Serge Druais
Innovation Director
Thales Services Division

⇨ **NESSI – Strategic Research Agenda**

NESSI's ambition is to

- develop a visionary unified European strategy
- implement technologies for
  - services architectures
  - software and grid infrastructures
  - trustworthy systems and services
- For industry
- For governments and administrations
- For citizens

NESSI was **launched as a Technology Platform** on the 7th of September 2005

According to NESSI, **R&D investments of 2.5 billion €** are required to **advance** the competitiveness and global reach of the European software and service industries.

The promoters:
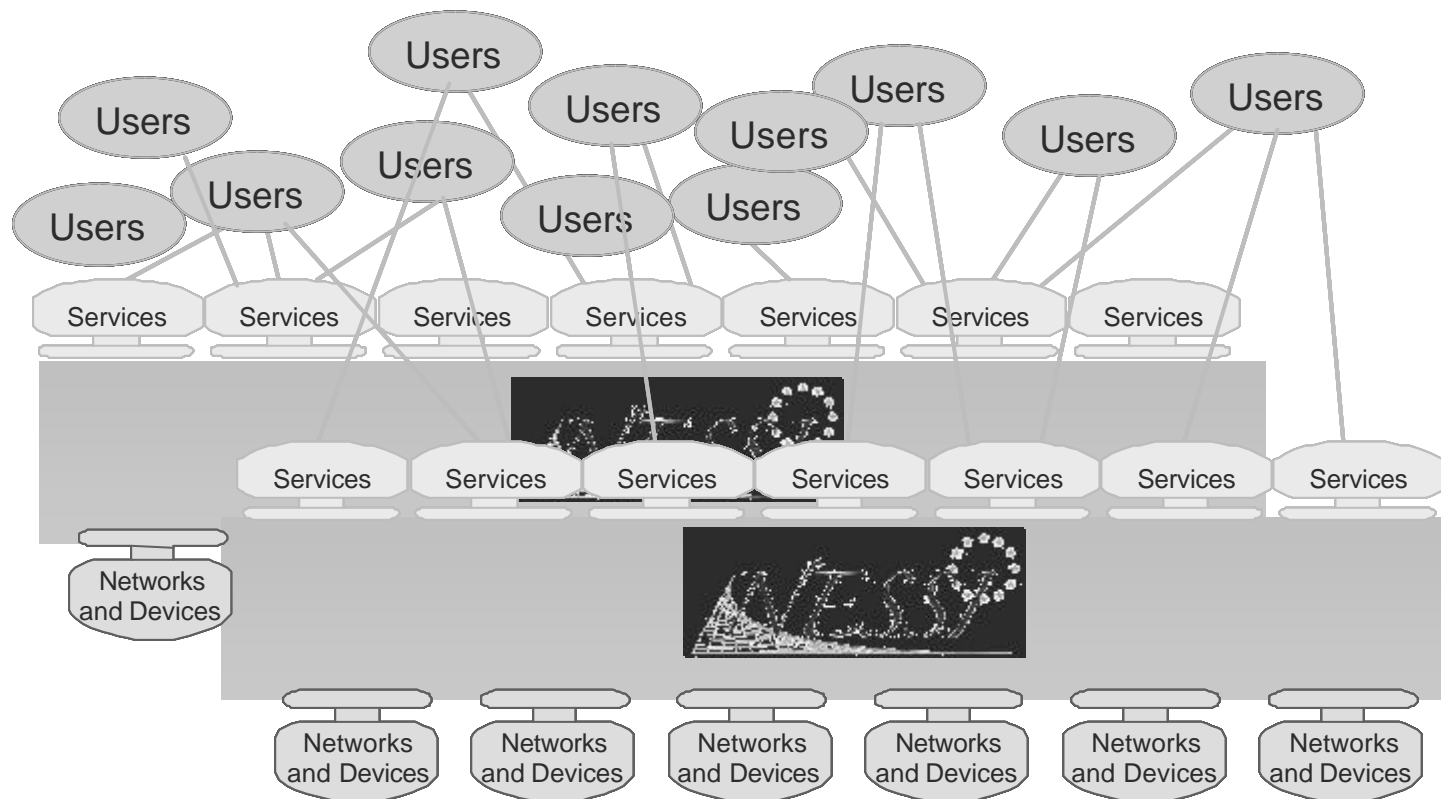
13 key European stakeholders in Software and Services:

Open

to all relevant European companies and academic research centres active in the field

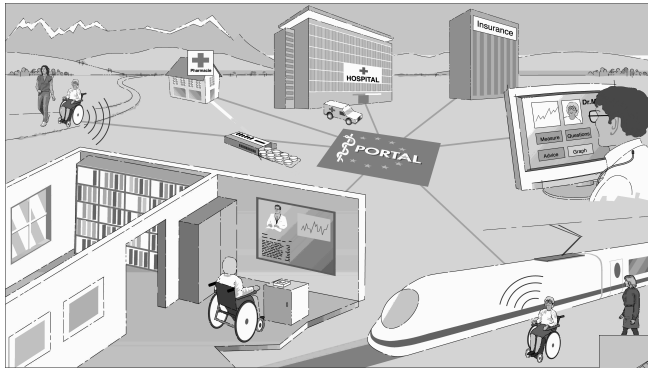NESSI is **strategic** in providing **environments** that will empower citizens and companies across a wide range of applications
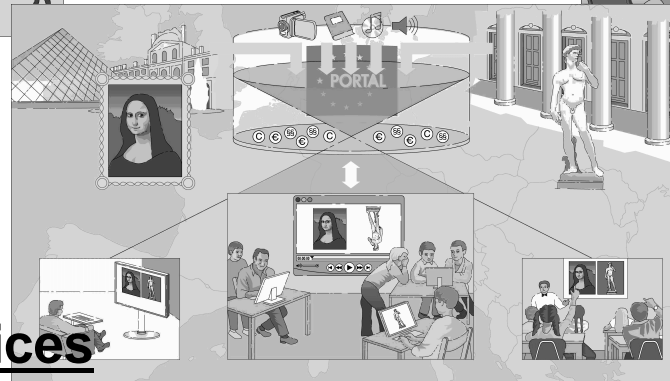
Electronic Health Services

Connected Mobility

E-Library

European public e-services
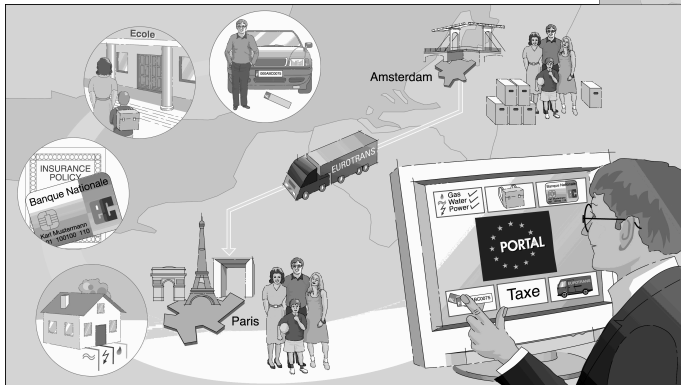
Virtual Enterprise

- NESSI Framework

Semantic Layer	Quality and Reliability	Trust and Security	Interoperability	Management Services
Service Integration Layer				
Infrastructure Layer				
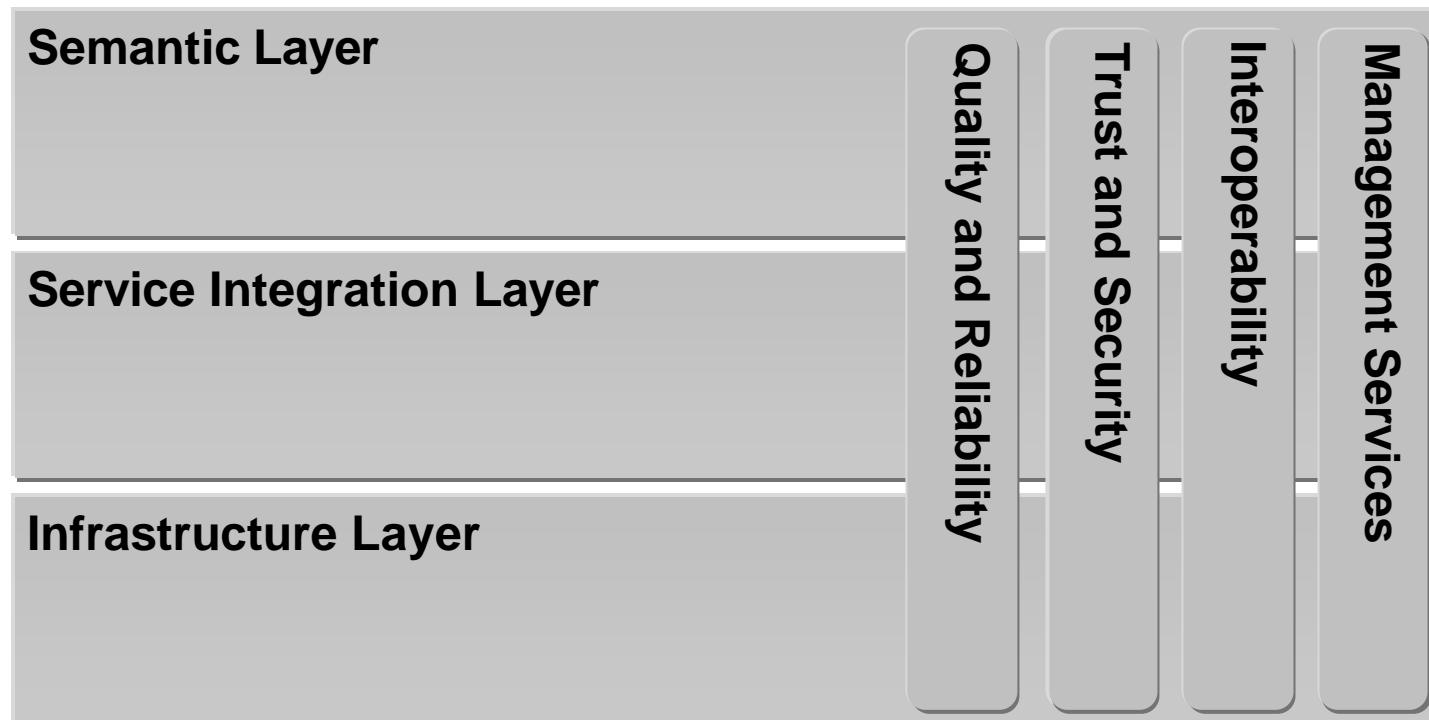
The NESSI initiative aims to provide a **common basis** for European research in **Services and Software** and their provision as a service oriented **utility** in order to establish the technological basis and the strategies that will **speed up services ecosystem dynamics**, by

- providing European industry (notably SMEs) and public sector with technology to master complex software systems for innovation and growth;
- transforming Software and Services Industry in Europe to achieve a leadership position;
- fostering the well-being of citizens through new societal applications, enhanced efficiency of industry and public sector, and competitive labour market;

in this way driving the transformation of the European economy toward a knowledge based economy based on service-oriented business models.

NESSI Holistic View

The World of NESSI

Powered by NESSI

NESSI Adoption

Practices and Usages
Cultural shifts and
training to boost the
adoption of services-
oriented approaches in
constructing businesses.

Architecture &
Engineering
Techniques and
processes to build
working instances of
NESSI service-based
systems and implement
processes in NESSI.

Regulatory Governance
Legal and regulatory
environment for adoption
of service-oriented
business processes;
includes contract law.

NESSI Landscape
Services implementing
the business-logic, plus
implementation of
business processes
and horizontal
applications.

NESSI Framework
Set of technologies to
develop, integrate,
manage, host, and
execute services.
Includes Infrastructure,
Service Integration,
and Semantics.

Principles
Core principles and key
characteristics which
pertain the whole
NESSI Ecosystems.

EU Economy

Trust - Dependability

Business Services

Comprehensive View

Business Domain 1

Business Domain 2

Business Domain n

NESSI Landscape
(Business level Services)

Cross business Collaborations

NESSI Adoption

Practices and Usages

Architecture and Engineering

Regulatory Governance

Core Services

Semantic Layer

Security

Interoperability

Management Services

Service Integration Layer

NESSI Framework

Infrastructure Layer

Open Standards - Open Source - Quality - Connectivity - Federation

The Art of NESSI

NESSI Core

NESSI is about transforming the EU economy through Service Oriented business models

- **Reaching the Vision is THE Challenge:**

  reaching the vision through a balanced construction of **all** the elements of the holistic view, which is far more than completing a single research agenda, however comprehensive.

- **Driving the Paradigm Shift:**

  achieving an effective transformation of the business models of the EU Economy from a product perspective to effective knowledge-based and service-oriented business paradigms.

- **Dealing with Complexity:**

  keeping service-based systems under control and efficient, avoiding to be under-performing or limited by a "wall of complexity".

- **The Tension of Trust:**

  building, along with the whole model, the holistic view of trust, security and dependability, with significant advances over the current level of service while balancing expectations which are often contradictory.

- **Keeping it OPEN:**

  constructing a world offering a level playing field for all actors, and where win-win relationships far outnumber win-loose relationships.

- **Transforming Vision into Reality** and **Building Active Support:**

  making it happen – avoiding to be on the wrong side of "*vision without implementation is hallucination*" (attributed to Thomas Edison).

- ## Short-term:

  bootstrap an active community around NESSI and provide a reference architecture, a series of interoperable reference implementations, and testbeds which are a required foundation for NESSI-related research, development, and experimentation. Import knowledge and technologies in NESSI.

- ## Mid-term:

  complete the portfolio, address the issues associated with the wide-scale, multi-cultural, or service-orientated deployment of existing areas, such as technologies, policies, knowledge,… Apply a multi-disciplinary approach to research.

- ## Long-term:

  go beyond the boundaries set by existing paradigms, establish new fields of science, build and test theories to fuel future NESSI-related research.

- ## Coordination:

  NESSI does not specify the complete set of topics required to reach the holistic vision; it does however work with other communities and initiatives through integrated cross-research frameworks to drive alignment. This includes both an inbound synchronization, such as gathering requirements, and an outbound synchronization, such as enticing others to build on NESSI – "Powered by NESSI".

- **3 "domains" in holistic view**
  - NESSI Framework ("NESSI Core")
  - NESSI Adoption ("The Art of NESSI")
  - NESSI Landscape ("Powered by NESSI")

- **4 "horizons" in research agenda**
  - Short-, Mid-, and Long-term research
  - Coordination

- **6 challenges to meet**
  - Reaching the Vision
  - Driving the Paradigm Shift
  - Dealing with Complexity
  - The Tension of Trust
  - Keeping it OPEN
  - Transforming the Vision into Reality / Building Active Support

- **SRA – Volume 1 – Framing the future of the service oriented economy**
  - 26/01/06 - Draft version – discussed at Forum 26/1/2006
  - 04/2006 - Public comment period
  - 05/2006 – Version 1.0

- **SRA – Volume 2 – Strategy to build NESSI**
  - 05/2006 – Draft version – to be delivered at General Assembly
  - 06/2006 - Public comment period
  - 09/2006 – Version 1.0

- **SRA – Volume 3.x – Roadmaps (phased in short, mid and long term)**
  - 06/2006 - Short term roadmap draft
  - 11/2006 – Short term roadmap version 1.0
  - Mid and long term roadmaps to be defined