FI-WARE Overview

Juanjo Hierro
Telefonica Digital,
Coordinator and Chief Architect, FI-WARE
jhierro@tid.es, @JuanjoHierro

http://www.fi-ppp.eu
http://www.fi-ware.eu

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

- The aim of the FI-PPP is to place Europe in the best position to capture new opportunities in the Future Internet, derived from digitalization of economy sectors

- This requires creating an generic, open and standard platform (FI-WARE) and a meeting point (FI-LAB) around which a dynamic innovation ecosystem can be created engaging developers and entrepreneurs
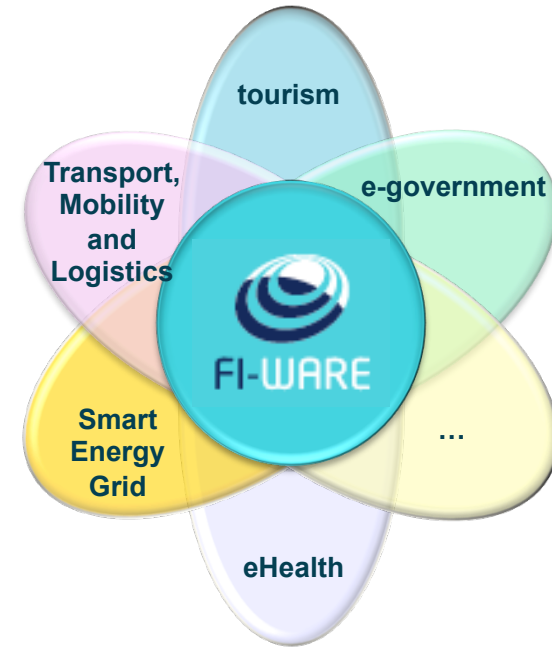
EC provides half of the funding:

Pan-european dimension

Industry driven, major industry players involved

FACTS:

2x € 300 million
INVESTMENT BY THE EUROPEAN COMMISSION & PROGRAMME PARTICIPANTS

158 PARTNER ORGANIZATIONS AND COMPANIES

68% INDUSTRY SHARE IN THE PROGRAMME

18 ACADEMIC INSTITUTIONS

23 COUNTRIES REPRESENTED (2 FROM OUTSIDE EUROPE)

**Open APIs** for Open Minds

FI-WARE   FI-Lab

What is genuine in the FI-PPP

- **Better suited** to align with roadmap of product developments by partners:
  - Industry- and Implementation-driven approach
  - Results exploitable in the short-medium term (4-5 years) rather than in the long-term (10-15 years)

- Targeted to attract **audience beyond the research community** who will be fund to develop applications on top of FI-WARE
  - Developers
  - Entrepreneurs
  - Public Administrations

- **Commitment for exploitation required:**
  - Commercial offer in the short term; or
  - Delivery of results in open source otherwise
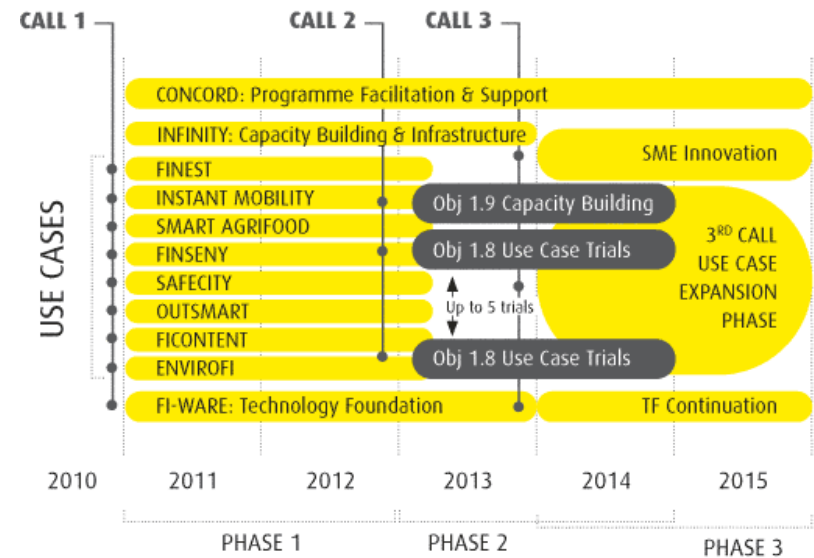
FI-WARE = advanced OpenStack-based Cloud + rich library of Generic Enablers

The Next Computer

… and all … truly Open

FI-WARE Generic Enablers (GEs)

- A FI-WARE Generic Enabler (GE):
  - set of general-purpose **platform functions** available through **APIs**
  - Building with other GEs a **FI-WARE Reference Architecture**

- **FI-WARE GE Specifications** **are open** (public and royalty-free)

- **FI-WARE GE implementation (FI-WARE GEi):**
  - Platform product that implements a given GE Open Spec
  - There might be multiple compliant GEis of each GE Open Spec
  - Available FI-WARE GEis published on the **FI-WARE Catalogue**

- **The FI-WARE project will deliver at least one reference implementation** of FI-WARE GEs:
  - Based upon results of previous R&D projects
  - Publicly available **Technical Roadmap** updated in every release
  - Licensed with no costs within the FI-PPP program
  - Commercialized under FRAND conditions or license as open source

FI-WARE: Targeting developers needs

What	How
Rich web-based User Experience	Advanced UI Enablers
Connect apps to the physical world	IoT-M2M Enablers
Manage open data at large scale and transform it into knowledge	Data/Context Enablers
Benefit from open innovation (crowd-sourcing, apps composition)	Integration and Composition Enablers
Reach target users, monetize	Business & Delivery Framework (revenue-share, cross-selling, …)
Ensuring Privacy, Security and Trust	Security Enablers
Take the most of infrastructures while keeping costs lower and under control	Advanced Cloud Enablers
access from everywhere, adapt to devices	Enablers easing interface to Network and Devices

Built-in APIs & tools

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FI-WARE

FI-LAB (FI-WARE Open Innovation Lab)

- FI-LAB (http://lab.fi-ware.eu) will be a **case example of a FI-WARE Instance**. It:
  - Provides Cloud hosting capabilities so third parties can run experimental Future Internet Applications and test them
  - Make Generic Enablers implementations available for experimentation:
    - Global accessible instances provided "as a Service"
    - Deployable as dedicated instances by application providers using Cloud blueprint management functions
  - Will be operated under central control and be accessible from a dedicated website.

- Entrepreneurs can setup accounts for free, adhering to certain terms and conditions

- Liason with so-called application sponsors (e.g., smart cities) to enrich the environment

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FI-WARE

Opportunities for all

Application sponsors (business, cities, etc)

- 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-Lab

FI-WARE Technology Providers

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

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FI-WARE

FI-PPP and 3rd facilities: opportunities to explore

Network of FI-WARE Backend Datacenters
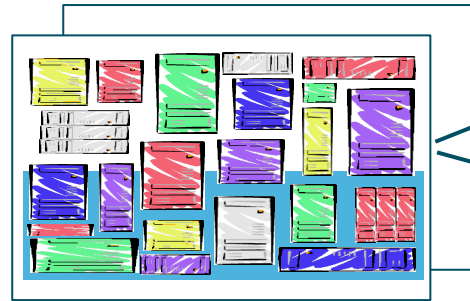
Location platform

ID providers
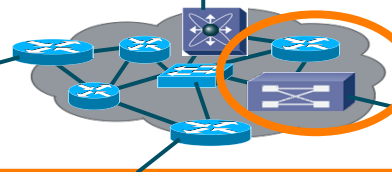
Experimental Facilities (networks)

Experimental Facilities (sensors)
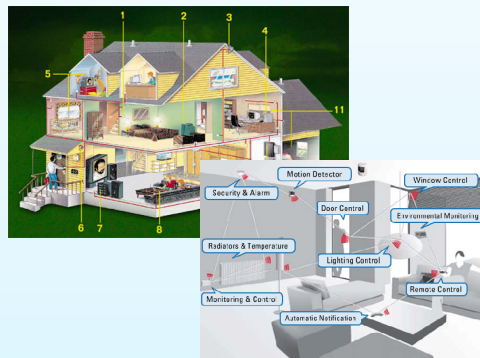
SMART Home Lab

SMART City Lab

SMART Biz Lab

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FI-WARE

Building the FI-WARE ecosystem: the vision

FI-WARE Catalogue

Commercial facility

Instructions for creation of dedicated GE instances

Complex Event Processing (CEP) - IBM Proactive Technology Online

Instructions for using Global shared GE instance

FI-Lab expansion across Europe as shared facility for Trials (XiFi project)

Current FI-Lab (FI-WARE Open Innovation Lab)

Trial 2

Trial 1

Specific UC Trial facilities

- Current focus:
  - Take up of FI-WARE results by Internet application developers and entrepreneurs
  - Creation and support of a dynamic innovation ecosystem
  - FI-Lab expansion across Europe

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FI-WARE

The EC is making a strong bet on FI-WARE/FI-LAB

■ Neelie Kroes launched FI-LAB at Campus Party Europe in London (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 (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

An ambitious plan under way

- **Ambitious FI-WARE promotion campaign (4,2 M€ investment during May 2013 – April 2014 period)**
  - Launch of the **FI-WARE Open Innovation Lab** at London Campus Party (September 3-8)
  - Presence in 50 startup weekend events across Europe
  - Hackathons, Development contests (870 K€ in awards)

- **100 M€ of funding for SMEs and Web entrepreneurs** developing products on top of FI-WARE:
  - to be canalized through incubators, accelerators, SME associations
  - projects starting in 2014

- Design and deployment of **pan-european FI-WARE trial facility** to be launch in April 2014

- Proposal for **FI-WARE continuation** phase (23 M€)

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FI-WARE

Thanks !

http://fi-ppp.eu

http://fi-ware.eu

http://lab.fi-ware.eu

Follow @Fiware on Twitter !

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access from everywhere, adapt to devices		Enablers easing interface to Network and Devices	

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FI-WARE

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

VM provisioning

Storage provisioning

Management of Blueprints

Gathering, publishing, processing and analyzing private and open data at large scale

Context

- OMA NGSI Context Management is about management of Context data (aka Context Information)

- Context Information is always relevant to "entities", although entities can be anything (applications, users, things, …)

Context Broker

Applications
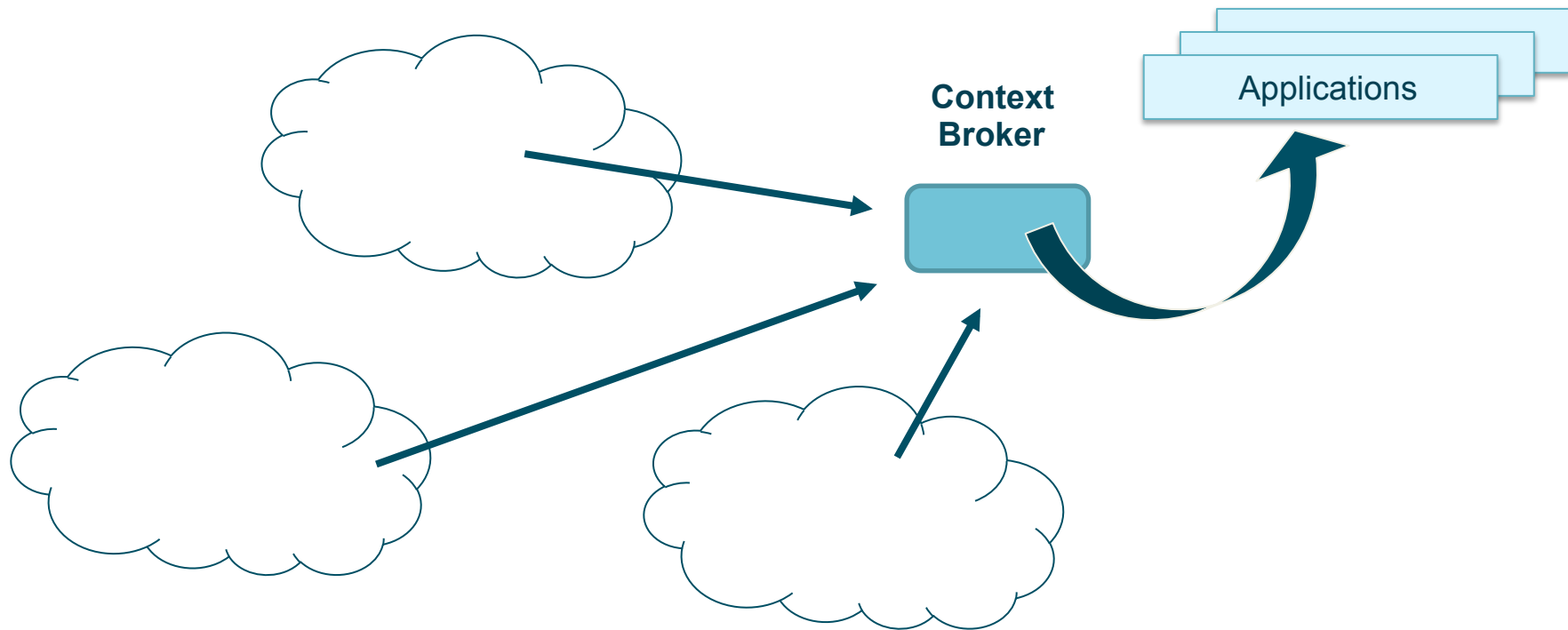
Simple yet powerful interaction model

Application

subscription_id_1 = subscribe (consumer1, expr1, duration1)

updateContext

Context Producer

Context Broker 2

notifyContext

Context Consumer 1

query

queryContext

Context Consumer 2

Context Provider
(maybe another Context Broker)

registerContext (Context Provider, what, duration2)

Application
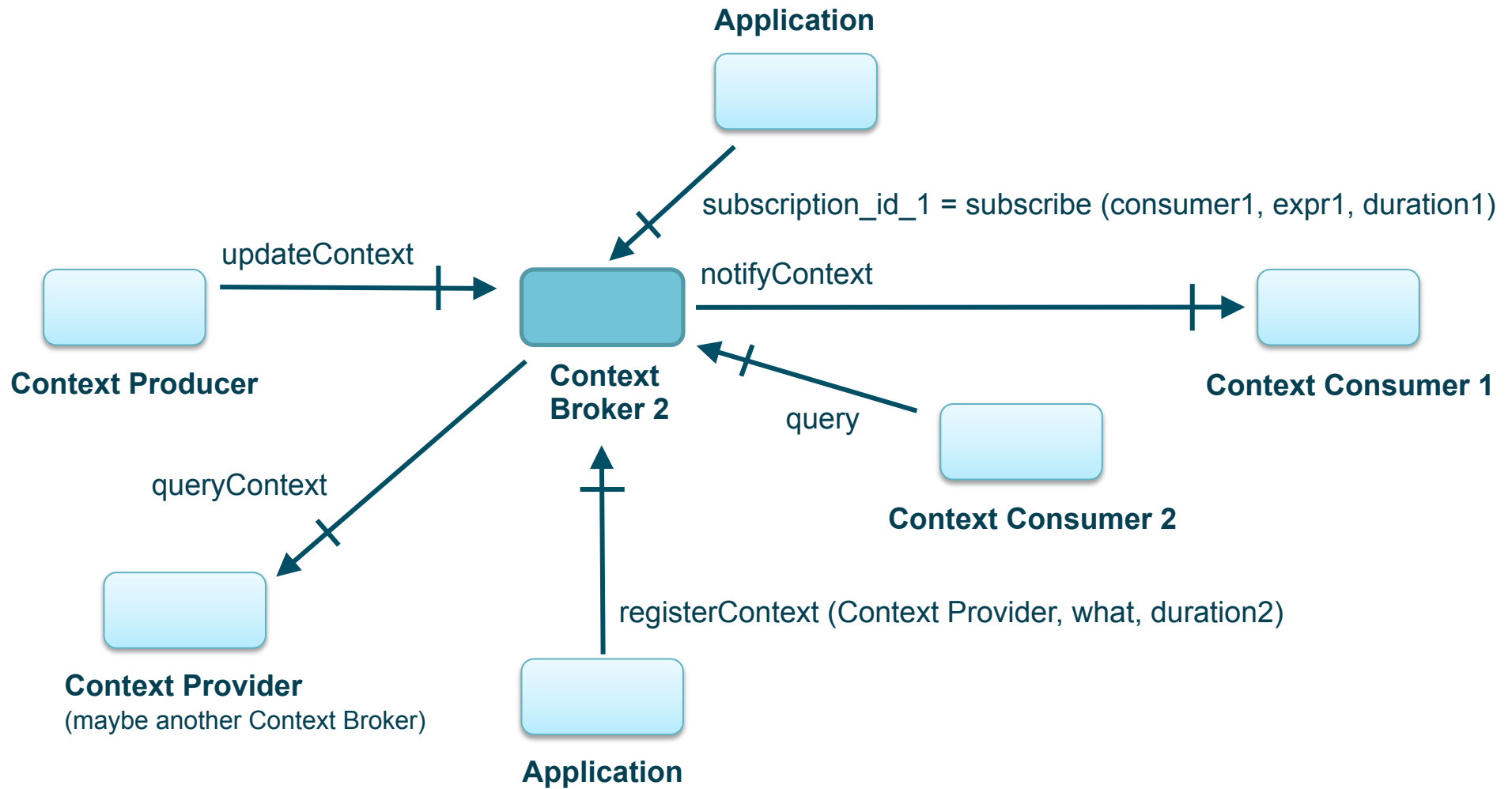
FI-WARE Context/Data Management Platform

Applications

OMA NGSI-9/10

Processing/Analysis Algorithms

Context Broker (Orion/CAP)

Gathered data is injected for processing/analysis

Data generated either by CEP or BigData is published

BigData Analysis/Processing (COSMOS)

Gathered data injected for CEP-like processing

Distributed Context Sources

Complex Event Processing - CEP (PROTON)

Processed data is injected for processing/ analysis

Direct bigdata injection

Programming of rules

Context/Data Management Platform

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FI-WARE

Easing connection to the physical world

FI-WARE IoT-M2M & Context/Management altogether

Applications

FI-WARE NGSI-9/10
(entities: things, other)

Other sources

Context Broker

BigData Analysis

CEP

IoT-enabled Context Management

Direct connection for higher performance

FI-WARE NGSI-9/10
(entities: things)

IoT Broker

IoT ConfigMan

NGSI IoT Adapter

Device-level Management API

IoT Backend Device Management

Backend

FI-WARE NGSI-9/10

Backend

Native NGSI IoT Agent

Gateway/Device Platform GEs

Native NGSI IoT Agent

Gateway/Device Platform GEs

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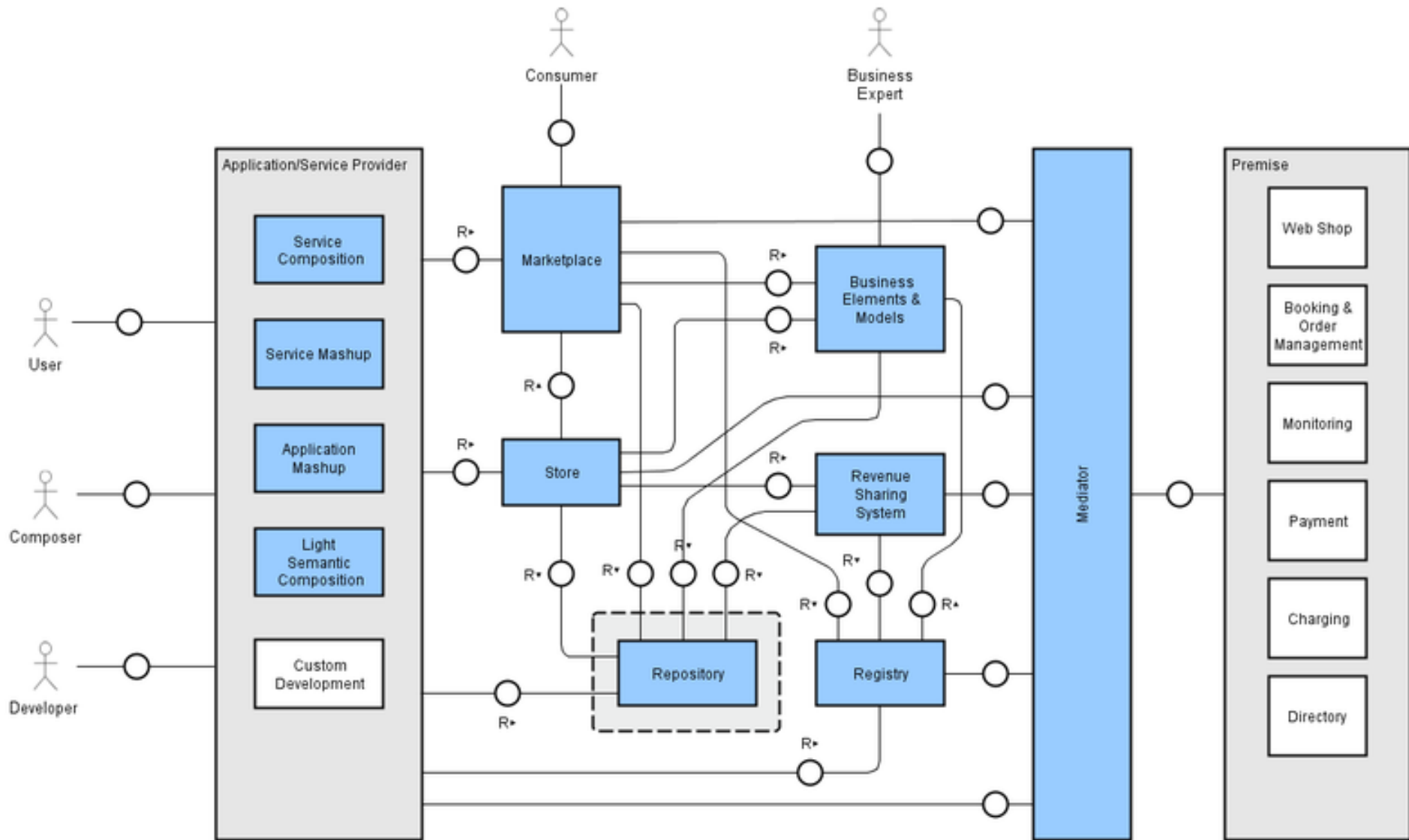FUTURE INTERNET PPP

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FI-WARE

Enabling co-creation through advanced Data/Services Composition and Mashup
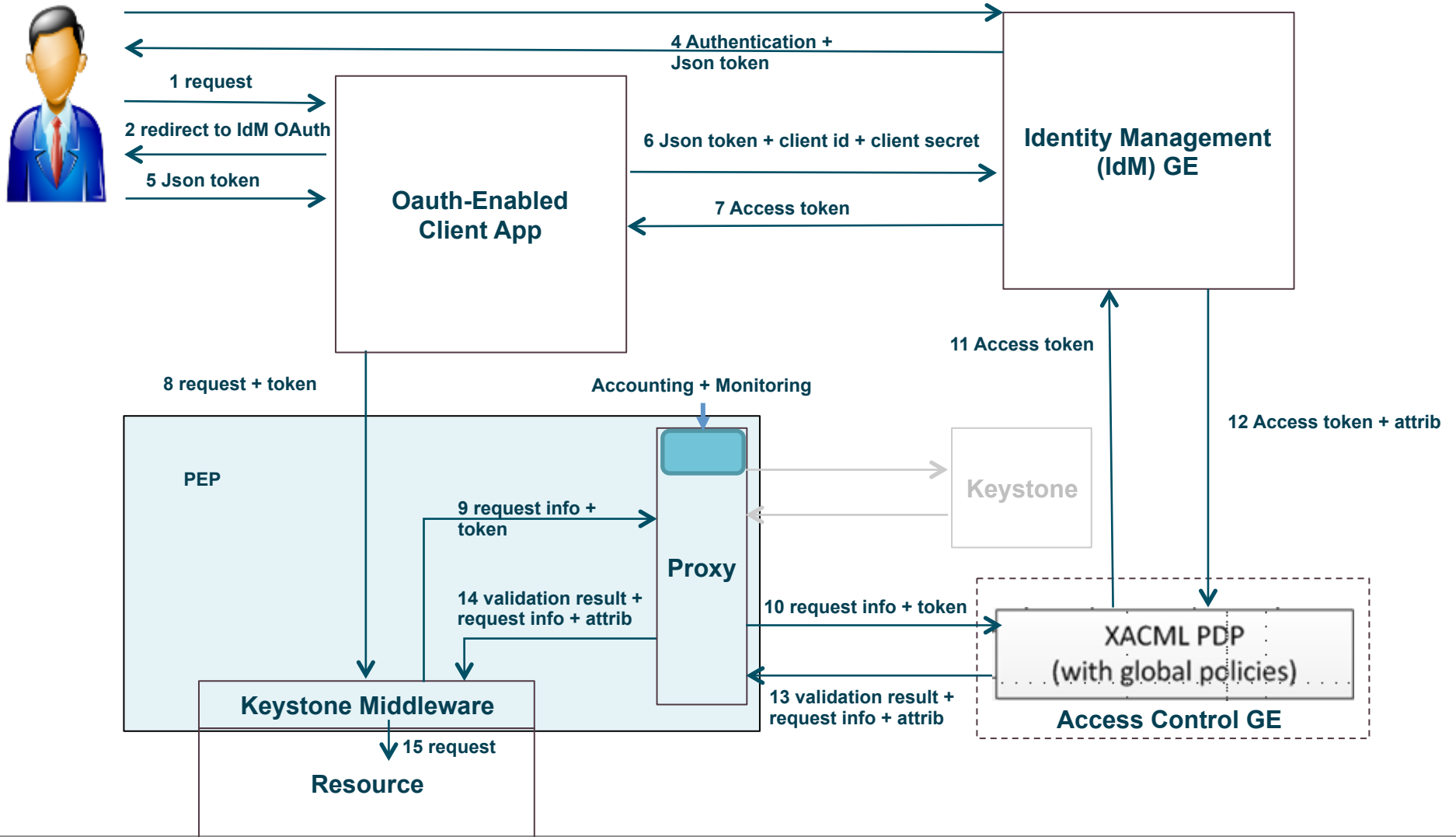
Reaching target users, monetize

Architecture of the Apps Chapter

Ensuring Privacy, Security and Trust

Proposal (Accounting+Monitoring)

# Offering rich web-based user interfaces

Access from everywhere, taking the most of the network and capabilities of devices
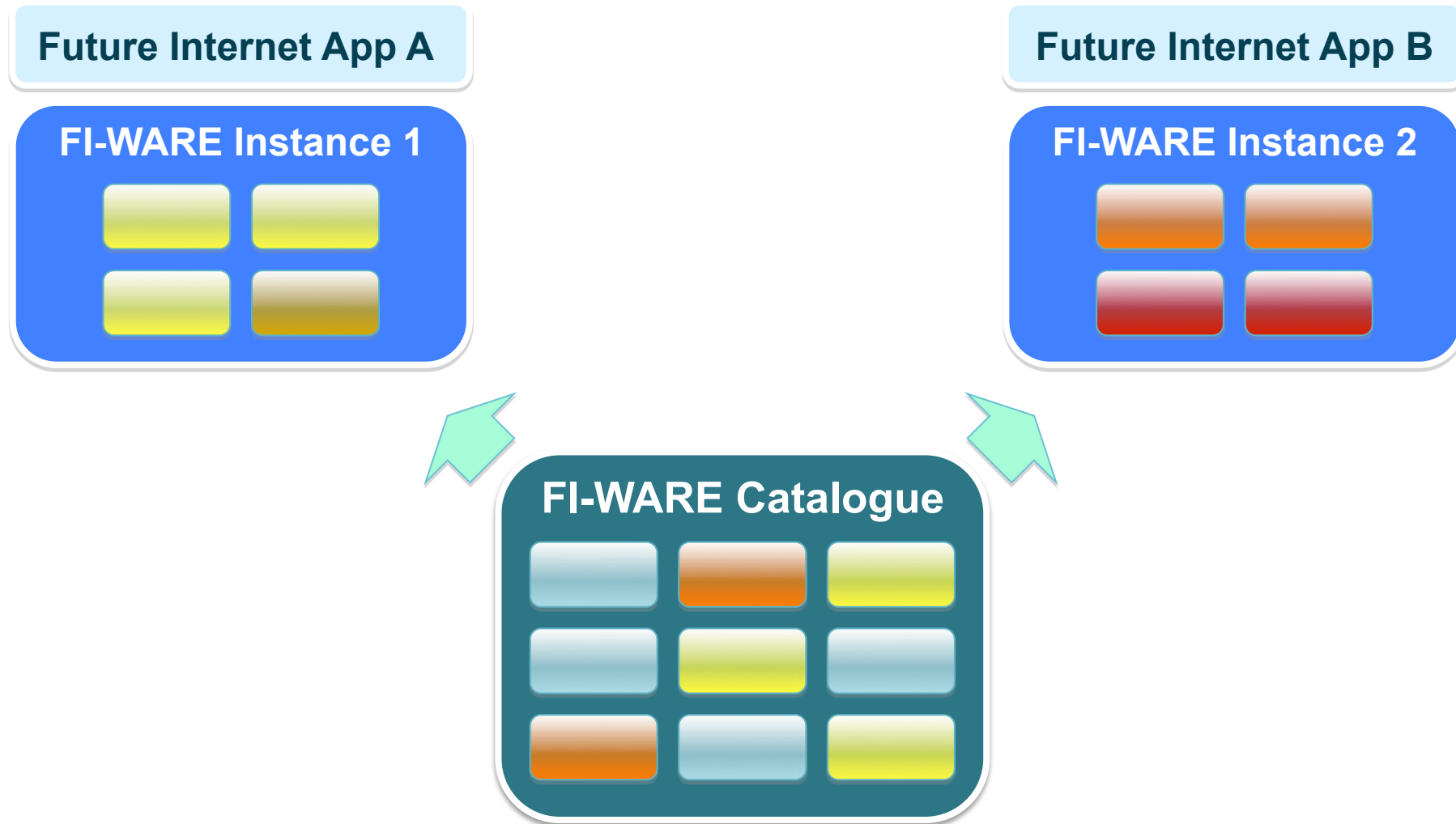
FI-WARE Instances

- Future Internet Applications run on top of "FI-WARE Instances" that are built by "FI-WARE Instance Providers" upon:
  - selection of FI-WARE GEis (products) from the FI-WARE Catalogue
  - assembly of selected FI-WARE GEis with proprietary added-value products

FI-WARE Catalogue

Future Internet App

FI-WARE Instance

assemble…

FI-WARE GE implementations

propietary product
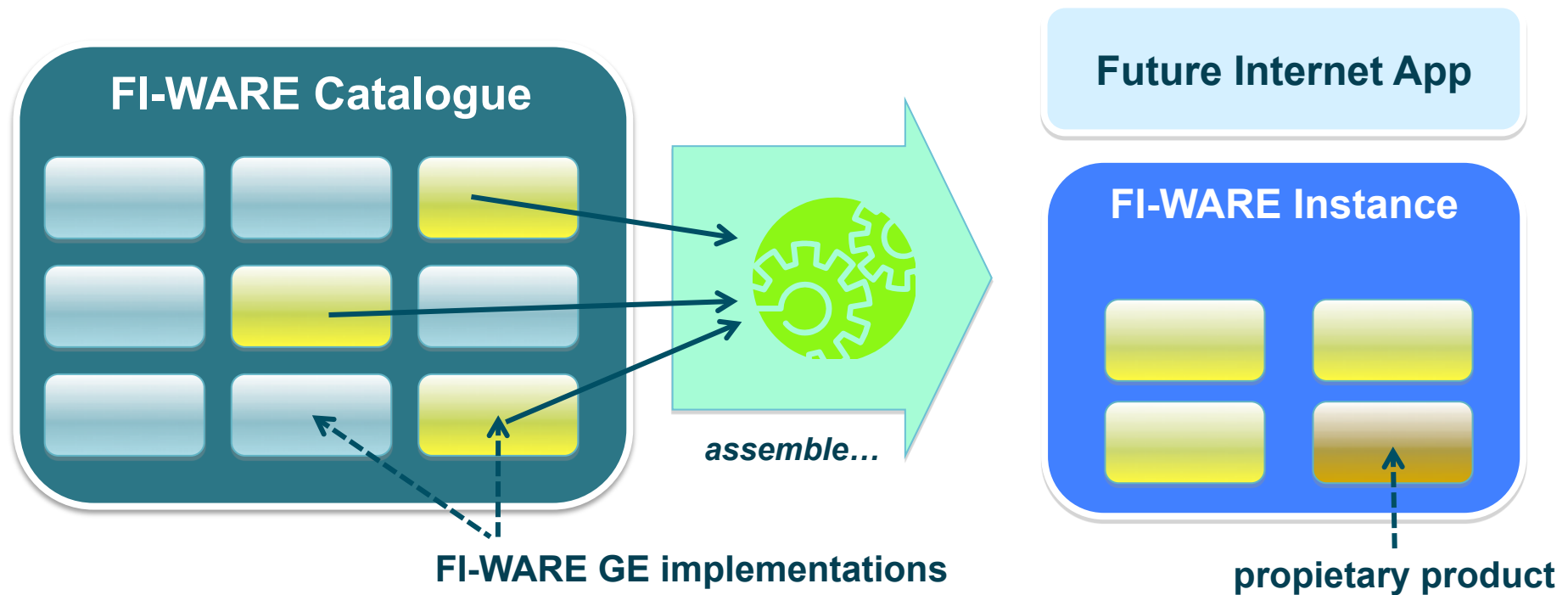
FI-WARE Instances

- There is no single universal FI-WARE Instance

FI-WARE Instances

- Offering of several FI-WARE Instances may be combined