Growth and jobs in service-based knowledge economy; How can Living Labs speed up innovation

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European Commission, New Working Environments

DG Information Society and Media

Key factors for growth

- *Economical growth through innovation*
  - *Creativity of knowledge work*
  - *Productivity of knowledge work*
  - *Creating innovation environments*
- *Better quality jobs in teams and groups*
- *Work and life balance*
- *Mobility of work, not workers*
- *Boosting dervice economy; 70% of GDP*
- *Increasing innovation, now 25% succesful (at maximum!)*

The response needed

- Innovation
  - Technology driven research meeting demand-driven multidisciplinary research in real world settings: Living Labs as melting point
- Creativity
  - Supporting multidisciplinary, connected environments for knowledge intense work
- Inclusion
  - Creating possibilities for work communities and atypical work relations to capture the full participation of all Europeans
- Covering both « old » and « new » sectors by systemic innovation

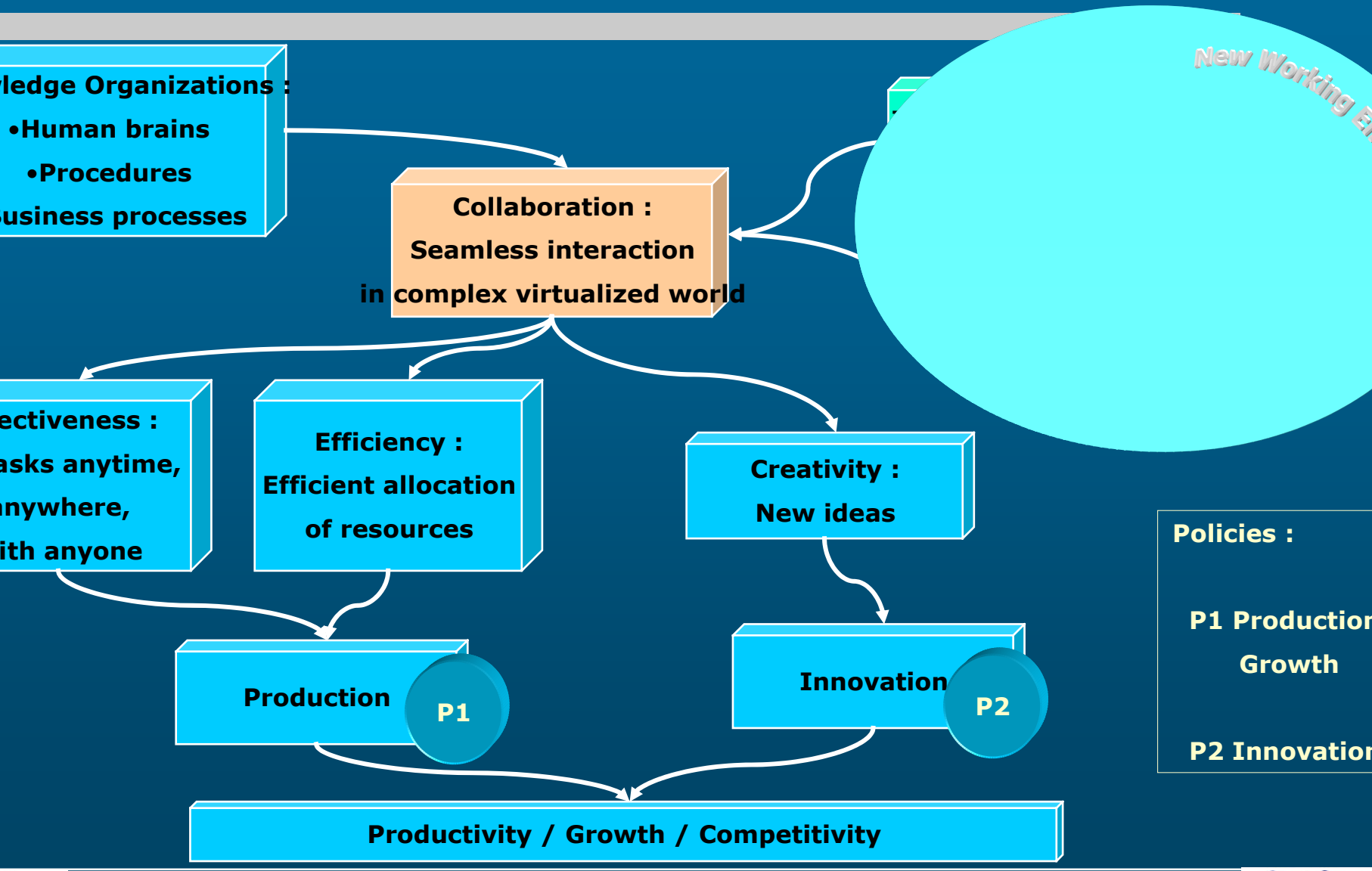
Example, from physical mobility to work mobility

- user-friendly ICT collaboration tools combined with remote management techniques offer new prospects for borderless co-operation between corporations and high skilled knowledge workers, at global level following 24/7 work paradigm
- ICT is provides the needed interoperability and connectivity to enable work to move around the global economy in extensive network and complex supply constellations
- companies needs to move work in these shifting global value constellations and collaborative networks in order to derive the greatest competitive benefits and advantages, also to benefit from creative commons

Example, the future enterprise: HOW is value created

- significant investment in human capital, intangible capabilities and greater adaptability of the workforce
- personalised products and services, custom-designed and built within a flexible production environment, delivered in collaborative competence and multi skilled ad hoc global supply chain and service networks
- life long learning and education to meet all economic expectations for productivity and growth, keeping people creative and motivated
- companies has to move forward with agility and speed. ICT provides the vehicle for mobility of work and organisational change for developing timely and competitive business

ICT for collaboration fostering competitiveness
Policy directions



Role of Living Labs: drivers for new innovation

- In knowledge economy multidisciplinarity more important
- Systems products, scalability
- Building new value propositions, business models
- Moving to value creation by collaboration
- Societal innovation with technology innovation
- Practical examples needed for action plans - > commitment of the players to the process, commitment to priorities
- European-wide distributed living labs
- Scalability and connectivity

- **> Creative COMMONS to build added value on**

what is a Living Lab ?

Citizens and users

Application Environments

Technology and Infrastructure

Organisation and methods

Living Lab Expertise

Living Lab

Living Labs examples 1

- *CDT Testbed Botnia (Luleå, Sweden)*
  - several thousand end-users.
  - researchers and companies conduct experiments on services and applications in a variety of social contexts.
  - city centres as well as the more rural settings of northern Sweden.
  - http://www.testplatsbotnia.com

- *Living Lab Västervik (Västervik, Sweden)*
  - development process that started in Västervik's municipality and Kalmar County to create a modern society structure.
  - digital society platform will establish a foundation for completely new conditions to develop organisations, stimulate new business and increase the service for citizens and tourists in the entire municipality.
  - http://www.livinglabs.se

Living Lab examples 2

- *Crossroads (Copenhagen, Denmark)*
  - network of research institutions, private enterprises and public organizations.
  - co-operation between companies and universities within culture, media and communication technology.
  - http://www.crossroadscopenhagen.com/index

- *Mobile City Bremen (Bremen, Germany)*
  - existing infrastructure was enhanced to create a test market for mobile applications. The acceptance and functioning of new products, services and solutions are investigated under real conditions.
  - Bonsai Test Market analyzes the effects of corresponding advertising and marketing measures focused on the Bremen test region.
    http://www.mobilecity.org

Living Labs examples 3

- *Helsinki Virtual Village (Arabianranta, Helsinki, Finland)*
  - An entire suburb of Helsinki is translated into an example of the future living environment. By integrating architecture, city planning with modern ICT solutions and services a unique environment has been created.
  - http://www.helsinkivirtualvillage.fi/

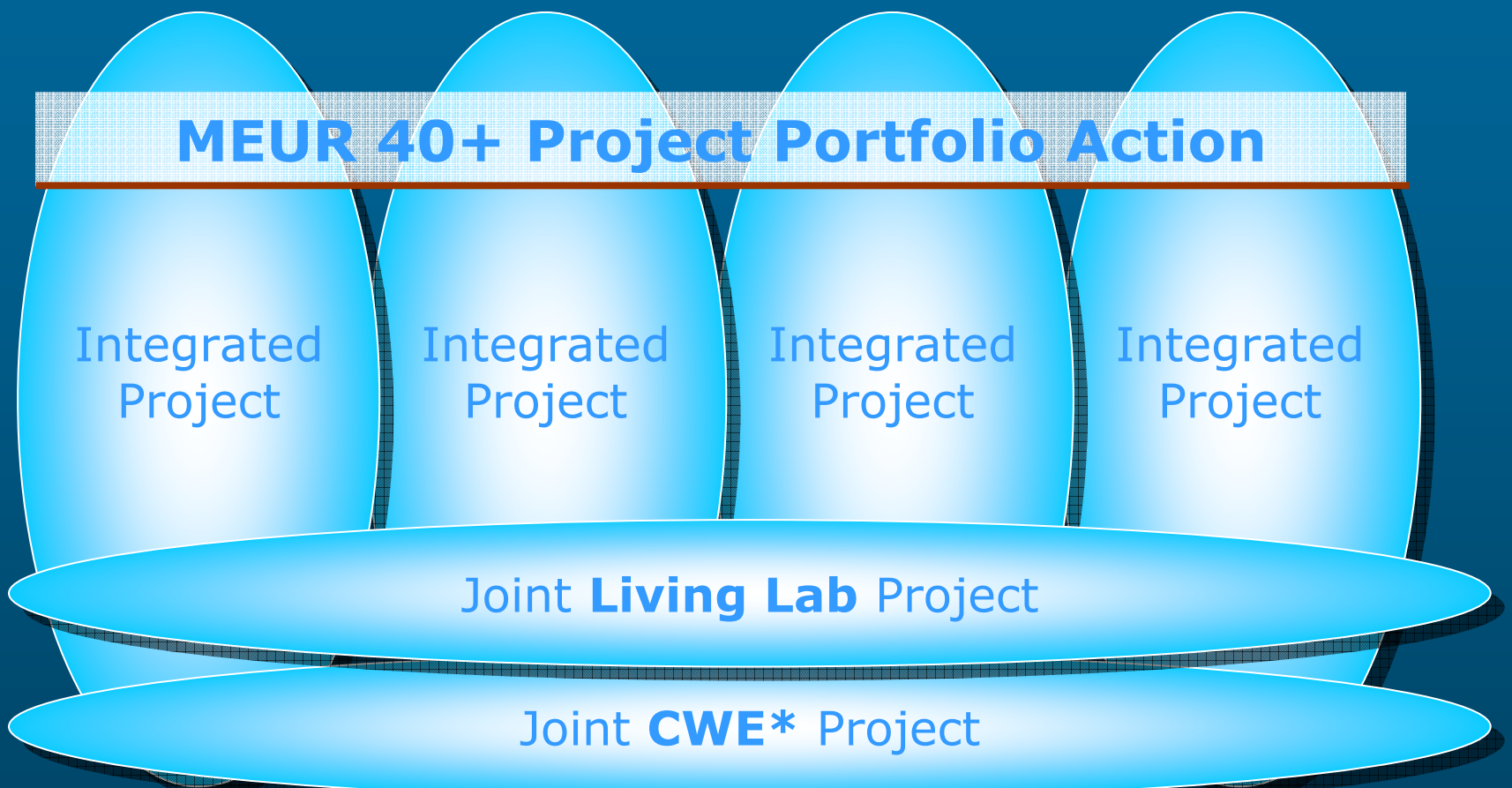
- *The Communications and Software Services Test (CASST) Centre (Waterford, Ireland)*
  - The centre is a mobile communications test facility which provides test bed for rapid development with co-operation with industry and research organisations.

Living Labs examples 4

- *22@ (Barcelona, Spain)*
  - The 22@bcn, S.A. is a private municipal company, a Barcelona City Council corporation responsible for the management of municipal services and activities.
  - http://www.bcn.es/22@bcn/

- In addition to these sites mentioned there is a set of large Integrated Projects funded by the European Commission, which target on specific sectors as validating environments. These sectors are engineering and design, creativity tools, rural Living Labs, service creation etc.

Power to initiate



* CWE – Collaborative Working Environment

Issues for Living Labs and Living Lab Networks

- IPR: How to combine open innovation and open infrastructures (creative commons) to possibly very closed industrial projects developed in these environments
- How to have spill-over effects tot he creative commons
- How to motivate, give incentive to the „real world participation“
- Identifying the public-private-civic partnership and the roles of all stakeholders
- Using precommercial public procurement for infrastructure funding, and also for implementing the systems developed in Living Labs
- Research needed to understand open innovation
- Companies need to explore their strategies on how to capture the whole potential of Living Labs vs the traditional (closed) testbeds
- Openness is a critical issue

Living Labs and FP7

- Strong priority of the Finnish presidency, followed by German, Portuguese and Slovenian presidencies
- IST natural home, from the service and middleware perspectives
- Theme 8 on socio-economic now open for consultation, possibility for joint calls within the theme
- CIP pushing the Living Labs concept
- Living Labs in the infrastructures part (RI programme)
- Launch event of the first wave of the Network of Living Labs in Helsinki on 20.-21.11.2006 by the Finnish Presidency
- Launch of the open community for innovation in Living Labs as well

Seamless connectivity as prerequisite for spontaneous collaboration and innovation

- Mobile and fixed communication technology, both providing near range communication across the work environment, and connectivity of that personalised work environment to distance, either mobile/wireless or providing a media-rich connection
- For many applications where no single high quality connection is available multichannnel communication is needed
- Technical roaming across networks is provided by the SOA, but for this domain more important is content and context roaming.
- Identity management/access rights in distributed real-time systems
- Distributed resource management (communication and hw resources)
- Location based context sensitivity
- Portability in addition to interoperability on technical and functional levels
- Underlying infrastructures: IPv6, SOA, XML, SOAP, Grid, P2P, sensor web, all towards utility infrastructure

Collectiveness and group working environments supporting cross-fertilization in innovation

- Semantic based Knowledge Management/ Extended Agents for heterogeneous information infrastructures
- Distributed interactive simulation and visualisation
- P2P communication in group context
- Real-time and even faster than real time simulation for decision support
- Systems capturing organisational knowledge and learning (managing incomplete and asynchronous information from heterogeneous sources, using web services)
- Cognitive systems between humans and mechatronics artefacts (like office environment devices, service and industrial robotics etc)
- Group presence techniques
- Media-rich communication to enhance trust building process
- Group identity management, dynamic resource sharing across groups (content, IPR etc)

Usability and affordability to enable all to participate

- Visualisation through interactive intelligent multimedia surfaces, multimedia walls, tables other artefacts
- Context sensing technologies and systems (person, environment and task aspects)
- Integrated devices, multiusage
- Strong personalisation, security, identification
- Security

New research discipline where LL possibly very strong instrument

Services Science, Design and Engineering:

A new science to do research on

needs and develop solutions for the services industry

(non manufacturing).

Fundamental Change

- Human Centered Knowledge Society means
  - Increased responsibility for the individual
  - Increased productivity through innovation and creativity
  - Time gain by collaborative structures and shared environments
  - Increased possibilities for wealth creation by atypical job relations
  - Less dependence on time and place
- *New* innovation paradigms
- *New* innovation environments

Way forward; new type of partnership

- People - who need the skills and the will to strive for improvements,
- Processes - that need to evolve to become more effective as well as more efficient,
- Technology - that both drives change and enables innovation
- Policies – to enable the building of partnerships and critical mass, and to guide innovation and implementation.

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