FIWARE
Open APIs for Open Minds

Unione degli Industriali della Provincia di Varese

"LE FRONTIERE DELL'INNOVAZIONE:
Tecnologie del futuro per il manifatturiero
12 ottobre 2015
LIUC-Università Cattaneo

lombardia aerospace cluster

FITMAN: architetture, piattaforme e componenti open source per l'innovazione digitale dell'industria

Sergio Gusmeroli, FITMAN Coordinator
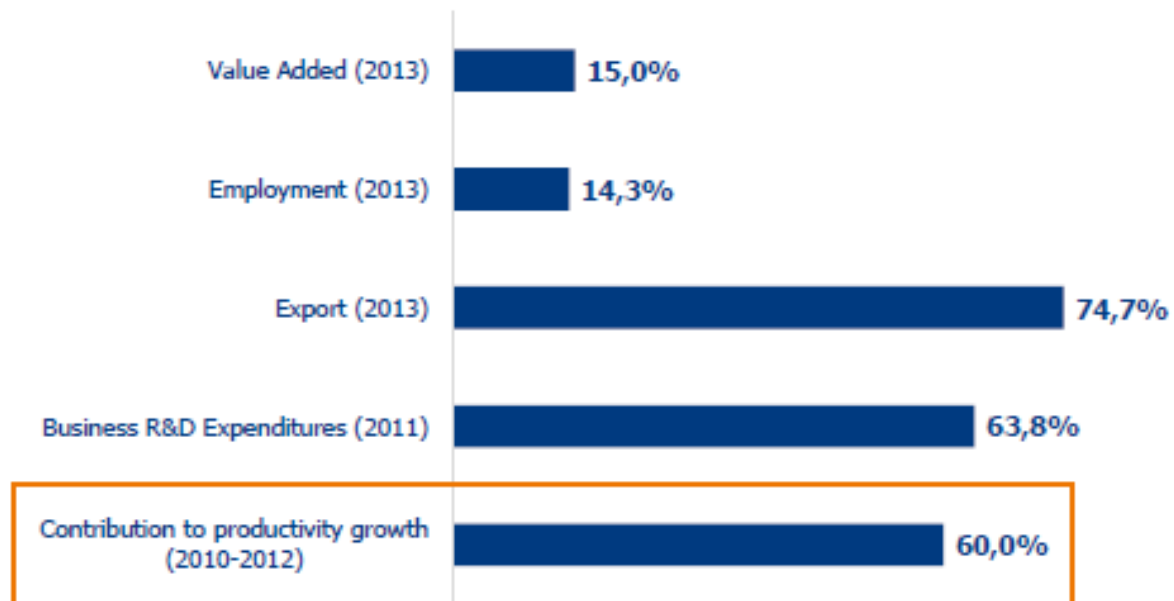*sergio.gusmeroli@txtgroup.com*

European Commission

FITMAN

Manufacturing Renaissance in EU

World Manufacturing Forum

The European House Ambrosetti

... this is why Manufacturing is such a pivotal sector for Europe

Importance of Manufacturing sector in the EU (% on the total economy)

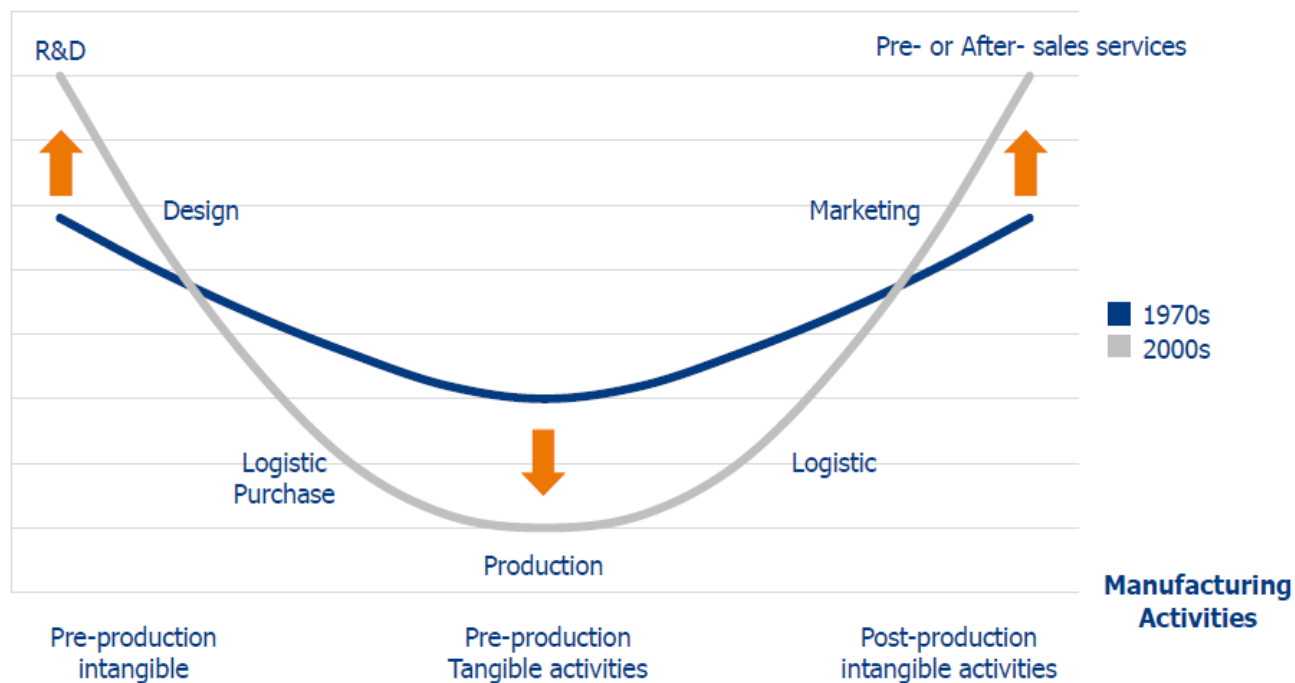| Category	%
Value Added (2013)	15,0%
Employment (2013)	14,3%
Export (2013)	74,7%
Business R&D Expenditures (2011)	63,8%
Contribution to productivity growth (2010-2012)	60,0%

Source: The European House - Ambrosetti re-elaboration on Eurostat, AMECO and OECD data, 2014

Manufacturing evolution 1970s-2000s

The "SMILE" challenge: European businesses must focus on high value added activities
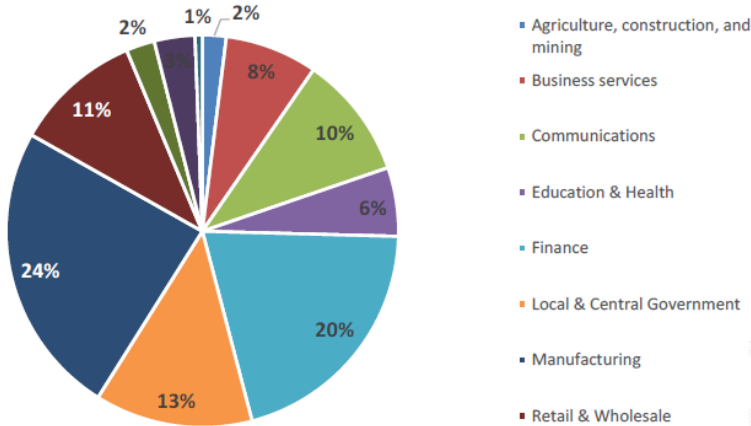
Value Added

R&D   Pre- or After- sales services

Design   Marketing

■ 1970s
■ 2000s

Logistic
Purchase   Logistic

Production

**Manufacturing
Activities**

Pre-production   Pre-production   Post-production
intangible   Tangible activities   intangible activities

- Value creation in Manufacturing is progressively shifting **towards pre-production** (R&D and Design) and **post production** (marketing and Pre-or-After sales service) activities

Source: The European House - Ambrosetti re-elaboration on Bruegel data, 2014
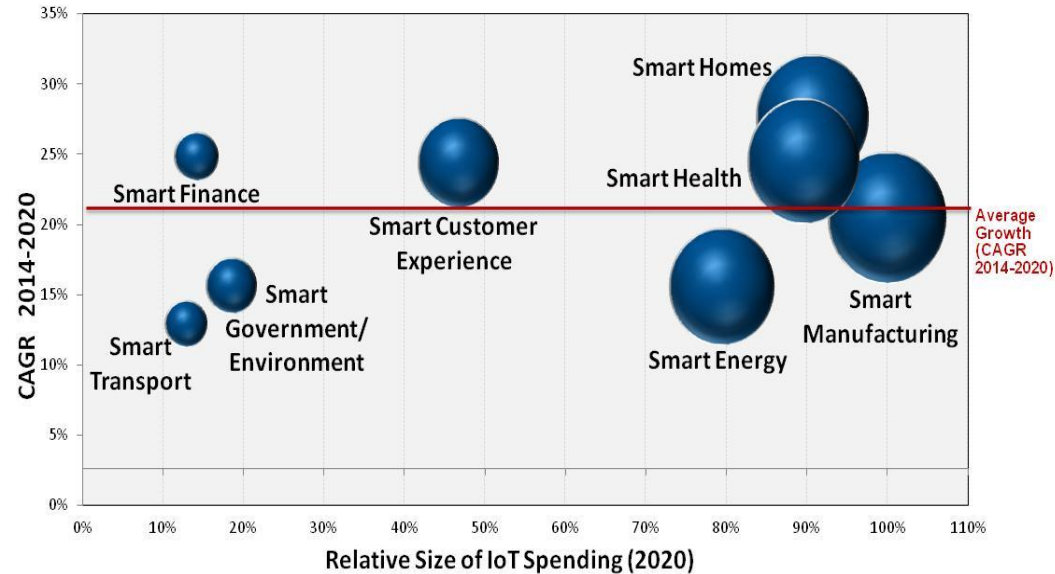
FI-driven Innovation in Manufacturing

IoT By Vertical 2020

- Agriculture, construction, and mining
- Business services
- Communications
- Education & Health
- Finance
- Local & Central Government
- Manufacturing
- Retail & Wholesale

Source: IDC 2014

Smart Manufacturing is one of the most promising domains for IOT-driven innovation (24% of the estimated IOT EU market size)
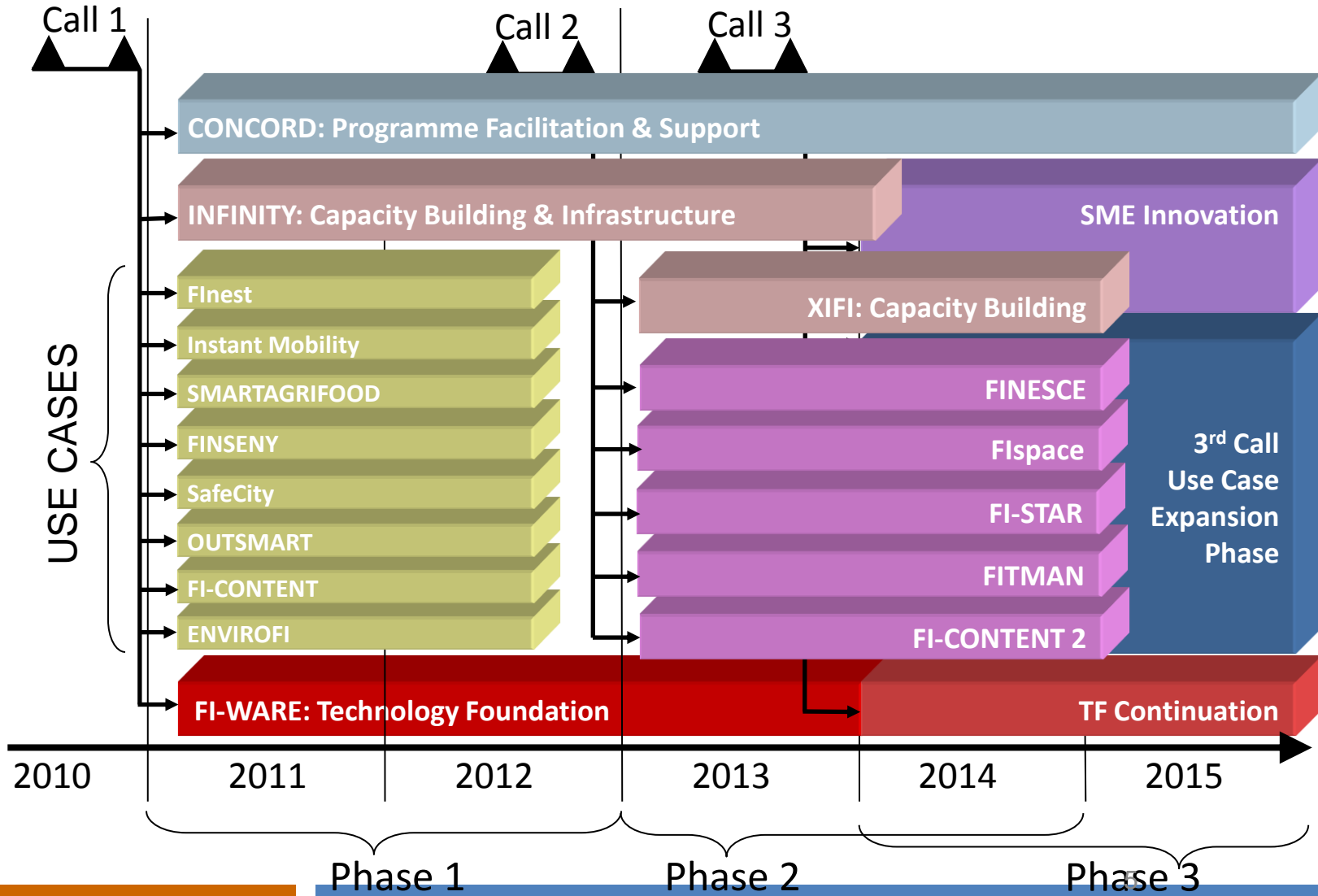
Smart Manufacturing excels not just in the potential size of the market, but is also well positioned regarding the estimated growth of such a market

The EU FI PPP (FIWARE) and FITMAN

Unione degli Industriali della Provincia di Varese

lombardia aerospace cluster

FIWARE
OPEN APIs FOR OPEN MINDS

FIWARE Lab
Spark your imagination

FIWARE Ops
Easing your operations

http://fiware.org

http://lab.fiware.org

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Join us!

http://fiware.org

http://lab.fiware.org

Follow @Fiware on Twitter !

FIWARE GENERIC ENABLERS

Generic Enablers (GE) offer a number of general-purpose functions, offered through well-defined APIs, easing development of smart applications in multiple sectors. They will set the foundations of the architecture associated to your application.

Specifications of FIWARE GE APIs are public and royalty-free. You can search for the open source reference implementation, as well as alternative implementations, of each FIWARE GE in the FIWARE Reference Architecture.

DATA/CONTEXT

INTERNET OF THINGS

ADVANCED UI

Data/Context Management
Easing access, gathering, processing, publication and analysis of context information at large scale.

Internet of Things (IoT) Services Enablement
Make connected things available, searchable, accessible, and usable.

Advanced Web-based User Interface
3D & AR capabilities for web-based UI.
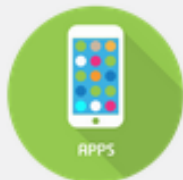
SECURITY

I2ND

APPS

Security
Make delivery and usage of services trustworthy by meeting security and privacy requirements.

Interface to Networks and Devices (I2ND)
Build communication-efficient distributed applications, exploit advanced network capabilities and easily manage robotic devices.

Architecture of Applications / Services Ecosystem and Delivery Framework
Co-create, publish, cross-sell and consume applications/services, addressing all business aspects.

CLOUD

Cloud Hosting
Provides computation, storage and network resources to manage services.

DOMAIN SPECIFIC ENABLERS

The FIWARE Catalogue will be extended to include domain-oriented enablers to be combined with those serving general purposes (Generic Enablers - GE). They will cover functionalities that are specific and will help accelerating development of applications, in certain domains.

The perfect solution to make your app focus on a specific vertical.

Manufacturing

Media

eHealth

Energy

Agrifood

BUNDLES

BUSINESS FRAMEWORK CONSUMPTION
The business Framework Consumption Bundle includes a set of GEis that support different monetization and revenue sharing features.
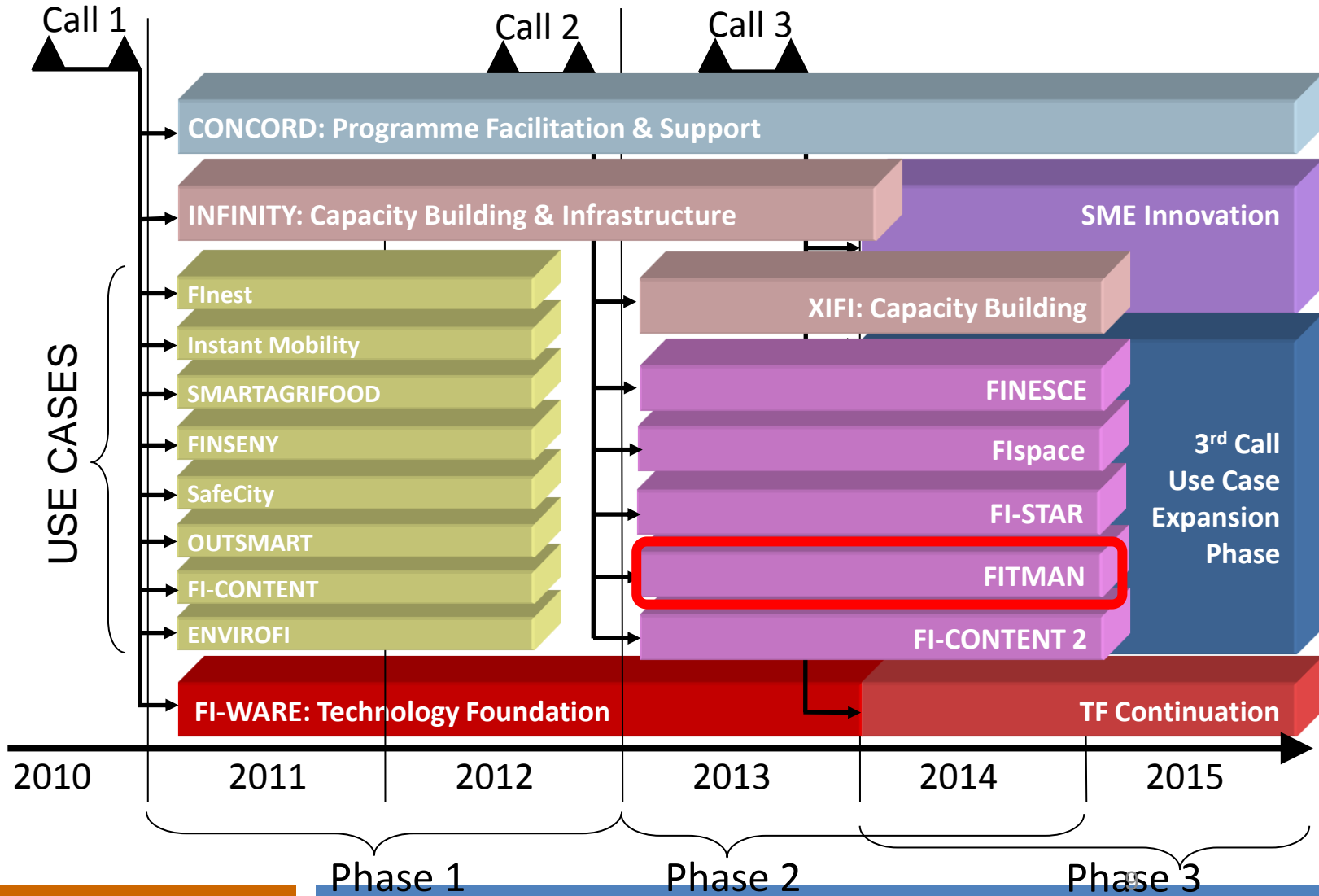
WIRECLOUD MONETIZATION
The Wirecloud (App Mashup) Monetization Bundle represents one of the uses cases of the business Framework and intends to show the potential of the BF features provided by FIWARE in a concrete use case. This use case is based on the use of the business framework.

DATA CONTEXT STREAMS
Context Streams generation storage and analysis.

8

The EU FI PPP (FIWARE) and FITMAN

FITMAN Factsheet

Project No: 604674

Project Full Name: **F**uture **I**nternet **T**echnologies for **MAN**ufacturing

Duration: 30 months

Start date: April 1st 2013

Partnership: 36 partners, 11 countries

Strategic Objective: FP7-2012-ICT-FI

FI.ICT-2011.1.8: Use Case scenarios and early trials

Total Eligible Cost: 18.034.000 EURO

EC Contribution: 12.890.000 EURO

Project Web Site: www.fitman-fi.eu

FITMAN Beneficiaries

FITMAN Reference Platforms: 14+15 Enablers

Smart Platform

GE1 • IoT.Backend.IoTBroker
• *Reference Impl. by NEC*

GE2 • IoT.Backend.ConfMan
• *Orion Context Broker by Telefonica I+D*

GE3 • IoT.Backend.DeviceManagement
• *IDAS by Telefonica I+D*

GE4 • IoT.Gateway.ProtocolAdapter
• *ZPA by Telecom Italia*

GE5 • IoT.Gateway.DataHandling
• *Esper4FastData by Orange*

SE1 • Shopfloor Data Collection
• *SDC by Uninova & ATOS*

SE2 • Secure Event Management
• *SEM by TXT*

SE3 • Dynamic CEP
• *DyCEP by FZI & NISSATECH*

SE4 • Dynamic Visualization & Interaction
• *DyVisual by DFKI*

Virtual Platform

GE1 • Apps.Marketplace
• *Reference Impl. by SAP*

GE2 • Apps.Repository
• *Reference Impl. by SAP*

GE3 • Apps.Mediator
• *Reference Impl. by Telecom Italia / Thales*

GE4 • Apps.Registry
• *Reference Impl. by SAP*

GE5 • Apps.LightSemanticComposition
• *COMPEL by ATOS*

GE6 • Data.SemanticSupport
• *Semantic Application Support by ATOS*

SE1 • Collaborative Asset Management
• *CAM by ENG*

SE2 • Collaborative Business Process Management
• *BPM by ENG*

SE3 • Supply Chain & Business Ecosystem Apps
• *SCApp by TXT*

SE4 • Data Interoperability Platform Services
• *DIPS by TXT*

SE5 • Metadata and Ontologies Semantic Matching
• *SeMa by NTUA*

SE6 • Management of Virtualized Assets
• *MoVA by DITF*

SE7 • Generation and Transformation of Virtualized Assets
• *GeToVA by UIBK*

Digital Platform

GE1 • Data.PubSub
• *Context Awareness Platform by Telecom Italia*

GE2 • Apps.ApplicationMashup
• *Wirecloud by UPM*

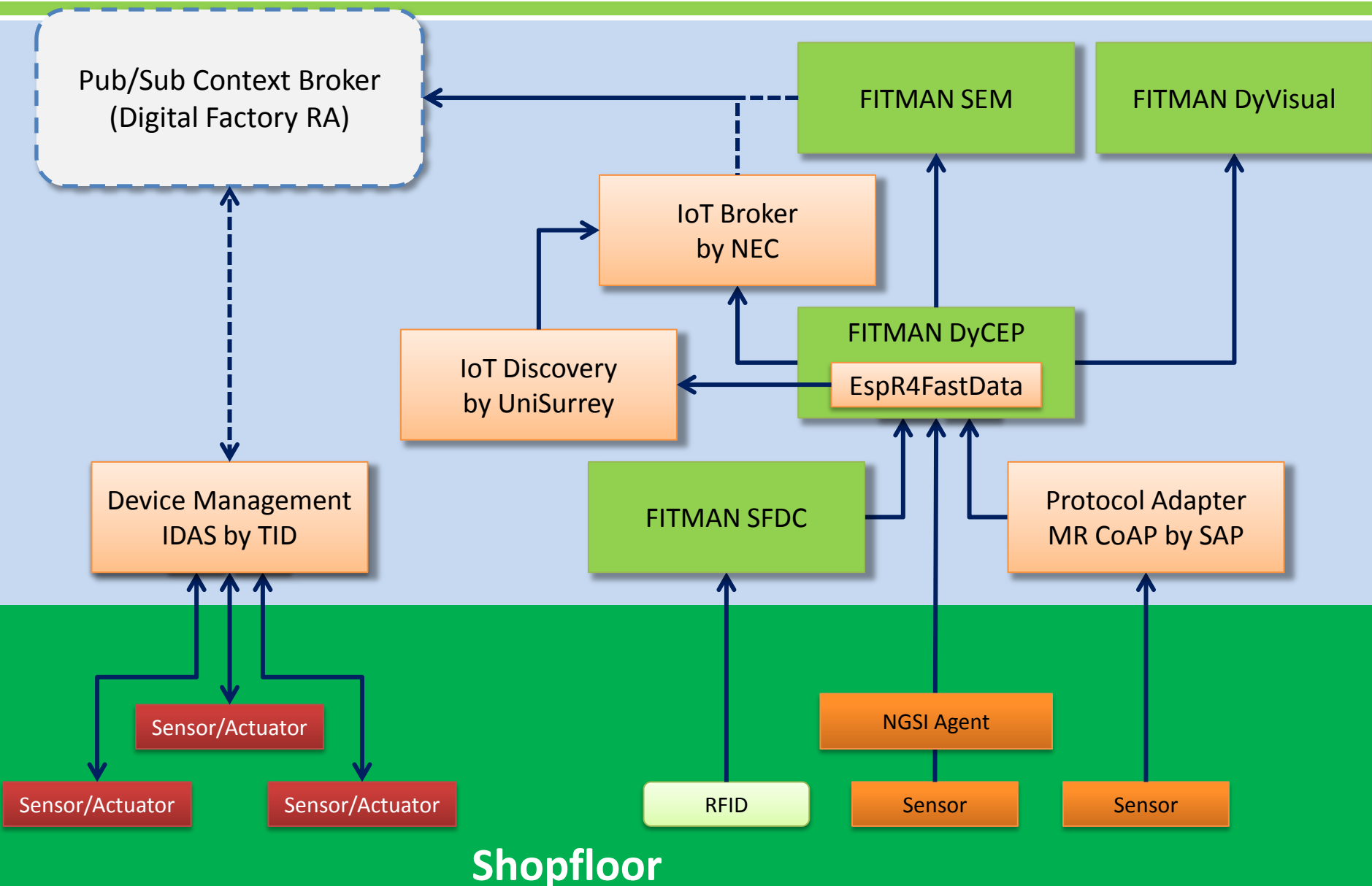**GE3** • Data.UnstructuredDataAnalysis
• *UDA by ATOS*

SE1 • Unstructured & Social Data Analytics
• *Anlzer by NTUA*

SE2 • Semantic Mediator front-end & back-end
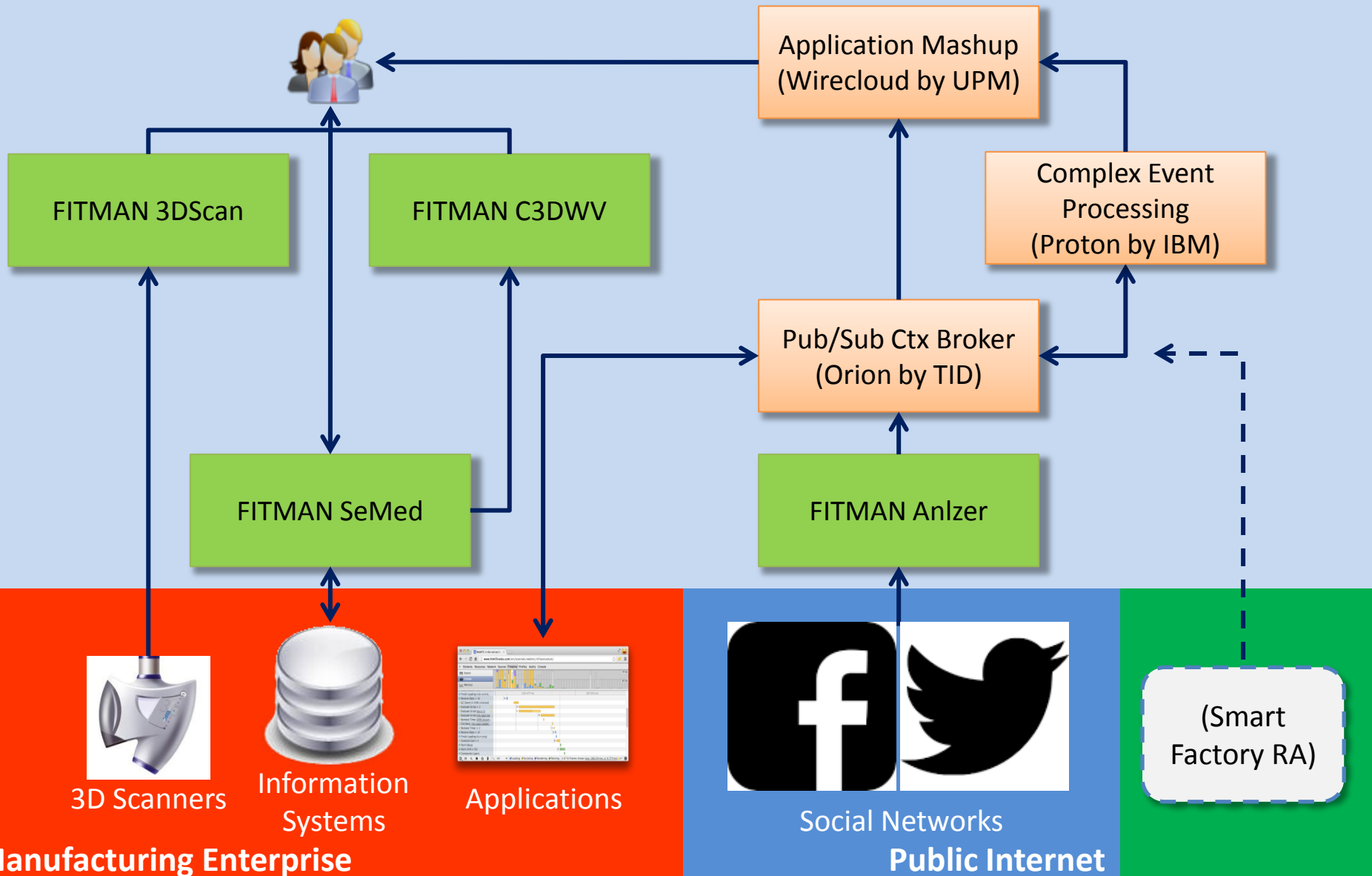• *SEMed by BIBA*

SE3 • 3D Scanning Storage and Visualisation
• *3DScan by DATAPIXEL*
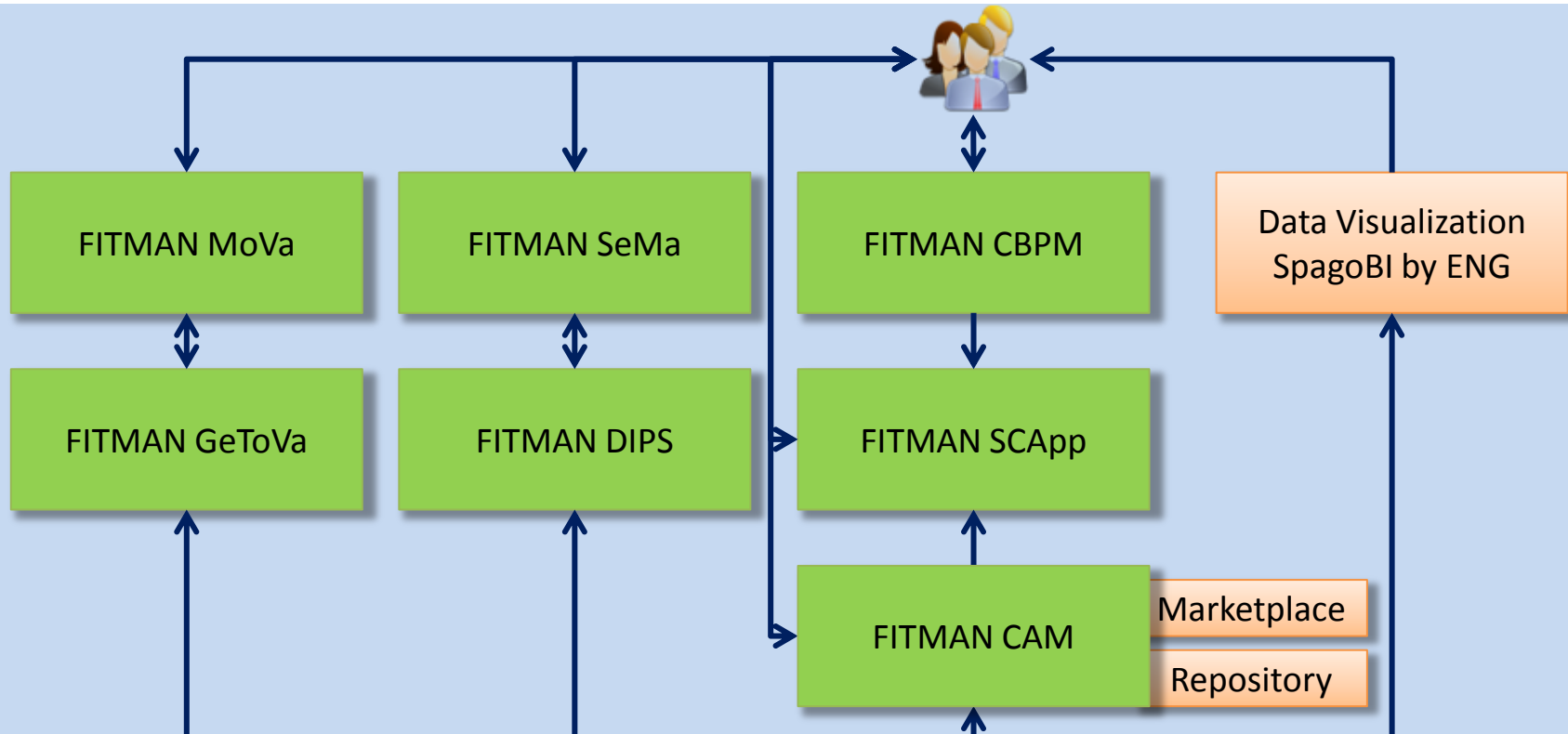
SE4 • Collaborative 3D Web Viewer
• *c3DWV by DFKI*

FITMAN Smart Factory RA

Pub/Sub Context Broker
(Digital Factory RA)

FITMAN SEM

FITMAN DyVisual

IoT Broker
by NEC

IoT Discovery
by UniSurrey

FITMAN DyCEP

EspR4FastData

Device Management
IDAS by TID

FITMAN SFDC

Protocol Adapter
MR CoAP by SAP

Sensor/Actuator

Sensor/Actuator

Sensor/Actuator

NGSI Agent

RFID

Sensor

Sensor

Shopfloor

FITMAN Digital Factory RA

FITMAN Virtual Factory RA

FITMAN MoVa

FITMAN SeMa

FITMAN CBPM

Data Visualization SpagoBI by ENG

FITMAN GeToVa

FITMAN DIPS

FITMAN SCApp

FITMAN CAM

Marketplace

Repository

Enterprise Ecosystem

IoT4MP: the full picture

Ten FITMAN Trials in Six Countries

LARGE ENTERPRISES

D #1 VW (Automotive OEM - DE)

S #2 TRW (Automotive Supplier - ES)

S D #3 AGUSTAW (Aeronautics - IT)

S #4 Whirlpool (White Goods - IT)

SMALL MEDIUM ENTERPRISES

S V #5 Piacenza (Textile - IT)

V #6 APR (Plastic - FR)

D #7 Consulgal (Construction - PT)

V #8 TANet (Resource Mgmt. - UK)

V #9 COMPlus (LED Lighting - DE)

D #10 AIDIMA (Furniture - ES)

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