Why an Infrastructure
For Lifelong Competence Development?
Things we have agreed upon in Europe ...

- Knowledge Society: knowledge and innovation
- Lifelong Learning is a necessity
- Learning must be directed at the attainment of interoperable, accredited competences
- Learning must be adapted to individual and local characteristics (preferences, needs, language, etc.)
- Use of ICT/the Internet is of crucial importance
However

- **Current Pedagogical & Organisational Models for learning** do not meet the demands and possibilities of lifelong competence development and the new learning technologies that are available.
- For individuals, groups, and organisations, it is hard to get an overview of all the possible formal and informal learning opportunities that are available, and to identify the most appropriate ones.
- For an organisation, it is hard to assess the competencies of applicants, employees, and learners who have studied and worked in a variety of settings or multiple countries.
- The availability of support is crucial for effective task performance. Current e-learning environments provide too little effective and efficient support to the users.
- Worlds of knowledge management, education, training, and informal learning are not integrated well enough: many fragmented methods & tools.
TENCompetence Project

• Development of an European Infrastructure for lifelong competence development
• Develops and integrates new models for lifelong competence development
• Infrastructure is based on integrated open source components, integrated into a SOA
• To be used by any individual, school, team or organisation to develop competences
• We don't start from scratch, but build on existing methods, open standards & open source tools
Some TENCompetence data

- EU IST–Technology Enhanced Learning
  Integrated Project
- 4 years: December 2005 – December 2009
- Budget 13.8 million euro + additional for pilots
- Pilots: digital cinema, health care workers, water management Nile region, Antwerp
- Building a growing network of associated partners:
  - bring in use cases
  - early access to software and documentation
  - organise additional pilots
  - develop business
Partners

• Open Universiteit Nederland (co-ordinator)
• ALTRAN (Software de Base, S.A. Madrid)
• LogicaCMG
• Universitat Pompeu Fabra Barcelona
• GIUNTI Interactive Labs
• Centre for Research and Technology - Hellas
• L3S (Universität Hannover)
• INSEAD (Institut Europeen d'Administration Des Affaires)
• The University of Bolton, representing The JISC
• Universiteit van Amsterdam
• Sofia University "St. Kliment Ohridski"
• SURF
• Synergetics
Basic Ideas Behind the Project:

- Competence
- Competence Development
- Infrastructure for Competence Development
Key role for 'competences' 

- The concept of competence can bridge the world of education, training, knowledge management, human resource management & informal learning 
- Many definitions, problem for system development 
- Difference: 
  - Competence: Effective performance in a domain at different levels of proficiency 
  - Competency: Skill (synonym) 
- Initial definition of 'competence' and 'competence development' in the project (next slides...)

TEN Competence 
Building The European Network for Lifelong Competence Development
Where are the Competences?
Cheetham & Chivers (2005)
Further elaboration of the Infrastructure for Competence Development...
Requirements for the infrastructure

• Based on **new pedagogical & organisational models**
• Supports users to **find** adequate learning resources to develop their competence
• Support to facilitate the **pro-active sharing** of resources
• Support for competence **assessment**
• Support agents to **help users**
• Includes principles and policies of **self-organisation**
• **Integrate** isolated open source tools
Integration of 4 'worlds'

- networks & communities for lifelong learning
- formal & informal programmes for competence development
- learning activities & units of learning
- knowledge resource sharing & management

Integrated TENCompetence Infrastructure for Lifelong Competence Development
meet requirements
How will it work?

• One learning network per occupation/domain of expertise
• A competence framework for each learning network that specifies effective performance in the field for different proficiency levels
• Formal or Informal Competence Development Programmes (including dynamically created learning routes) that are aimed at the attainment of proficiency for one or more competences in the competence framework
• Learning activities or units of learning that are available/shared in the network and are the building blocks of the programmes
• Knowledge resources that are available/shared in the network and are used in the learning activities and units of learning
How will it work? <continued>

• Members of the learning network:
  - People in the profession (from very beginners to experts)
  - Suppliers of formal and informal programmes/courses
  - Suppliers of materials, tools, etc. needed in the profession
  - Employers and professional associations

• Functions to be performed by the members:
  - find & perform knowledge/learning activities/programmes
  - share & discuss knowledge/learning activities/programmes
  - support trainees in the profession
  - provide feedback on quality of programmes/courses
  - provide feedback on quality of tools from suppliers
  - define professional competences at different proficiency levels

• Facilitated by: Social Exchange Mechanisms; Support Agents
Technologies

• Add & edit new knowledge/activities/programmes
• Search suitable knowledge/activities/programmes
• Exchange personal data
• Policy mechanisms to support social exchange
• Support agents for users in all their functions
• Use of open standards and service based architectures
Service Oriented Architecture

**Technology layer**
- .Net
- Linux
- DBMS
- MS Windows

**Application layer**
- Reload
- CopperCore
- RSS
- ASK_LDT
- DSS for learning and organisations
- Navigation tool
- Qed
- Agent stimulating self org.

**Service layer**
- KRS&M
- LA&UoL
- CDP
- NofLCD

**Integrative layer**
- presentation layer
- business process integration

**Common services**
- CopperCore
- DSS for learning and organisations
- Navigation tool
- Agent stimulating self org.
To Summarize. What we will get is:

• New innovative **methods** to support lifelong competence development

• An integrated set of **open source software** to create, store, use and exchange:
  - knowledge resources,
  - learning activities, units of learning and
  - competence development programmes within learning networks for a profession/domain

• **Web services** that can be accessed and used by every person, team and organisation in Europe to develop their competences

• New possibilities to **provide commercial and non-commercial services** using this infrastructure
Associated Partners

• Want to input use cases?
• Want to test early versions of the systems?
• Want to set-up pilots in collaboration with project?
• Want to deliver commercial or non-commercial services using the TENCompetence infra?
• You are working on a related project and want to establish a formal link with TENCompetence
• => please contact us (next page)
References

• www.tencompetence.org (project)
• email: ten.competence@ou.nl rob.koper@ou.nl
• Download these slides at:
  http://hdl.handle.net/1820/504

Thanks!
Relationship Between the 4 Worlds

1. Knowledge Resource Sharing & Management
Relationship Between the 4 Worlds

2. Learning Activities & Units of Learning
3. Competence Development Programmes