

OS@emi



OSAmI Commons

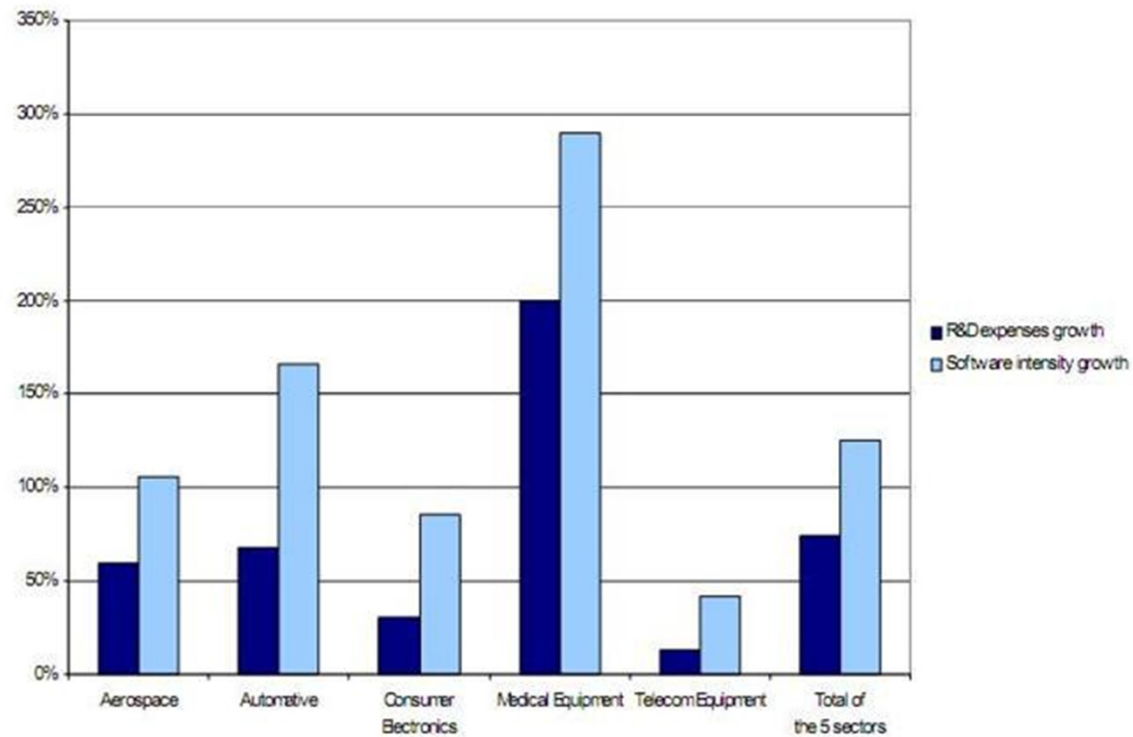
The Ambient Intelligence platform to create and re-use service solutions across industries

Jesus Bermejo
Telvent, OSGi User´s Group Spain Chair
September 20th, 2011

Industrial Context

....increasing SW intensity

Compared growth of general R&D and software intensity over the period 2002-2015



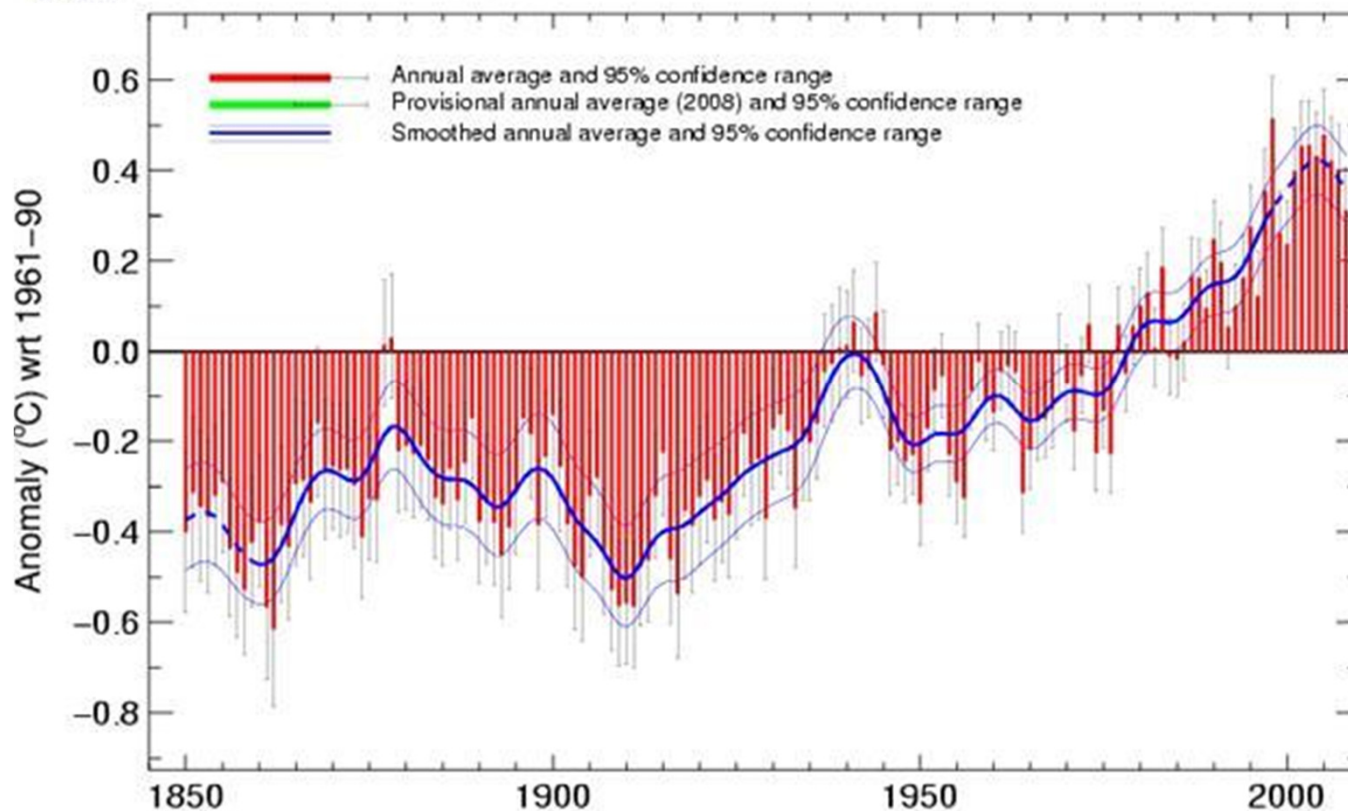
Source : IDATE

Social Challengesglobal warming



Global average temperature 1850–2008

Based on Brohan et al. 2006



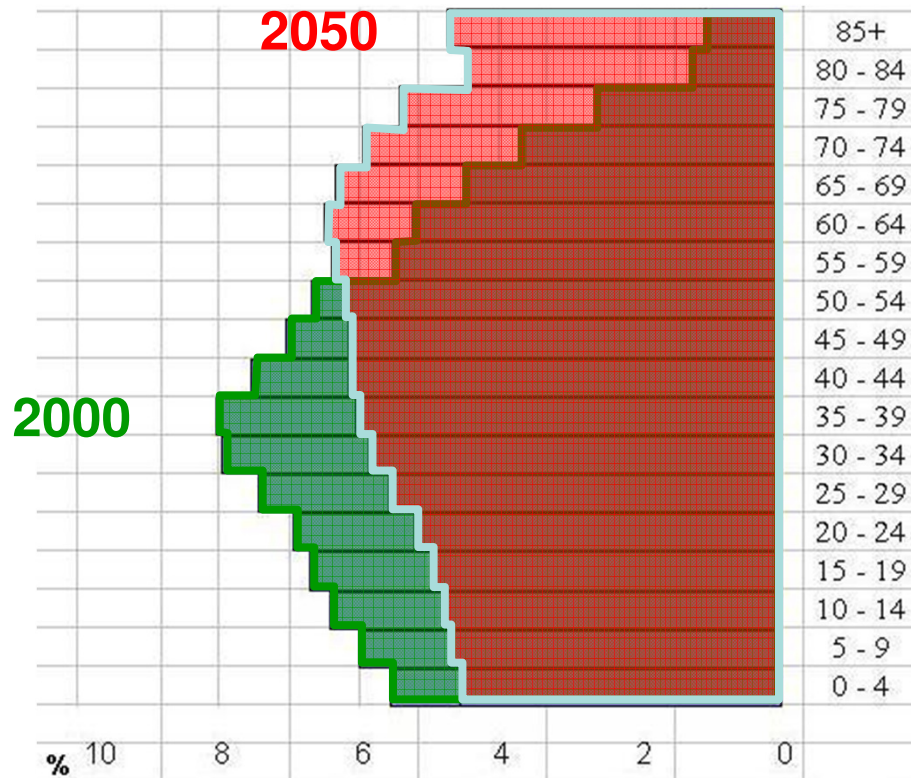
Met Office Hadley Centre

Source: www.metoffice.gov.uk/hadobs

Crown Copyright 2009

Social Challenges

....aging population (EU population by age 2000 -> 2050)



	Total EU Population (millions)	Dependency Ratio (65+ in % 20-64)
2000	450,7	26
2050	452,6	56

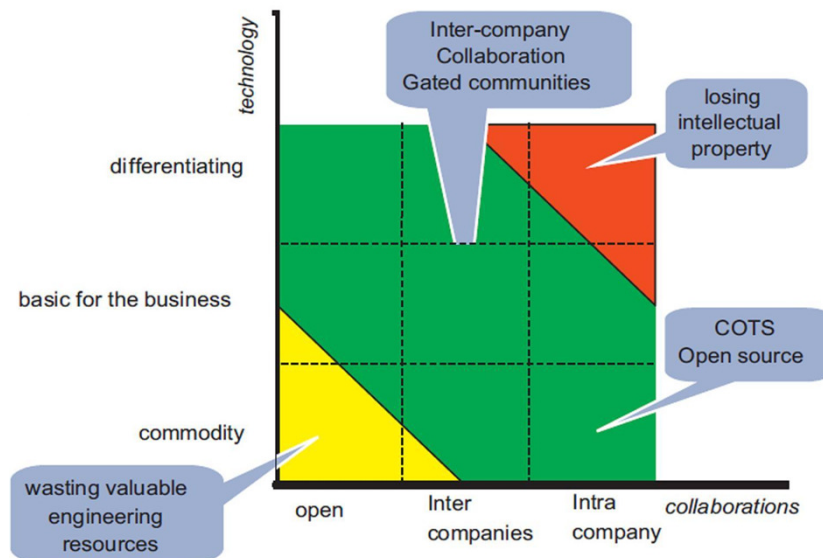
Source: <http://www.oecd.org/dataoecd/52/31/38123085.xls>

Reducing development cost and time ...from process centric to composition centric systems

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

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

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

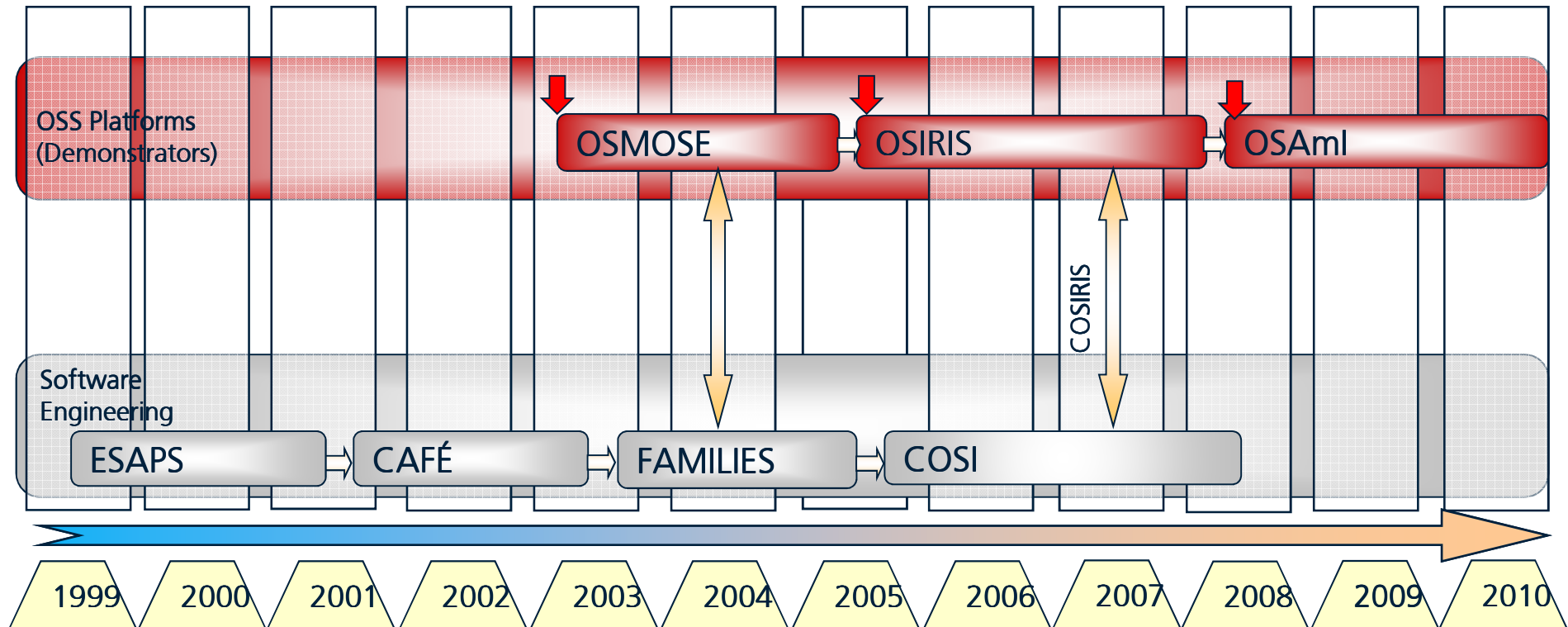


Efficient and effective development

Business integration approach (example)

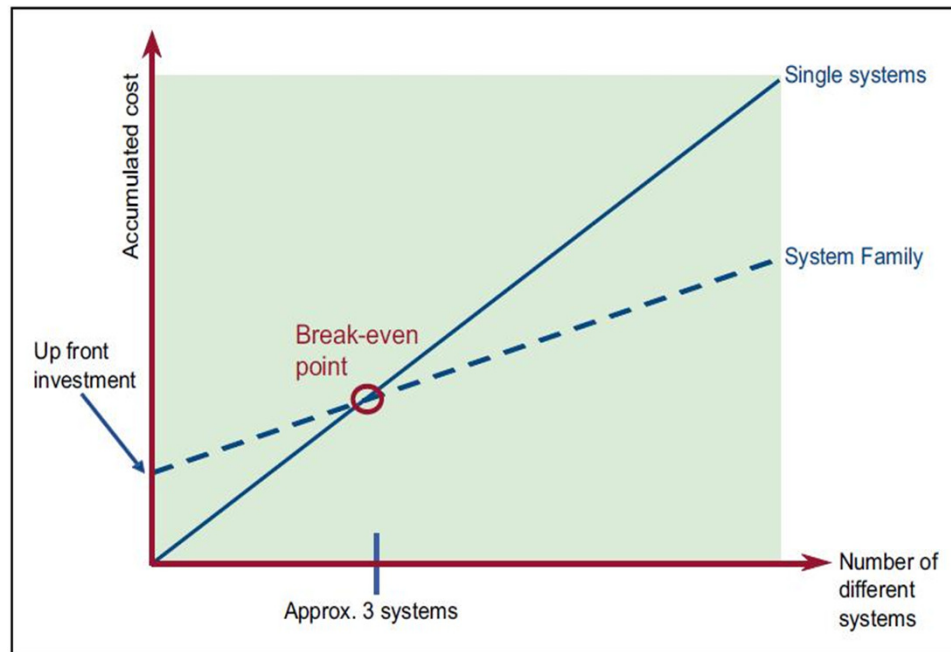
(from ITEA COSI, Co-development with Inner and Open Source in Software Intensive Products, 2005-2008)

Related projects ...software engineering + middleware



Business impact

...real 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%.

What is OSAmI-Commons about?

...towards a global Product Line



- **Unique Selling Point**
 - ✓ The creation and provisioning of an open source-based platform and software modules for further cross-industry adoption.
- **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 – based on OSGi**
 - ✓ Maximizes software reuse
 - ✓ Enables fast and dynamic development
 - ✓ Provides the European Community with the right platform and architecture for further industry developments
- **Benefits**
 - ✓ Reducing development costs
 - ✓ Reducing development time
 - ✓ Enhancing the market for SMEs

General OSAmI project benefits

...available for further use

- **Successful project**
 - Open source SW components and tools available
 - Component-oriented OSAmI platform enables dynamic cooperation and exchange between projects
 - Standardized templates for service descriptions (already in use)
 - Methodology when tooling is appropriate (development and deployment of applications)
 - IP policy ready for other projects
 - Tools support for IP policies
 - Tools tested and further developed in OSS (Eclipse)
 - Business Process Document
 - Open source business models
- **Successfully tested project demonstrators**

Fast Exploitation – First results

Sustainability – Green buildings

- Green Building – INEED 3 (LCIS/Grenoble-INP, Thales, Bull, UJF, EdF)



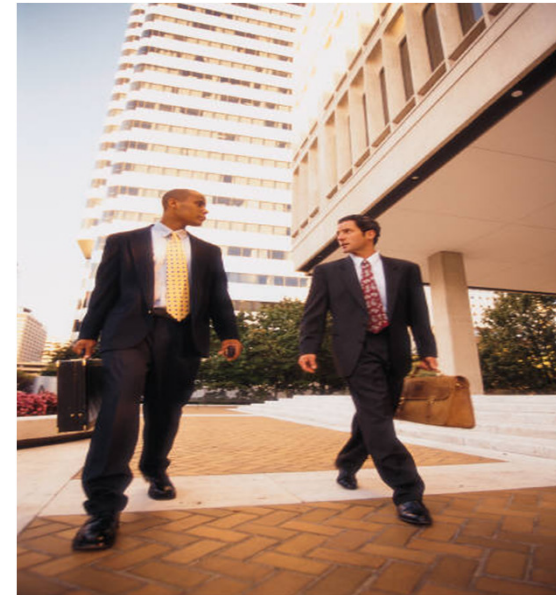
- New bachelor degree program: “Coordination for low energy buildings”
- Define and design conceptual Wismotes/Smart Plugs and OSAmI Components
- Off the shelf products for SME partners
- Provides a reference architecture for green buildings, reducing costs and deployment time

User information via OSAmI reduces up to 10-15% of energy consumption

Fast Exploitation – First results

Smart home and cities domain

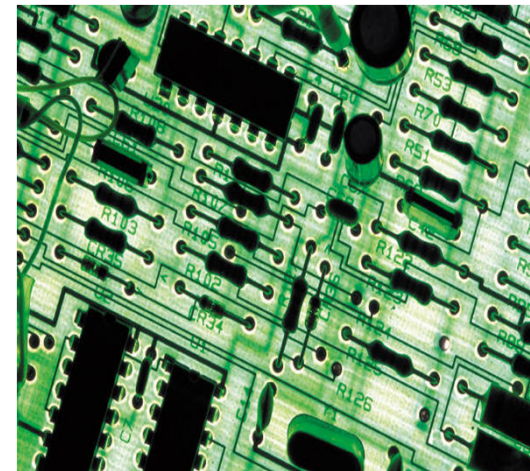
- **Smart Home (VTT)**
 - Planned business solutions for wireless sensor networks and application development based on the OSAmI platform
 - An ambient home UI for Android Marketplace
 - Component-oriented, future proof portfolio for commercial projects
- **National and international Smart City Projects (Sampas)**
 - Additional ambient city service solutions for existing Intelligent City System
 - OSGi based map service components
 - Open Street Map REST based directions and map services integration



Fast Exploitation – First results

Mobile, tools and OSGi based extensions

- **Mobile (Siemens)**
 - Mobile outdoor team training and coaching application
 - Persistent and distributed context management for OSGi and Android solutions
 - Intelligent incident management architecture blueprint
- **Open Source (Eteration, Bull, Universities, Research Institutes)**
 - Tools & Services based on OSAmI results
 - Eclipse Libra Platform for commercialization in the Enterprise Market
 - Consultancy services
- **OSGi-based extensions for embedded and desktop devices (ProSyst)**
 - Further development of Supervisor App for telemedical services as part of the remote management platform mPRM
 - Device Abstraction Layer RFP for OSGi standardization



Achievements Summary



Open Services Ecosystem supports fast exploitation

Over 200 dissemination activities

Standards: OASIS WS-DD; IETF 6LowPAN- Coap; OSGi Alliance

Research projects: UniversAAL; AALOA, SODA & SOCRADES ...

The way ahead ...the cross industry platform

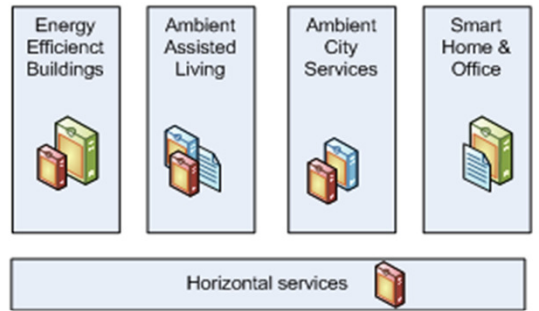


OS@mi
Development tools



Community of Developers

OS@mi services



OS@mi
Repository &
Deployment tools

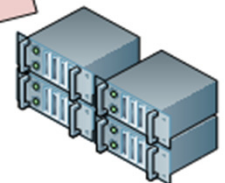
OS@mi applications



Gateway



Smartphone



Server/cloud infrastructure

In Summary – OSAmI targets business impactthrough enhancing innovation in the OSGi ecosystem



Business value

- Reduction of development cost and time-to-market
- Enabler of innovative business solutions
- Enable cross-industry business solutions
- Support for exploitation of academic R&D
- Fast exploitation: first products
- Supports cumulative development allowing for more complex long term solutions

Ongoing collaboration with other research projects and the AALOA initiative

- OSAmI provides IP Policy Support
- OSAmI provides Open Source tools and software components

Effective standardization activities

- OSAmI enabled standardization activities in OASIS-WS-DD, IETF 6LoWPAN – CoAP, and OSGi Alliance

•Strong ongoing dissemination activities

- OSAmI has achieved a strong dissemination of its results with over 200 activities, including papers, presentations, theses, event booths, articles, book contributions and one book

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