recently, the Web 2.0 has demonstrated the positive impact of involving user communities in new product development such as mass collaboration projects (e.g. Wikipedia) in collectively creating new contents and applications.

# The ICT world is changing





## ..... The Smart Cities

Cities are where daily life and businesses actually happen



And that's why Smart Cities become so strategic in paving the way for innovation and ultimately boosting productivity and growth...

# The Future Internet Public-Private Partnership (FI-PPP)

- **Goal:** capture opportunities derived from the new wave of digitalization of life and businesses
- **Strategy:** build a ecosystem that will work as catalyst for capturing the opportunities
- **Achievements:**
  -  **FI-WARE** : a generic, open standard platform which serve the needs of developers in multiple domains
  -  **FI-Lab** : a meeting point where takes place, an opportunities can be incubated
  -  **FI-ccelerate** : a program that funds developers and entrepreneurs, and ignites roll-out of the ecosystem
  -  **FI-Ops** : the suite of tools easing deployment and operation of FI-WARE instance nodes
- **Global footprint:** open to regions who share the same ambition

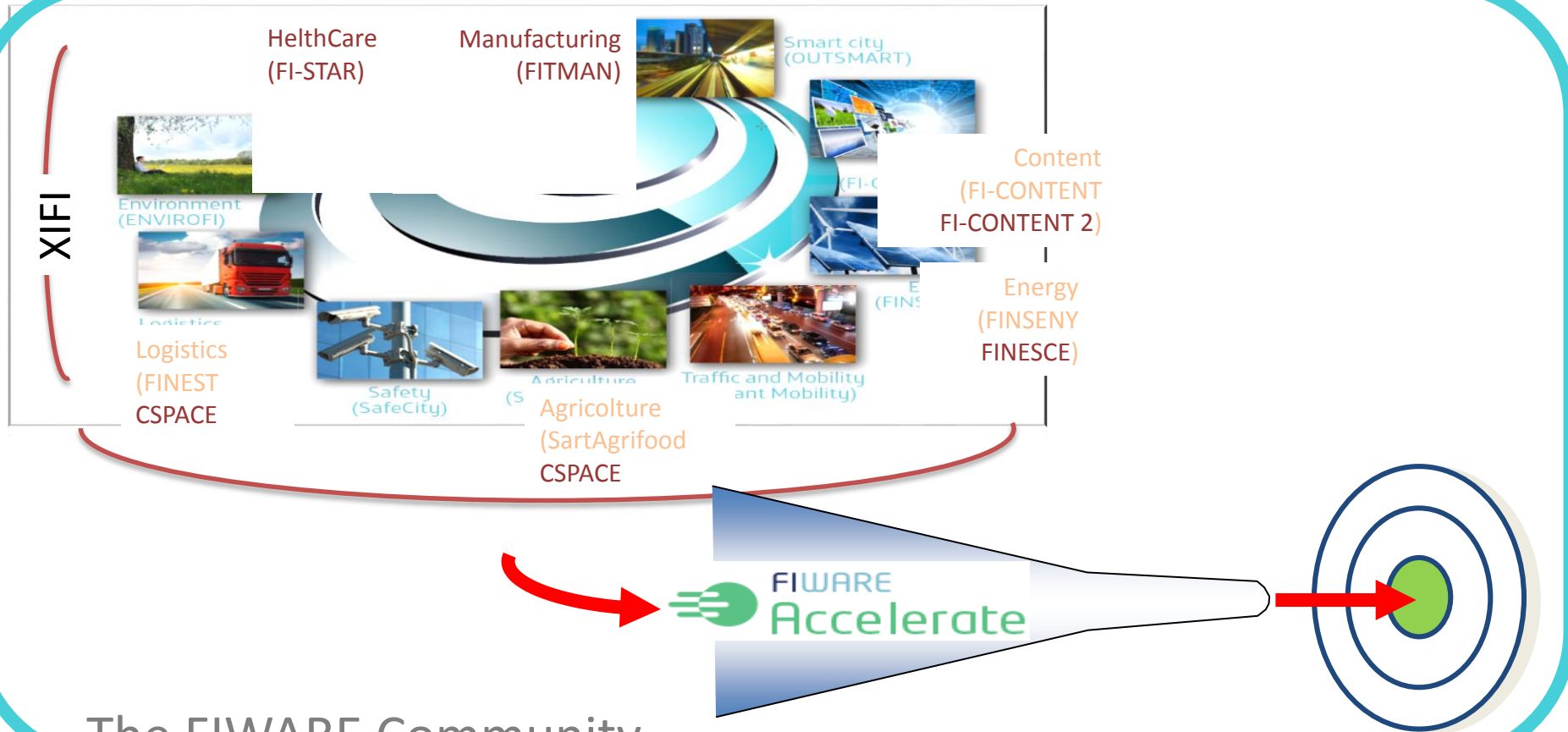
**421 = 296 + 125 M€**  
Budget (EC funding + own funding)

**124 = 85 + 39 M€**  
Budget devoted to FI-WARE/FI-Lab

**270** **150**  
partners companies  
**100 M€** **27**  
for entrepreneurs countries



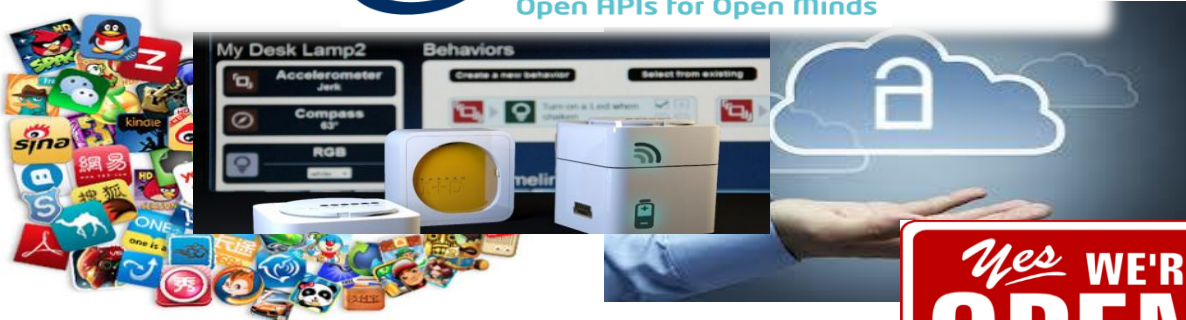
# A Collaborative Programme



The FIWARE Community



# FI-WARE = advanced OpenStack-based Cloud + rich library of Generic Enablers



Driven by  
implementation



Sustainability ensured

# FIWARE Lab: going beyond technology, the “meeting point” where a new Open Innovation ecosystem will be boosted (<http://lab.fi-ware.org>)

## Customers and Data providers (e.g., cities)

- Connect to entrepreneurs
- Put their data at work
- Visibility, promotion
- Costs saving
- Better service to customers
- Corporate Reputation

## Entrepreneurs, Developers

- Ability to test with real data
- Ability to run trials with real users
- Visibility, promotion
- Hosting of permanent showcase
- Connection to potential customers
- Acceleration of product development

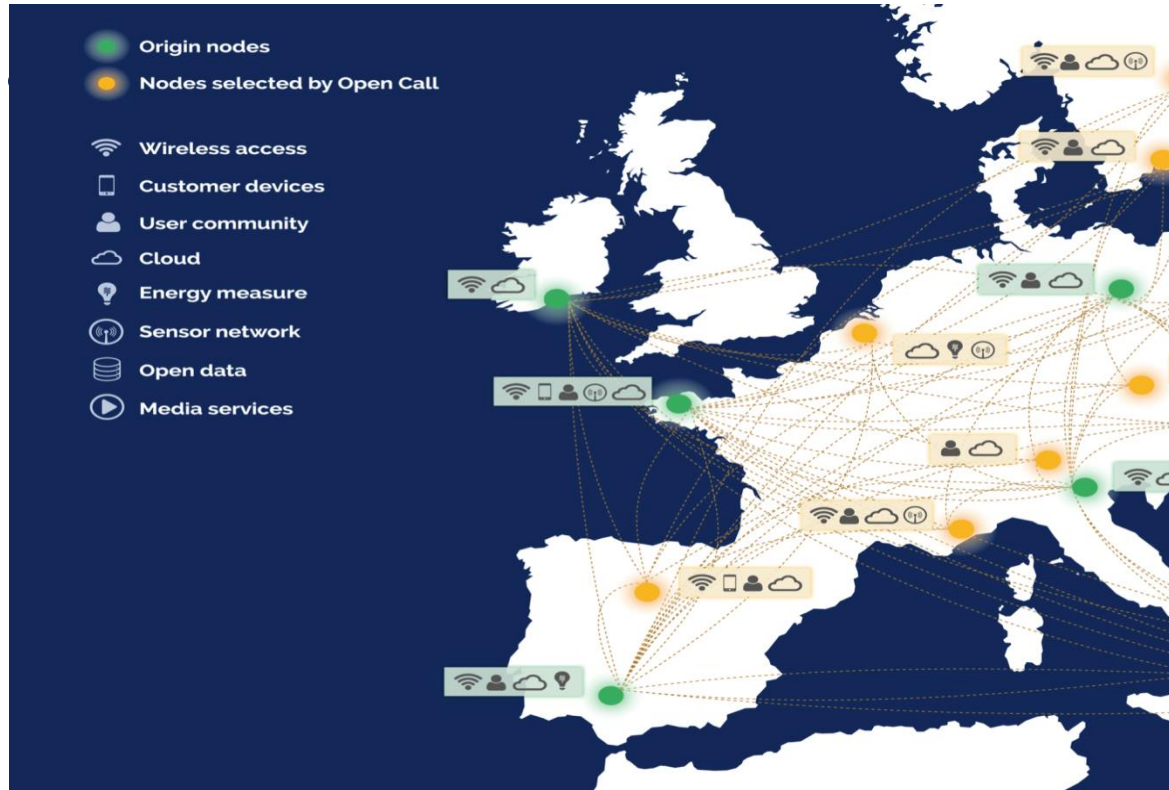


## FI-WARE Technology Providers

- Added value to just the technology
- Connecting to entrepreneurs: Revenue-sharing opportunities



# Extending the FI-Lab offering for service providers and developers



- Availability of 5 nodes (end of March 2014) with 500+ cores, 1TB+ Ram, 100TB+ HD
- Additional 12 nodes (April / September 2014) with 1000+ cores, 2TB+ Ram, 200TB+ HD
- Level 1 and Level 2 support for the nodes
- Showcases for developers, infrastructures, smart businesses

## Objectives:

Wide take-up of FI-PPP results by SMEs and web-entrepreneurs. This includes the use of FI-WARE, an innovative, open cloud-based infrastructure for cost-effective creation and delivery of Future Internet applications and services, and FI-Ops, a collection of tools that facilitate deployment, setup, and operation of FI-WARE instances by platform providers.

Development of innovative services and applications in different business sectors based on the technologies and platforms developed in the FI-PPP.

**80 MILLION EURO  
FOR SMEs and Startups**



# The accelerator projects

CEED Tech - Social connected TV, Smart city, Virtual Factory, Smart buildings

CreateFI - Creative Industry

EuropeanPioneers - Social connected TV, Smart city services, Pervasive games, eLearning

FABulous – 3D printing

FI-ADOPT – Learning, eHealth and well-being, Social integration

FI-C3 - Smart Territories, Media & Contents and Care & Well-being

FICHe – eHealth

Finish – Food supply chain

FINODEX – Open Data

FRACTALS – Agriculture sector

FrontierCities – Smart City

IMPACT – Mobile technologies

INCENSE - smart energy infrastructures

SmartAgriFood 2 – Smart farming

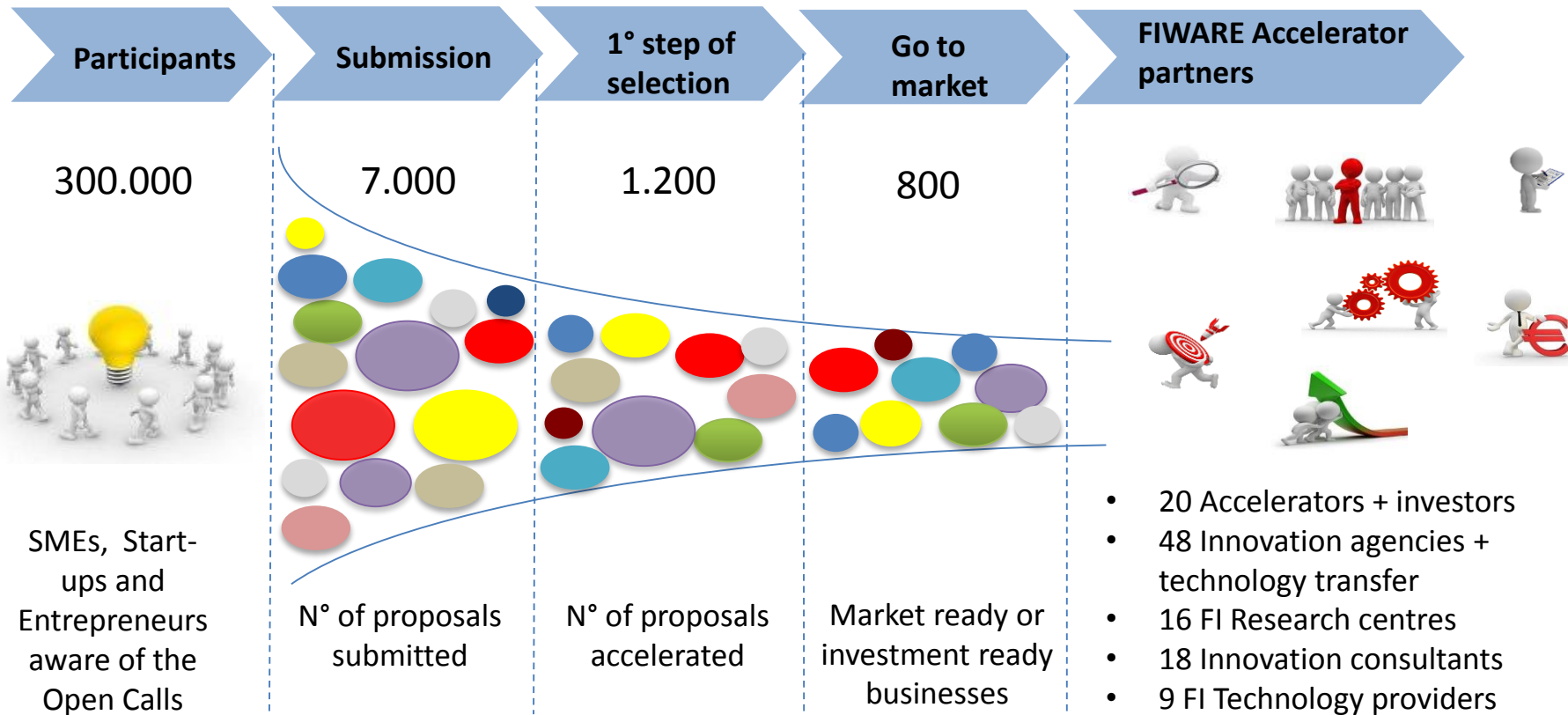
SOUL-FI - open data and crowd-sourced data

SpeedUP! Europe: Agri-food, Smart City, Smart grids

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[www.fiware.org/accelerators](http://www.fiware.org/accelerators)

# The plan

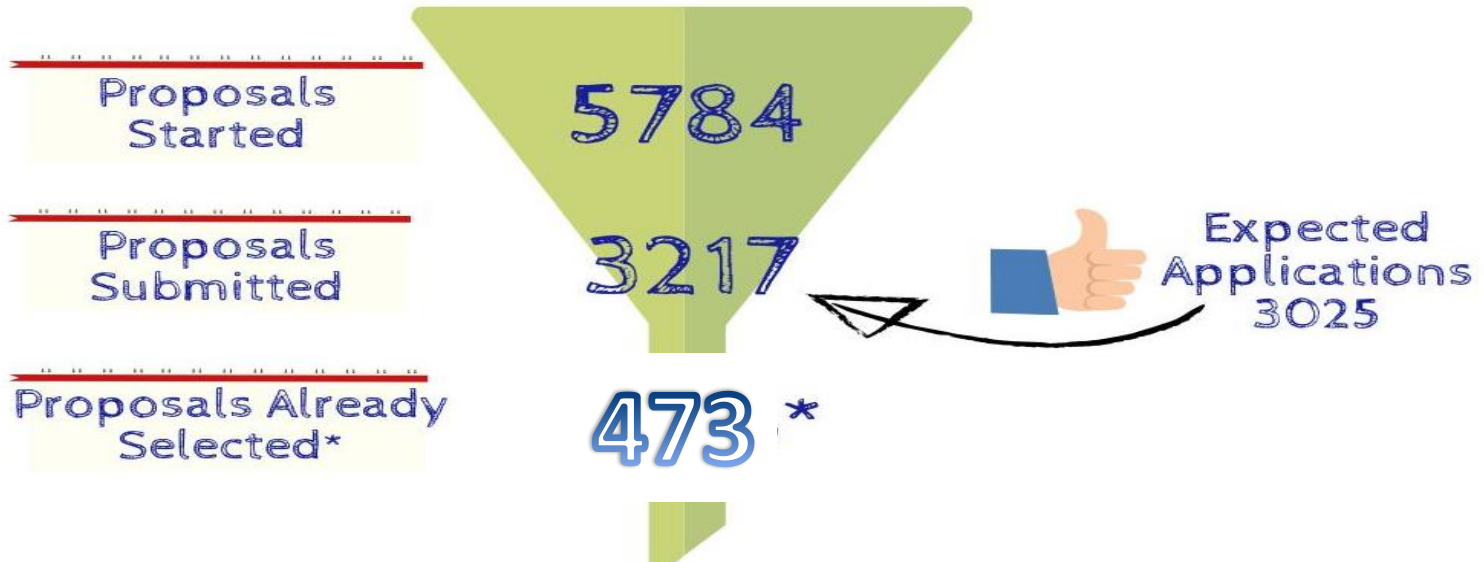




# Half way results

## Overview of Proposals by Phase

Base: 14 Accelerators



\* = data available for 10 accelerators



# The EC is making a strong bet on FIWARE

- Neelie Kroes launched FI-LAB at Campus Party Europe in London (Sept 2013 - full speech [here](#))
  - *"FI-WARE is one way we are levelling a playing field: a project to make innovative technologies available for all."*
  - *"Smart cities are a great example ... They create platforms, and use them, making open data and applications available – to citizens, to developers, to innovators, to come up with yet more ideas ... and this is where initiatives like the FI-LAB come in. Led by industry, this is a major investment in generic technology."*
- She also made a reference to FI-LAB at the launch of the EIP on Smart Cities and Communities (Sept 2013 - full speech [here](#))
  - *"Just earlier this week I launched the Future Internet lab ... That's something that you can turn into real results, real jobs, and real innovation. European platforms helping European innovation in European cities."*
- Additional mentions by the EC compiled [here](#)



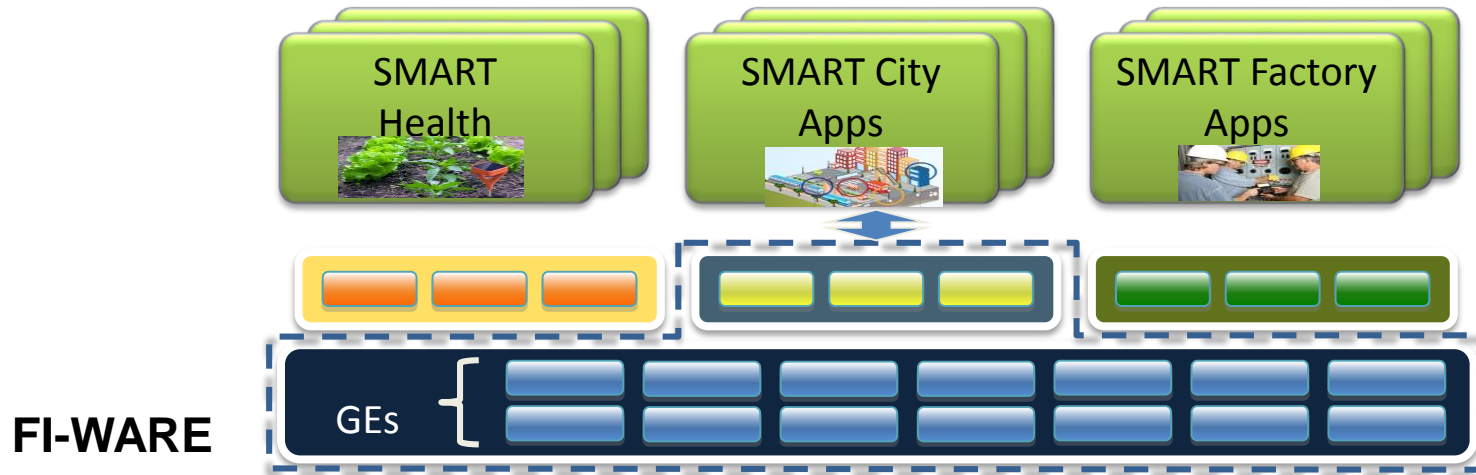


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# FI-WARE Generic Enablers

- The FI-WARE Platform comprises a set of “Generic Enablers” designed to be general purpose and independent from any domain
- Generic Enablers specifications are open and royalty free
- Generic Enablers provide open interfaces
- All the GE reference implementations are released under Open Source model



# FIWARE: Targeting developers needs (<http://catalogue.fi-ware.org>)

## What

**Rich web-based User Experience**

**Connect apps to the physical world**

**Manage open data at large scale and transform it into knowledge**

**Benefit from open innovation (crowd-sourcing, apps composition)**

**Reach target users, monetize**

**Ensuring Privacy, Security and Trust**

**Take the most of infrastructures while keeping costs lower and under control**

**Access from everywhere, adapt to devices**



## How

**Advanced UI Enablers**

**IoT-M2M Enablers**

**Data/Context Enablers**

**Integration and Composition Enablers**

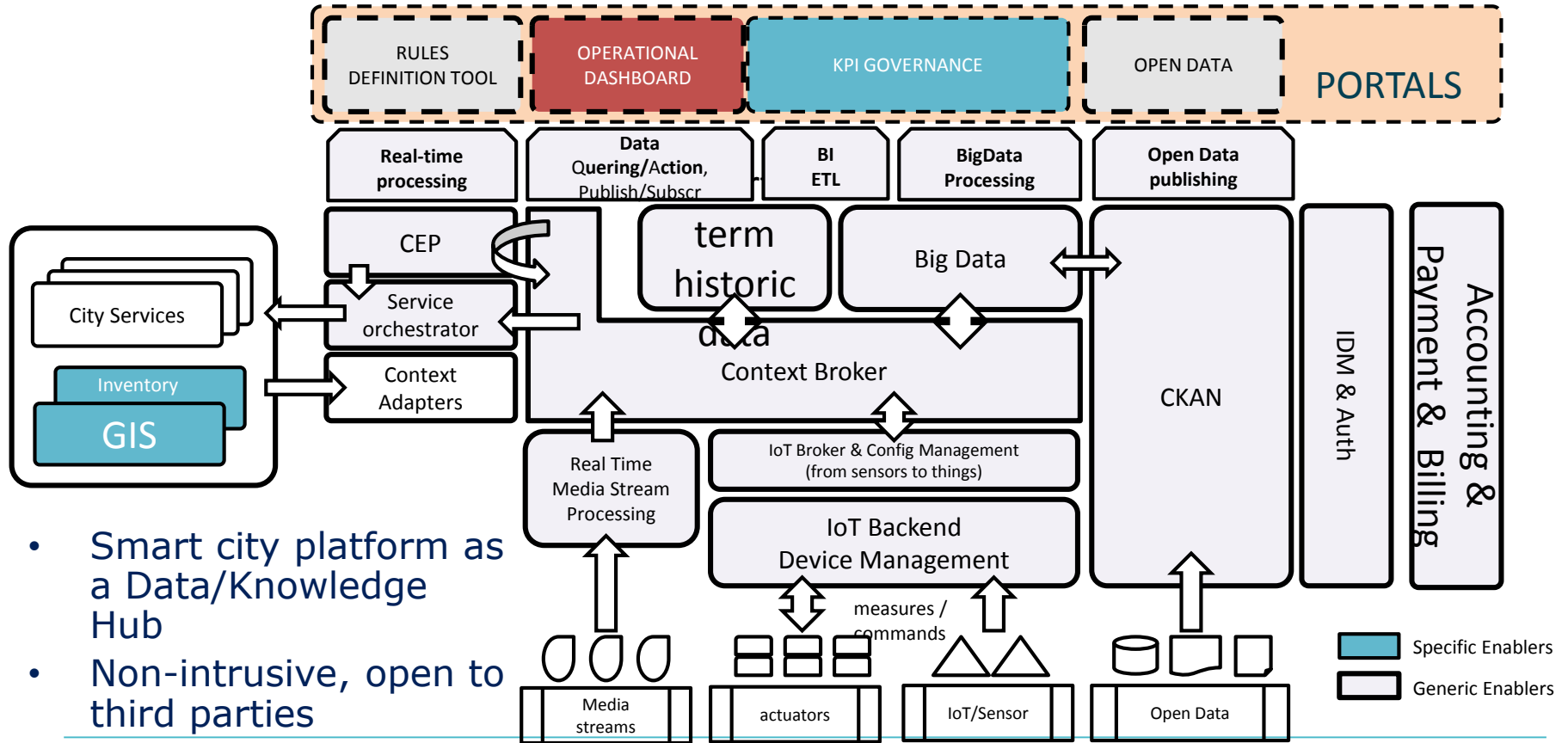
**Business & Delivery Framework (revenue-share, cross-selling, ...)**

**Security Enablers**

**Advanced Cloud Enablers**

**Interface to Network and Devices**

# Envisioned target Smart City platform



- Smart city platform as a Data/Knowledge Hub
- Non-intrusive, open to third parties

# A rich ecosystem is arising

- Smartphone Sensors
- Traffic incidences
- Public transportation
- Bikes renting
- Animal Pests

- Streetlights
- Public transportation
- Parkings
- Traffic
- Gardens Irrigation



Amsterdam



- Public Transportation
- Cultural Events
- Demography
- Parkings



Espoo

Lisbon

Terni

Valencia

Barcelona

Las Palmas

Roma

Sabadell



Smart Sevilla

- Surveillance media streams
- fountains water healthiness
- Water consumption
- Noise
- Demography, Bikes renting

# FIWARE-Lab: Open Data sets

The screenshot shows a web browser window displaying the FIWARE Lab Datasets page. The browser's address bar shows the URL `https://data.lab.fiware.org/dataset?q=&sort=title_string+asc`. The page has a navigation bar with links for Cloud, Store, Mashup, Data, Account, and Help&info, along with a Sign in button. Below the navigation bar, there are tabs for Datasets, Organizations, Groups, and About, and a search bar labeled "Search datasets...".

The main content area is titled "/ Datasets" and features a sidebar on the left with a list of organizations and their dataset counts:

- Trentino (867)
- Malaga (512)
- Florence (320)
- Rotterdam (179)
- Amsterdam (168)
- Valencia (75)
- Vigo (15)
- Alcobendas (14)
- Logroño (13)
- Lleida (12)

Below the list is a link "Show More Organizations". The sidebar also has a "Groups" section.

The main content area displays "2,266 datasets found" and an "Order by:" dropdown menu set to "Name Ascending". Below this, there are two featured dataset sections:

- A new Test Dataset**: Includes tags for CSV, ngsi, JSON, and XLS.
- PRIVATE APPs SENSORS**: A section for private app sensors.
- Activiteiten**: A section for activities, with a description: "Alle activiteiten in Amsterdam en omgeving zoals deze door Amsterdam Marketing worden beheerd. Dit bestand wordt dagelijks vernieuwd en bevat steeds de activiteiten vanaf...". It includes tags for CSV and n/a.

The Windows taskbar at the bottom shows the date and time as 09.03.2015 - 10:58, and the FIWARE Ops logo is visible in the bottom right corner.

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## **TELEFONICA, ORANGE, ENGINEERING and ATOS join forces to push common standards for Smart Cities based on the FIWARE platform**

*The companies commit to deliver commercial offerings and provide their support to the establishment of an open source community around FIWARE.*

Simple, Open, Free and standardized: enabling the new future for Smart Cities services.

**Barcelona, March 3<sup>rd</sup> 2015.** Telefónica, Orange, Engineering and Atos have decided to join forces and announce that they will take the initiative towards creation of the FIWARE Open Source Community to foster and support the evolution of standards for Smart Cities and their spread worldwide. It is expected that the FIWARE Open Source Community will be fully operational at the end of Q2-2015.



# fiware.eng.it



The screenshot shows a web browser window with the URL <https://fiware.eng.it>. The browser's address bar and tabs are visible at the top. The website header features the FIWARE Lab logo with the tagline "Spark your imagination" and the text "offered by" followed by the ENGINEERING logo. A "Home" button is located in the top right corner. The main content area displays the title "II FIWARE Lab di Engineering" on the left and a vertical list of four links on the right: "Accesso al Lab", "Open Datasets by FIWARE Lab", "Generic Enablers Catalogue", and "FIWARE Academy". The footer contains four logos: FIWARE, FIWARE Lab (with tagline), FIWARE Accelerate, and EIT ICT Labs.

Browser tabs: (FIWARE) FIWARE, <https://www.ffg.at>, BMWi - Publikation, [www.bmw.de/BM](http://www.bmw.de/BM), BMWi - Smart Serv, 12 Google Calendar, FIWARE Lab Engine

Address bar: <https://fiware.eng.it>

Header: **FIWARE Lab** Spark your imagination offered by **ENGINEERING** [Home](#)

Main Content:

## II FIWARE Lab di Engineering

- [Accesso al Lab](#)
- [Open Datasets by FIWARE Lab](#)
- [Generic Enablers Catalogue](#)
- [FIWARE Academy](#)

Footer:

- FIWARE**
- FIWARE Lab** Spark your imagination
- FIWARE Accelerate**
- eit** Knowledge & Innovation Community EIT ICT Labs

Grazie!



OPEN APIs FOR OPEN MINDS

[www.fiware.org](http://www.fiware.org)  
@Fiware 

