A Common Strategic Framework for research and innovation in Europe

Workshop “The role of funding agencies and industrial research in promoting computing science education”

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"The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission."
Europe 2020: 7 flagship initiatives

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- **Smart**:
  - Innovation: « Innovation Union »
  - Education: « Youth on the move »
  - Digital society: « A Digital Agenda for Europe »

- **Sustainable**:
  - Climate, energy and mobility: « Resource efficient Europe »
  - Competitiveness: « An industrial policy for the globalisation era »

- **Inclusive**:
  - Employment and skills: « An agenda for new skills and jobs »
  - Fighting poverty: « European platform against poverty »
Objectives of smart, sustainable and inclusive growth
- Headline targets, including 3% of GDP invested in R&D
- Includes the Digital Agenda for Europe flagship
  - ICT research and innovation as a central pillar
- Includes the Innovation Union flagship
  - Key conditions to make Europe attractive for R&I
- Includes the Industrial Policy flagship
  - ICT as a Key Enabling Technology
- Innovation endorsed by February 2011 European Council as key to future growth and jobs
ICT matters

The ICT sector represents 4.8% of the EU economy...

ICT manufacturing (1% of the GDP) alone generates 25% of total business R&D

The ICT sector and investment in ICT are responsible for 50% of productivity growth

Source: Eurostat, IPTS-JRC and EU KLEMS
ICT value in % of GDP

EU 27: 4.8%
US: 6.4%
Japan: 6.8%

Source: Eurostat, IPTS-JRC

ICT manufacturing
ICT services
Contribute to the Europe 2020 Strategy by exploiting the potential of ICT

How? By making the virtuous circle of the digital economy work

Attractive content and services stimulate demand, which creates the business case for investment in faster networks
digital economy challenges

- Fragmented digital markets
- Lack of investment in networks
- Rising cybercrime and low trust in networks
- Lack of interoperability
- Insufficient research and innovation efforts
- Lack of digital literacy and skills
- Fragmented answers to societal challenges
DAE: 7 pillars structuring the answer

- A vibrant digital single market
- Fast and ultra fast internet access
- Enhancing digital literacy, skills and inclusion
- ICT-enabled benefits for EU society
- Trust and security
- Interoperability and standards
- Research & Innovation
- + International dimension
Consulting on major improvements to future EU research and innovation funding for the next EU budget (2014 +)

- Proposed to cover the FP, CIP and EIT in a Common Strategic Framework
- With a a coherent set of funding instruments including innovation
- ...and simplification of procedures and rules
Covering current funding for:

- **7th Framework Programme (FP7)**
  - 53 B Euro (2007-2013), 4 main programmes on Ideas, People, Cooperation and Capacities

- **Competitiveness and Innovation Programme (CIP)**
  - 3,6 B Euro (2007-2013), 3 programmes on enterprise & innovation, intelligent energy and ICT policy support

- **European Institute for Innovation & Technology (EIT)**
  - Autonomous EU body bringing together higher education, research and business to stimulate innovation in KICs - Knowledge and Innovation Communities. EU budget contribution 309 M Euro (2007-2013)
Why a CSF? Increasing impact

- **From** different priorities in each programme and initiative
  - To **common strategic priorities**, focusing on societal challenges, competitiveness and research excellence

- **From** gaps between the stages (R&D, demonstration, market take up, etc)
  - To **coherent support for projects and organisations** across the innovation cycle.

- **From** research results that are not used and focus on technologies
  - To stronger support for **innovation**, including non-technological innovation and market take-up
Why a CSF? Achieving simplification

- **From** a larger variety of funding schemes within and between programmes
  - **To** a *rationalised toolkit* of schemes across the Common Strategic Framework
- **From** different rules in each programme and initiative
  - **To** *more standardised rules* across all the initiatives - which meet the different needs and with flexibility where needed
- **From** multiple websites, guidance documents, applications
  - **To** a *common entry point*, one stop shop, common IT platform
Why a CSF? Consultation

- Working together to deliver on **Europe 2020**
  e.g. where to act at EU level?
    How to best pool/leverage resources?

- Tackling **societal challenges**?
  e.g. how focus on societal challenges affect balance between curiosity driven research / agenda-driven research?
Why a CSF? Consultation

- Strengthening *competitiveness*?
  e.g. how to strengthen industrial participation?
  JTI? PPP? ETPs?...
  How to support SMEs? Open schemes?...
  Pre commercial procurement?

- Strengthening the *science base* and the *ERA*?
  e.g. ERC? FET? ... Marie Curie actions?...
  research infrastructures?... eInfrastructures?
  international cooperation?...
Thinking the future

- What is at stake is the future of the Union's capability to continuously innovate in all fields of science and technology in order to be able to face the challenges of the 21st century and be more competitive on the global scene.
digital science: technology enablers

- Data Mining
- Simulation
- Modelling
- Data Infrastructures
- Sensors
- KETs
- Networks
- 3D Virtual Labs
- Science 2.0 (sci blogs, wikis,...)
- Knowledge sharing
- Digital Libraries
- Science Clouds
- Exascale Supercomputers

Digital Science
digital science: policy, governance...

Authorship
Open Access

...“Beta” Factor
Trans-disciplinary attitude
Non-regulated relation
Education
Scientific Societies

Social responsibility
Ethics and deontology
Globalisation of Science
Social implications
Communicating Science
Standards

Digital Science
digital science: some questions

- How to breed new high techs?
- How to breed new generations of talents?
- How the ERA would evolve?
- How to ensure better science-policies links?
- Do we need a science mediator?
- How to ensure open access to digital science?
- Do we need new trans-disciplinary curricula?
- Do we need new accreditation systems?
- Do we need new more science-driven R&D?
- Do we need new infrastructures?
A fundamental characteristic of our age is the rising tide of data – global, diverse, valuable and complex.

In the realm of science, this is both an opportunity and a challenge; when the information is so abundant, the very nature of research starts to change.

Data-intensive science emerges as decisive to understand global societal challenges (climate change, complex systems)
ICT drivers

- **Connecting** everything and everybody
- Smart spaces - **sensing** everything
- **Processing** power everywhere
- **Data** from everywhere at anytime
- New **materials**, increased capabilities
ICT innovation

- Speed up ICT innovation by bringing people together from different disciplines and backgrounds to nurture novel ideas
- Breed entrepreneurial ICT talents in Europe by fostering the emergence of a creativity and entrepreneurial culture in the universities
- Support the valorisation of results of research
- Innovation, not just technological
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conclusions

- Investing in Research and Innovation is key to achieve a smart, sustainable and inclusive growth
- Need to overcome fragmentation and to strengthen the links between education, research and innovation
- New EU policy context provides considerable opportunities for European excellence to emerge