

Validating the Outcomes of the Public Consultation: 'Science 2.0': Science in Transition

Jean-Claude Burgelman
Silvia Luber, Rene von Schomberg
DG Research and Innovation

Do not quote

Workshop co-hosted with the Romanian Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)

Bucharest

20-11-2014





- Background of the public consultation
- Perceptions regarding Science 2.0
- Drivers and barriers of Science 2.0
- Implications
- Opportunities of Science 2.0
- Need for policy intervention
- Policy recommendations





Background of the public consultation



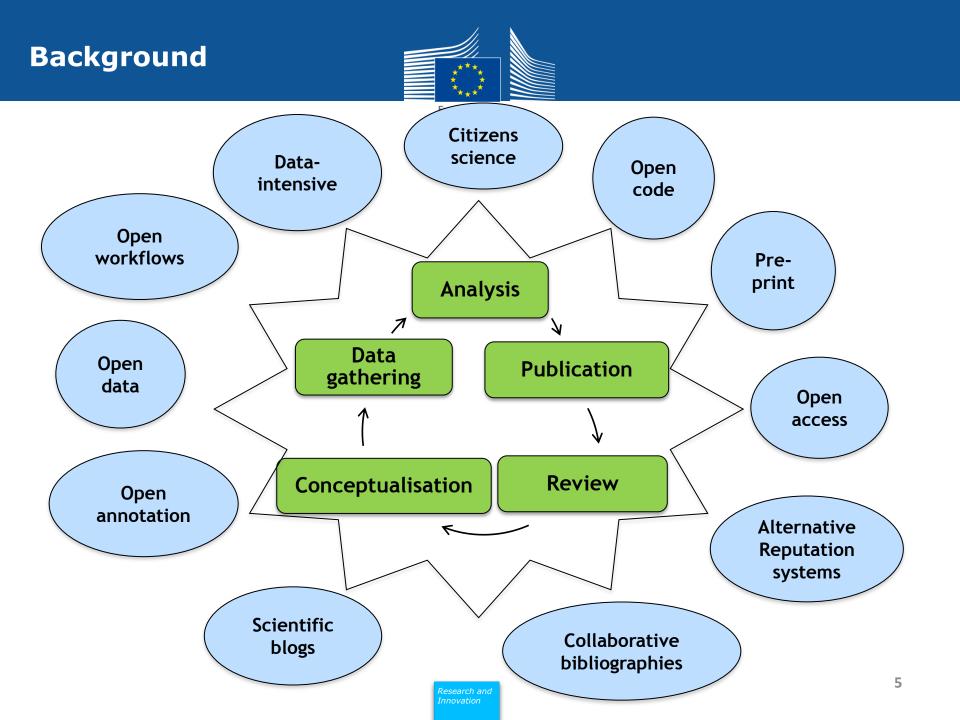
Background



- Purpose of the consultation:
- 1. Assess the degree of awareness amongst the stakeholders of the changing modus operandi,
- 2. Assess the perception of the opportunities and challenges,
- 3. Identify possible policy implications and actions to strengthen the competitiveness of the European science and research system
- 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

This presentation is a first preliminary analysis of the closed questions (graphs), open questions and position statements (quotes and word clouds).

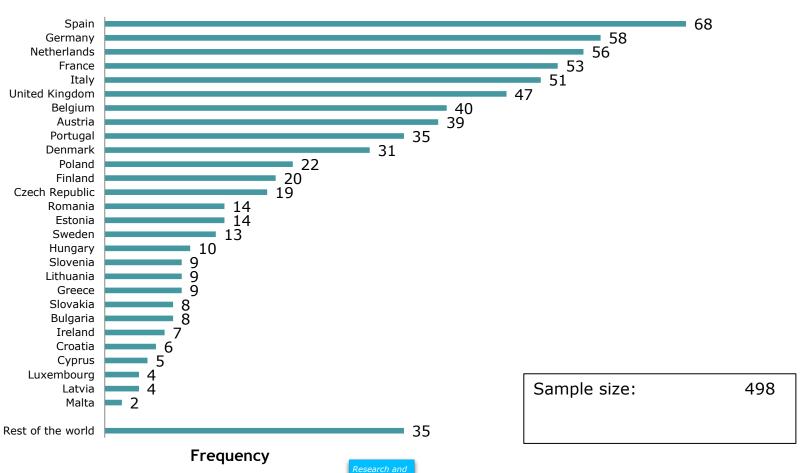






Respondents' profile

Country or countries of residence or activity (Number of responses)



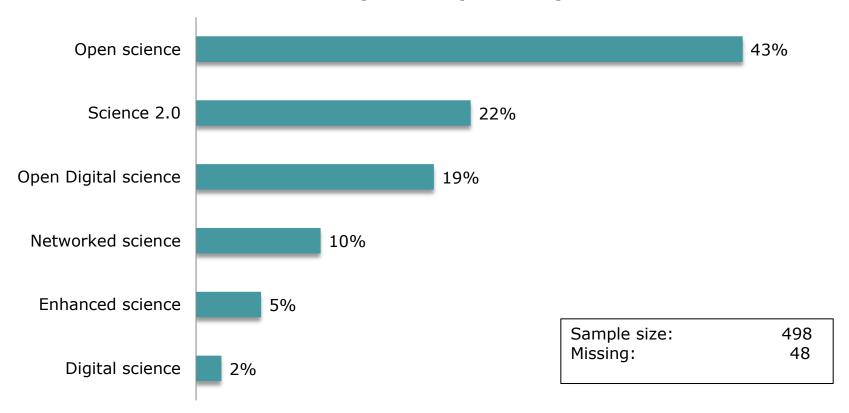


Perceptions regarding 'Science 2.0'



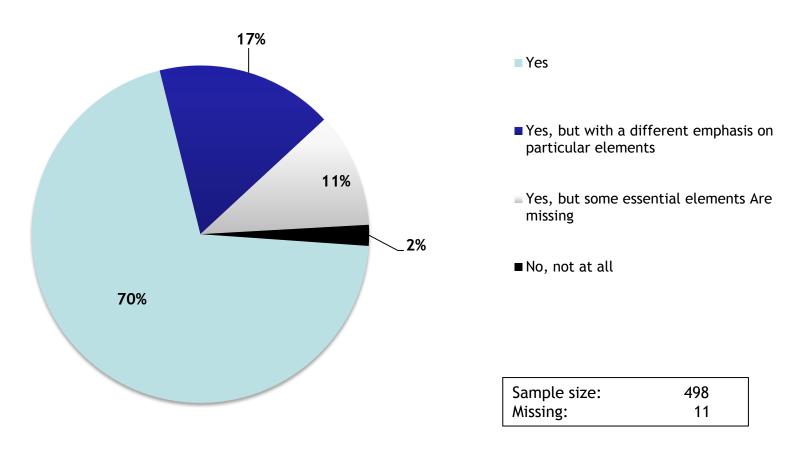


What is the most appropriate term to describe 'Science 2.0'? (closed question)





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







Drivers and barriers of 'Science 2.0'



Drivers of 'Science 2.0'



What are the key drivers of 'Science 2.0'?

Availability of digital technologies and their increased capacities

Researchers looking for new ways of disseminating their output

Researchers looking for new ways of collaboration

Increase of the global scientific population

Growing criticism of current peer-review system

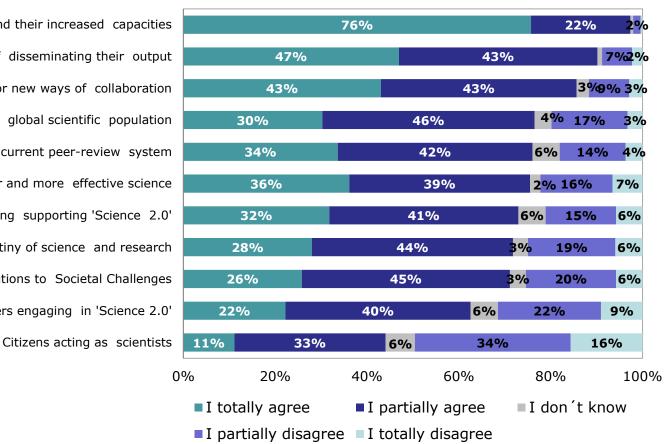
Public demand for better and more effective science

Public funding supporting 'Science 2.0'

Growing public scrutiny of science and research

Public demand for faster solutions to Societal Challenges

Scientific publishers engaging in 'Science 2.0'



Sample size: 498 Missing: 8 to 12

> Research and Innovation



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

Concerns about quality assurance

Lack of credit-giving to 'Science 2.0'

Lack of integration in the existing infrastructures
Limited awareness of benefits of 'Science 2.0 for
researchers

Lack of financial support

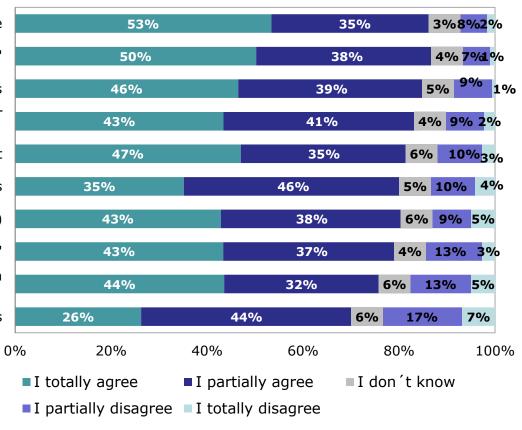
Uncertain benefits for researchers

Legal constraints (e.g. copyright law)

Lack of research skills fit for 'Science 2.0'

Lack of incentives for junior scientists to engage with 'Science 2.0'

Concerns about ethical and privacy issues

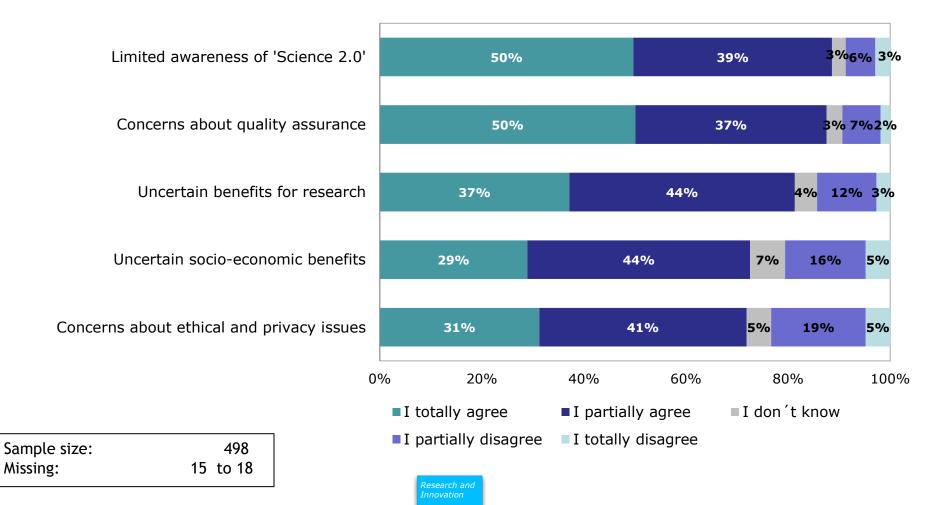


Sample size: 498 Missing: 15 to 22





What are the barriers of 'Science 2.0' at the institutional level?







Example word cloud based on open responses to this question

Research and Innovation



Implications of 'Science 2.0'





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

(All respondents)

Science more reliable (e.g. re-use of data)

Science more efficient

Faster and wider innovation

Data-intensive science as a key economic driver

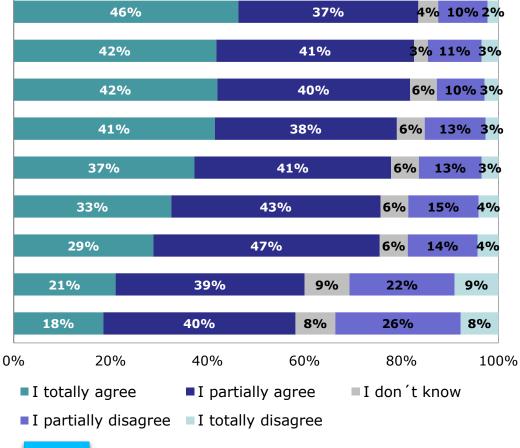
Greater scientific integrity

Reconnect science and society

Science more responsive to societal challenges

Research more responsive to society through crowd-funding

Crowd-funding an important research funding source



Sample size: 498 Missing: 8 to 13



What are the implications of 'Science 2.0' for society, the economy and the research system? (Individuals, self-reported)

Science more reliable (e.g. re-use of data)

Science more efficient

Faster and wider innovation

Reconnect science and society

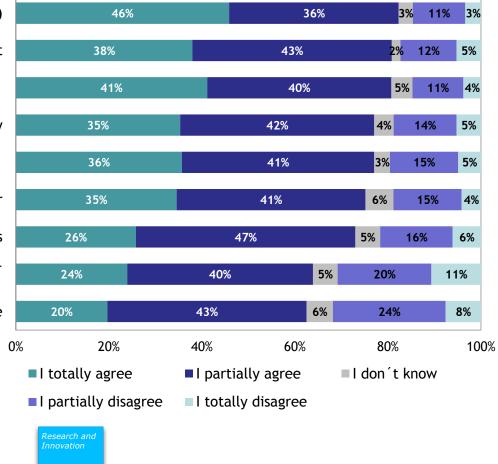
Greater scientific integrity

Data-intensive science as a key economic driver

Science more responsive to societal challenges

Research more responsive to society through crowdfunding

Crowd-funding an important research funding source



Sample size: 498 Missing: 235 to 232



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

(Organisations, self-reported)

Science more efficient

Science more reliable (e.g. re-use of data)

Data-intensive science as a key economic driver

Faster and wider innovation

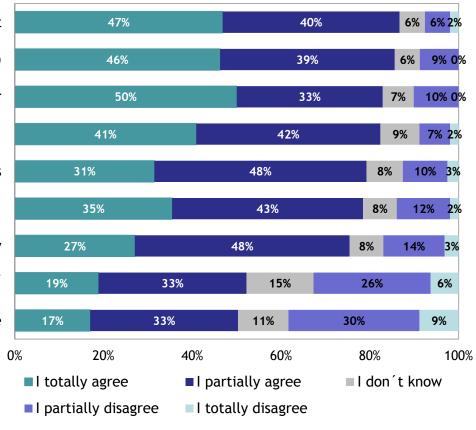
Science more responsive to societal challenges

Greater scientific integrity

Reconnect science and society

Research more responsive to society through crowdfunding

Crowd-funding an important research funding source



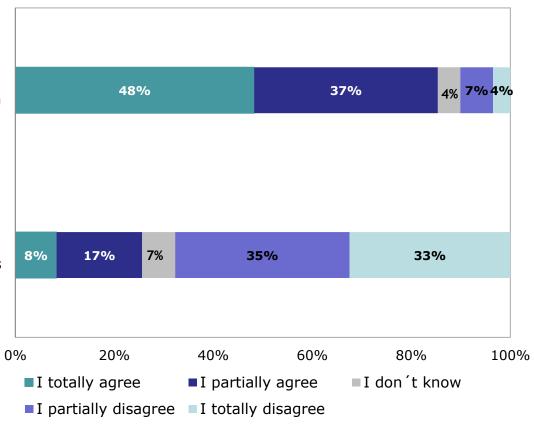
Sample size: 498 Missing: 338 to 340



Implications of 'Science 2.0' for researchers: Acknowledgement of 'Science 2.0'-based activities

'Science2.0' activities should be taken into account for researchers' career progression

Science 2.0' activities shouldn't impact the recruitment modes of research organisations



Sample size: 498 Missing: 13 to 18



What are the most effective channels for awareness-raising of 'Science 2.0'?

Integration in research training

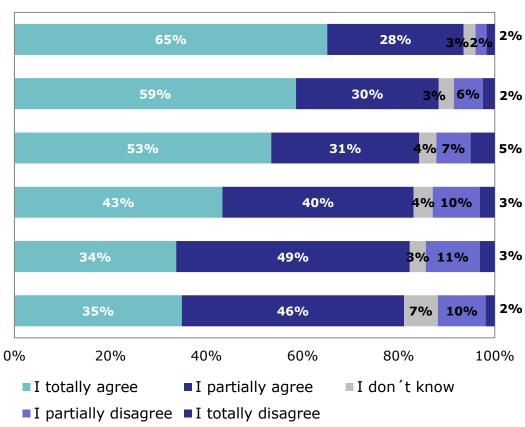
Funding of specific actions by research funding organisations

Integration in career promotion procedures

Awards for specific initiatives

Organising debates at universities

Engagement of learned societies



No. of valid responses: 477 to 481 Sample size: 498

Research and Innovation



Opportunities for 'Science 2.0'





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

Wider dissemination and sharing of research outputs

Involvement in international networks of researchers

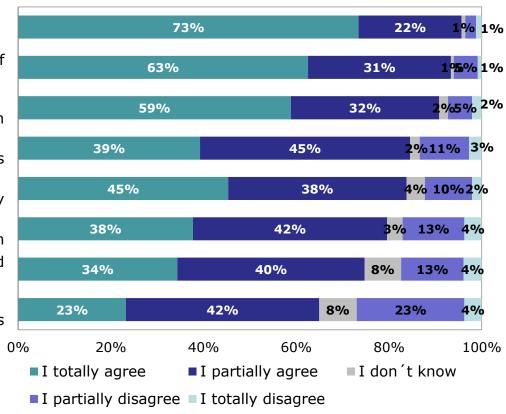
Involvement in more multidisciplinary research

Greater publication opportunities

Engaging with the society

Possibility to review the peer review system Research on problems that could not be addressed otherwise

Enhanced career perspectives



Sample size: 498 Missing: 15 to 19





What are the opportunities for 'Science 2.0' at the institutional level?

Accountable and collaborative research modes

Supporting new forms of research-based teaching

Fostering new forms of research

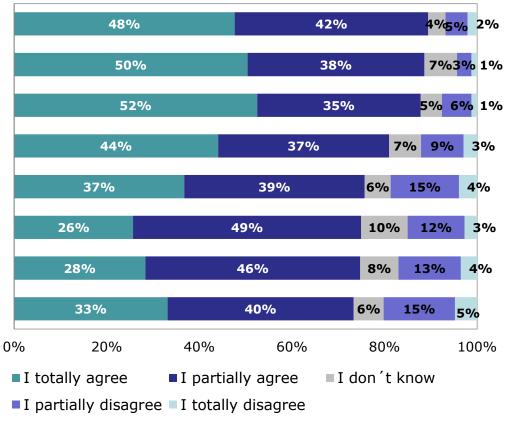
Better science

Avoiding duplication

Driving economic growth

Creating scientific output to underpin public policy

Accelerating the research process



Sample size: 498 Missing: 14 to 19

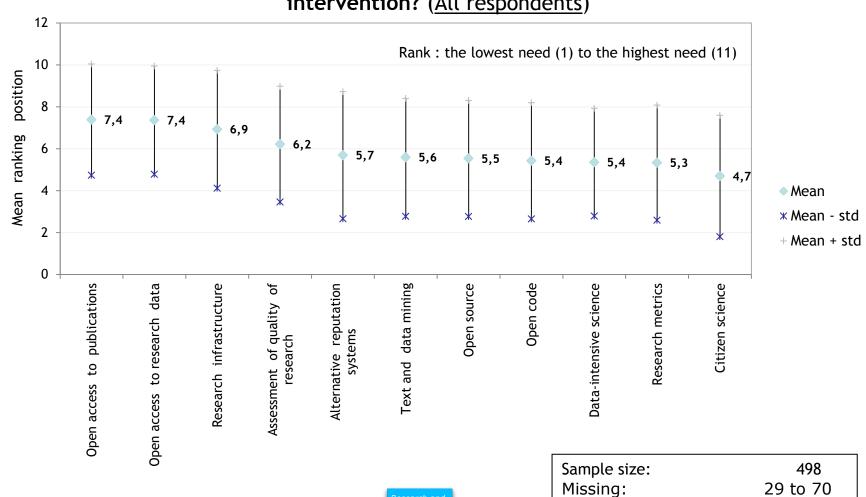


Need for policy intervention





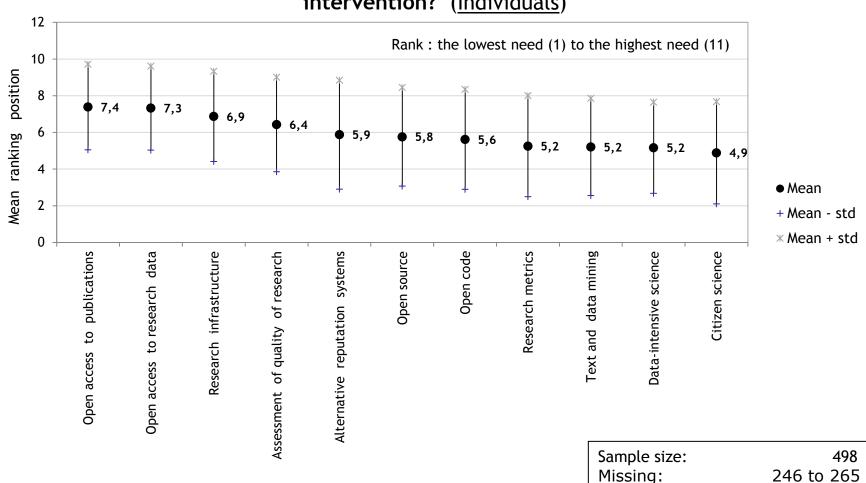
On what issues within 'Science 2.0' do you see a need for policy intervention? (All respondents)



Need for policy intervention (cont.)



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

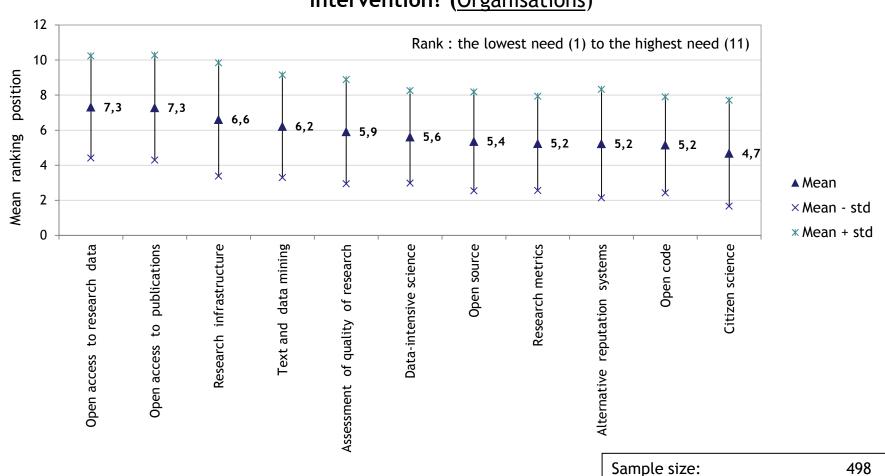


Missing:

Need for policy intervention (cont.)



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



341 to 355

Missing:





Development of research metrics and quality assurance

Data and formula/algorithms for metrics should be transparent

Research is needed to advance quality assurance

Research metrics cannot be determined by private actors

Altmetics should supplement conventional metrics

The EC should fund research to advance altmetrics

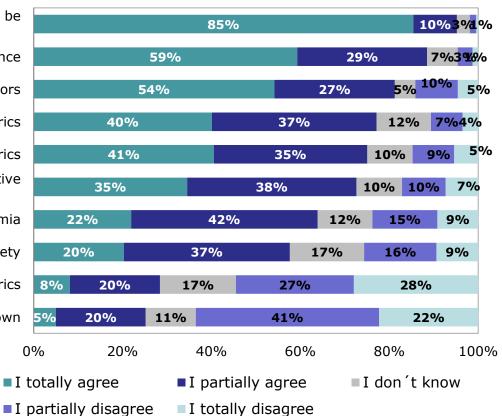
Altmetrics should include engagement in collaborative research

Altmetrics should include impact beyond academia

Altmetrics should include involvement of civil society

Altmetrics should replace conventional metrics

Recent metrics (e.g. altmetrics) are well known



Sample size: 498 Missing: 17 to 19





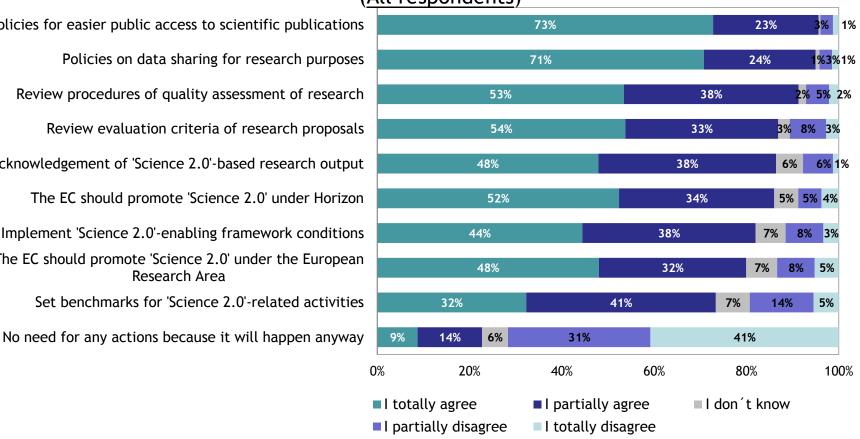




Role of research funding organisations, Member states and the EU Public authorities could facilitate the uptake of 'Science 2.0' by:

(All respondents)

Policies for easier public access to scientific publications Policies on data sharing for research purposes Review procedures of quality assessment of research Review evaluation criteria of research proposals Acknowledgement of 'Science 2.0'-based research output The EC should promote 'Science 2.0' under Horizon Implement 'Science 2.0'-enabling framework conditions The EC should promote 'Science 2.0' under the European Research Area Set benchmarks for 'Science 2.0'-related activities



Sample size: 498 17 to 21 Missing:





Role of research funding organisations, MS and the EU Public authorities could facilitate the uptake of 'Science 2.0' by: (Individuals)

Policies on data sharing for research purposes

Policies for easier public access to scientific publications

Review procedures of quality assessment of research

Acknowledgement of 'Science 2.0'-based research output

Review evaluation criteria of research proposals

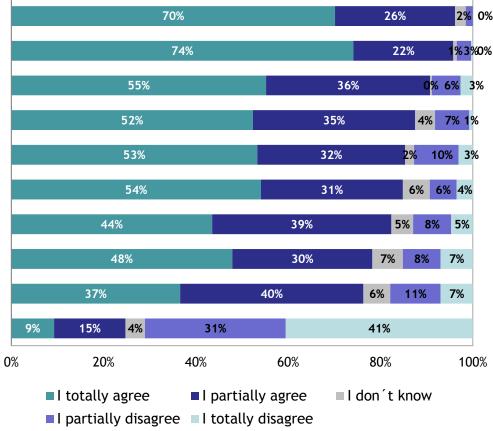
The EC should promote 'Science 2.0' under Horizon

Implement 'Science 2.0'-enabling framework conditions

The EC should promote 'Science 2.0' under the European Research Area

Set benchmarks for 'Science 2.0'-related activities

No need for any actions because it will happen anyway



No. of valid responses: 239 to 242 Sample size: 498

Research and Innovation



Role of research funding organisations, MS and the EU Public authorities could facilitate the uptake of 'Science 2.0' by:

(Organisations)

Policies for easier public access to scientific publications

Review procedures of quality assessment of research

Policies on data sharing for research purposes

Review evaluation criteria of research proposals

The EC should promote 'Science 2.0' under Horizon

Acknowledgement of 'Science 2.0'-based research output

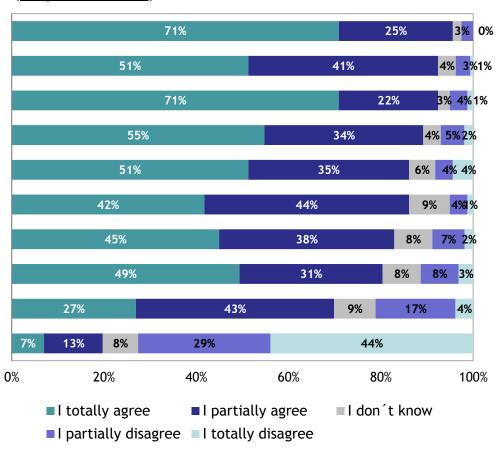
Implement 'Science 2.0'-enabling framework conditions

The EC should promote 'Science 2.0' under the European

Research Area

Set benchmarks for 'Science 2.0'-related activities

No need for any actions because it will happen anyway



Sample size: 498 Missing: 340 to 342

Research and Innovation



Science and Society - key points

- There needs to be a broader recognition for NGO, civil society groups and science journalists
 - NGOs and civil society groups should be recognised in H2020 (following the bigger role that SMEs have).
 - Independent science journalists can also help link science, politics and culture. But traditional media is losing ground amid "a cacophony of facts, lies and opinions" online
 - Wikipedia is often the first source the public goes to for science info.
- Citizen science platforms should be supported further(NESSI)
- Crowdfunding and citizen science can create public engagement, but should be an additional source of funding rather than a substitution
- European Commission could broker discussions on the role of citizen science (Is it public engagement? Is it robust research?)

Summary of position statements from academies, learned societies, funders, universities, RPOs, civil society organisations





The EC/ERA should

- Support citizen science platforms
- Encourage the recognition of the civil society, NGOs, and journalists
- Increase openness and encourage barriers to publications and research data
- Regulate data access, copyright, text and data mining and data protection
- Develop infrastructure for Science 2.0, for example through H2020
- Highlight best practices in data management
- Encourage skills and training for science 2.0 (at all levels)
- Further discussion and consultation are needed to better understand Science 2.0 and the realm of policy intervention within it
- Consider creating an EU-wide science administration system

Summary of position statements for academies, learned societies and research funders





Universities and research performing organisations should

- Raise awareness about Science 2.0
- Work to embed Science 2.0 in the research culture
- Reform career progression
- Promote research ethics and integrity
- Provide frameworks and training for researchers to share sensitive data appropriately
- Consider open data as default option and help provide needed infrastructure

"Research organisations must play an active part in setting standards for research integrity and to ensure that scientific misconduct is investigated and sanctioned" Research Council of Norway

Summary of position statements from academies, learned societies, research funders, universities, research performing organisations





Academies, learned societies and research funders should

- Incentivise 'good behaviour' e.g. data management plan
- Require data to be open as a condition of grant funding, factor in data archiving and usage costs in projects costs, and find ways to support open data infrastructure
- Funders should not require grantees to participate on online platforms
- Funders should require intelligently open data as a condition for funding

National Governments and bodies should

- Make sure they have open data regulations for Science 2.0
- Review mechanisms for research assessment
- Help develop relevant research infrastructures
- 'Protect' science from commercial interests

Summary of position statements for academies, learned societies and research funders





Thank you

Follow the validation process and post your comments at:

http://scienceintransition.eu/

