

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

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(check for quote)

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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'?

Availability of digital technologies and their increas capacities Researchers looking for new ways of disseminating th output Researchers looking for new ways of collaborati Increase of the global scientific populati Growing criticism of current peer-review systemeters Public demand for better and more effective scier Public funding supporting 'Science 2 Growing public scrutiny of science and resear Public demand for faster solutions to Societal Challeng Scientific publishers engaging in 'Science 2 Citizens acting as scientis

sed	76%						22%	2%
eir	47%)	<mark>7%2</mark> %		
ion	43%			43%			3%) 3	<mark>%3%</mark>
ion	30%			46%		4%	×17%	3%
em	34%			42%		6%	14%	o <mark>4%</mark>
nce	36%	, 0		39%	0	2%	16%	7%
2.0'	32%			41%		6%	15%	6%
rch	28%			44%	3	8% 1	9%	6%
ges	26%		4	5%	3	% 2	0%	6%
2.0'	22%		40%)	6%	22%	, 0	9%
sts	11%	33%	6	%	34%		16	%
0	% 20	%	40%	6	0%	80%	6	100%

■ I totally agree

■ I partially agree ■ I don't know

ow I partially disagree

I totally disagree



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

Concerns about quality assurance	53	3%	3	5% 39	3%8 <mark>%2</mark> %	
Lack of credit-giving to 'Science 2.0'	50	%	38	3% 4	%7 %⊥%	
Lack of integration in the existing infrastructures	46%	0	39%	b 5%	6 <mark>9% 1</mark> %	
Limited awareness of benefits of 'Science 2.0 for researchers	43%		41%	4%	<mark>9%2</mark> %	
Lack of financial support	47%	<i>/</i> o	35%	6%	10% <mark>3%</mark>	
Uncertain benefits for researchers	35%		46%	5% <mark>1</mark>	0% 4%	
Legal constraints (e.g. copyright law)	43%		38%	6% 9	9% <mark>5%</mark>	
Lack of research skills fit for 'Science 2.0'	43%		37%	4% 1	3% <mark>3</mark> %	
Lack of incentives for junior scientists to engage with 'Science 2.0'	44%		32%	6% 13	% <mark>5%</mark>	
Concerns about ethical and privacy issues	26%	44%	5	6% 17%	7%	
00	% 20%	40%	60%	80%	100%	

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





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

Science more reliable (e.g. re-use of data)	46% 42%			37%		<mark>% 10% 2</mark> %
Science more efficient			41%		3%	a 11% 3%
Faster and wider innovation		42%		40%	6%	<mark>6 10% 3</mark> %
Data-intensive science as a key economic driver	r 41%		38%		<mark>6%</mark> 13% 3%	
Greater scientific integrity		37%		41%	6%	13% 3%
Reconnect science and society	3	3%		43%	6%	<mark>15% 4</mark> %
Science more responsive to societal challenges	29	%	4	17%	6%	14% 4%
Research more responsive to society through crowd-funding	21%		39%	9%	22%	9%
Crowd-funding an important research funding source	18%		40%	8%	26%	8%
0)%	20%	40%	60%	80%	1004
	■I totally agree		■I partially agree		■I don't know	
	∎I partia	lly disagree	I totally	disagree		



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





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

- Support big data (infrastructure) needs includes 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





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)

 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





European Open Science Agenda – potential actions (under consideration)

Develop data 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





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 (28 May 2015)
- Launch of a European Open Science Agenda: 22/23 June 2015 Conference: "A new start for Europe: Opening up to an ERA of Innovation"





A European Open Science Cloud Rationale and first ideas

Work in progress. Not to be quoted





Science 2.0 consultation (July-Sept 2014)

- $\circ~\sim85$ % agree to some extent that data infrastructures are a bottleneck
- Spontaneous position papers from research stakeholders

Possible actions

- 1. Mandate the development of common interfaces and data standards
- 2. Coordinate at European Level the funding/ maintenance and interoperability of research infrastructures
- 3. Support the development of a **European Open Science Cloud** for research



European Open Science Cloud



The **European Open Science Cloud** is part of Europe's ambition to support the transition to Open Science and make the most of data-driven science.

- European scientists **strongly stated the need** for a research data infrastructure that is **cost-effective**, preserves **privacy** and is **IPR-conscious** (Science 2.0 consultation).
- The cloud provides **all EU researchers** a virtual environment with free, open and seamless services for data storage, management, analysis and re-use, across disciplines.
- The cloud will **federate existing and emerging** horizontal and thematic data infrastructures, effectively bridging todays fragmentation and ad-hoc solutions.
- The cloud adds value scale, data-driven science, inter-disciplinarity, data to knowledge to innovation - and leverages current and past infrastructure investment (10b per year by MS, two decades EU investment).





European Open Science Cloud





European Open Science Cloud

European Commission

Current activities

- High level expert group.
- WP 2016-2017.
- Council Conclusions, Open Science debate.

Question

How could you best <u>contribute to the development</u> of the European Open Science Cloud? (intelligence, mobilising, etc.)





Thank you!

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

