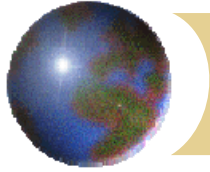


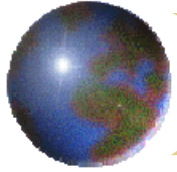
The FP7 REGPOT SISTER Project: Developing the ICT Research Potential in National, Regional and European Context

Roumen Nikolov
Sofia University
Sofia, Bulgaria

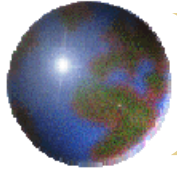


Content

- Bulgaria, Sofia, Sofia University
- The FP7 REGPOT SISTER Project
- The new European political context
- The role of Universities, ICT and RTDI
- The role of REGPOT & ROK and some proposals

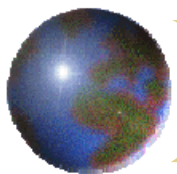


Bulgaria, Sofia, Sofia University



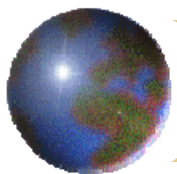
Bulgaria – map location





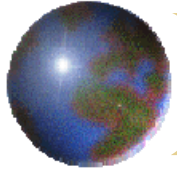
Bulgaria – Modern and Ancient



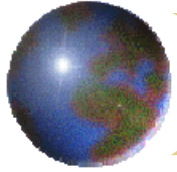


Sofia University and ... Sofia



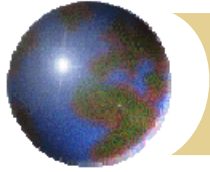


The FP7 REGPOT SISTER Project



Background

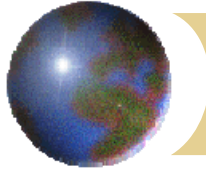
- Emigration and migration to industry of highly skilled professionals
- Insufficient research funding
- Lack of sufficiently stimulating research environment
- Lack of enough youth staff
- Lack of stable and multiple bridges between research, innovation, development, education and training
- Lack of traditions in university-industry-government cooperation
- Fragmented nature of research activities and the dispersal and not effective use of limited resources.
- Financial crises....



Project FP7-REGPOT-2007-1: SISTER: Strengthening the IST Research Capacity of Sofia University

Main goals:

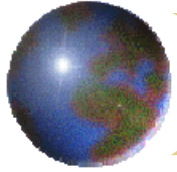
- ✚ to strengthen the RTD & Innovation capacity of Faculty of Math & Informatics (FMI);
- ✚ to develop FMI as a Leading Centre in South-East Europe (SEE) in research, innovation and training
- ✚ in the area of ICT (Software & Services, Intelligent Content)



FP7 SISTER project

Objectives:

- to elaborate a strategic RTDI framework for FMI
- to enhance the human resources capabilities of FMI
- to strengthen the capacity of FMI for business exploitation of academic results and cooperation with industry
- to improve the research environment of FMI
- to build a strong long-term collaboration with leading research and business organisations in EU and the SEE countries;
- to make FMI a well-known research centre in SEE.



Groups of Activities

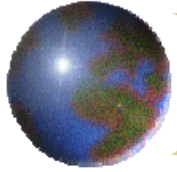
- Developing and validating an RTDI Strategy for FMI;
- Networking with other universities and research centres;
- Hiring of new young researchers to reinforce the human potential of FMI;
- Renewal of ICT equipment;
- Two-ways mobility visits;
- Research and training seminars;
- Summer schools;
- Workshops;
- Conferences;
- Research and young researchers web-based information system;
- Sharing digital content;
- other



SISTER Project as an Incubator of Other Projects, Partnerships and Activities

National funding

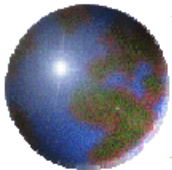
- Project *Smart Book*, Ministry of Education and Science - National Research Fund
- Project *Agile methodology for software development*, National Research Fund
- Project *AtechnOlogy-enhanced Platform for eduTAInment* (ADOPTA), National Research Fund
- **UCREL**: Integrated University Center for Research and QA in e-Learning in a Variety of Educational Contexts, Ministry of Education and Science - National Research Fund
- **ARECS** – PostDoc research project; the main goal is to establish an effective approach for calculation of **embedded Component-Based Software Systems reliability**, National Research Fund
- **ADEESS** - Project purpose is to encourage research of young scientist, so members of the team are 5 young researchers – 2 Post Docs and 3 PhD students; the main goal is to minimize the complexity of **building embedded software systems** (ESS), by applying up-to-date software engineering (SE) approaches, National Research Fund
- ESF BG051PO001-3.3.04-0013 Project: Support of the scientific development of doctoral students, post-docs and young researchers in the area of computer science;
- NSF CVP01/0116 CENS CIT: **Centre of Excellence in Nano-Science in Physics, Chemistry, Biology and ICT** at Sofia University, 1.4 Mio €
- NSF IRC-CoSim: **Integrated Research Centre on Computational Sciences in the Microworld**
- NSF RNF_09_0077 Project: Building a **University Laboratory Complex** on Renewable Energy Technologies in Bulgaria, 0.65 Mio €
- **Technology Transfer Office (TTO)**, under a PHARE project
- A proposal for a **Technology Park** submitted under ESF, Regional Development



SISTER Project as an Incubator

European funding

- I-SEEMob project (*Inter-sectoral mobility of researchers in South-Eastern Europe*), FP7-COH-2007-2.2-OMC-NET
- SEE-MOB project (*Enhancement of mobility of researchers to South-East Europe*), South-East Europe Transnational Cooperation Programme
- VirtSOI **Living Lab** "Virtual Services and Open Innovation", EC ENoLL
- eContentPlus "Share.TEC: SHARing digital REsources in the Teaching Education Community"
- Project proposal FP7-SSH-2010-2: Demand driven R&I policies **InDemand** (evaluation - 14 out of 15 points);
- Support of development of successful projects by partnering organizations in FP7, CIP, LLL, ESF (more than 15)



Events

AIMSA 2010

The 14th International Conference on Artificial Intelligence: Methodology, Systems, Applications

- AI and Knowledge Societies: Learning, Sharing, Amplifying -

Second Workshop on a Networking Initiative for ICT related projects

Held under the initiative "Networks of Knowledge" & "Research Potential"

10-11 September, 2010

Golden Sands Resort, Varna, Bulgaria

Draft agenda 10

The workshop follows the first workshop of the kind, organized on 5 May 2009 in Brussels. The purpose of the workshop is to support the networking initiatives launched in Brussels which aims to foster a portfolio of projects jointly funded under the FP7 calls, or both the programmes "Networks of Knowledge" (NoK) and "Research Potential" (R&P). The initiative will stimulate a better visibility.

The Second International Conference on SOFTWARE, SERVICES & SEMANTIC TECHNOLOGIES

September 11-12, 2010

Varna, Bulgaria

SST 2010 will provide a forum for connecting researchers and international research communities for worldwide dissemination and sharing of ideas and results in the areas of Software and Services and Intelligent Content and Semantics.

Four coherently interrelated tracks will be arranged in the two-day conference including:

- Software and Services,
- Intelligent Content and Semantics,
- Technology Enhanced Learning,
- Knowledge Management, and Business Intelligence and Innovation.

Researchers and graduate students are welcomed to participate in paper presentations and panel discussions under the themes of the conference tracks.

The conference is supported by FP7 EU SISTER Project and hosted by Sofia University.

SST 2010 will be held immediately after AIMSA 2010 in the same location.

Welcome | Conference Topics | Invited Speakers | Call for Papers | Paper Submission | Registration | Accommodation | Travel Information | Location | Conference Venue | Committees | Sponsors

First SST 2009

Sofia University
St Kliment Ohridski

The European Day of the Entrepreneur 2009

THE EUROPEAN IDEA

The European Day of the Entrepreneur is an initiative which has long traditions in the EU. This event is organized in the framework of the EACEI Network (The First Action of Excellence in Innovation) coordinated at dissemination of best models for establishing new technology based companies. The concept of the forum is introduced by EUROCTIES (Network of the European Towns) and the European Commission.

EUROPEAN DAY OF THE ENTREPRENEUR, October 21 - 24, 2009

Sofia University "St Kliment Ohridski" and Sofia Municipality the pleasure to invite you to participate in the European Day of the Entrepreneur. This year it will be held on October 23-24 in Sofia, Bulgaria.

INNOVATIONS - THE EUROPEAN MODEL FOR SURMOUNTING ECONOMIC CRISIS will be the origin of this year EDE initiative.

Digital Spaces Living Lab

Home | Home | members zone | venue | contacts

Home | About | Local events and activities | Services and collaborative tools | Member profiles | European and international inspiration

Creativity and Innovation

European Year 2009

EUROPEAN SWE WEEK 2009

How Ideas Evolve

23 October 2009, Friday, from 10 am to 6 pm

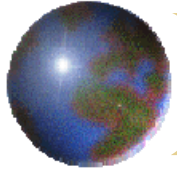
The event will take place at Sofia University "St Kliment Ohridski". Free entrance (registration required) >>>

Main organizers:

- NEVEQ
- ES&S
- VirTech
- DSL
- Microsoft

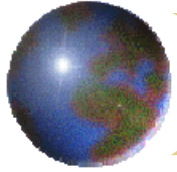
Supporting partners:

- NEVEQ
- ES&S
- VirTech
- DSL
- Microsoft



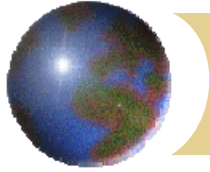
Impact at Faculty level

- strengthening the RTD human capacity;
- strengthening the network of RTD partners;
- advanced RTDI and training infrastructure;
- stimulate young people to enter a research career and stay in research;
- increase the success rate in obtaining PhD degrees
- substantial increase the number of scientific publications
- exchange of knowledge and research results
- building of virtual teams in ICT across Europe
- improve the skills of FMI researchers
- better quality of education and training
- attracting new PhDs and young researchers
- increasing the FMI reputation, etc.



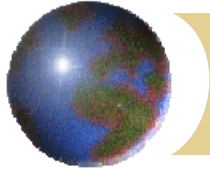
Impact at University Level

- Supporting interdisciplinary research;
- Supporting development of interdisciplinary skills of researchers;
- Supporting introduction and wider use of interdisciplinary programs;
- Increased participation of SU in FP7 and other EC programs;
- Supporting the process of establishment of Technology Transfer Office and a Science Park at SU
- Supporting SU to become a 'digital, research and entrepreneurial university';
- Etc.



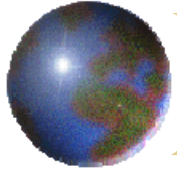
Impact at National Level

- Strengthening ICT research and innovation in Bulgaria;
- Support for development of a National RTDI Strategy;
- Support for establishment of National Technology Platforms, such as NESSI and the Knowledge4Innovation initiative;
- Support in better linking industry needs and research results;
- Support in providing better career opportunities for young scientists;
- Support in Increasing participation of Bulgaria in FP7 and other EC programs (e.g. through our NCPs and other experts);
- Support in meeting the respective objectives of the i2010 initiative (Digital Agenda, EU2020);
- Support in improving the quality of eContent, eLearning and S&S developments;
- Etc.

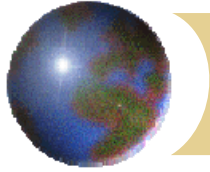


Impact at European Level

- Support policy development initiatives (Knowledge4Innovation, Informatics Europe, IFIP);
- Support for establishment of the European Research Area, e.g. playing the role for a gateway to national research area in ICT and innovation;
- Support for implementation of the European RTD initiatives and programs, such as i2010 (Digital Agenda), European Technology Platforms (e.g. NESSI), Joint Technology Initiatives, EIT, Living Labs, etc.
- Supporting EC in the European enlargement initiatives, especially ones in South-Eastern Europe;
- Support EU policies, such as for mobility of researchers, regions of knowledge;
- Providing expertise and experts for different European expert groups (evaluation, NCPs, experts working in EC);
- Hosting European events;
- Contributing to other European initiatives and programs related to eContent, eLearning and S&S developments, such as CIP;
- Etc.



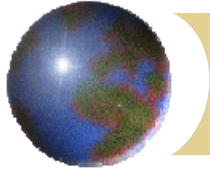
The New European Political Context



The EU2020 Priorities

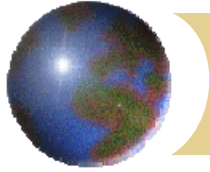
Europe 2020 puts forward three mutually reinforcing priorities:

- ❊ **Smart growth:** developing an economy based on knowledge and innovation.
- ❊ **Sustainable growth:** promoting a more resource efficient, greener and more competitive economy.
- ❊ **Inclusive growth:** fostering a high-employment economy delivering social and territorial cohesion.



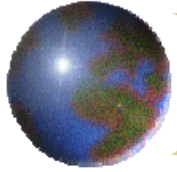
EU2020 flagship initiatives

- EU - Innovation Union
- Youth on the move
- A digital agenda for Europe
- Resource efficient Europe
- An industrial policy for the globalisation era
- An agenda for new skills and jobs
- European platform against poverty

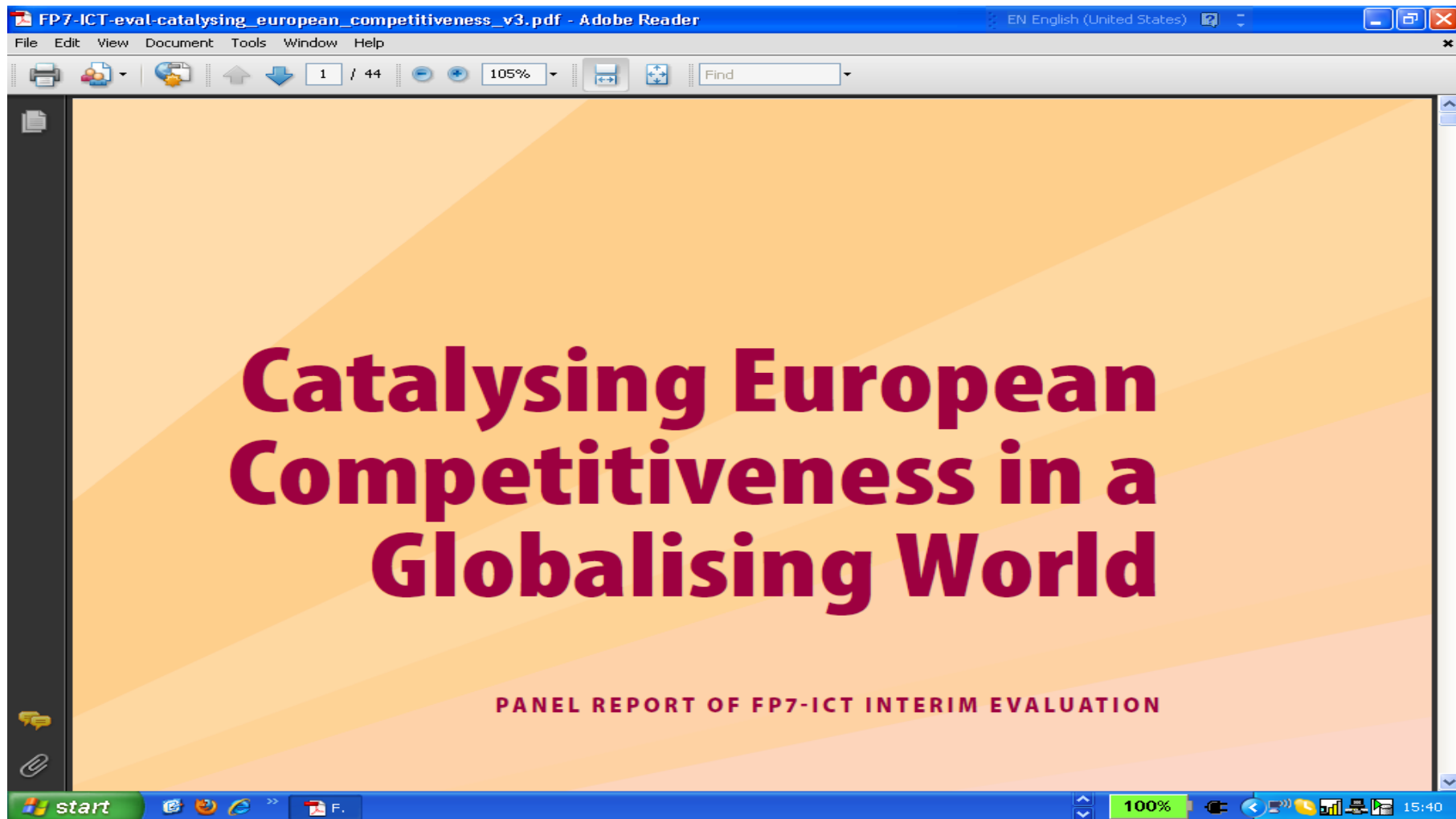


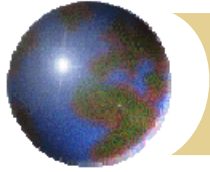
Baroso's Speech, EP, Sep 7th, 2010

- *"Investing in innovation also means **promoting world class universities in Europe**. I want to see them attracting the brightest and the best, from Europe and the rest of the world. We will take an initiative on the **modernisation of European universities**. I want to see a Europe that is strong in science, education and culture."*
- *"We need to improve Europe's innovation performance not only in universities. Along the whole chain, from research to retail, notably through **innovation partnerships**. We need an **Innovation Union**. Next month, the Commission will set out how to achieve this."*



A Useful Document (June 2010)





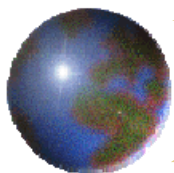
Some Recommendations:

Need for three essential sets of action:

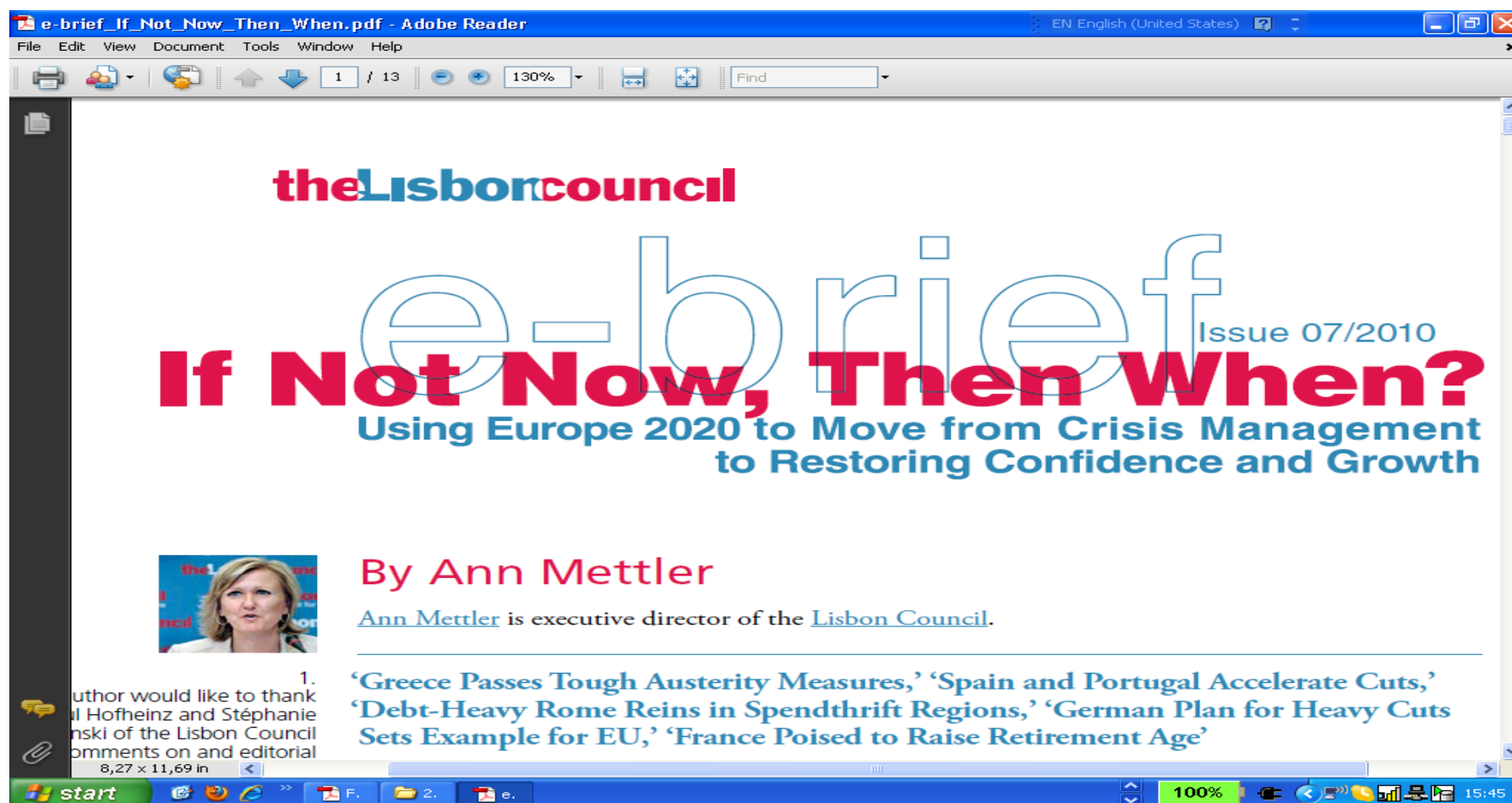
- **Strengthening European ICT research** in a globalizing world;
- Exploiting the **pervasiveness of ICT via integrated policies**;
- **Sharing risk**

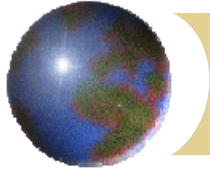
Recommendations:

- **Recom. 1:** To support the use of ICT and the competitiveness of European industry, the Commission should continue the ICT Programme in a further strengthened form through the rest of FP7 and into FP8 while ensuring it has the flexibility and **interdisciplinarity** needed for dynamic and **radical ICT innovation**.
- **Recom. 7:** To make **best use of the power of the Higher Education system in spreading innovation and providing the skills and competencies** needed for competitiveness, the Commission should incorporate elements in future Calls that encourage participants to **develop curricula in new and emerging areas** as part of the activities funded.



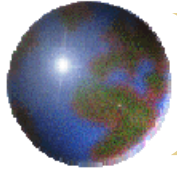
Another Document (July 2010)





Some Statements of Ann Mettler:

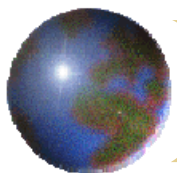
- *'If the next financial perspective will closely resemble the last one, the EU should drop its pretense of wanting to be an "Innovation Union" and instead rename itself the "**Agro Union.**"';*
- *"Allocating some **€25 million to the newly established European Institute of Technology**, set up to supposedly rival the world-class Massachusetts Institute of Technology, while **channeling €40 billion a year into agriculture**, speaks for itself and of Europe's true priorities"*
- *'The overriding priority must be to change the narrative and demonstrate that **Europe and the member states can pro-actively shape and develop policy agendas.**'*
- *'Despite Europe 2020's low-key start, it is not too late to signal to European citizens and the world at large that the **EU is still in business.**'*



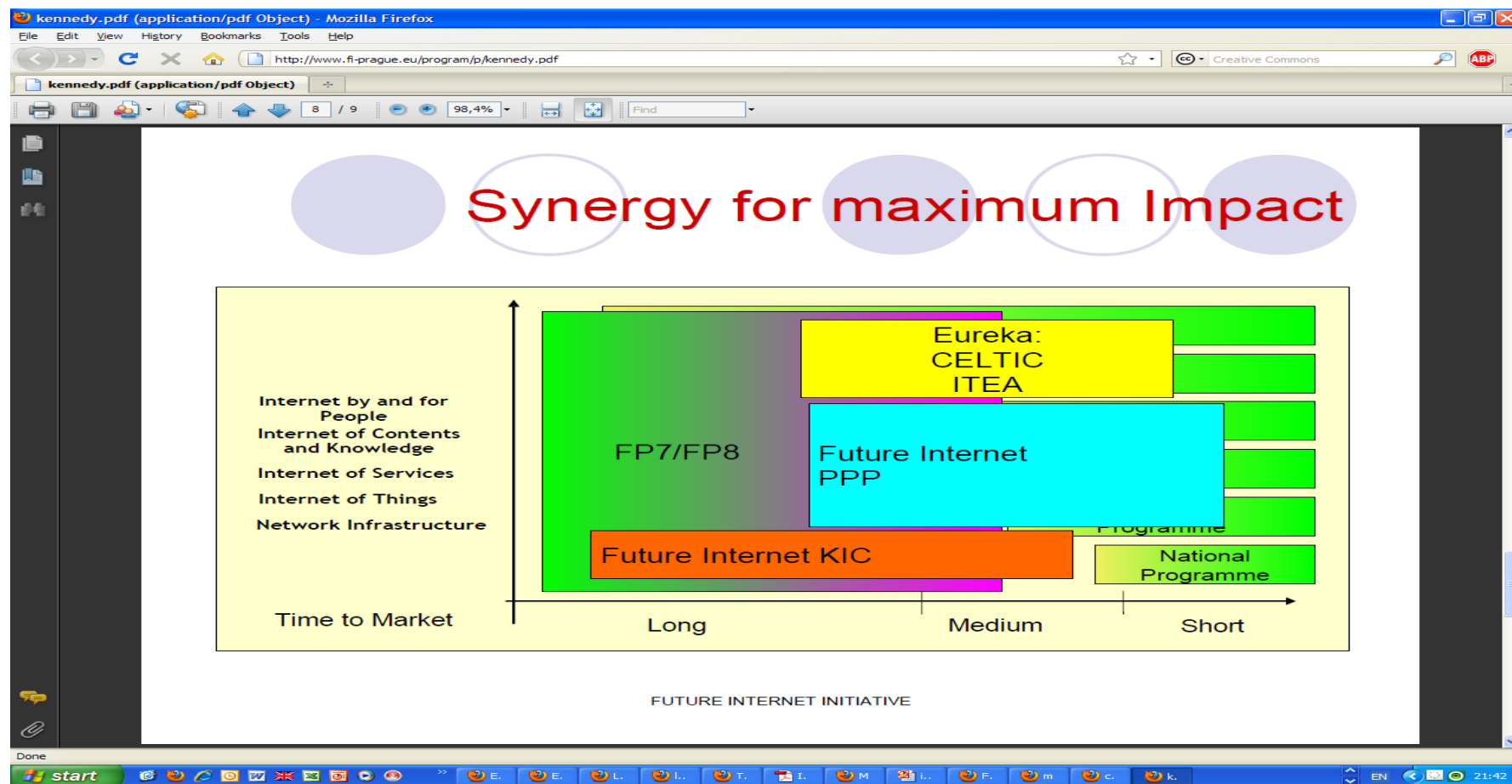
European Economic Recovery Plan – 3 PPPs +

As part of the European Economic Recovery Plan, the Commission is launching three Public-Private Partnerships (PPPs).

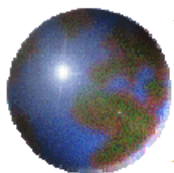
- **“Factories of the Future”** initiative for the manufacturing sector (€1.2 billion for R&D);
- **“Energy-efficient Buildings”** initiative for the construction sector (€1 billion for R&D); and
- **“Green Cars”** initiative for the automotive sector worth a total of €5 billion, of which €1 billion is for research activities.
- Preparing to launch a **PPP for Future Internet**



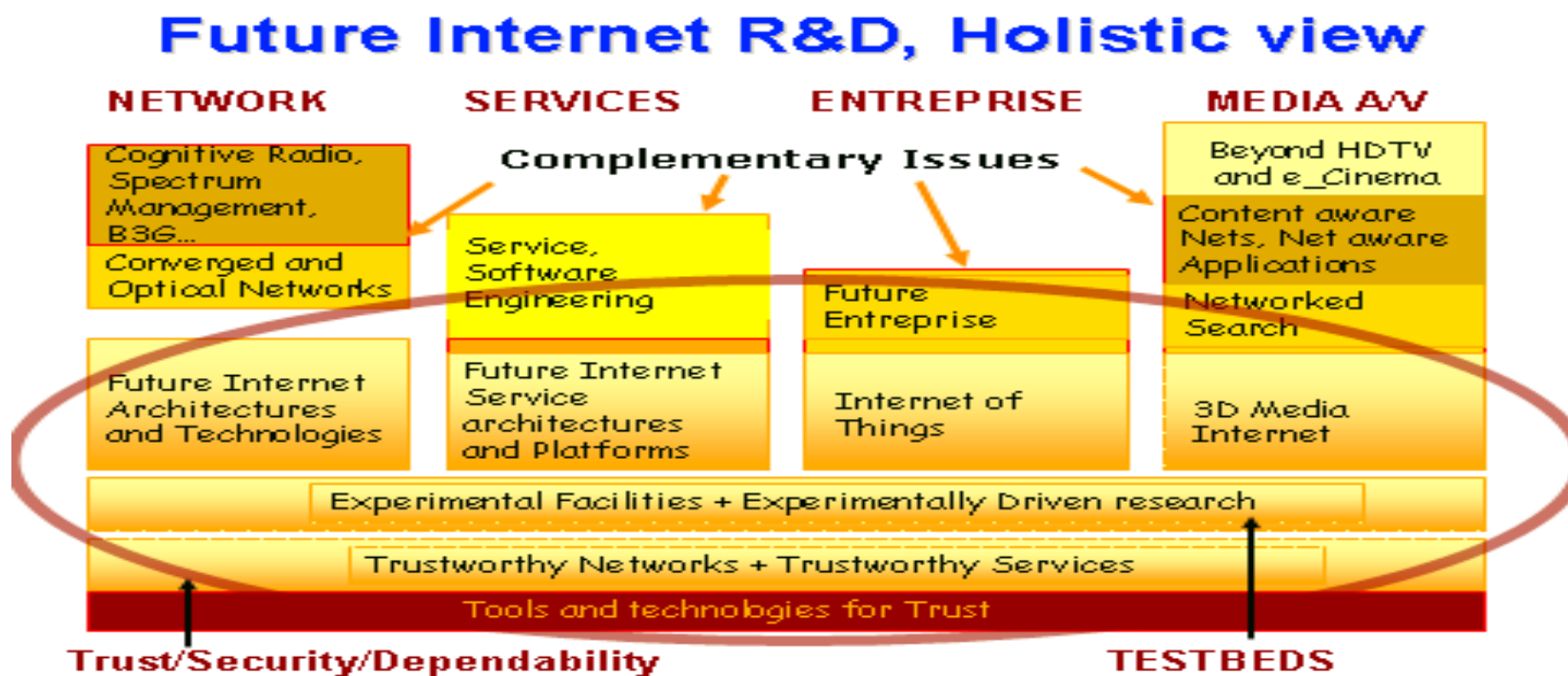
Future Internet PPP

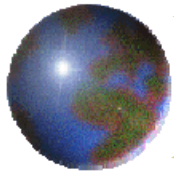


<http://www.fi-prague.eu/program/p/kennedy.pdf>



Future Internet R&D





Areas of RTDI

EFII_White_Paper_2010_Public.pdf (application/pdf Object) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.future-internet.eu/fileadmin/initiative_documents/Publications/White_Paper/EFII_White_Paper

Most Visited Getting Started Latest Headlines https://poshta.fmi.uni...

AVG explore with YAHOO! SEARCH Search Total Protection Page Status

EFII_White_Paper_2010_Public.pdf (...)

11 / 14 150% Find

The diagram illustrates the Future Internet PPP definition, organized into several interconnected areas:

- Top Row:** Smart Energy, Intelligent Transport, eHealth.
- Second Row:** Virtualization - Cloud, Multimedia searching, Advanced Interfaces.
- Third Row:** 3D Multimedia Technologies, Context awareness techniques, M2M Communications, Localization.
- Fourth Row:** Data Mining – Data Aggregation, Semantics, Recommendation systems.
- Fifth Row:** Sensor Networks, High capacity networks, Network Management Optimization, Self-healing, networks.
- Right Side (Vertical Column):** Privacy and trust, Identity, Intrinsically Secure Networks, Security reputation.

White paper on the Future Internet PPP definition, January 2010

Page 11

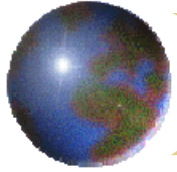
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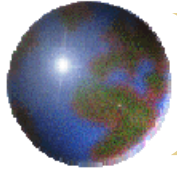
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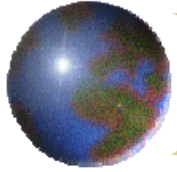
EC: Broadband and Economic Recovery

- Access to an **affordable high speed broadband infrastructure** fundamental element for individuals, enterprises and governments at all level
- Broadband is **key to maintaining social contacts, cultural and political participation, finding jobs, learning skills, accessing information, accessing markets and cutting costs.**
- **ICT accounts for half the EU productivity growth:**
(broadband development could create 1 million jobs in Europe to 2015 and extra growth of €850bn)



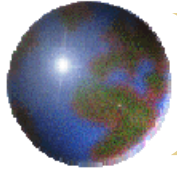
Broadband Impact

- £1 invested in broadband **increases local GDP by £10** (www.sngroup.com);
- Firms with broadband are **31% more productive** than firms without (<http://www.broadbanduk.org/>)
- A 10% increase in the connectivity of the workforce can lead to up to **12% increases in productivity** in IT-intensive sectors (<http://www.broadbanduk.org/>)



EC & National Broadband Strategies

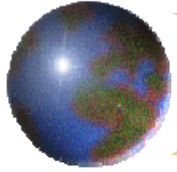
- **UK: “Digital Britain” strategy**
 - Target: universal broadband coverage service by 2012 at up to 2 Mbps.
 - Will analyse how to stimulate investments in Next Generation Broadband
- **Finland: national broadband strategy**
 - Target: 100 Mbps broadband for all by 2015
 - Consumers have to connect themselves to the closest access point (max 2 km)
- **France: “Plan numérique 2012”**
 - Target: broadband for all by 2012, of at least 512 kbps, at affordable tariff – less than 35€/month.
- **Germany: broadband strategy**
 - Target: broadband for all by 2010 (1 mbit/s)
 - High speed broadband (50 mbit/s) for 75% of all households by 2014
- **Portugal:** In January 2009, Portugal's government announced an 800-million-euro credit line for the roll-out of next-generation broadband networks in the country.
- Prime Minister Jose Socrates announced the funding, saying he hoped the country's main telecoms operators would invest one billion euro to build NGNs during 2009
- **EC – Broadband in Rural Areas**



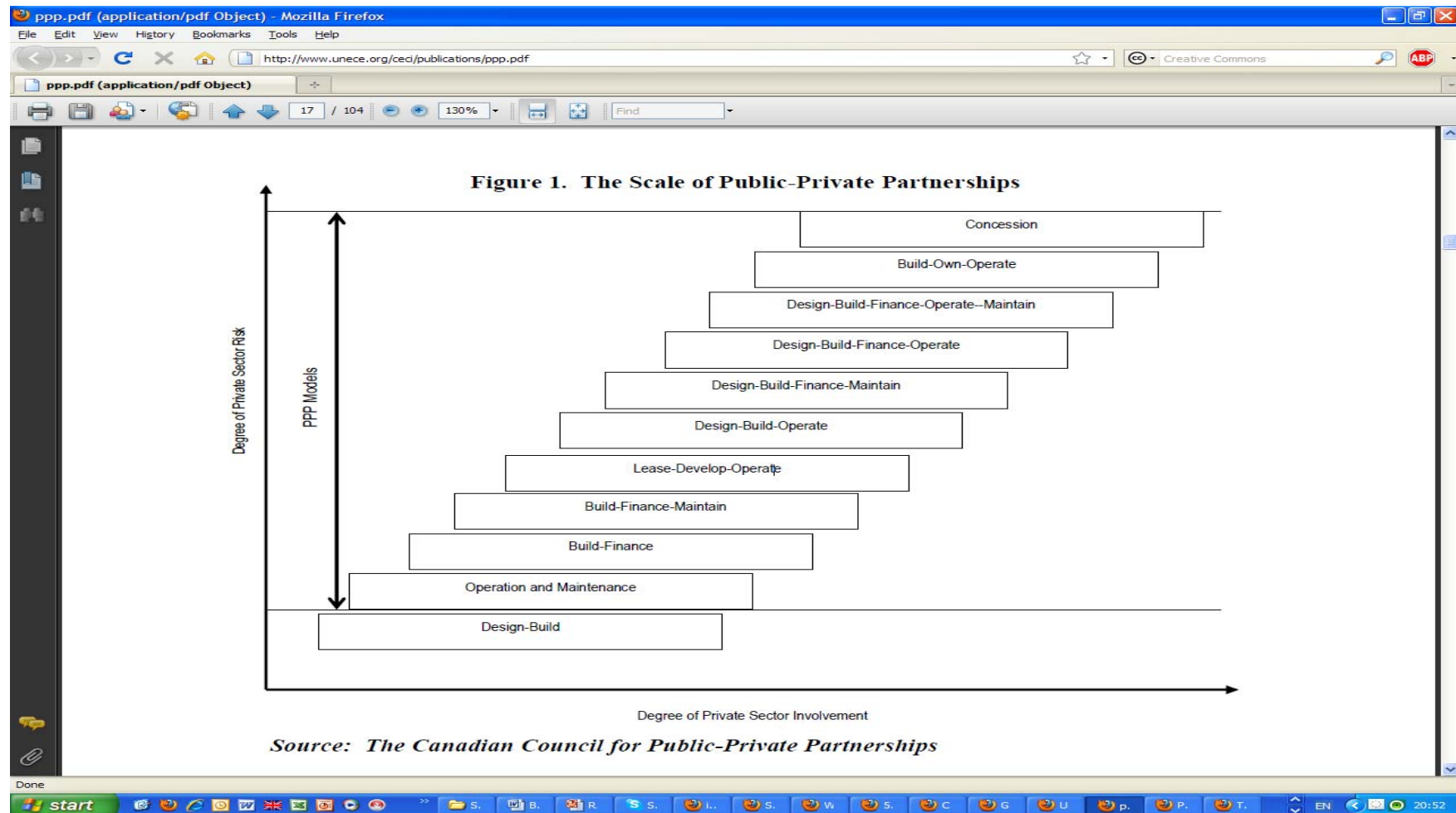
Public-Private Partnership

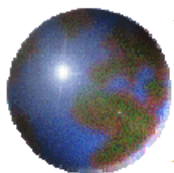
"A cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards".

The Canadian Council for Public-Private Partnerships

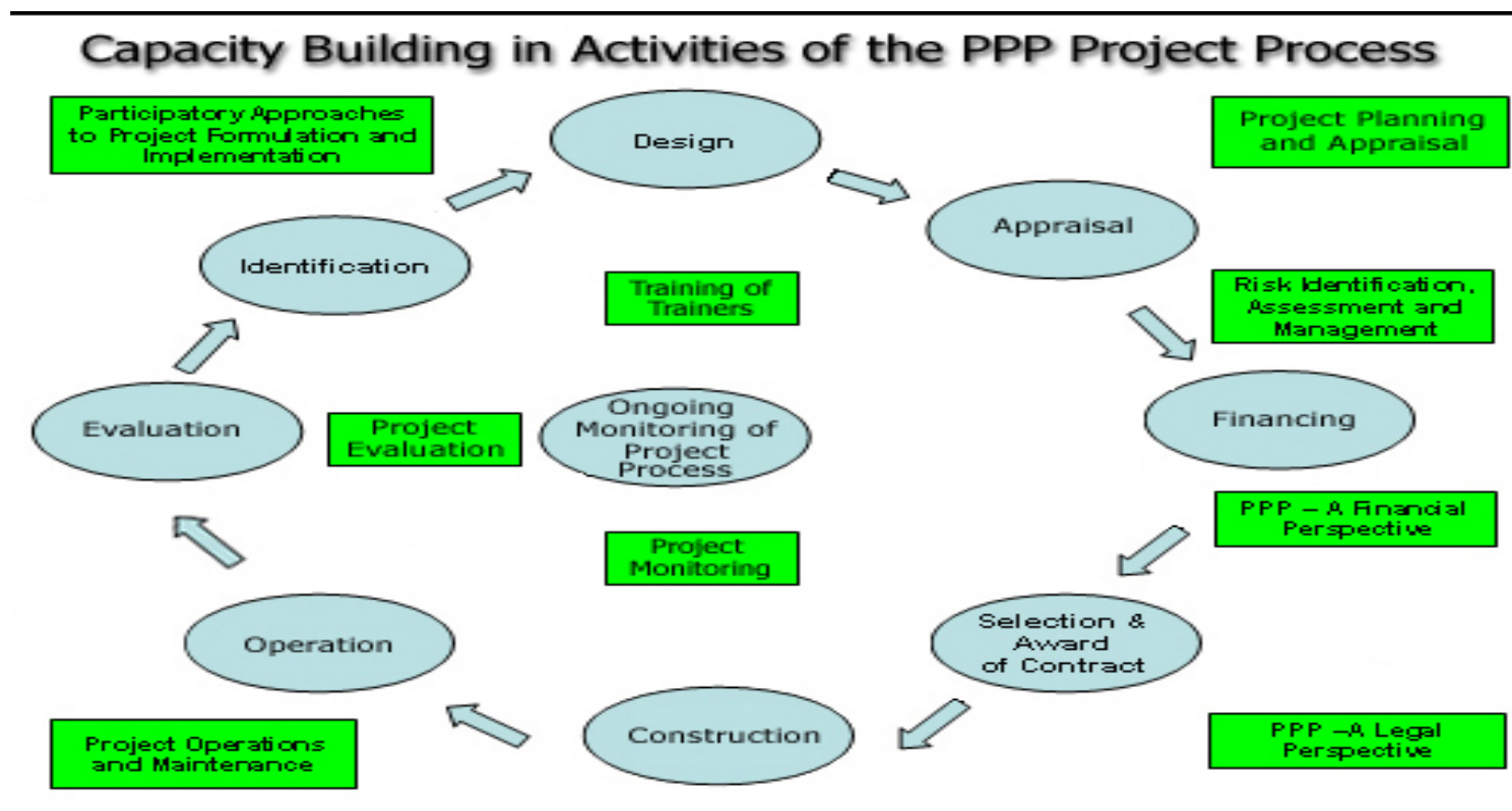


PPP Models

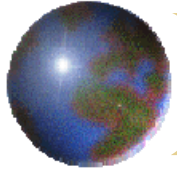




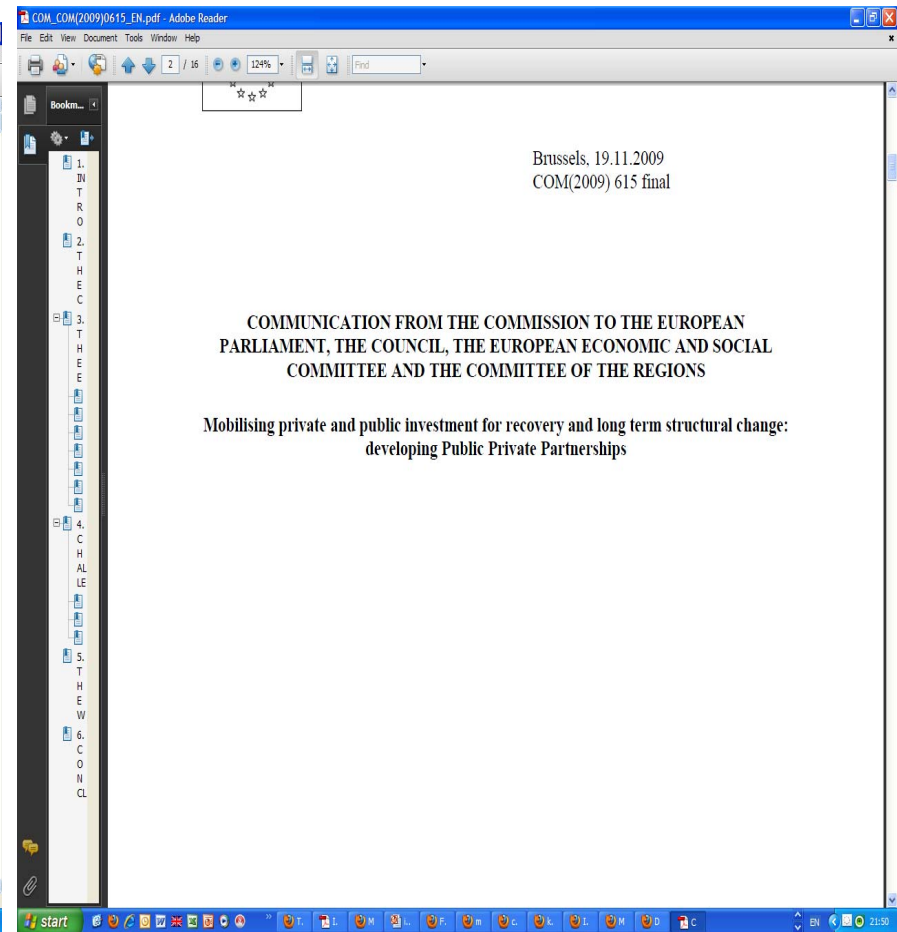
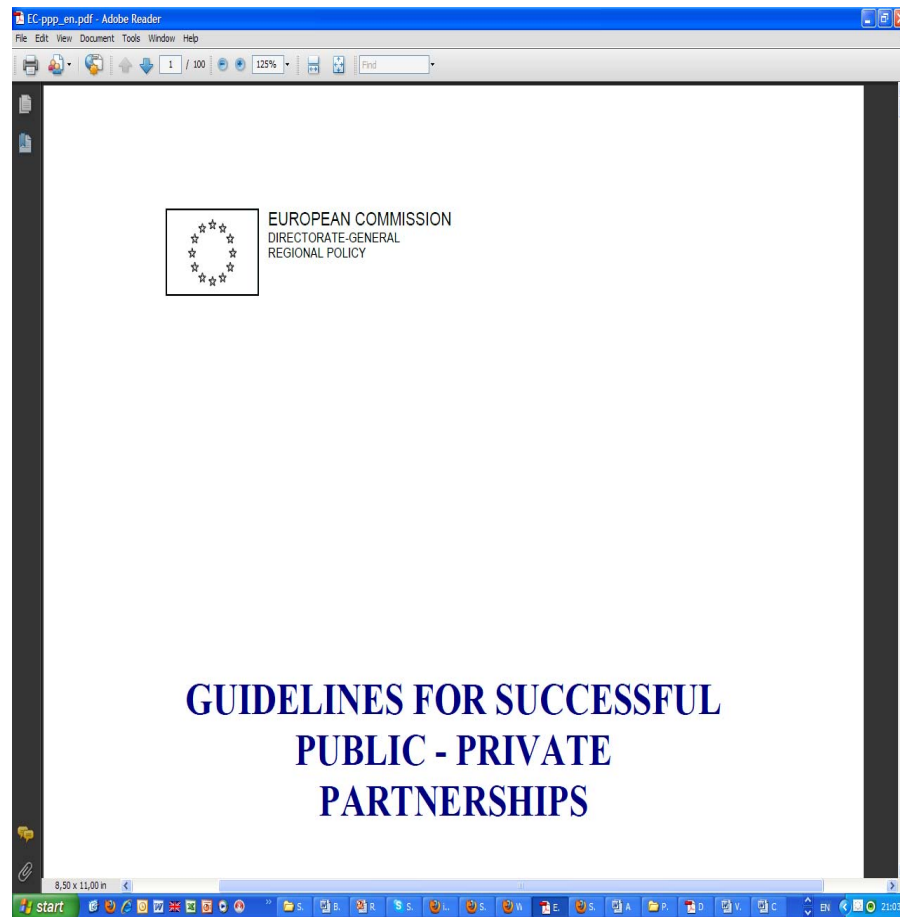
Need of Capacity Building in PPP

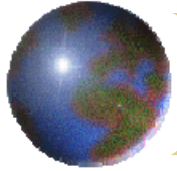


Source: <http://www.unescap.org/>

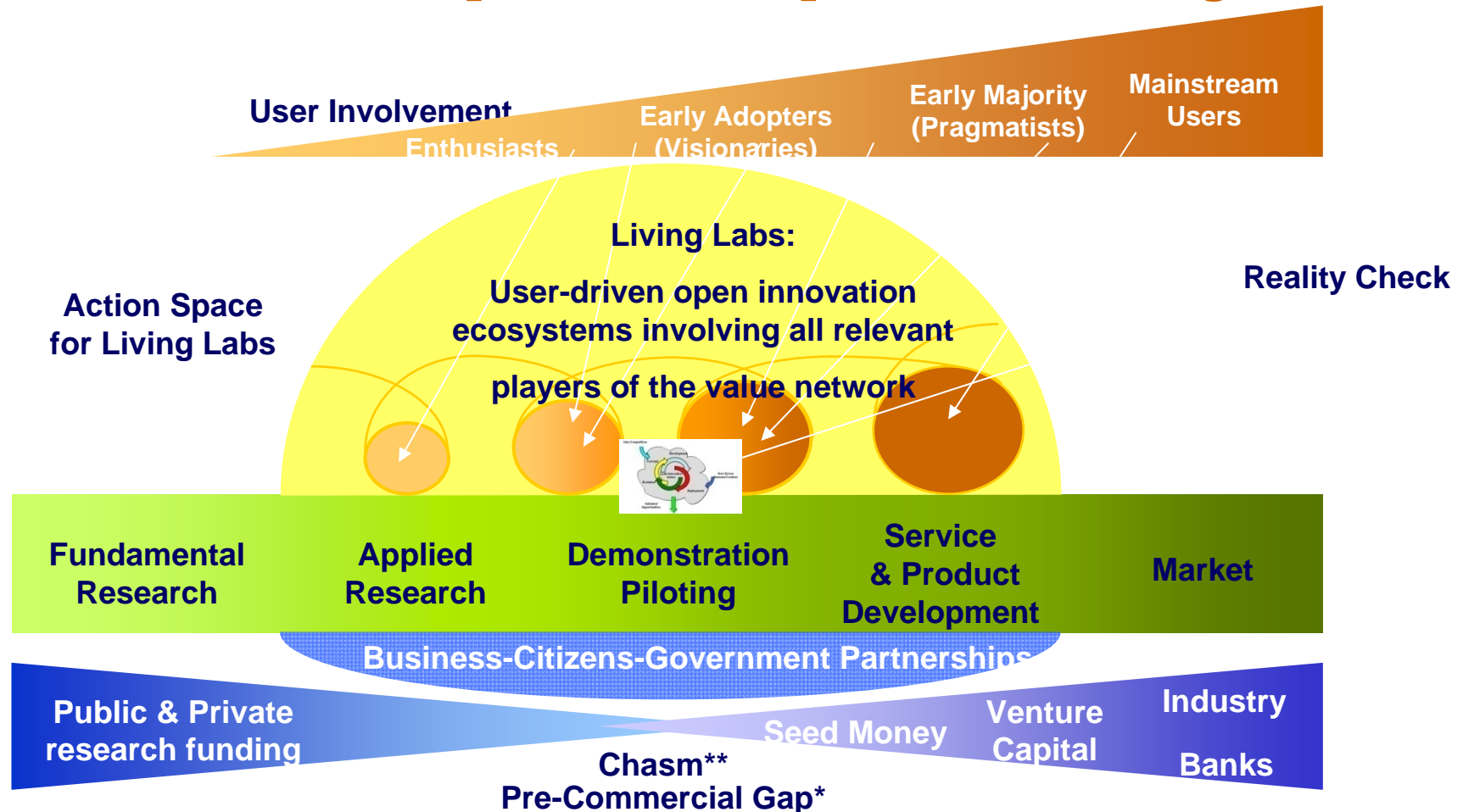


Guidelines for PPP



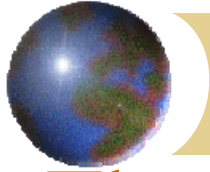


Public-Private-People-Partnership (PPPP) - Living Labs



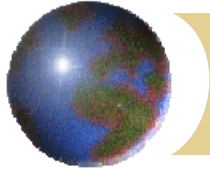
* MacDonald and Associates,
2004

** Geoffrey A Moore: Crossing the Chasm, 1999



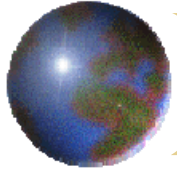
The Living Labs model benefits citizens, industry and research

- Living Labs **empower citizens**, as end-users, to influence the development of innovative services & products that eventually could benefit the whole society.
- Living Labs **allow industry to develop, validate and integrate new ideas**, to partner with other companies and to increase their chances of success during product and/or service launches.
- Living Labs facilitate the **increase return on investments in ICT and integration of technological innovation in society and research**.



Living Labs across domains and regions

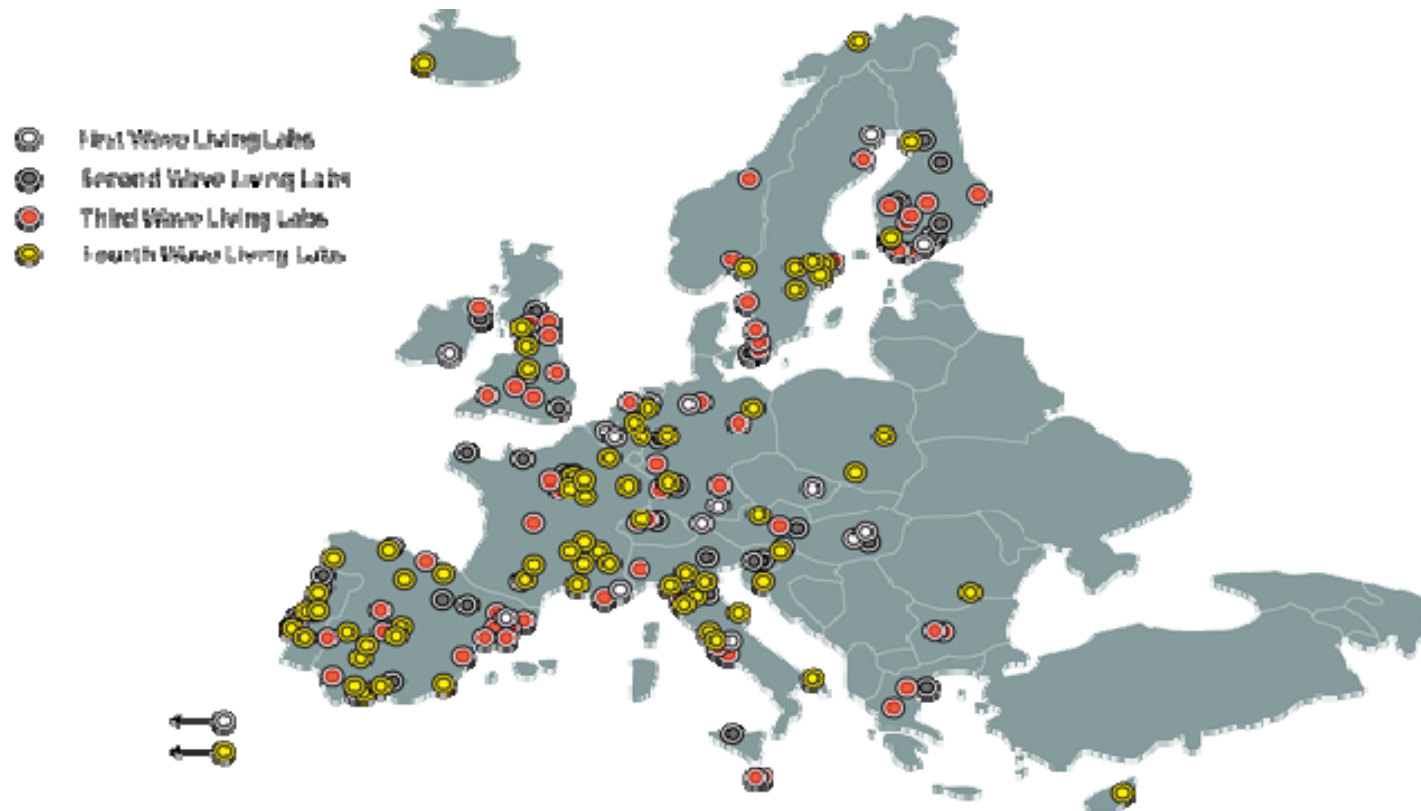
- Healthcare
- E-Government
- Rural Development
- Energy Efficiency
- Media
- etc



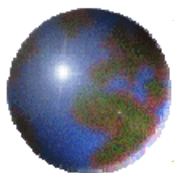
Hundreds of public bodies, including Municipalities, Innovation Agencies, Universities...

Thousands of companies, especially SMEs clusters

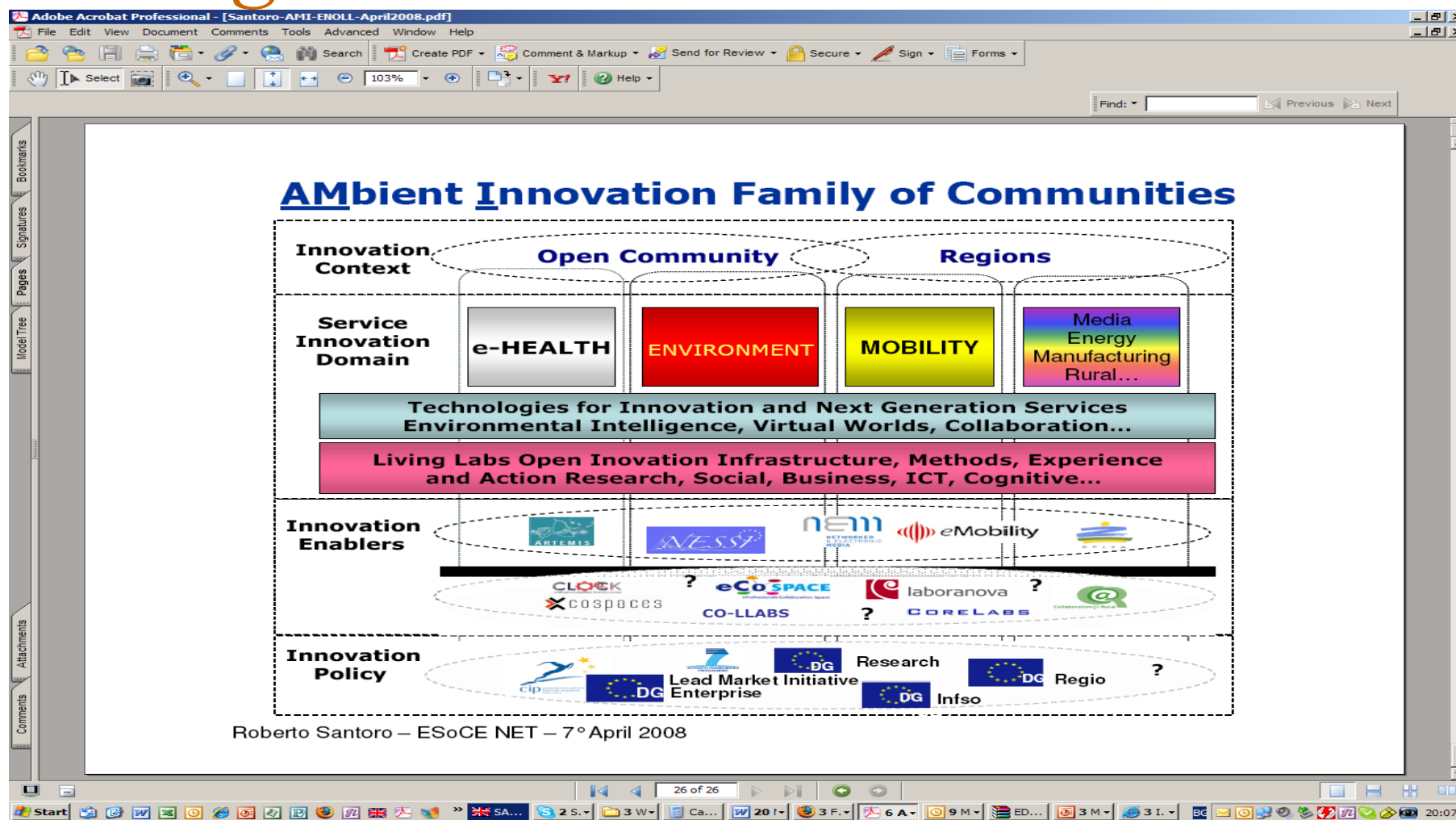
Hundreds of thousands of final users organized in user communities

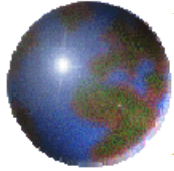


**European
Network of
Living Labs**

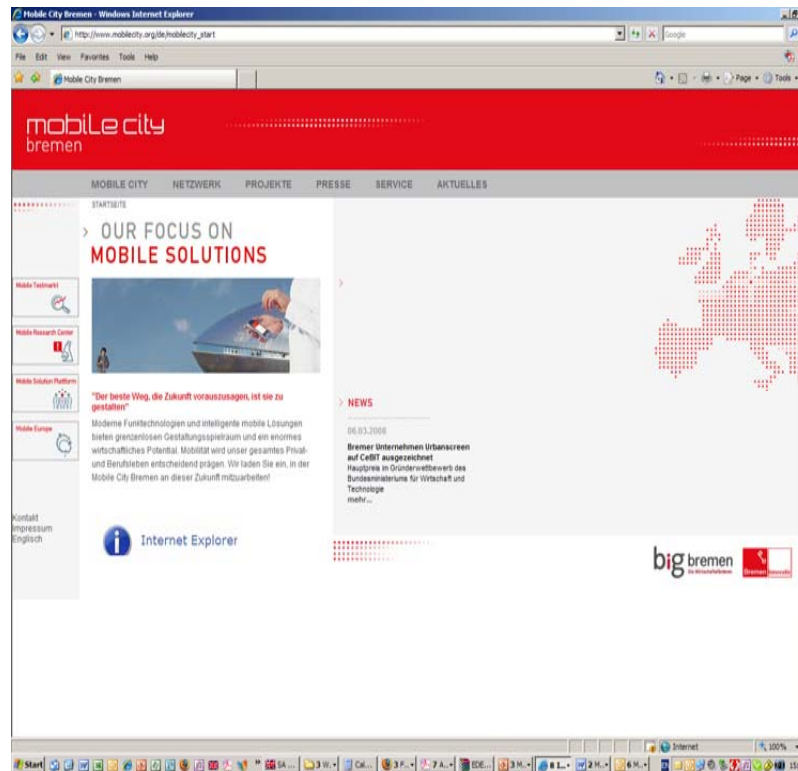


Living Labs in EU context

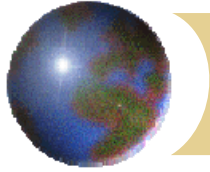




Mobile City Bremen Living Lab

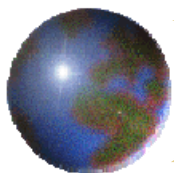


- combines research, development, testing and marketing of mobile products and services in a mobile cluster;
- thanks to targeted sponsorship and the dedicated cooperation of numerous companies, universities and research institutes, **Bremen has become a premium address for mobile solutions;**



Mobile City Bremen...

- The key elements of Mobile City Bremen are the **Mobile Research Center**, the **Mobile Solution Platform** operated by the **Mobile Solution Group**, and the **Mobile Test Market**.
- Point of entry is the **Mobile Solution Center on the university campus**.
- At the Mobile Research Center, **more than 100 academics** from the fields of information technology, communication engineering, design and media constitute a high-quality interdisciplinary research network for the mobile future.
- The **Mobile Solution Platform** helps to make a success of mobile applications more quickly. This open system platform adapts content to the users' various mobile devices and provides access to a multitude of users. Additionally, the **city of Bremen is firmly established as an ideal testing environment for product launches and acceptance tests**.

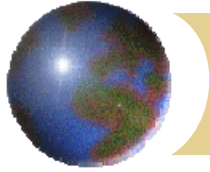


Rural Living Lab (RLL) – Gödöllő, Hungary



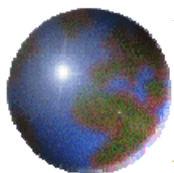
Services:

- **Infrastructure and access points:**
Alternative mobile, satellite and wireless applications
- **Business applications** suited to rural SMEs: low cost and easy to use solutions, open software and peer-to-peer platforms, Trading, ERP, SCM,...

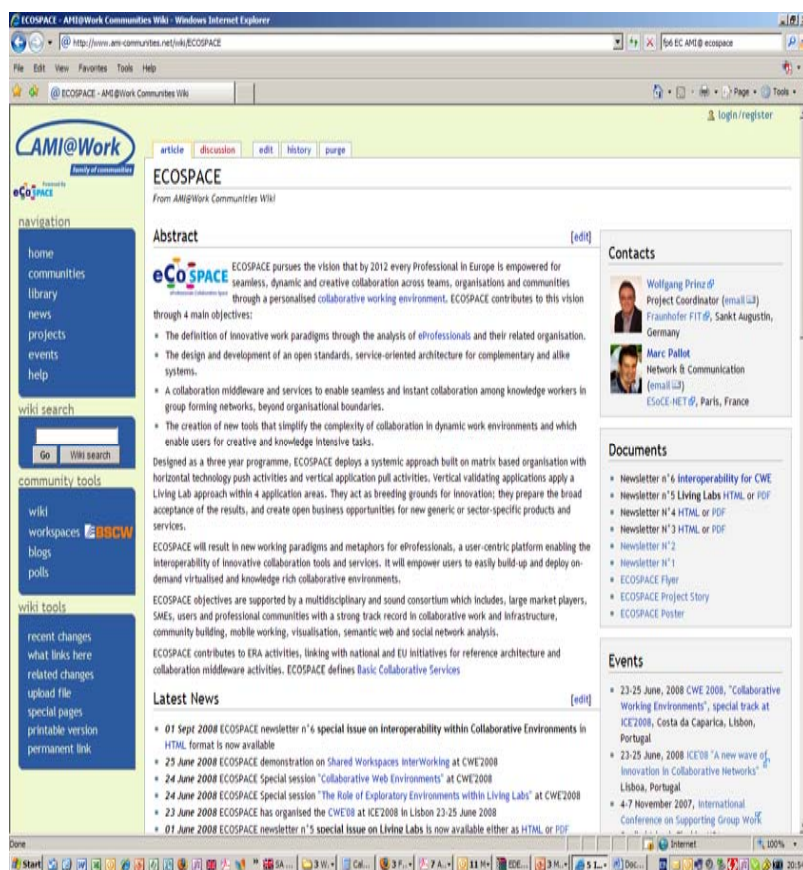


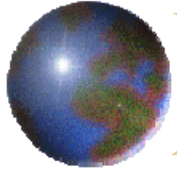
Rural Living Lab...Services

- **E-communities:** knowledge and information management (semantic and content-based techniques), personalized content and research technologies to support self-organised communities (such as farmers and their organizations), building and enabling human relationships.
- **Interfaces** which will be critical for take-up: multi-lingual, multi-modal and adaptive, natural language interaction, visualisation technologies, ...
- **GIS** (Geographic Information Systems) for characterisation of spatial entities to deliver position related services and assessment of rural development.
- **Rural-related sectors** (healthcare, tourism, agriculture), Food industry, requirement for selective technology development.



Bulgarian involvement in LL projects ECOSPACE, COMIST and other





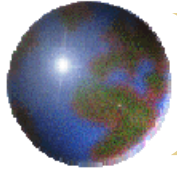
VirtSOI Regional Living Lab- Sofia



Virtual services -
development and
implementation within the
society related to: eLearning,
eWork, eGovernment, eHealth,
eBusiness, eContent,
eInclusion, Mobile Technology
Applications, Web 2.0 and
Virtual Worlds, ICT for
Sustainable Development, etc

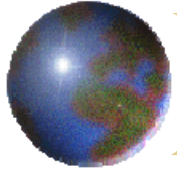
Incubator for Living Labs

<http://www.openlivinglabs.eu/pdfs/virtsoi.pdf>

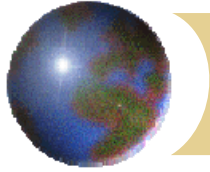


VirtSOI Open Innovation Platform



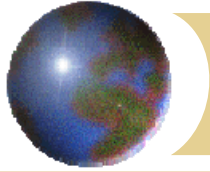


The Role of Universities, ICT and RTDI



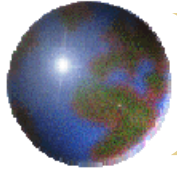
Universities in the Knowledge Society

- ICT caused a **dramatic change** in the way people live, learn and work and this process is accompanied by social, industrial, and organisational reconstructions and innovations.
- A **university**, being the center of knowledge production and teaching, could be considered as a “**knowledge factory**”, **equated to an industry** (Machlup)
- “**A large modern university had to operate as a part of society, no longer as an ivory tower apart from it**” (Clark Kerr, Former President of UC Berkley);
- Europe has to build a “***creative interaction between universities, scientists and researchers on the one hand and industry and commerce on the other*** (Kok’s report).



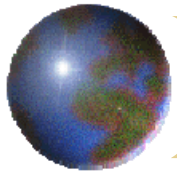
Globalization of Education & RTDI

- ICT drives **globalization** of education and RTD and innovation.
- The **competition between universities** force them to define **new strategies and business models**.
- Large multinational companies also adopt e-learning, RTD and Open Innovation very fast and create a **growing market of innovative products and services**.
- Effective usage of **e-learning and e-RTDI** gradually **removes the barriers between the university and corporate sector** and turns into a competitive advantage both for organizations and individuals

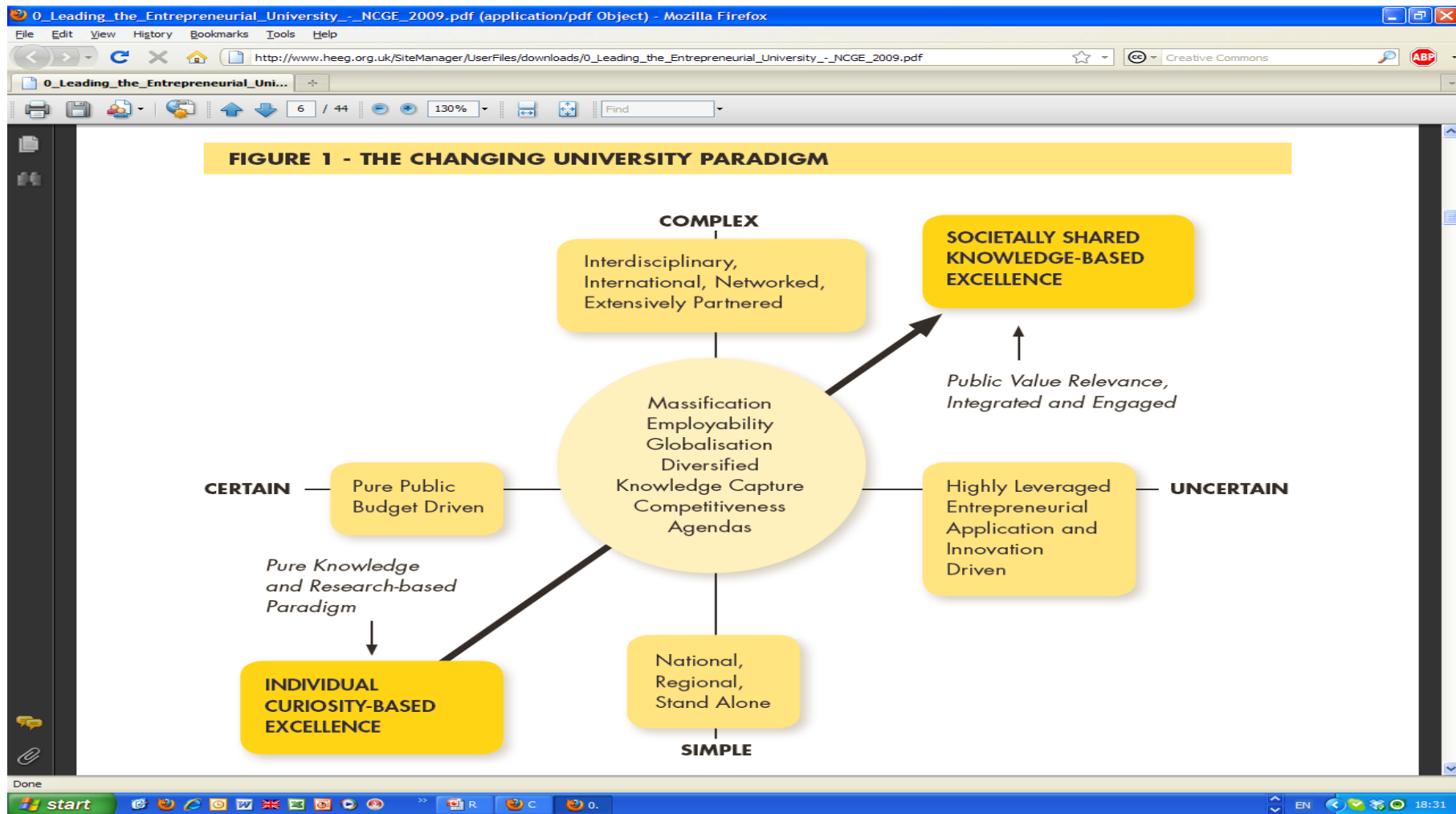


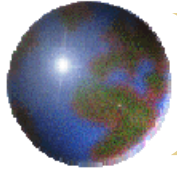
University Organisational Models

- University as a centre of knowledge production and teaching - *knowledge factory (Machlup, 1962)*;
- Research University
- Entrepreneurial University
- Innovation University (Aalto, FI)
- Global University
- Virtual University
- eUniversity (Digital University, eCampus, University 2.0)
- Open University;
- University of Applied Science
- Corporate University
- Franchise University
- Global Alliance

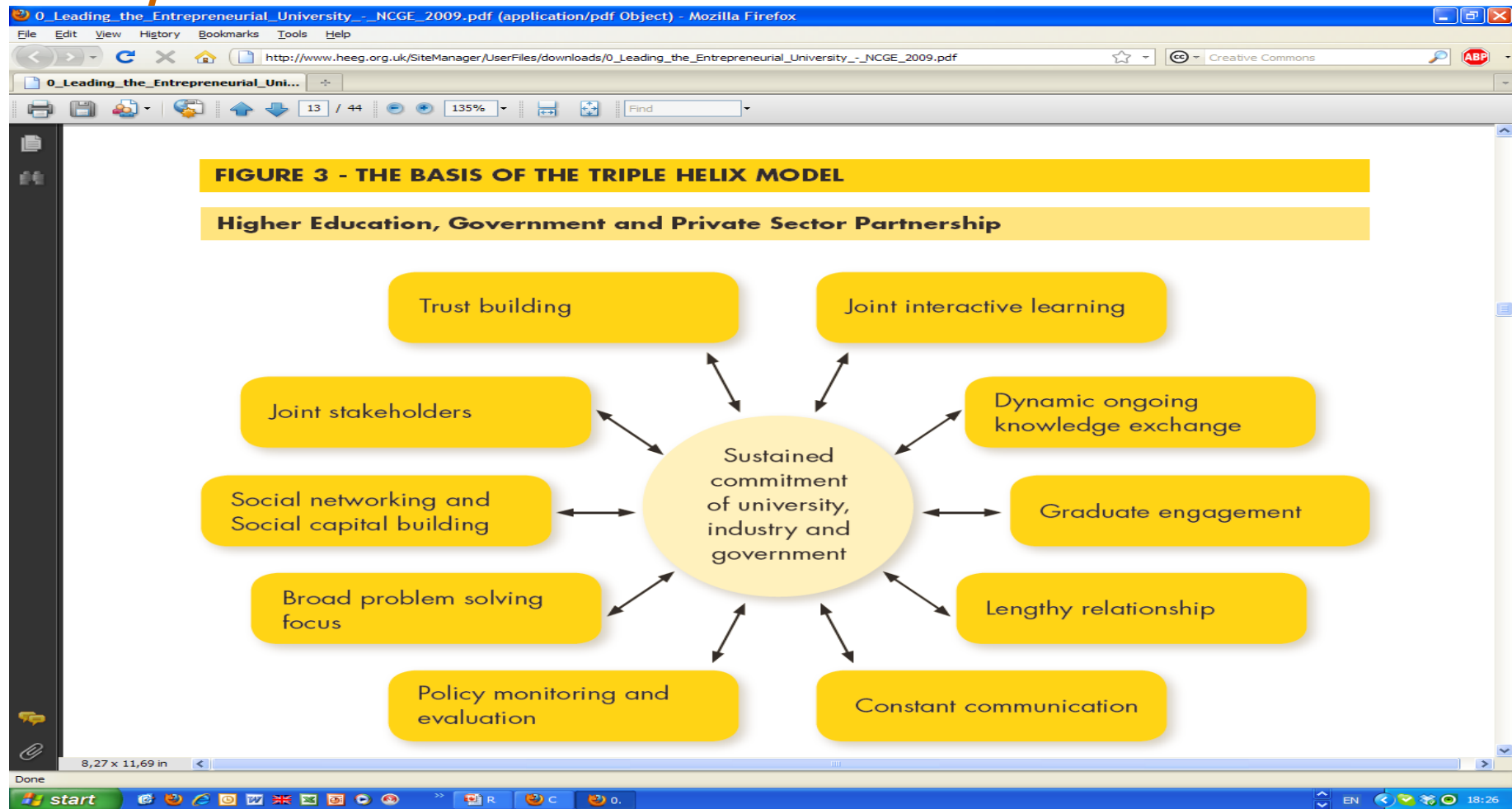


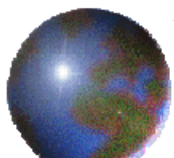
The Changing University Paradigm





Triple Helix Model

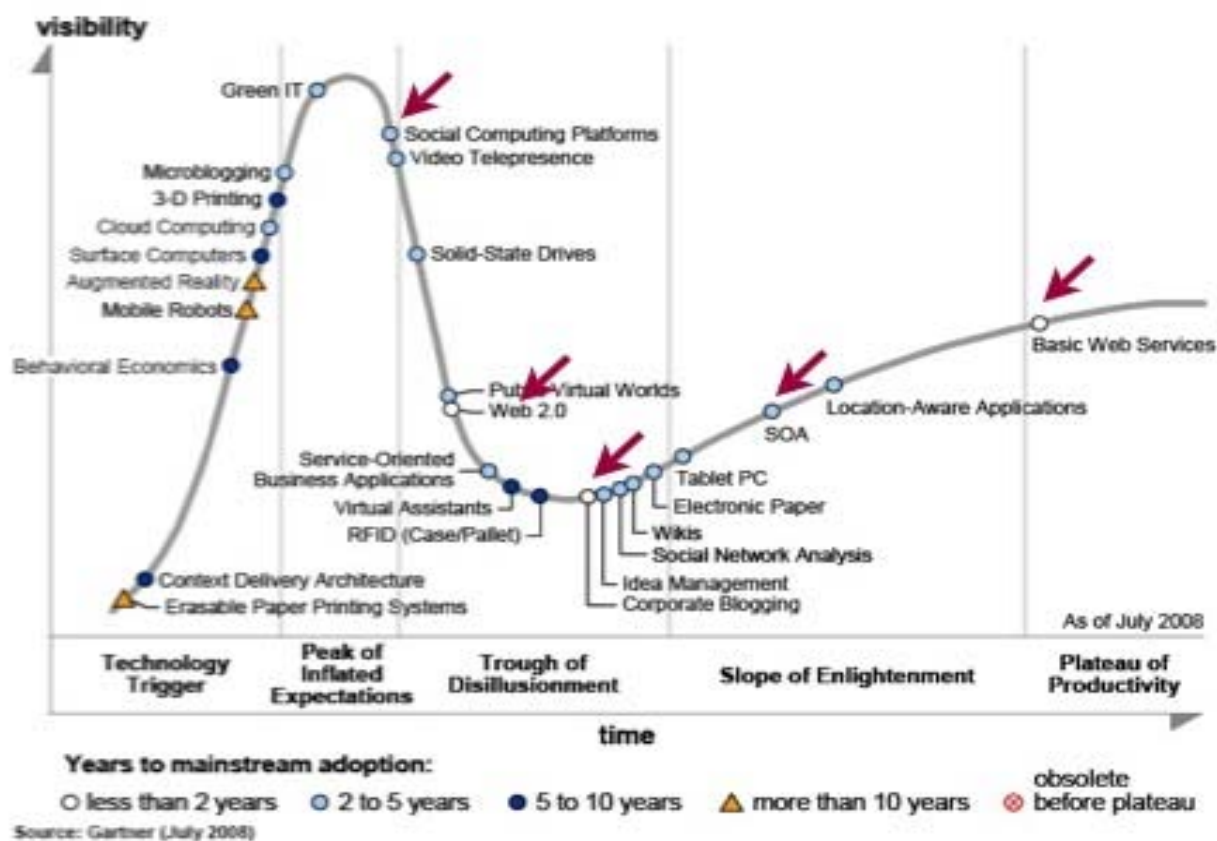




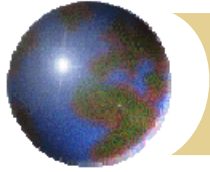
Gartner's 2008 Hype Cycle:

Web 2.0 And Related Concepts Are Just Before, In, Or Coming Out of *Trough of Disillusionment*

Figure 1. Hype Cycle for Emerging Technologies, 2008

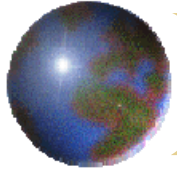


"Although **Web 2.0** is now entering the Trough of Disillusionment, it **will emerge within two years to have transformational impact**, as companies steadily gain more experience and success with both the technologies and the cultural implications"



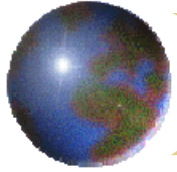
Additional Features

- Open Educational Resources (OER)
- MIT OpenCourseWare, OpenCourseWare Consortium (> 100 institutions);
- open textbooks;
- open repository of research publications;
- E-libraries (e.g. Europeana)
- Global Research Library (GRL)
- Serious Gaming Phenomena



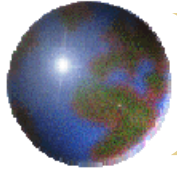
E-infrastructure for e-Science

- High performance computation services;
- Data, information and knowledge management services;
- Observation, management and fabrication services;
- Interfaces and visualization services;
- Collaboration service;
- Virtual Organizations



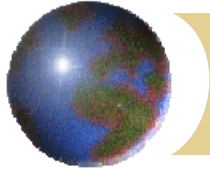
Virtual Organizations (1)

- E-infrastructure changes the needs and roles of the individual learner, **changing the organizational enterprise of learning** (NSF, 2006);
- In order to realize these radical changes in the processes of learning and discovery, **cyber-services also demand a new level of technical competence from the workforce and citizens:**
- **Future generations of research scientists and engineers.** The new tools and functionality of e-infrastructure are transforming the nature of scientific inquiry and scholarship.
- **Teachers and faculty.** To employ the tools and capabilities of e-infrastructure enabled learning environments effectively, teachers and faculty must also have continued professional development opportunities.
- **Undergraduate curricula** must also be reinvented to exploit emerging e-infrastructure capabilities and the students should be able to do e-infrastructure-enabled scientific inquiry and learning;



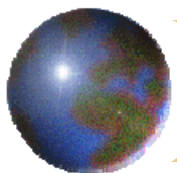
Virtual Organizations (2)

- **E-infrastructure career professionals.** Ongoing attention must be paid to the education of the professionals who will support, deploy, develop, and design current and emerging e-infrastructure.
- The increased emphasis on “**data rich**” **scientific inquiry** has revealed serious needs for “***digital data management***” or data curation professionals. Such careers may involve the development of new, hybrid degree programs combining library science with a scientific discipline.
- **Business and industry workforce.** The e-infrastructure will impact the portfolio of skills and knowledge the business people and professionals should strive to achieve through professional certification training continual workplace learning (supported by the e-infrastructure).
- **Citizens at large.** E-infrastructure extends the impact of science to citizens at large by enhancing communication about scientific inquiry and outcomes to the lay public. E-infrastructure enables lifelong learning opportunities as it supports the direct involvement by citizens in distributed scientific inquiry.

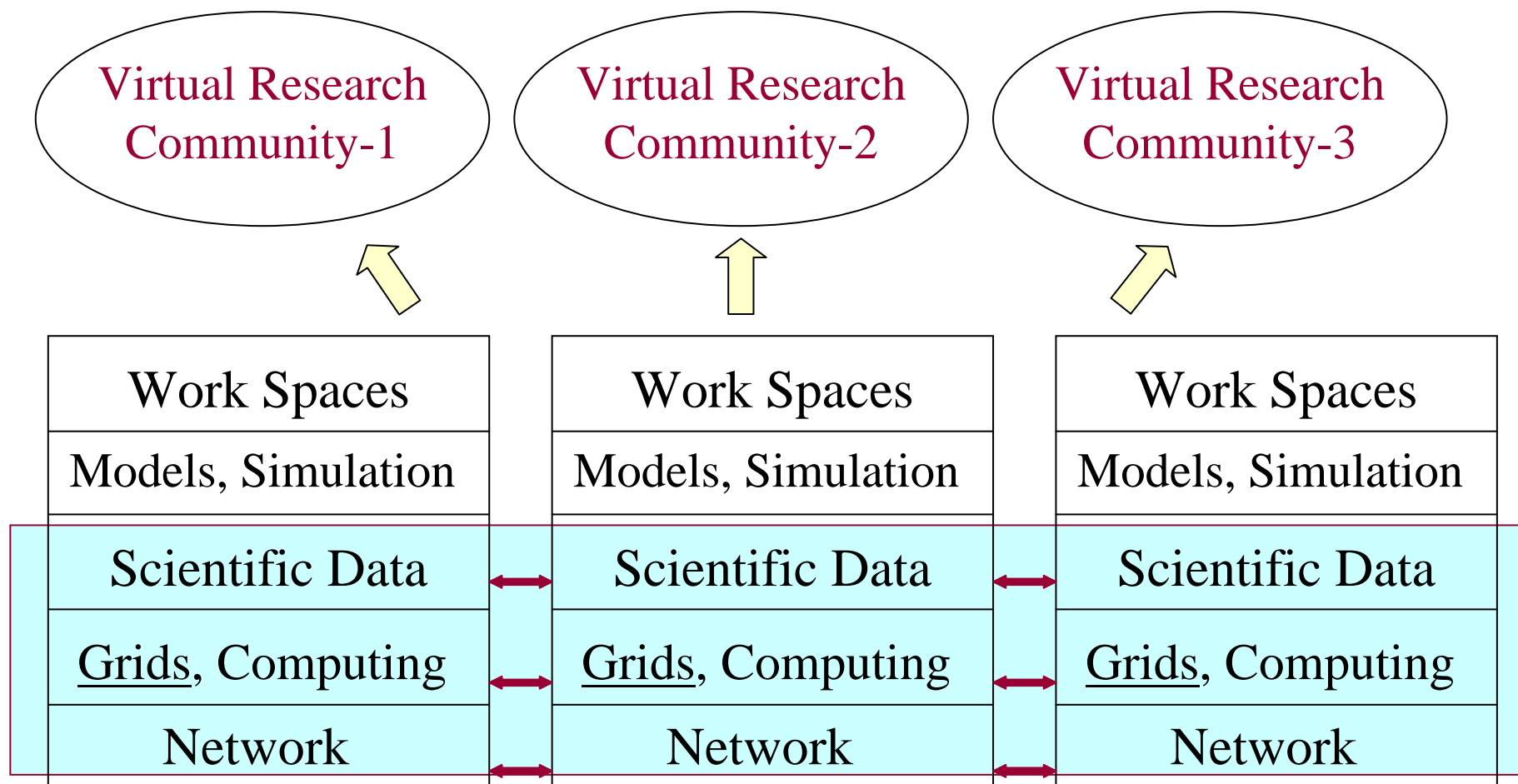


Global Alliances

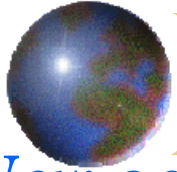
- building global alliances - **clear tendency** in the global educational & RTDI movement;
- **reasons** for forming partnerships:
 - sharing resources, costs and infrastructure to deliver e-learning and doing e-science;
 - competing with other international providers;
 - reducing duplication among existing universities;
- **The publishing companies** are also active in alliances with universities, colleges and other educational service providers;



Global Virtual Research Communities



Global Virtual Research Communities are complementary to physical research centres; they are not replacing them



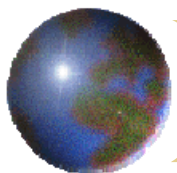
New generation of ICT-infrastructures

End-user view: “unlimited” access to ICT-resources distributed world-wide, global collaborations simplification

Developer view:
abstraction, effective
service creation

Infrastructure-provider view:
Integration, pervasive virtual
organisations, streamlining and
longer-term protection of investment

Flexible control and sharing of distributed resources



EGEE: global collaborations in science

- ~ 500 sites in 40 countries
- > 60 Virtual Organisations
- ~ 30 000 CPUs
- > 5 PB storage
- > 20 000 concurrent jobs/day

- Scientific communities

High Energy Physics

Astrophysics

Computational Chemistry

Fusion

Life Sciences

Biomedics

Earth Sciences

Finance

Geophysics

Multimedia...



Enabling Grids for E-science is the largest grid infrastructure in the world



e-NMR: Deploying and unifying the NMR e-Infrastructure in System Biology

Mission of e-NMR | Deploying and unifying the NMR e-Infrastructure in System Biology - Mozilla Firefox

файл Редактиране Изглед История Отметки Инструменти Помощ

http://www.e-nmr.eu/enmr-mission

Най-посещавани Customize Links Free Hotmail Windows Marketplace Windows Media Windows

e-nmr
Deploying and unifying the NMR e-Infrastructure in System Biology

SEVENTH FRAMEWORK PROGRAMME

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Mission of e-NMR

NMR plays an important role in life sciences (biomolecular NMR), and structural biology in particular, at both European and international levels. An I3 initiative is operative in the field, which provides access to NMR instrumentation and pursues technical advancement (EU-NMR). In addition, the EC has funded a Coordination action [NMR-Life](#) aimed at the establishment of common experimental approaches and at the spreading of best experimental practices across Europe. Altogether, these two initiatives provide a reference point for the large majority of European scientists with an interest in biomolecular NMR.

In parallel, European developments in the area of Research Infrastructures in the past years resulted in a leading edge high-speed research network covering all Europe and in a overlaying production Grid infrastructure, realized by projects as [EGEE/EGEE II](#). This integrated network and processing/storage environment - e-Infrastructure - provides a platform for new methods of global collaborative research - e-Science.

The main objective of this project is to optimise and extend the use of the NMR Research Infrastructures of EU-NMR through the implementation of an e-Infrastructure in order to provide the European biomolecular NMR user community with a platform integrating and streamlining the computational approaches necessary for biomolecular NMR data analysis (e-NMR). The e-NMR infrastructure will be based on the Grid infrastructure.

The project will also tackle the following objectives:

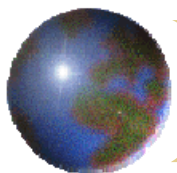
- establish a human collaboration network between the biomolecular NMR and the e-Infrastructure scientific communities
- assess the state-of-the-art of the computational aspects of biomolecular NMR
- implement and make available state-of-the-art computational methods.

A broad range of networking activities will focus on monitoring, dissemination and outreach, training, hands-on workshops. The development and enforcement of operational and organizational schemes and policies will also be addressed.

Access People Network Data Wiki

Готово

Start 2 W... 2 S... 3 M... 19 F... e-Re... SA D... rev... 2 M... 2 M... 11:22



NMDB: real-time database for high resolution neutron monitor measurements

Neutron Monitor Database - Mozilla Firefox
файл Редактиране Изглед История Отметки Инструменти Помощь
http://cosmicrays oulu.fi/nmdbinfo/

NMDB Neutron Monitor Database

Navigation

- Meetings and events
- NMDB and Stations Overview
- NMDB Documentation
- NMDB Online Access Tools
- Working Packages and Project Groups

Navigation

- NMDB site materials

User login

Username: *
Password: *
☐ Remember me

[Request new password](#)

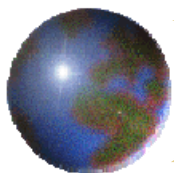
NMDB: real-time database for high resolution neutron monitor measurements
May 21, 2008 - 3:11pm — Askar Ibragimov

The worldwide network of standardized neutron monitors is, after 50 years, still the state-of-the-art instrumentation to measure variations of the primary cosmic rays. These measurements are an ideal complement to space based cosmic ray measurements. Unlike data from satellite experiments neutron monitor data has never been available in high resolution from many stations in real-time. The data is often only available from the individual stations website, in varying formats, and not in real-time.

To overcome this deficit, the European Commission is supporting the Neutron Monitor database (NMDB) as an e-Infrastructures project in the Seventh Framework Programme in the Capacities section. Stations that do not have 1-minute resolution will be supported by the development of an affordable standard registration system that will submit the measurements to the database via the internet in real-time. This resolves the problem of different data formats and for the first time allows to use real-time cosmic ray measurements for space weather predictions. Besides creating a database and developing applications working with this data, a part of the project is dedicated to create a public outreach website to inform about cosmic rays and possible effects on humans, technological systems, and the environment.

Research Infrastructures
INFRA-2007-1.2.1 - Scientific Digital Repositories

e-infrastructure



DRIVER: Networking European Scientific Repositories

DRIVER | Home - Mozilla Firefox

Файл Редактиране Изглед История Отметки Инструменти Помощ

http://www.driver-repository.eu/

Най-посещавани Customize Links Free Hotmail Windows Marketplace Windows Media Windows

SEARCH THE REPOSITORIES | LEARN ABOUT DRIVER | FIND SUPPORT | REGISTER YOUR REPOSITORY

driver Digital Repository Infrastructure Vision for European Research

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search... **Search**

Latest News

- Softver za infrastrukturo DRIVER je že dosegljiv!
- DRIVER infrastructure software release is available now!
- Lancering D-NET: unieke Europese portal voor wetenschappelijk onderzoek

DRIVER: Networking European Scientific Repositories

Considered the largest initiative of its kind in helping to enhance repository development worldwide, DRIVER is a multi-phase effort whose vision and primary objective is to create a cohesive, robust and flexible, pan-European infrastructure for digital repositories, offering sophisticated services and functionalities for researchers, administrators and the general public.

DRIVER has established a network of relevant experts and Open Access repositories. DRIVER-II will consolidate these efforts and transform the initial testbed into a fully functional, state-of-the art service, extending the network to a larger confederation of repositories. DRIVER is integral to the suite of electronic infrastructures that have emerged in the worldwide GEANT network and is hence funded under the e-Infrastructures call of the European Commission's 7th framework programme. It aims to "... optimise the way the e-Infrastructure is used to store knowledge, add value to primary research data and information making secondary research more effective, provide a valuable asset for industry, and help bridging research and education."

The objectives of DRIVER-II, the second phase of the project, include efforts to expand, enrich, and strengthen the results of DRIVER, in the following areas:

- strategic geographic and community expansion by means of the DRIVER confederation
- establish a robust, scalable repository infrastructure accompanied by an open source software package D-Net
- broader coverage of content through the use of enhanced publications
- advanced end-user functionality to support scientific exploration of complex digital objects
- larger outreach and advocacy programmes
- continued repository support
- guidelines for interoperability in the larger European digital library community
- Open Access to European research materials

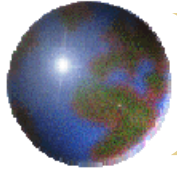
DRIVER is a fully distributed endeavour and profits immensely from this since:

- It combines the expertise of its partners in many different domains such as technical knowledge, knowledge of university libraries, experience in strategic thinking and project management.
- The distributed computer power from technical partners facilitates the workings of the system through its specific nodes.
- The European background of its partners, from Slovenia to Denmark, Greece to the UK, is a great asset in the development of a pan-European infrastructure.

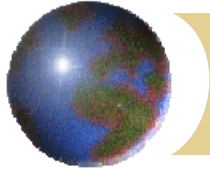
The congregation of such diverse content and services on the common DRIVER platform is of immense value to both specialized research communities and the general public. DRIVER represents a unique venture, drawing together stakeholders and integrating repositories over a diverse and expansive physical and cultural landscape. In its first phase, the project has succeeded in securing a high profile as well as an awareness among the international Open Access community and the targeted stakeholder groups. Moreover, DRIVER's studies on interoperability and technological issues, combined with the uptake of subject-based communities, examine practices performed in similar environments stretching across European boundaries. The scientific and societal advances

Готово

Start 2 W... 2 S... 3 M... 23 F... e-R... SA... 2 N... 2 M... 2 M... 11:42

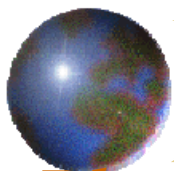


*The Role of REGPOT and RoK.
Some Proposals*

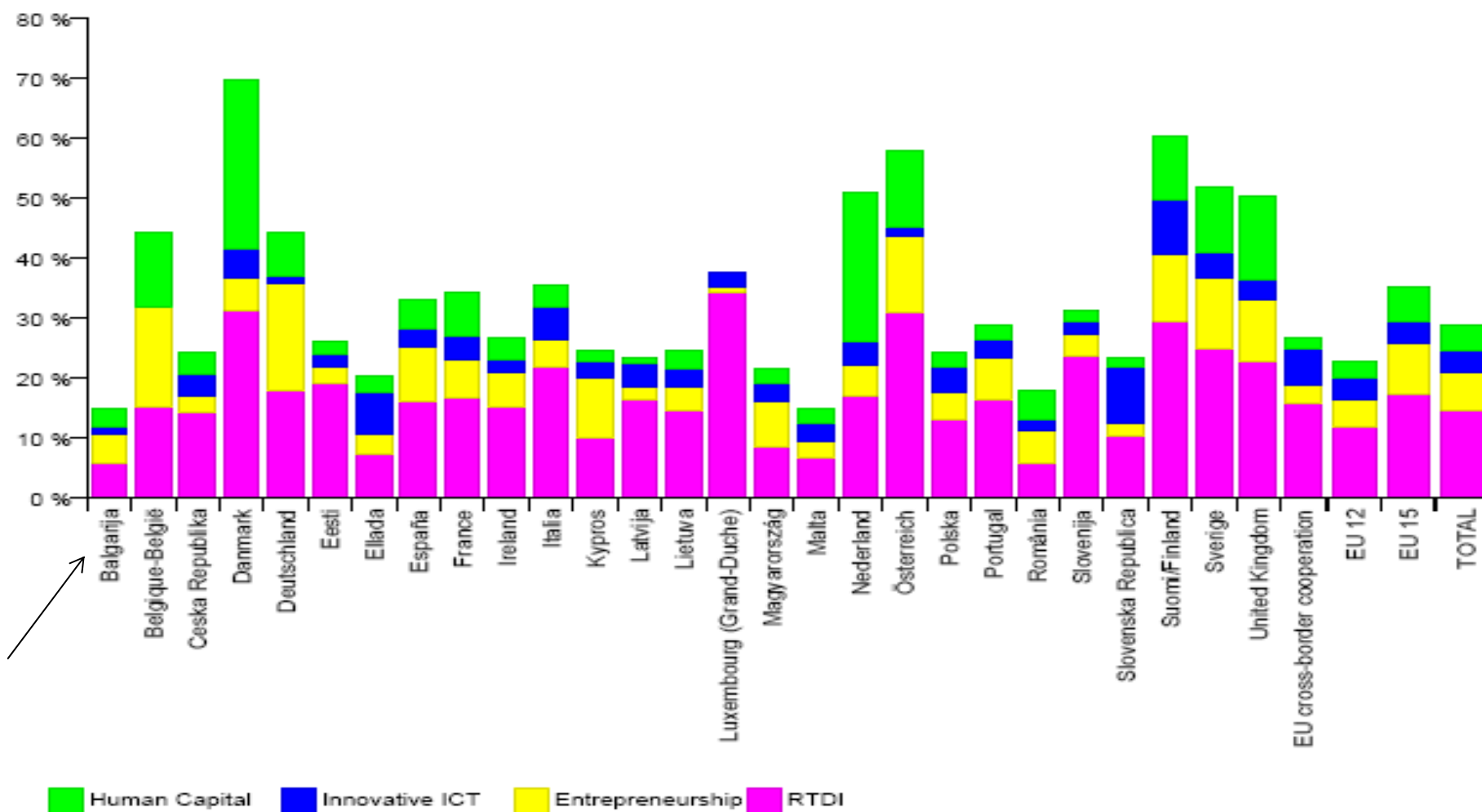


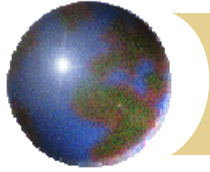
Regional Development

- **Regions** are more and more generally identified as **important players in the knowledge-based economy**;
- Sub-territories or **Macro-Regions** (Baltic Sea, Danube, North Sea-English Channel)
- **Instruments & funding**: national/regional authorities, private sector, Community programmes (FP7, CIP, Structural Funds, INTERREG, URBACT, SEE Programme, VC Funds, EIB, EIF,...)
- Initiatives/Activities:
 - Entrepreneurial/Innovation/Digital University
 - Research Intensive Clusters;
 - Science Parks;
 - Living Labs.



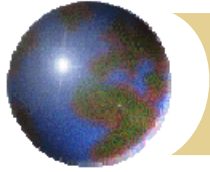
Planned Cohesion Policy Investments in Innovation by MS





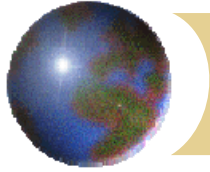
Regional Aspects of FP7

- FP7 'Regions of Knowledge' (RoK) programme aims to strengthen the research potential of European regions:
 - encourages and supports the development of RTDI joint action plans, elaborated by mature '**regional research-driven clusters**';
 - connects the research entities, enterprises and regional/local authorities ('**triple helix**') - to increase regional economic competitiveness through RTDI activities in traditional or emerging business sectors.
- FP7 'Research Potential' (RegPot) programme aims to unlock and develop the existing or emerging RTDI potential institutions located in the EU's convergence and outermost regions (e.g. FP7 SISTER Project).



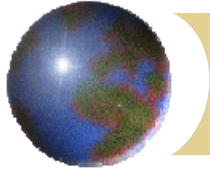
Research-Intensive Clusters

- Research-intensive Cluster (RIC) - a cluster that **relies predominantly on RTDI** as a source of its innovativeness;
- **market-driven**;
- based on a **partnership and collaboration between businesses and universities/public research organisations**;
- support role for **public and semi-public bodies** (RTDI agencies, innovation / technology transfer centres, public and private venture capital funds, etc.);
- **exchange of knowledge and human resources.**



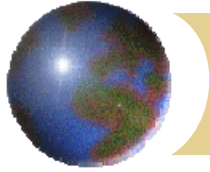
Science Parks

- Science parks (incl. incubators) are regarded as one of the important elements in the successful design of **research-based regional development policy** and can be complementary to RICs. The main actors:
 - **Government**: to increase the amount of applied research and in order to raise the level of technology transfer in a country;
 - **Regions**: to stimulate the regional economy by offering high-tech companies an attractive location;
 - **Universities**: to commercialize their research results, to establish good environment for their graduates and to attract more students by - solving interesting and actual projects, good employment foresight in the future, possibility to create own company, etc;
 - **High-tech Companies**: access to RTDI; international cooperation, qualified labour force, good location and excellent services - aiming to increase their future profit;
 - **Investors** - looking for the profit offering the premises and services.



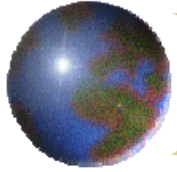
Some proposals for REGPOT & ROK(1)

- Support Macro-Regions Development
- To catalyse a **swift university reform**, similar to the Finish reform (Aalto University) and the German 'Elite University' initiative;
- To support access to an affordable high **speed broadband infrastructure** - fundamental element for individuals, enterprises and governments at all level;
- To support development of **infrastructure and capacity** (national and regional) for active participation in the EC, national and regional programmes;
- **New instruments**, e.g. 'joint ventures' and alliances of RTDI institutions;
- Support mostly **virtual mobility** of researchers, knowledge and innovation (open innovation) rather than physical mobility;
- Involving **local SMEs and RTDI institutions** in developing and deploying e-services;



Proposals... (2)

- **Capacity building in policy & strategy development** and active involvement in EU policy/strategy development
- Support development of **e-Region Strategies** for:
 - digital and knowledge economy;
 - e-learning and e-competence development;
 - e-Cultural Heritage;
 - RTDI, including how to better participate in FP7, CIP, EIT (KICs), JTIs, ETPs, SFs, etc;
- Support development of a **Region Network of Living Labs** Program - similar to Nordic Baltic Programme on Living Labs of the LILAN (Living Labs in the North) initiative;
- Support development of **Regional Networks of Science Parks** and **Innovative Clusters Program**;
- Reinforcing usage of **Public-Private-Partnership** (PPP) and **Public-Private-People-Partnership** (PPPP, e.g. in Living Labs)



Thank you for your attention!