

# OS@emi

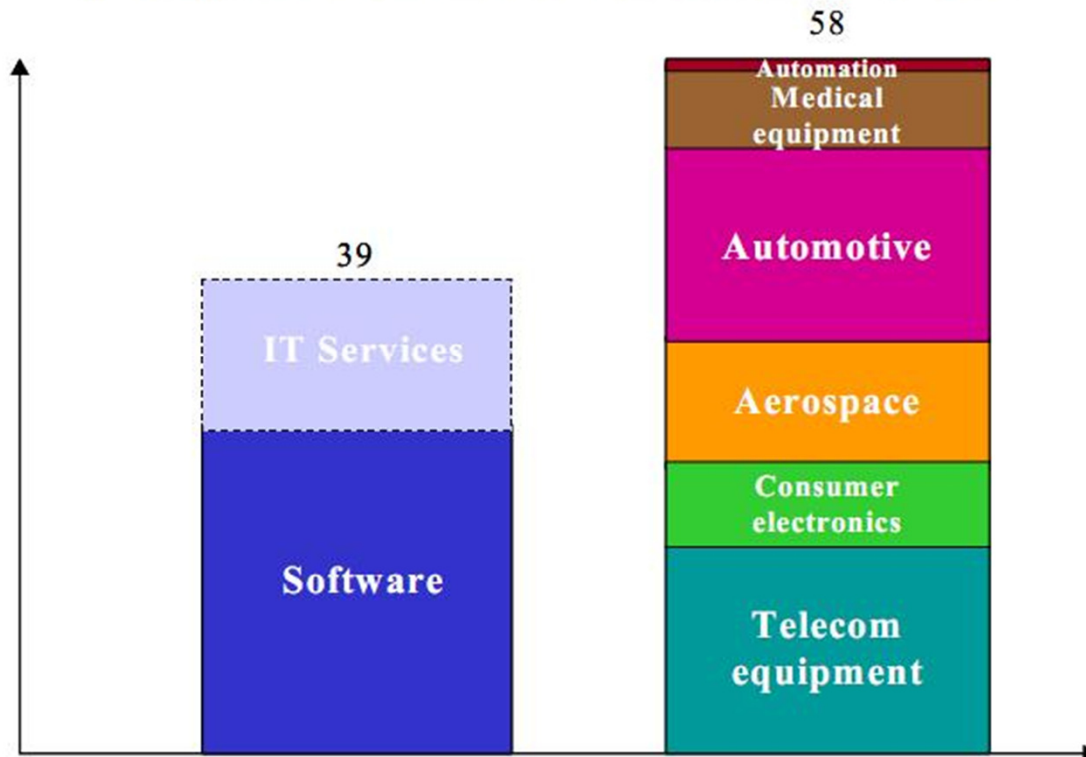
## **OSAmI-Commons**

**Open Source Ambient Intelligence Commons**

# Ambient Intelligence - Industrial Context

## Packaged Software vs. Industrial Sectors

Software development expenses worldwide from IT services, packaged software and the industrial sectors in 2002

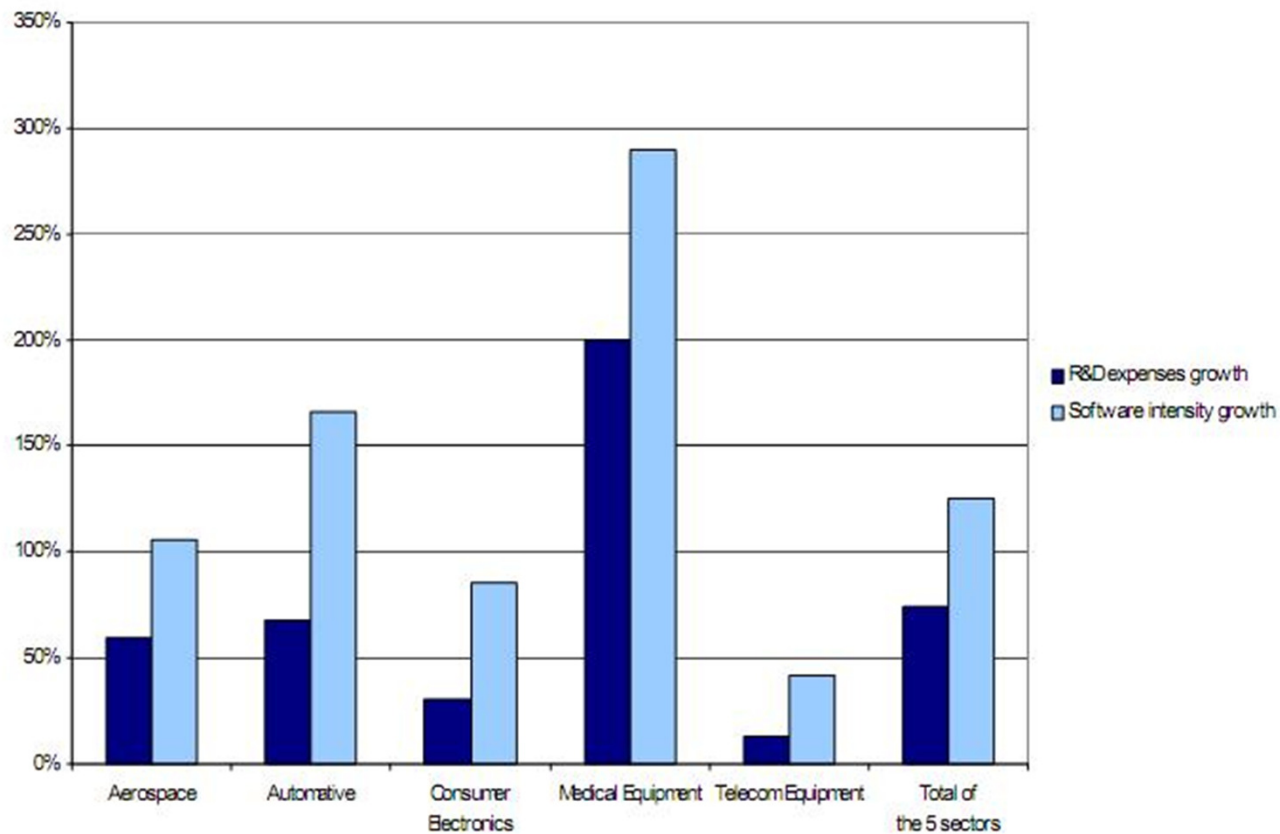


Source: IDATE

# Industrial Context

## Increasing SW Intensity

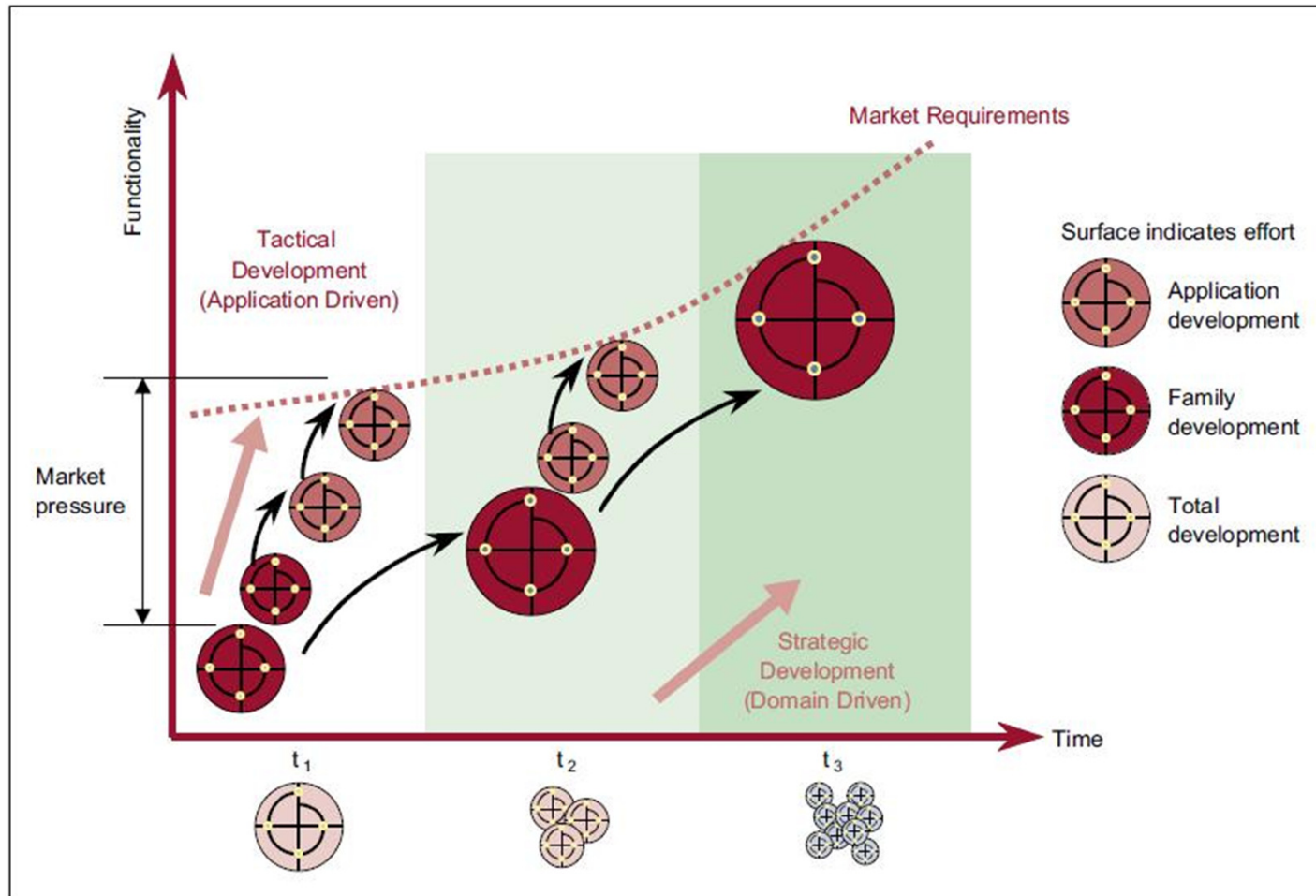
Figure 5 : Compared growth of general R&D and software intensity over the period 2002-2015 for the 5 main sectors



Source : IDATE

# Product Line Engineering

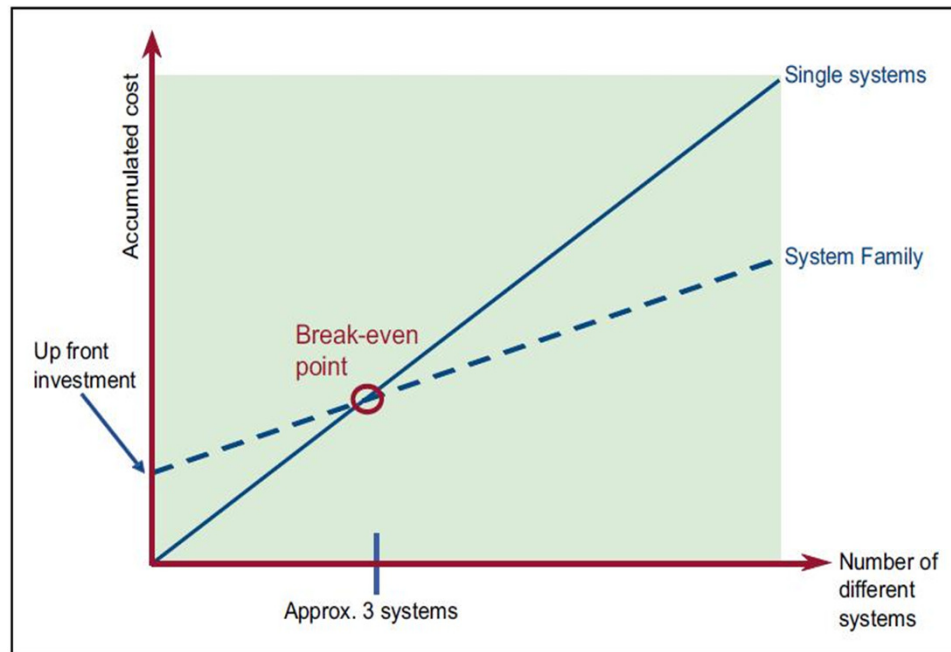
## Reuse across Systems – Maturity Levels



*Increase System-Family Engineering to speed-up development*

# Product Line Engineering

## Productivity Metrics



*Economics*

- Product cost reductions of 60 to 70%
- Improved productivity by a factor of two to six times higher output
- Investment reduction by an average 50%, and up to 90%
- Product lead-time reductions by an average 50%, and up to 95%
- Maintenance cost reduction
- Portfolio complexity reduction
- Training time reduction
- Better product planning and use of roadmaps
- Product defect density 50% or less
- Reuse of test cases from 40 to 60%.

# Increasing Software Complexity

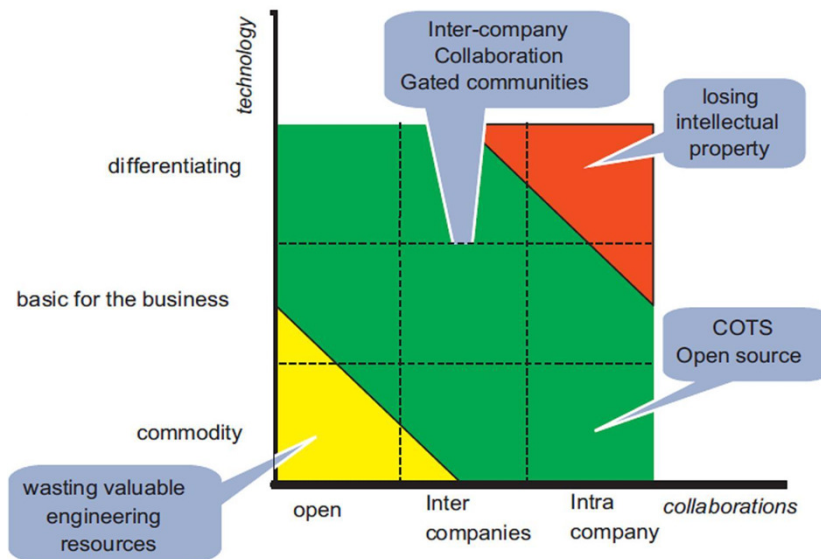
## Evolution in SW Engineering and OS Integration

**Product development** -> Process Centric (e.g. CMMI)

**Product Line** (family of products) -> Architecture Centric (intra-organisation reuse)

(related projects; ESAPS 1999-2001, CAFE 2001-2003, FAMILIES 2003-2005)

**Ambient Intelligence** -> Composition Centric (Inter-organisation reuse)



*Efficient and effective development*

### Business integration approach (example)

**COSI (Co-development with Inner and Open Source in Software Intensive Products, 2005-2008)**

# Increasing Software Complexity

## Evolution in Middleware Technologies

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### Middleware driven projects

**OSMOSE (Open Source Middleware for Open Systems in Europe, 2003-2005)**

OSGi, J2EE → Demonstrators

**OSIRIS (Open Source Infrastructure for Run-time Integration of Services, 2005-2008)**

Distributed OSGi, ESB, Tools → Demonstrators

### Domain(s) driven project (Health, Energy, City Services, Home Services, Education)

**OSAmI-Commons (Open Source Ambient Intelligence Commons, 2008-2011)**

Vertical Domains → Transversal Platform → PaaS

# OSAmI Innovation & Expected Results

## A New R&D Approach

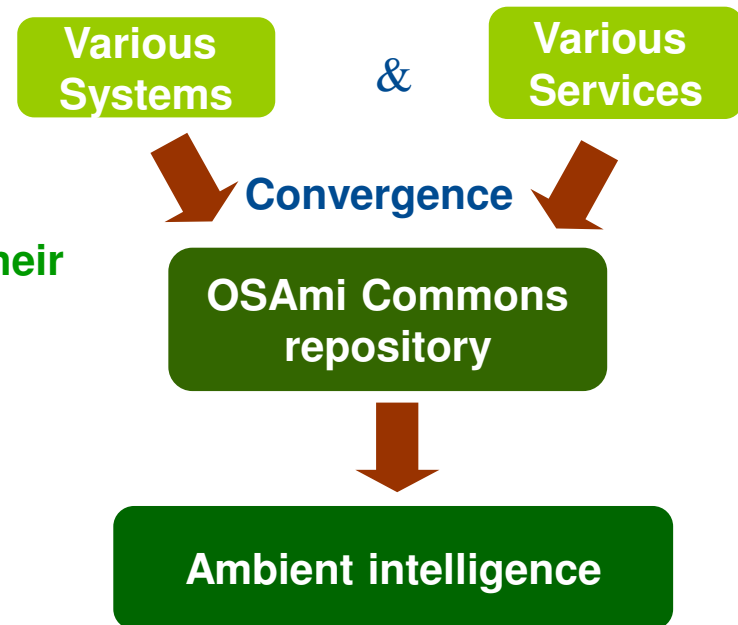
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- **Research & development approach**

From isolated projects towards a transversal R&D platform allowing for cumulative development and fast exploitation

**OSAmI Commons provides foundations for an open-source based platform for devices and their services**

- Business
- Architecture
- Process
- Organisation
- Legal
- Policy Recommendations





# OSAmI-Commons expected results

## Open Source-based Platform Foundations for Devices and their Services

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- **Unique Selling Point**
  - ✓ The creation and provisioning of an open source-based platform and code for further cross-industry adoption by other companies, including SME's.
- **The project**
  - ✓ Targets social needs (energy efficiency, remote health, smart home, mobility, intelligent city)
  - ✓ Is tested in various industry domains
  - ✓ Deploys open technology
- **The platform**
  - ✓ Maximizes software reuse
  - ✓ Enables fast and dynamic development
  - ✓ Provides the European Community with foundations for the right platform and architecture for further industry developments
- **Benefits**
  - ✓ Reducing development costs
  - ✓ Reducing development time
  - ✓ Enhancing the market for SMEs

# OSAmI-Commons Consortium



AAL workshop Brussels 2011

OSAmI-Commons  
7 June 2011

## OSAmI-DE, OSAmI-ES, OSAMI-FI, OSAmI-FR, OSAmI-TR

AICIA  
Bull  
Capricode Oy  
Carlos III University of Madrid  
Cenatic  
CorScience GmbH & Co. KG  
EDF  
Espotel  
Eteration  
European Software Institute /Tecnalia  
Fidetia  
INPG  
MATERNA GmbH  
OFFIS e.V.  
Universidad Politécnica de Madrid (UPM)  
Universidad politécnica de Valencia  
(UPV)

Prodevelop SL  
ProSyst Software GmbH  
Sampas  
Schüchtermann-Schiller'sche Kliniken  
Siemens AG,  
SRDC  
Telefónica  
Telvent  
Thales  
Twinapex  
TU Dortmund  
Université Joseph Fourier  
Universidad de Málaga  
University of Paderborn  
University of Rostock  
Universidad de Vigo  
Vodafone  
VTT



# Platform Demonstrators

## Validation in Multiple Domains

### 1- Ambient Assisted Living

- Medical rehabilitation training at home
- Allowing non-expert users to deal with highly complex device and sensor environments

### 2- Smart Grid

- Open-source building blocks for the management of energy-efficient buildings
- Enabling energy savings through building-wide energy profiles and rules

### 3- Smart Home Services

- Integrate intelligent home devices via the open platform
- Allows consumers to receive messages from and control devices with any connected device (mobile phone, remote control, service gateway etc.)

### 4- City Services

- Map based eCity services (points of interest, routing ...)

### 5- Edutainment

- Follow-me edutainment multimedia services



**OS@emi**

**[www.osami-commons.org](http://www.osami-commons.org)**

**Thank you!**