



Open Science policy: Results of the consultation on "Science 2.0: Science in transition" and possible follow up

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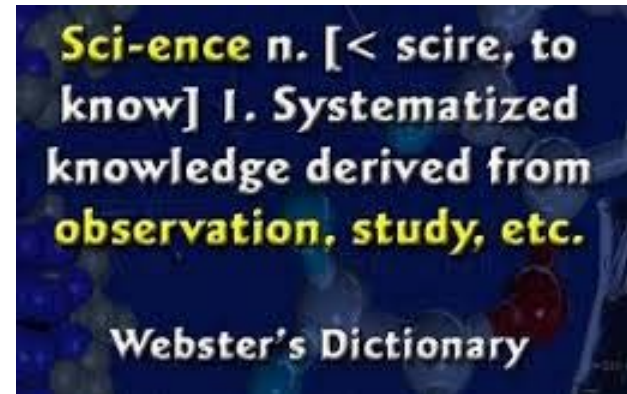
Espoo, 11-12 May 2015

YEAR Annual Conference

Keynote

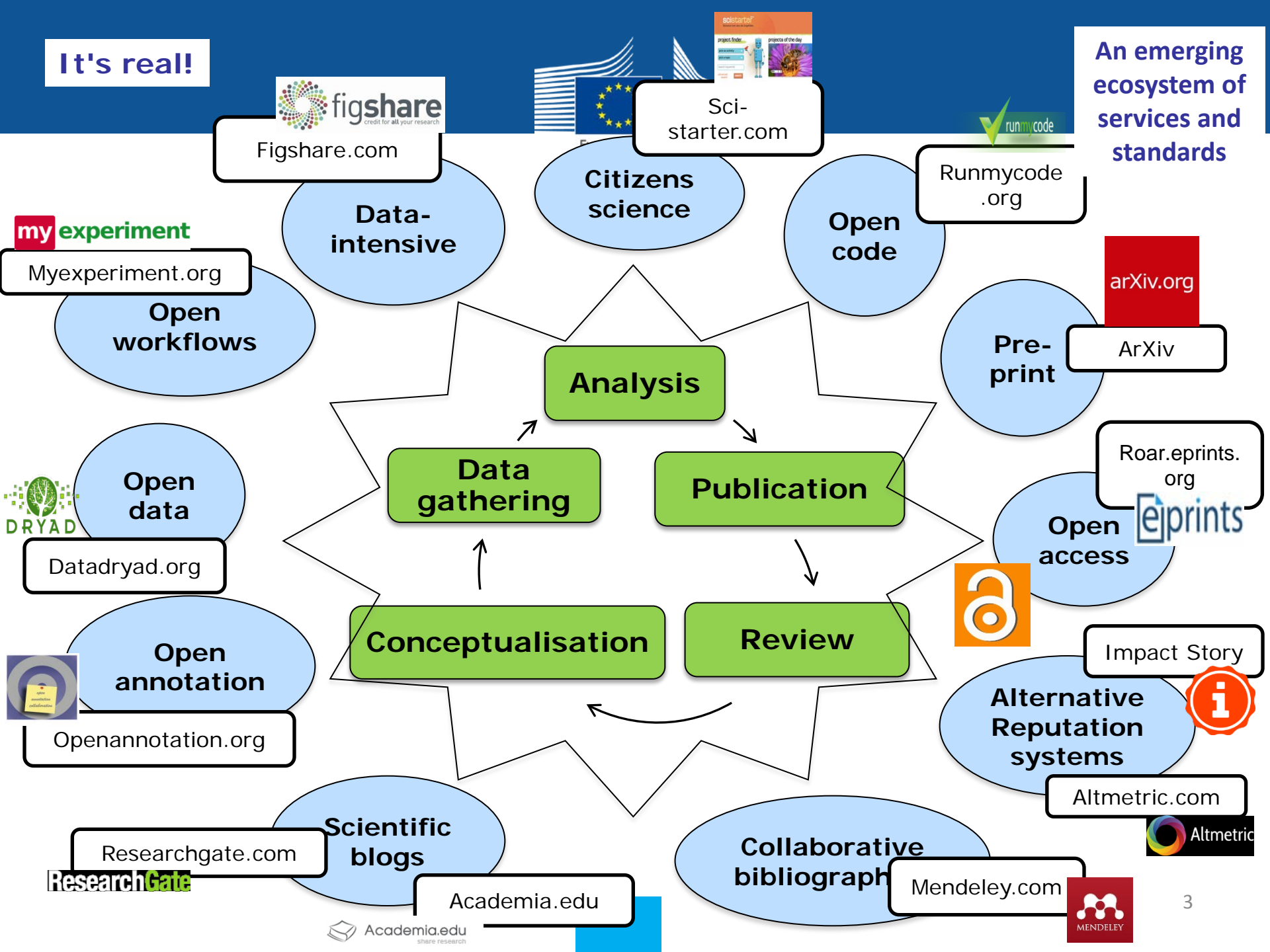
Open Science / Science 2.0

- A systemic change in the modus operandi of science and research
- Affecting the whole research cycle and its stakeholders



It's real!

An emerging ecosystem of services and standards



It's Irreversible

- **Digital technologies** enable changes similar as Web2.0 to the internet
- Exponential **growth of data** – data driven science
- **Globalisation** and growth of the science community
- Pressure on the science system to address faster the **Grand Challenges**
- Rising **expectations of citizens for science** to deliver and be transparent
- Demand for **accountable, responsive and transparent science**
- **Digital "natives"** entering the research population

It's not happening in isolation

- Open source software
- Collaborative knowledge production
- Creative commons
- Open innovation
- The sharing/collaborative economy ("collaboratism")
- MOOC
- Web 2...
 - what started +/- 15 years ago is deeply affecting ("paradigm shift") commerce, manufacturing, health, government, social relations, media, culture,....
 - and now science and research

It offers great opportunities

- Better value for money by strengthening the productivity of the European science and research system
- More transparency, openness and networked collaboration
- More efficiency, reliability and responsiveness

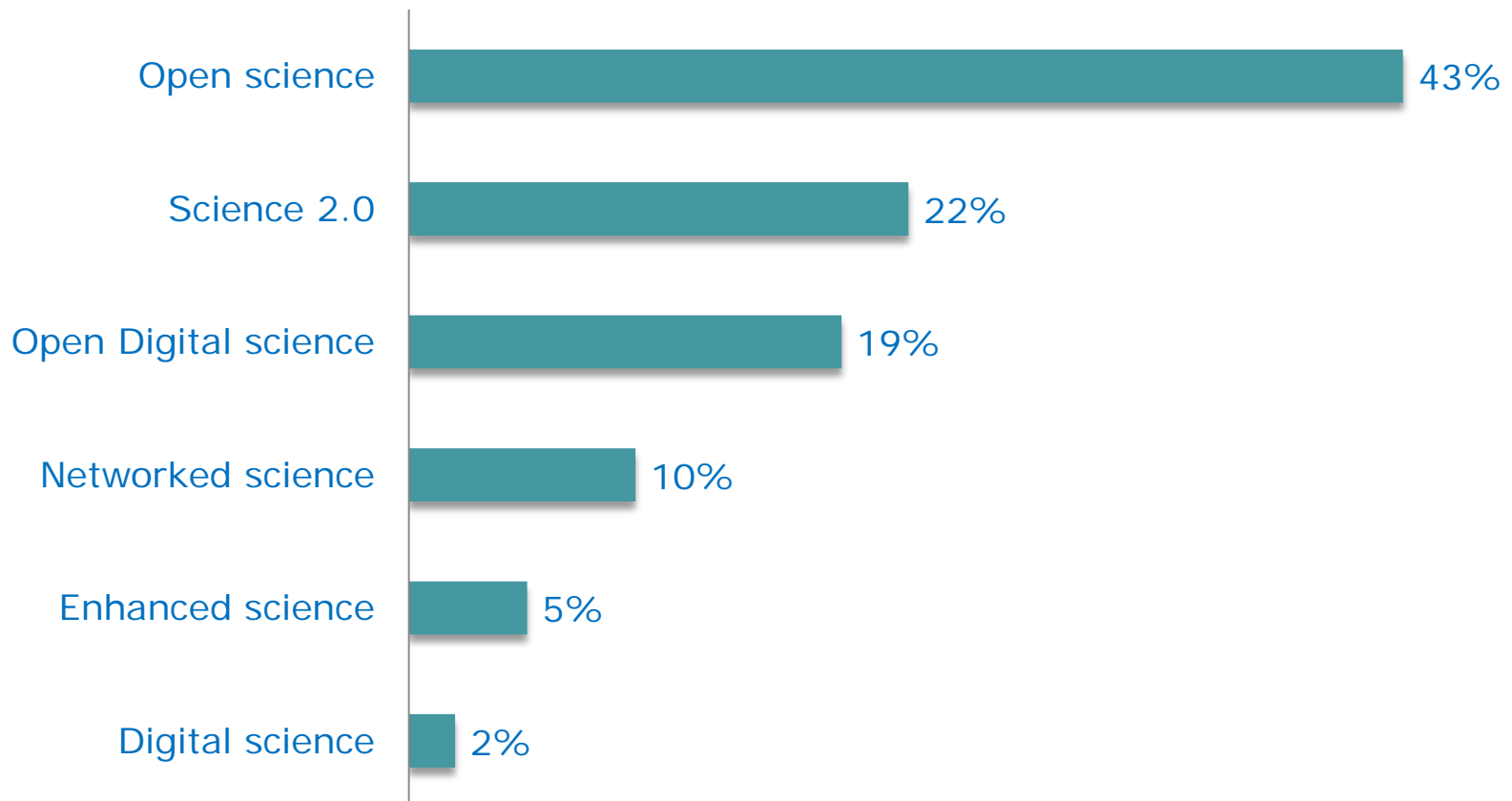
Public consultation: Science 2.0: Science in Transition

- Assess the **degree of awareness** amongst the stakeholders of the changing modus operandi
- Assess the **perception of the opportunities and challenges**
- Identify **possible policy implications and actions** to strengthen the competitiveness of the European science and research system

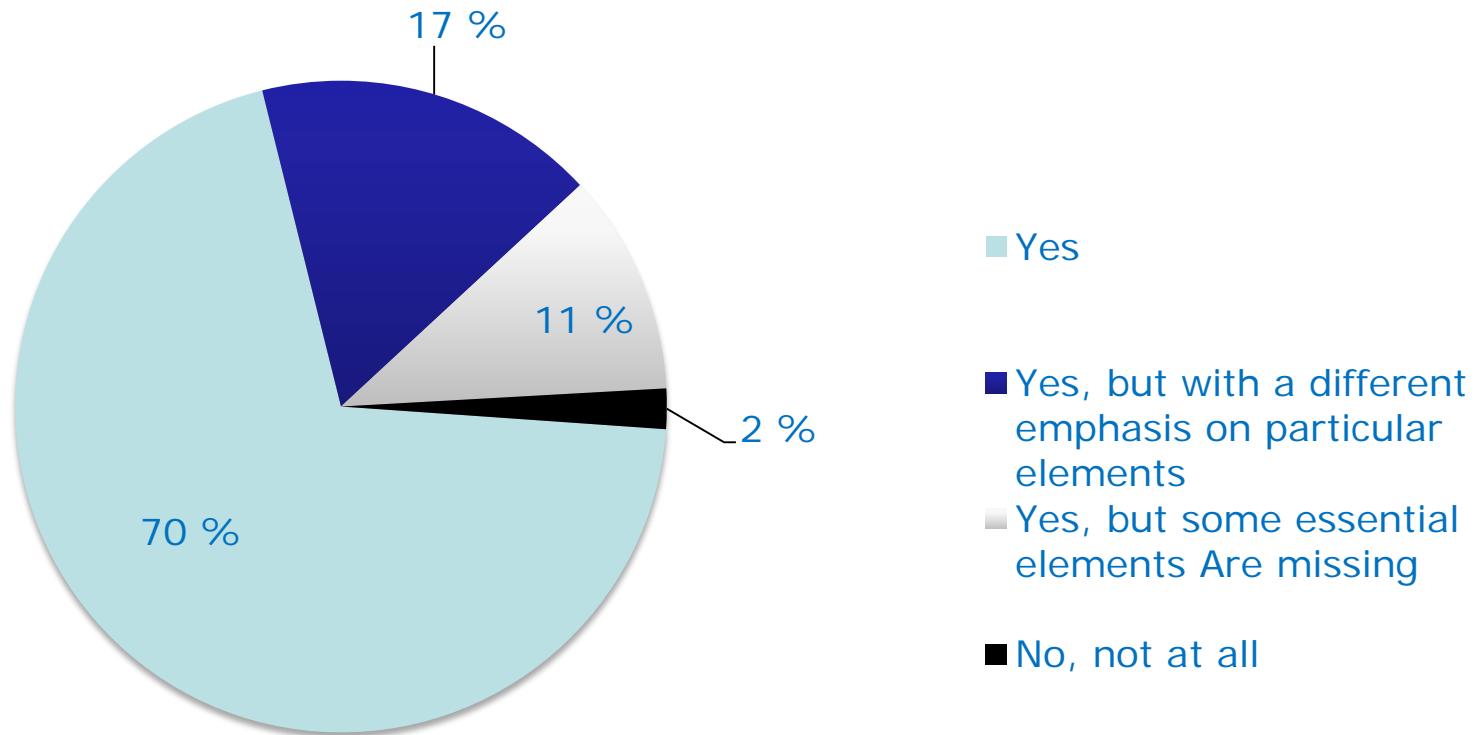
Numbers:

- From 03.07.2014 to 30.09.2014
- 498 submitted responses of which 164 Organisations and 38 Public Authorities
- 28 position papers voluntary submitted in addition to questionnaire

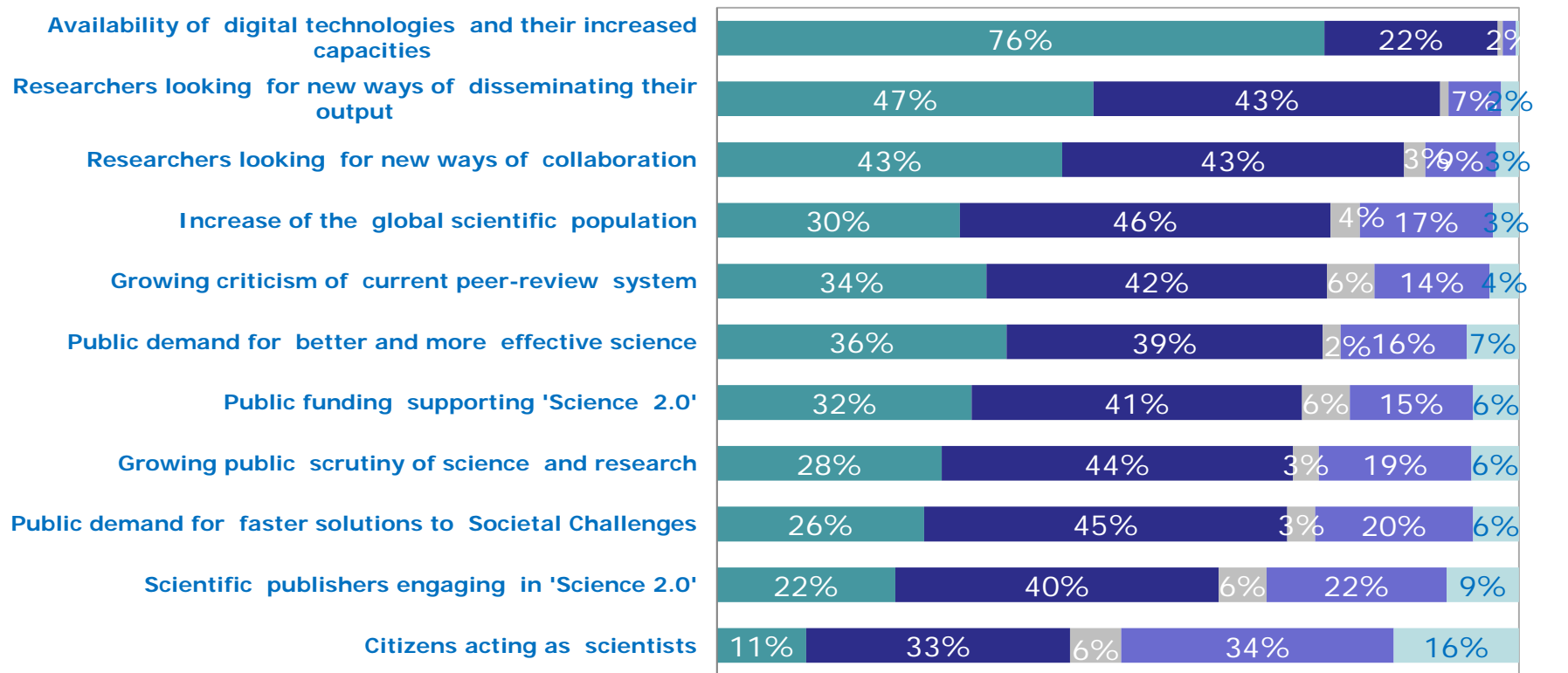
What is the most appropriate term to describe 'Science 2.0'?



Do you recognise the trends described in the consultation paper as 'Science 2.0'?



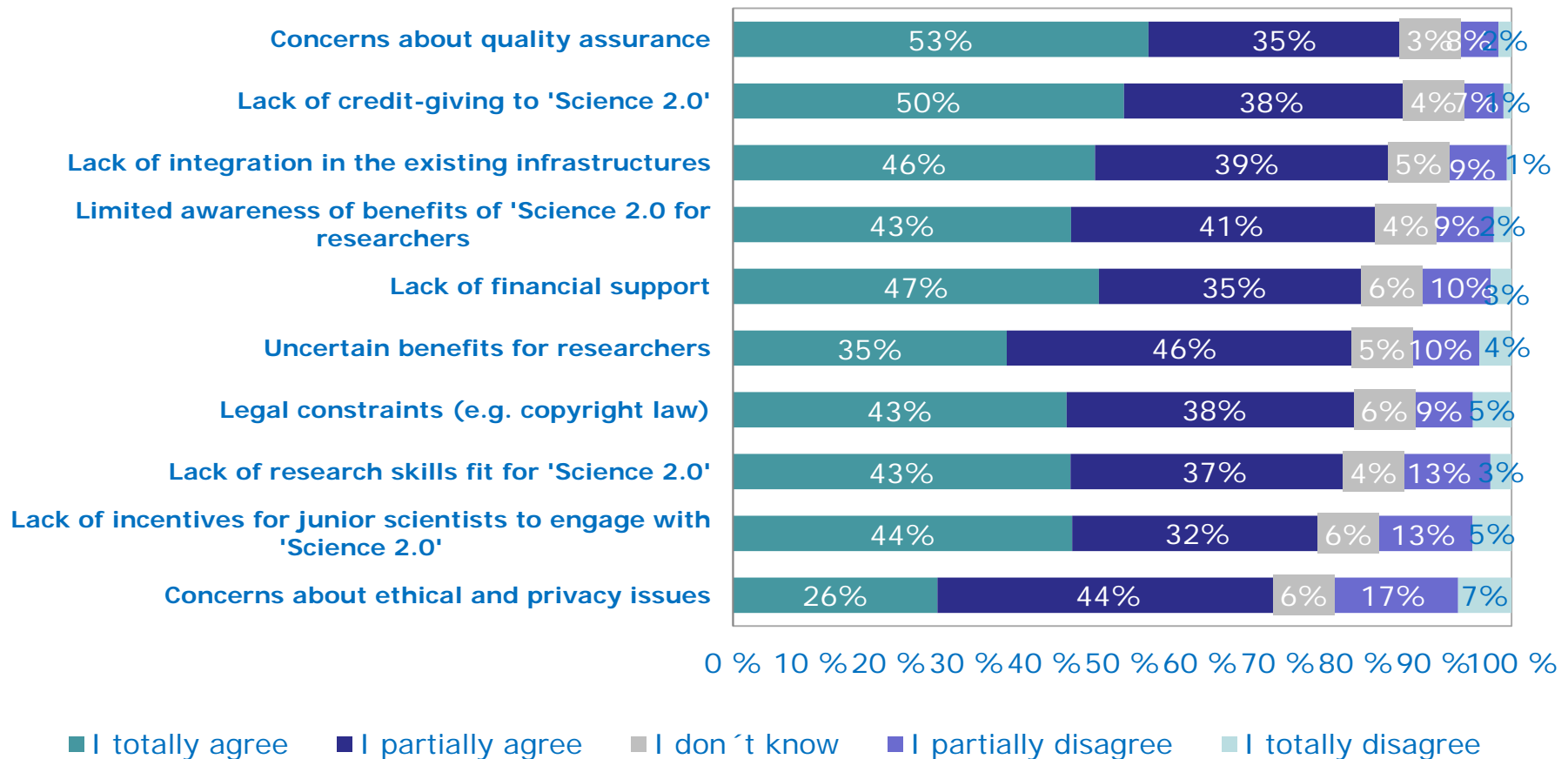
What are the key drivers of 'Science 2.0'?



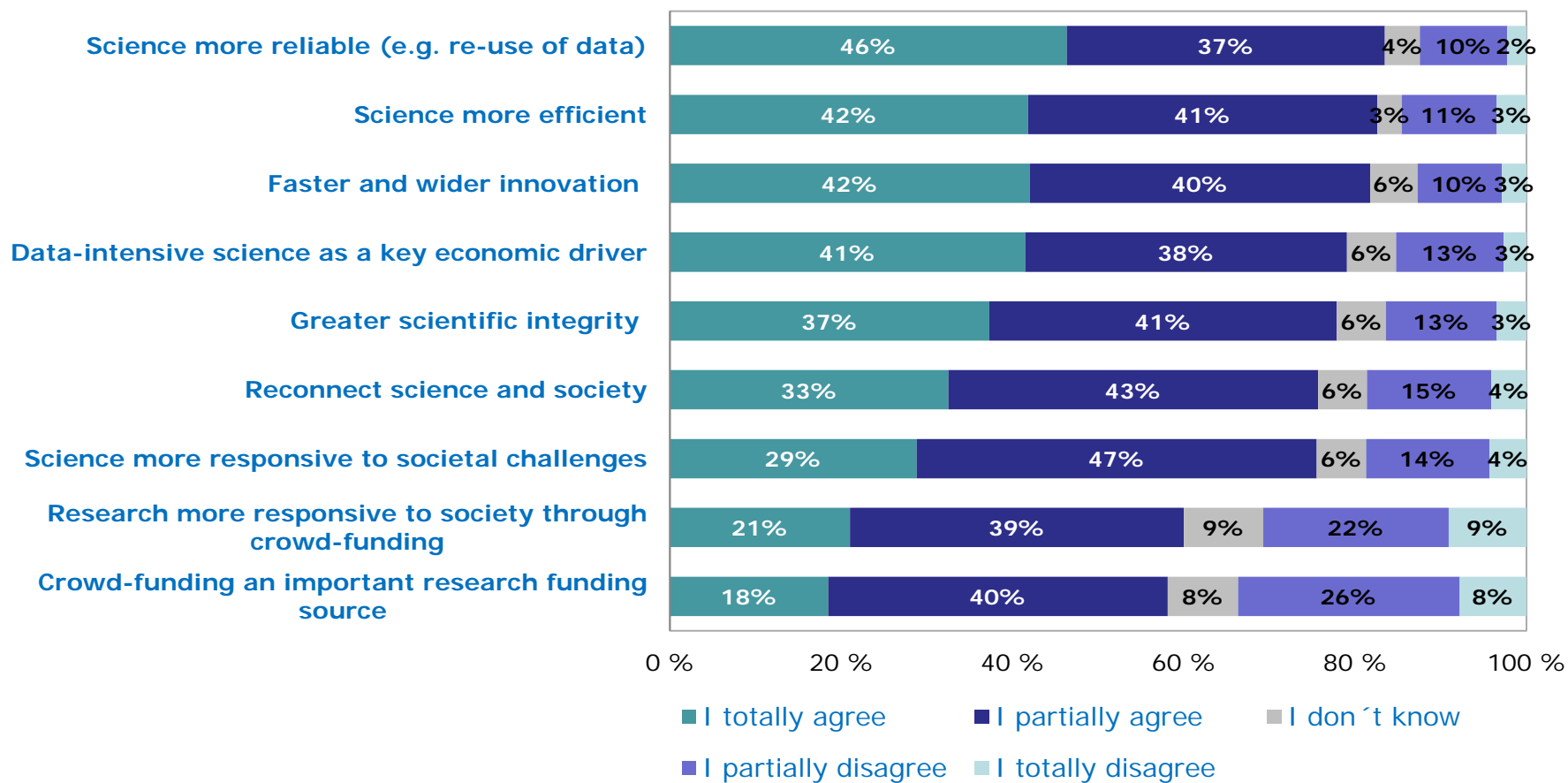
0 % 10 % 20 % 30 % 40 % 50 % 60 % 70 % 80 % 90 % 100 %

■ I totally agree ■ I partially agree ■ I don't know ■ I partially disagree ■ I totally disagree

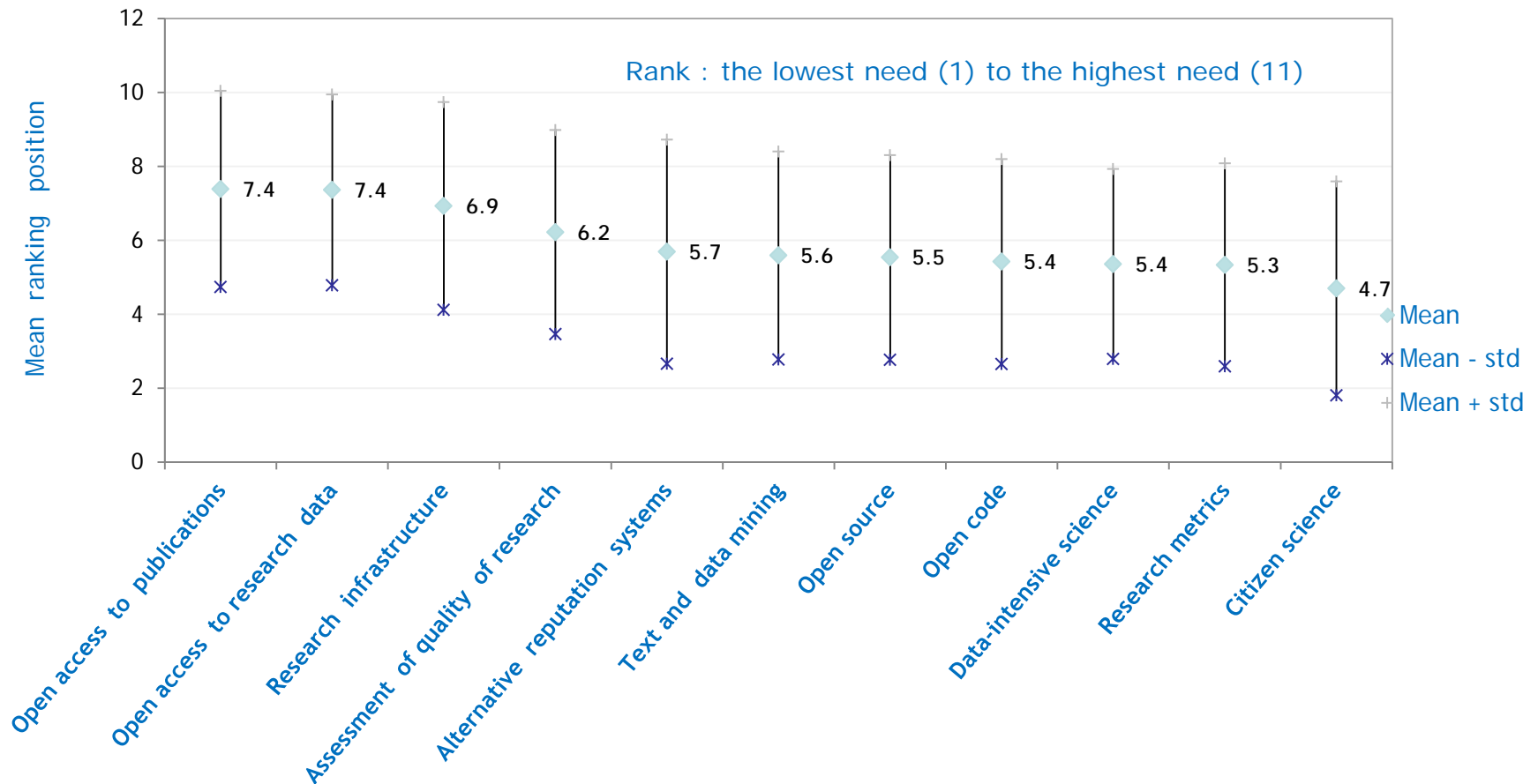
What are the barriers for 'Science 2.0' at the level of individual scientist?



What are the implications of 'Science 2.0' for society, the economy and the research system?



On what issues within 'Science 2.0' do you see a need for policy intervention?



Policy recommendations regarding skills

- Provide or support training on 'innovative digital skills'
- Encourage skills and training for Open Science at all levels, possible adapting university curricula to new needs
- Integrate Open Science in research training is an effective channel for awareness-raising

E.g. in position papers of League of European Research Universities (LERU), European Universities Association (EUA), EuroTech Universities, Universities of Denmark, The Royal Society, Science Europe etc.

Objectives of possible future policy initiative (results from validation workshops)

- Support big data infrastructure needs (also governance)
- Improving Framework Conditions (Removing barriers, creating incentives) for fostering Open Science
- Making science more efficient (better use of and sharing of resources), reliable (replicability/re-use of data) and more responsive to societal challenges

Stakeholders share these expectations of 'Open Science' with large majority, on "condition":

- **bottom-up**
- **stakeholder-driven**



Short-term Roadmap for Policy on Open Science

- Open Science as an action under the Digital Single Market initiative of the European Commission (adopted 6 May 2015), e.g. establishment of a 'European Open Science Cloud'
- Policy Debate on Open Science at May Competitiveness Council
- Launch of a European Open Science Agenda:
22/23 June 2015 Conference: "A new start for Europe: Opening up to an ERA of Innovation"



European Open Science Agenda – potential actions (under consideration)

Fostering Open Science: Creating incentives and removing barriers, e.g.

- Establish a **stakeholders forum** at European Level and a self-regulation/ clearinghouse mechanism for addressing Open Science issues
- Propose a **European "code of conduct"** setting out the general principles and requirements of how Open Science should affect the roles, responsibilities and entitlements of researchers and of their employers

European Open Science Agenda – potential actions (under consideration)

Mainstream Open Access to publications and data, e.g.

- Consider extending the **Horizon 2020 pilot** on Open Access to data
- Develop **EU guidelines** for addressing IPR issues and the funding of data-management



European Open Science Agenda – potential actions (under consideration)

Develop research infrastructures for Open Science, e.g.

- Mandate the development of common interfaces and data standards
- Coordinate at European Level the funding/ maintenance and interoperability of research infrastructures
- Support the development of a **European Open Science Cloud** for data, protocols and methodologies

European Open Science Agenda – potential actions (under consideration)

- Introducing Open Science actions to **address common societal challenges** under the European Research Area and under Horizon 2020
 - e.g. by '**knowledge coalitions**' of key-actors



This is a common endeavor:

We want to hear your views!





How has the dynamics between competition and collaboration in the world of science evolved?

Who is in your view in the driving seat of Open Science?

Has being on twitter, having a blog, looking for crowdfunding, thinking about societal impact of your research really became the norm?

What skills would you like to improve? Data management, data curation, data sharing, finding unusual collaboration etc.?

Should Open science be an integral part of Doctoral Programmes?

How do you as scientists see the current peer review system and how would you change it if you had the chance?



Thank you!

<http://ec.europa.eu/research/conferences/2015/era-of-innovation>