Institutional Change for Responsible Innovation

Dr.Dr.phil. René von Schomberg

European Commission, DG RTD
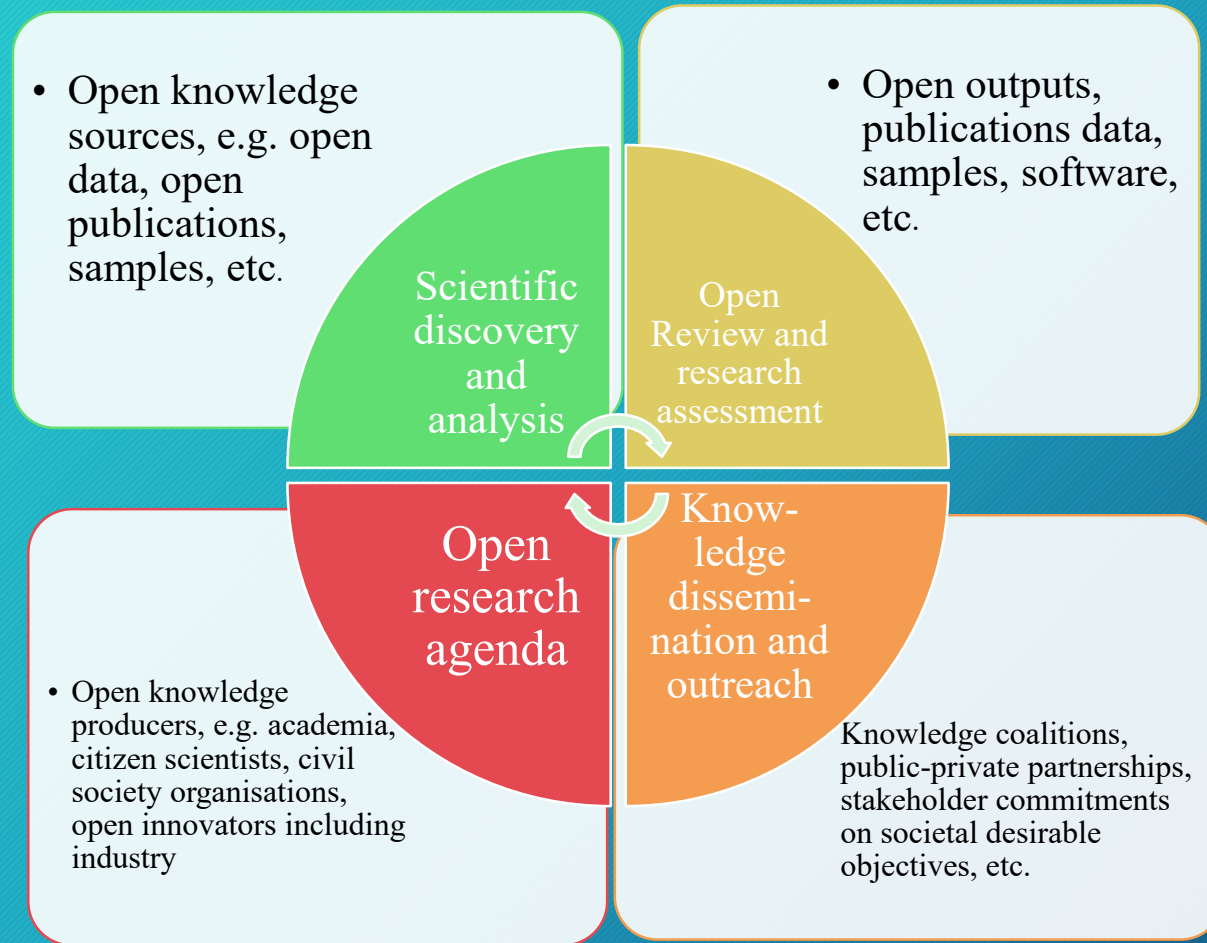*Guest-Professor, Technical University Darmstadt, Germany (and sometimes elsewhere)*
Speaks in private capacity

	'Responsible' State	'Responsible' Market	Responsible Innovation
Scope of Responsibility of Government	Outcomes and Risks	Risks	Outcomes and Risks
Regulatory oversight	State	Market-hurdles	Public-Private
Socio-economic assessment for Governance	Benefits for the State	Macro-economic/competitive advantage	Social desirability
Governance priorities	Control/Security/Access to resources	Speed of innovation uptake	Responsive to public values
Research/Inno-vation Policy	Technological superiority over competitors	Key-Tech oriented	Societal challenge oriented/Mission oriented
Threats for 'irresponsible innovation'	'Policy Pull' Lack of Foresight	Technology Push, Ignorance of Ethical values	Collective Co-Responsibility!
Ethical constraints	Moral constraint of the 'governor'	Ethical constraints of the market	Ethics as driving force!

1.Towards a new *modus operandi* for Science: a necessary/insufficient condition for RRI

Current System (dominant)		Open Science	
Rewarding individual competing scientists - gaining scientific prestige		Rewarding collaboration and sharing to achieve societal impact (e.g. Covid-19)	
Publish as much and as fast as possible: (*publish or perish!*)		Share knowledge/data as early as possible in open collaboration : *collaborate or have no impact!*	
Excellence as a self-referential criterion		Relative contribution to research missions with a focus on a societal challenge: collaborate with open research agenda's or have no impact!	
Incentivises researchers to *produce specific outputs* (mainly publications)	Use of quantitative metrics to 'measure' quality and productivity	Incentivises researchers to *conduct particular research behaviour*: share knowledge/data, collaborate, transnational, transdisciplinary, with all knowledge actors	Use of qualitative assessment mechanisms for the 'behaviour' of researchers

Open Research and Scholarship: sharing knowledge/data as early as possible with all knowledge actors

- Open knowledge sources, e.g. open data, open publications, samples, etc.

- Open outputs, publications data, samples, software, etc.

Scientific discovery and analysis

Open Review and research assessment

Open research agenda

Know-ledge dissemi-nation and outreach

- Open knowledge producers, e.g. academia, citizen scientists, civil society organisations, open innovators including industry

Knowledge coalitions, public-private partnerships, stakeholder commitments on societal desirable objectives, etc.

Why not apply to all publicly funded research, notably SDGS?

2. Addressing Market-Failure: *We are subject of change rather than agent of change*

- Responsible innovation constitutes a new paradigm for innovation, in which our social systems institutionalizes collective co-responsibility as a driving force for socially desirable innovation, by giving innovation a direction and whenever possible, shaping its characteristics

- Addressing Market Failure (*and dependence on philanthropists*): new conditions for the 'market': stakeholder commitment, deployment of non-legislative actions, codes of conduct, certification, new innovation standards, new public-private partnerships, no IPR in RTD discovery phase etc

3. Anticipatory Public Governance

- Organising/Institutionalising collective-co responsibility: Ethics as a driving force rather than a constraint

- Institutionalisation of Foresight and Technology Assessment in public policy: facilitation of alternative futures for public deliberation

- Normative, participative technology design, value-sensitive design etc.

- Value driven innovation: current key example from HE:

- *Mission-oriented research* , co-designed and co-created, stakeholder driven inclusive research/innovation agenda with a focus on socially desirable outputs

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INTERNATIONAL HANDBOOK ON
Responsible Innovation
A Global Resource

Edited by
René von Schomberg • Jonathan Hankins

RESPONSIBILITY

GOVERNANCE

INNOVATION

The International Handbook of Responsible Innovation is thus a guidebook for a shift in stance toward collective accountability for the products and consequences of our own ingenuity.'
– Daniel Sarewitz, Arizona State University, US

renevonschomberg.wordpress.com

On Responsible Innovation, open science and ethics: please send me your comments!
Thanks for your attention