From FP7 towards Horizon 2020

Workshop on " Research performance measurement and the impact of innovation in Europe"

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Lucilla Sioli, European Commission, DG CONNECT

Overview of the presentation

- FP7 – Research projects in the ICT domain
- ICT FP7 Evaluation and Monitoring System
  - Data on FP7 participation
  - Findings of Interim evaluation of ICT FP7
  - Currently available evidence on ICT FP7 outcomes
- Horizon 2020: What's new?
- Key Performance indicators for H2020
- Challenges in measuring impact of research

FP7 – Research projects in the ICT domain

- Overall budget: 9 billion EUR over the full duration of the FP7 (2007-2013)
  - ICT Theme of Cooperation
  - art. 171 (JTIs) and 169 (AAL)
  - eInfrastructures (FP7 Capacities)

- Specific objectives:
  - Improve competitiveness of European industry
  - Enable Europe to master and shape future developments in ICT
  - Strengthen Europe's scientific and technology base
  - Ensure global leadership in ICT
  - Stimulate product, service and process innovation and creativity through ICT use
  - Ensure that ICT progress is rapidly transformed into benefits for citizens, businesses, industry and governments
  - Help to reduce digital divide and social exclusion

Monitoring and Evaluation in FP7

- Annual monitoring of ICT FP7 participation (Stream Report)
  - Implementation, progress and achievements (*inputs*)
- Interim Evaluation ('Bravo Report', 2010)
  - Quality of the research activities, quality of implementation and management, and progress towards the objectives set
- Ex-post evaluation (to start in 2014)
  - Rationale, implementation and achievements

Research performance indicators for FP7 projects

Projects are requested to provide information in Final Reports on:

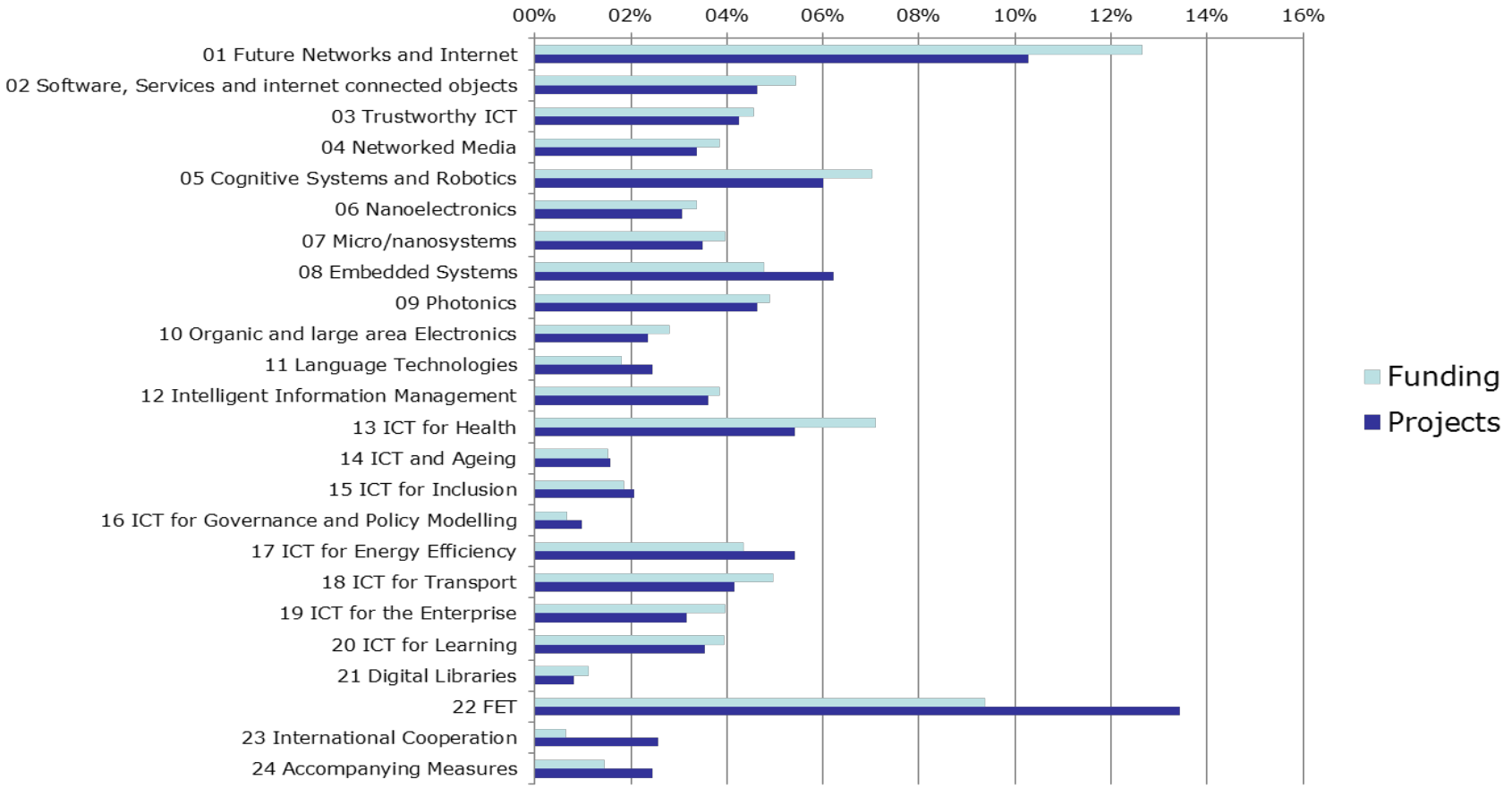
Use and dissemination of foreground

- Scientific (peer reviewed) publications relating to the foreground of the project
- Dissemination activities
- Applications for Intellectual Property Rights
- Exploitable foregrounds

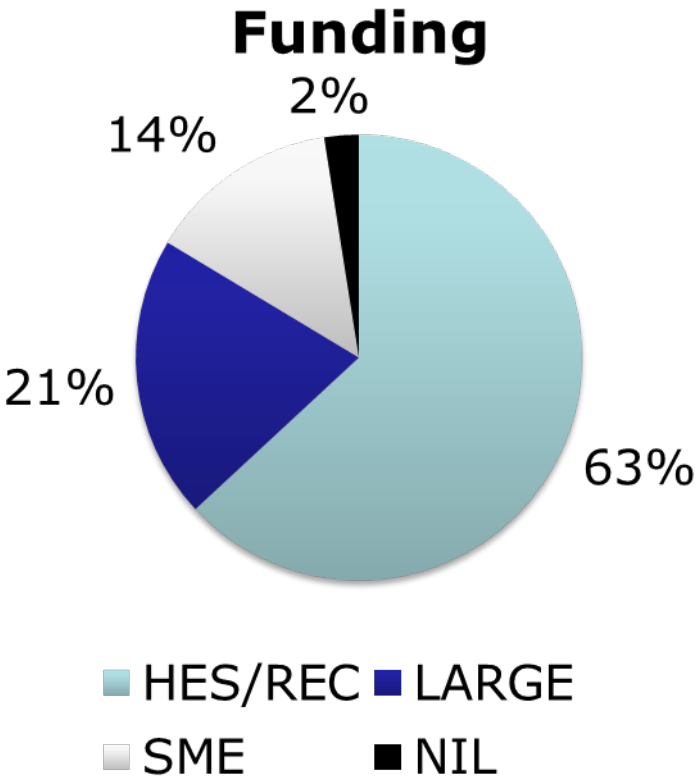
Societal implications

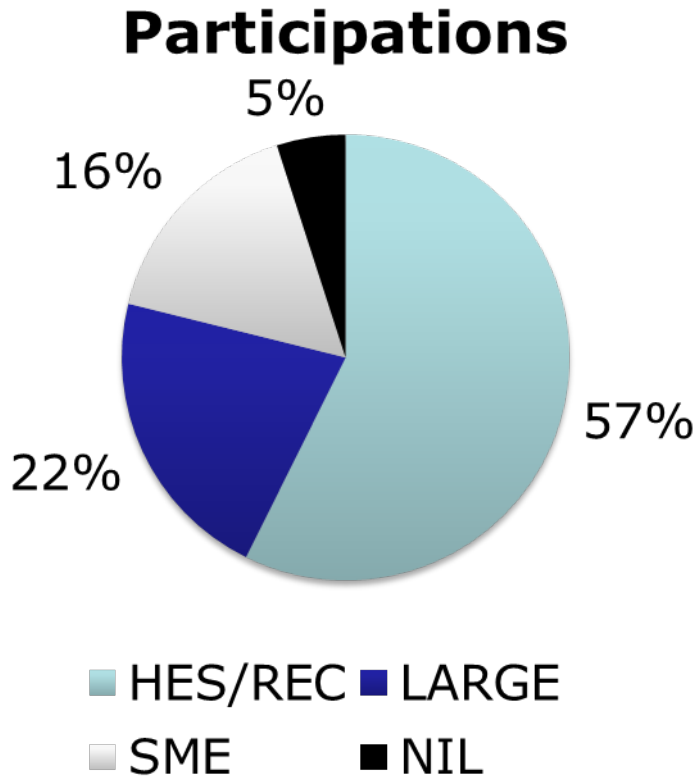
- Projects Workforce of the scientific staff and additional researchers recruited
- Use and dissemination (including spin-off companies created/ planned as a direct result of the project and number of additional jobs)

ICT FP7 - Strategic objectives
(cumulated figures 2007 – 2012)



ICT FP7 Participating organisations
(cumulated figures 2007 – 2012)





ICT FP7 Interim Evaluation (Bravo Report)
Summary of findings/ 1

- ICT programme:
  - Is solid and largely well implemented
  - has succeeded in creating/strengthening longer-term strategic R&D alliances, contributing to the integration of European research.
  - Backwards progress on simplification " *… not 'merely' a matter of imperfect implementation … an existential challenge to the Programme itself"* →**Need to improve "risk-sharing"**
  - Technical risk perceived to be lower where the consensus-based strategic agendas have defined the path for development
  - ➢ **The Programme needs to be rebalanced by taking on longer-term technology risk in emerging areas (expand and continue FET)**
  - ➢ **Flexibility and interdisciplinarity needed to support dynamic and radical ICT innovation**

ICT FP7 Interim Evaluation (Bravo Report)
Summary of findings/ 2

- A strong 'core' of participants involved in successive FPs:
  - Allows for the creation of critical mass in specific S&T fields at European level
  - Greatly increases the likelihood that results will be implemented
  - Fosters an on-going strengthening and expansion of strategic R&D Partnerships
  - Represents the established, major stakeholders on the European stage ('the usual suspects')
  - **Constitutes a risk for lock-in**
    - ➢ **Need to attract new participants**

- SMEs significant participants and contributors
  - ➢ **Specifically tailored risksharing finance instruments should be created for advanced users and high-tech SMEs**

Currently available evidence of ICT FP7 outcomes/ 1

Study on "*Analysis of publications and patents of ICT research in FP7*":

- Assessment of **output performance** of EU funded research in ICT based on:
  - Number and relevance of publications (scientific articles, proceeding papers)
  - Number of Patents
  - Extent of cooperation (across countries and organisations)
  - Study duration: 2012 – 2014 (three annual reports)
  - Based on survey to FP7 participants (response rates: 2011:58%, 2012:47%)
  - Comparison of focal samples with control samples for benchmarking

Currently available evidence of ICT FP7 outcomes/2

	2012
Articles	573
Proceeding papers	1008
	2011
Patents	21
Total number of projects surveyed	1706
Number of projects responding to the survey	795

Currently available evidence of ICT FP7 outcomes/3

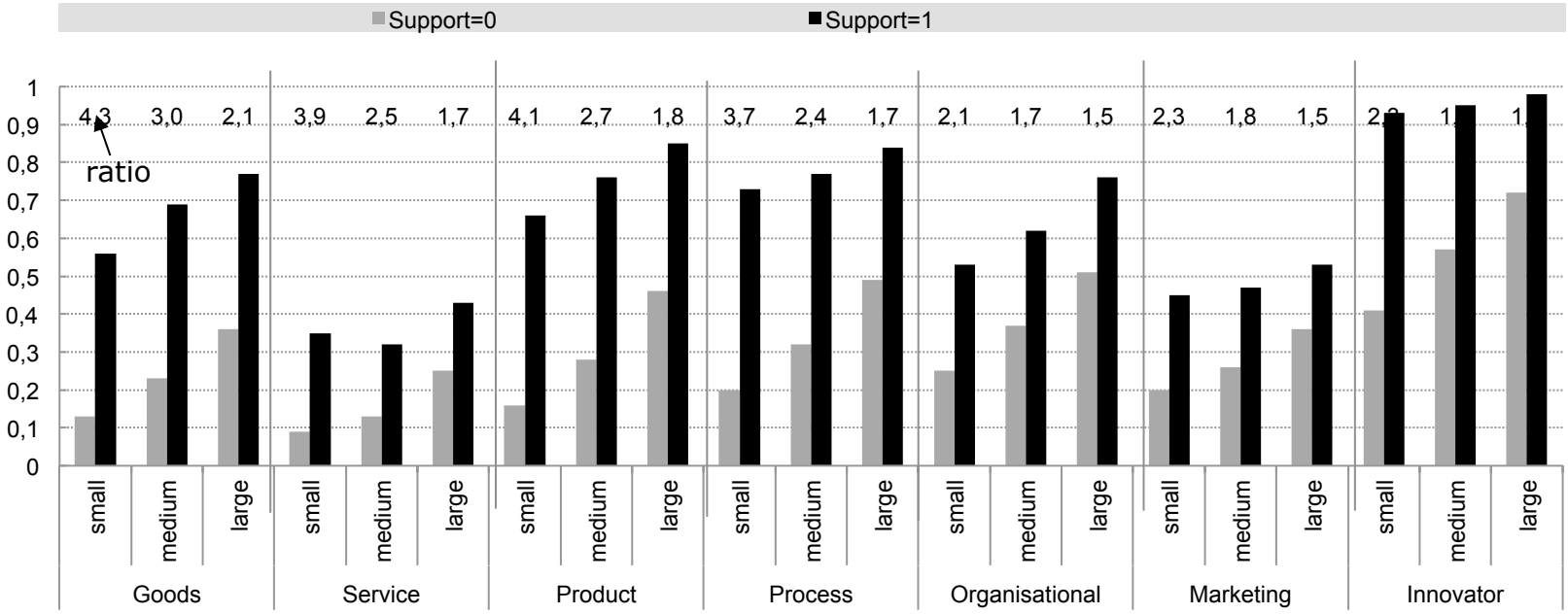
- Quality of publications: 63.5% of articles received citations (even if less than one year old);
- Small or medium-scale focused research projects (STREP) and Large scale integrating collaborative projects generate the most output, both for articles and proceedings; over 50% of patents stemmed from STREP projects;
- FET Open accounts for over one third of articles; top five strategic objectives contribute to more than half patents;
- Some countries have a larger presence in the focal sample than in the control sample (for publications); Germany is the most important player among EU countries as for patents (both in focal and control samples).
- Cooperations with large and research-intensive firms seem to pay off in terms of publication outputs produced.
- FP is instrumental in setting up research collaboration between EU countries (absent in the control sample).

Horizon 2020: What's new?

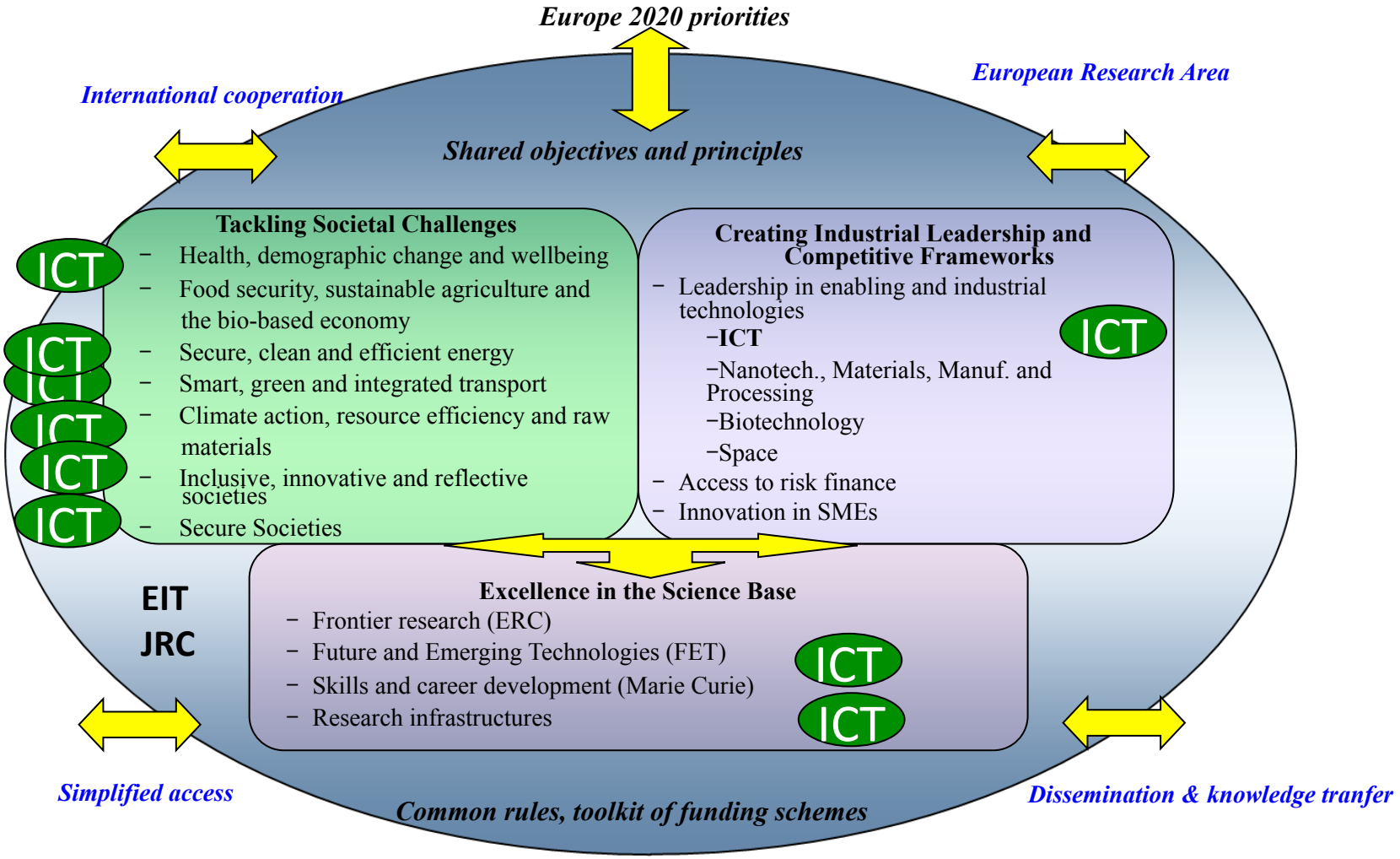
- **A single programme** bringing together three separate programmes/initiatives (FP7 + CIP + EIT)
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges facing EU society**, e.g. health, clean energy and transport
- **Simplified access**, for all companies, universities, institutes in all EU countries and beyond (Reaching out to non-traditional actors, More risk taking, Strengthened support for high-tech SMEs)
- Programme structured around the **three priorities** of Excellence in Science, Societal Challenges and Industrial Leadership

Firms benefitting from public support have higher innovation rates, particularly SMEs

Share of innovative firms among firms receiving public support or not, by size and type of innovation



Source: OECD calculations based on CIS 2008 microdata (Eurostat), 2012.


Europe 2020 priorities
International cooperation
European Research Area
Shared objectives and principles
Tackling Societal Challenges
- Health, demographic change and wellbeing
- Food security, sustainable agriculture and the bio-based economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Secure Societies
Creating Industrial Leadership and Competitive Frameworks
- Leadership in enabling and industrial technologies
-ICT
-Nanotech., Materials, Manuf. and Processing
-Biotechnology
-Space
- Access to risk finance
- Innovation in SMEs
ICT
Excellence in the Science Base
- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures
EIT
JRC
Simplified access
Common rules, toolkit of funding schemes
Dissemination & knowledge tranfer

Specific objective	Key Performance Indicator
1. EXCELLENT SCIENCE	ERC - Share of publications from ERC funded projects which are among the top 1 % highly cited
	FET - Publications in peer-reviewed high impact journals
	FET - Patent applications and patents awarded in Future and Emerging Technologies
	MSC -Cross-sector and cross-country circulation of researchers, including PhD candidates
	Infrastructures -Number of researchers who have access to research infrastructures through Union support
2. INDUSTRIAL LEADERSHIP	Patent applications and patents awarded in the different enabling and industrial technologies
	Share of participating firms introducing innovations new to the company or the market (covering the period of the project plus three years)
	Number of joint public-private publications
	Risk Finance - Total investments mobilised via debt financing and Venture Capital investments
	Risk Finance - Number of organisations funded and amount of private funds leveraged
	SME - Share of participating SMEs introducing innovations new to the company or the market (covering the period of the project plus three years)
	SME - Growth and job creation in participating SMEs
3. SOCIETAL CHALLENGES	Publications in peer-reviewed high impact journals in the area of the different Societal Challenges
	Patent applications and patents awarded in the area of the different Societal Challenges
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	Number of prototypes and testing activities
	Number of joint public-private publications
4. JRC	JRC -Number of occurrences of tangible specific impacts on European policies resulting from technical and scientific support provided by the Joint Research Centre
	JRC - Number of peer reviewed publications in high impact journals

Challenges in measuring impact of research

- Time lag and programming cycles (for setting up of indicators and evaluation)
- Data collection beyond completion of projects
- Appropriate reporting tools
- Scientific practices are evolving, need for new indicators
- Measuring innovation
- Measuring additional indicators (e.g. number of start-ups)
- Establishing causality links of impacts

- *We welcome new ideas!*

Thank you for your attention!

The Stream report and the databases of FP7 ICT and CIP projects (selected variables) are available on the Digital Agenda website: http://ec.europa.eu/digital-agenda/en/download-data

The visualisation tool of the Digital Agenda Scoreboard allows exploring the main indicators derived from this dataset: http://digital-agenda-data.eu