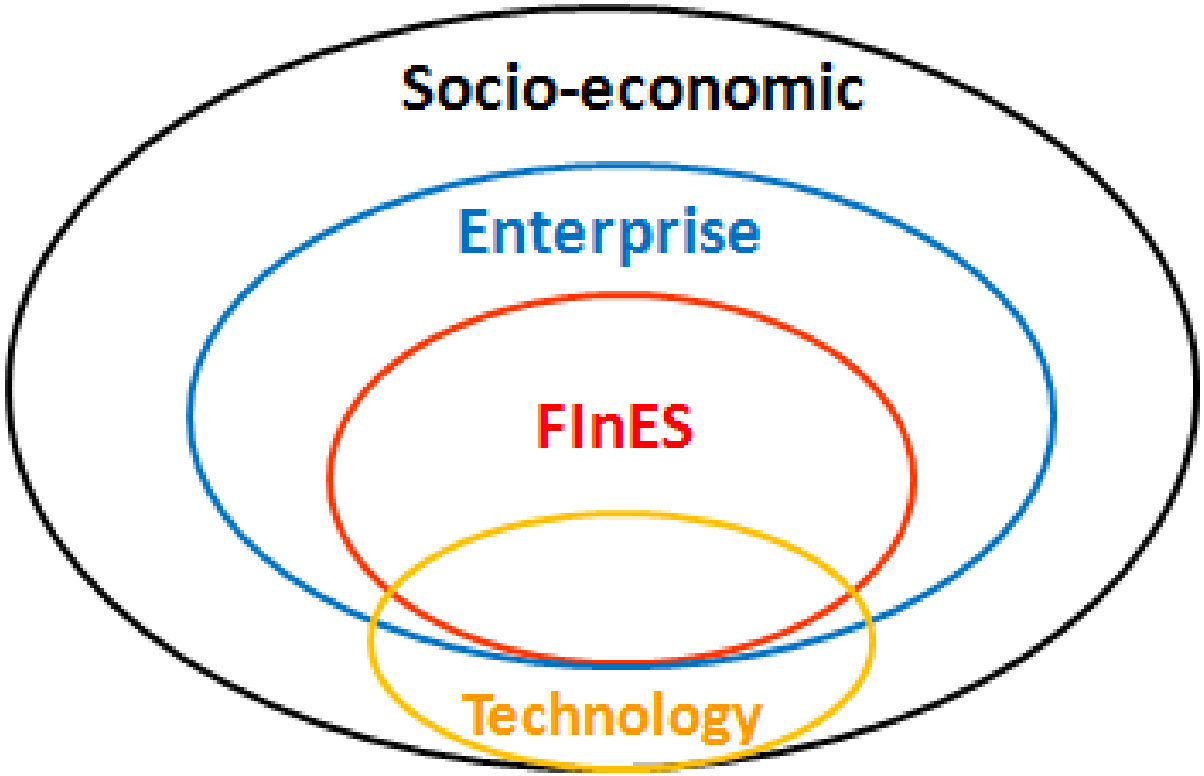
Future Internet Enterprise Systems (FInES) Cluster activities

Man-Sze Li (IC Focus)
FInES Cluster Co-Chair

With acknowledgement to FInES Cluster members

ICT Proposers' Day, Networking Session, Objective ICT-2013.1.3: Digital Enterprise
Warsaw, 27th September 2012, 14:30 – 16:00

Positioning of FInES in ICT Research



FInES project portfolio

FP7 FoF

FP7

FP6

FP5

CIP

FInES project portfolio: research areas

Key Concepts originating from FInES Cluster Publications

	Cluster Publication	Strategic Concepts from the FInES Cluster (formerly Enterprise Interoperability Cluster)
2006	EI Research Roadmap	ISU - Interoperability Service Utility EISB – Enterprise Interoperability Science Base
2008	EI Value Proposition Report	EIVP - Enterprise Interoperability Value Proposition (framework) FInES – Future Internet Enterprise Systems
2009	FInES Position Paper	New Models of Business and Business Value UBS – The Internet as a Universal Business Systems
2010	FInES Research Roadmap	QoB – Quality of Being of (future) enterprises FInER – Future Internet Enterprise Resources
2011	FInES Position Paper on Orientations for FP8	Sensing Enterprise ES 3.0 – Enterprise System 3.0 Digital assets & intangibles
2012	FInES Research Roadmap	[recent publication – see following slides]

FInES Cluster activities per Task Forces

Focused

- Business Values, Business Scenarios and Business Models (re-visited) Task Force
- Collaborative Networks Task Force
- FInES Architectural Design Principles Task Force
- The Internet as a Universal Business System and ISU Re-visited Task Force

Coordination

- Communication Task Force
- FInES Research Exploitation and Impact Creation Task Force
- FInES Scientific Publications Task Force
- Going Global: The International Dimension of FInES Research and International Cooperation Task Force
- Manufacture and Industry Task Force

Horizontal

- FInES Research Roadmap Task Force
- Inter-relation between FInES Research and Standards and Standardisation Task Force
- SMEs in the Future Internet Task Force
- Technology watch and FET Task Force

Inactive

- Contribution of FInES Research to the Digital Agenda Task Force

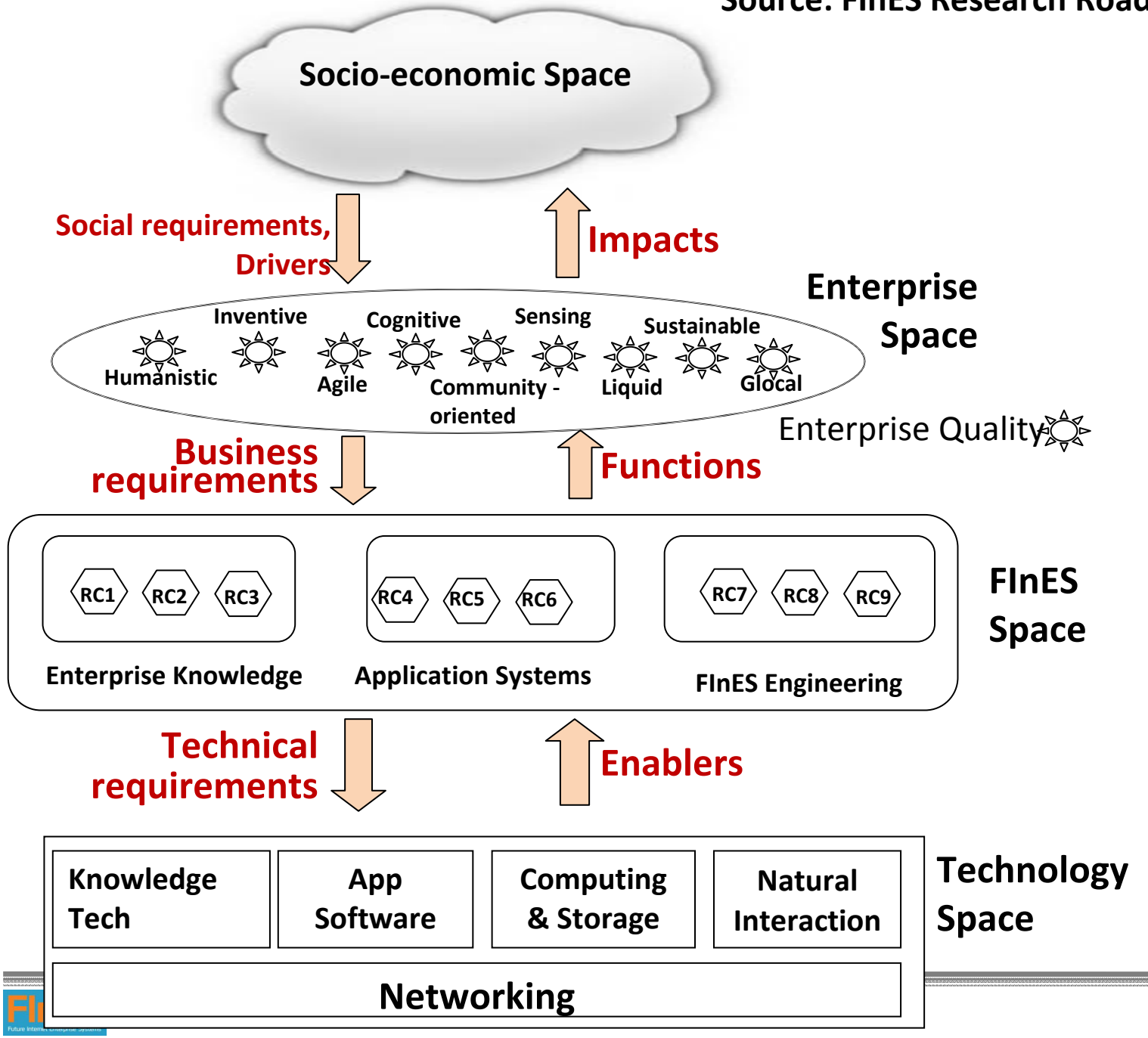
Main topics explored by the FInES Cluster (2011 – 2012)

- Working Groups (since December 2011)
  - Business Modelling and Service Composition
  - Distributed, Adaptive and Interoperable Virtual Enterprises
  - Knowledge Value Generation
  - Future Manufacturing

- FInES Cluster Meeting @ FI Week Aalborg, 9 May 2012
  - Business values, value objects and value constellations
  - The Sensing Enterprise
  - Next-generation enterprise systems – characteristics, properties and architectural design principles

Synoptic View of the 4 FInES Spaces

Source: FInES Research Roadmap, 2012



FInES Spaces

The 3 Dimensions and **9 FInES Research Challenges**

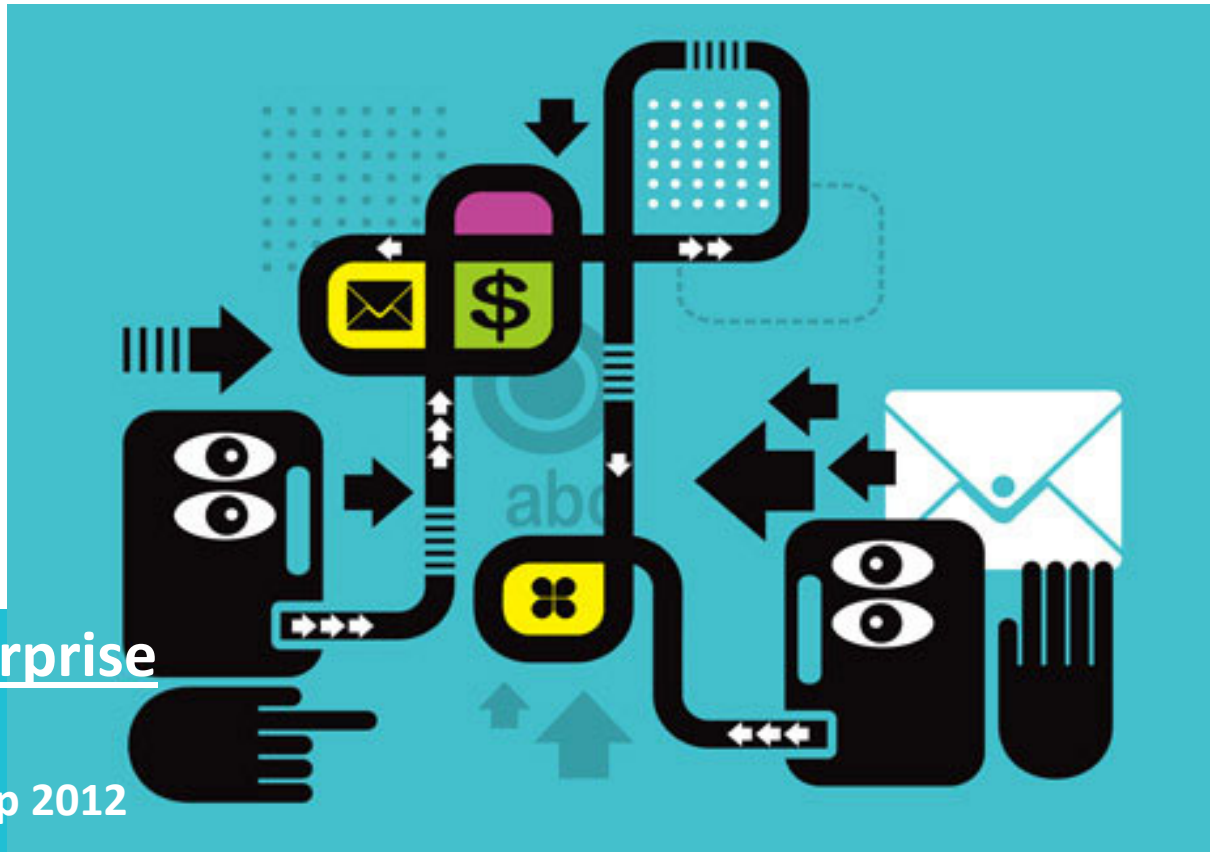
- **Knowledge** Dimensions (... *how we know*)
  - **UDE**: Unified Digital Enterprise, **Open Knowledge, Complex Systems**
- **Functional** Dimension (... *what to build*)
  - **Innovation-oriented** Business Platform (beyond ERP), **UDE** Management System, **Multi-actor** Collaboration Platform (Objects and Humans)
- **Engineering** Dimension (... *how to build*)
  - Proactive Business Mashup (**Business Expert** driven), **Autonomic** Computing Networks (Self-organising **Smart Objects**), **Flexible Federated** Computing Platforms

Source: FInES Research Roadmap, 2012

The FInES "Grand Objectives" as enterprise qualities

"By 2025, the Internet will become a universal business environment on which new values can be created by competing as well as collaborating enterprises through innovation in a level playing field." FInES Position Paper, 2009

- Humanistic
- Inventive
- Agile
- Cognisant
- Community-oriented
- Liquid
- Glocal
- Sustainable
- and the **Sensing Enterprise**



Source: FInES Research Roadmap 2012

The Sensing Enterprise
(a concept originated from the FInES Cluster)

- A complex smart entity capable of sensing and reacting to a wide ranging set of (business) stimuli
- Context: advent of the "Augmented Internet"
- Characteristics:
  - "global" context awareness
  - decentralised intelligence
  - dynamic configurability
  - multi-identity oriented
  - "fusion" between the virtual & the real
  - Self-*, self-re-invention?

Source: FInES Position Paper, 2009

Sensing as a capability of enterprises some elements to consider …

Object	Physical
	Virtual
Device	Any
Information	Multi-media
	Multi-form
	Multi-dimensional
Context	Global
	Situated
	Individuated to objects
	Individualised for people
World	Physical
	Virtual
	Merged
Persistence	Event triggered vs “Permanence”

Source: M-S Li, IoT Conference @ Poznan, Panel on The Rise of the Sensing Enterprise, Proceedings, 26 October 2011

Sensing Enterprise: example application areas

- Data discovery and linking: finding all observations that meet certain criteria and link up to external data sources
- Device discovery and selection: finding all devices that meet certain criteria and make use of best of breed/best of fit
- Combination of the above: provenance and diagnosis
- In response to the above: device operation tasking, programming and (re-) configuration
- Social enterprises and social applications

Source: Proceedings of FInES workshop @ Aalborg in FI Week, Panel on Sensing Enterprise, 15 May 2012

FInES Technology Spaces

The ‘enabling role’ of ICT for FInES

- **Networking**
- **Knowledge**
- **Application**
- **Computation and Storage**
- **Natural interaction**

Source: FInES Research Roadmap, 2012

Next FInES Cluster meeting
12 October 2012, Brussels

Hosted by the European Commission DG CONNECT Unit E3
Avenue de Beaulieu 25, 1160 Brussels

Open Call for Speakers (submission deadline: 1 October 2012)
(1) Digital Enterprise and Business Innovation; (2) Sensing Enterprise

Join Us!

www.fines-cluster.eu