

Responsible Research & Innovation

**German-Japanese Symposium: “Education,
Research and Innovation**

**June 28th
@ Free University of Berlin
Norimasa Morita**

**What is innovation
creates –
not simply a new set
of techniques, but new
social practices and
even institutions**

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Literacy rates soared

Idea traveled

The way idea spread: In different languages

Nationalism

Challenges

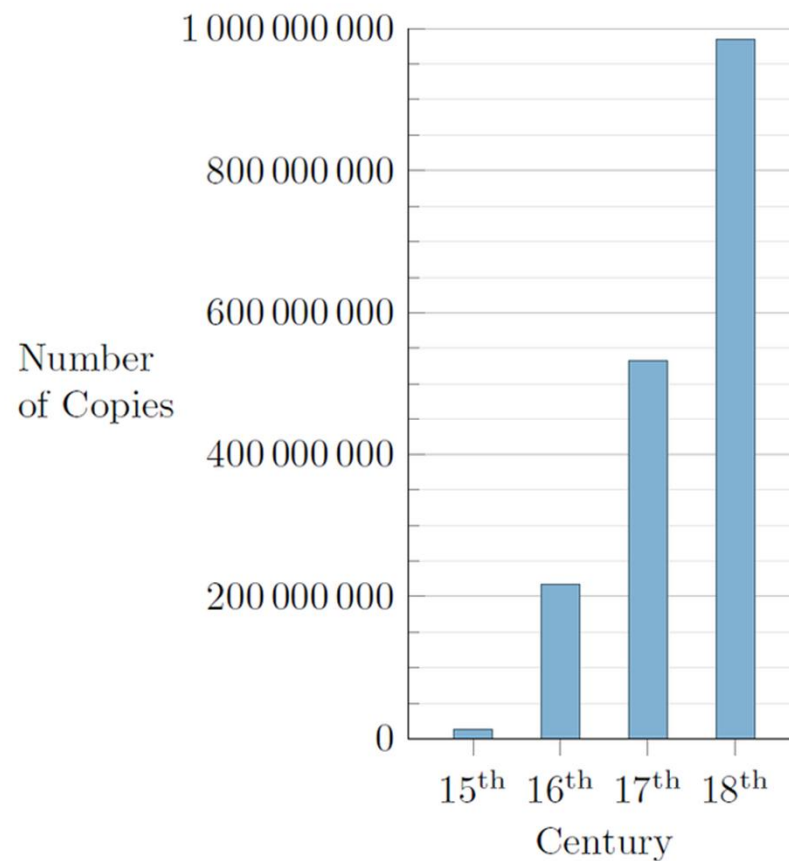
to the Catholic Church

Reformation

Counter-

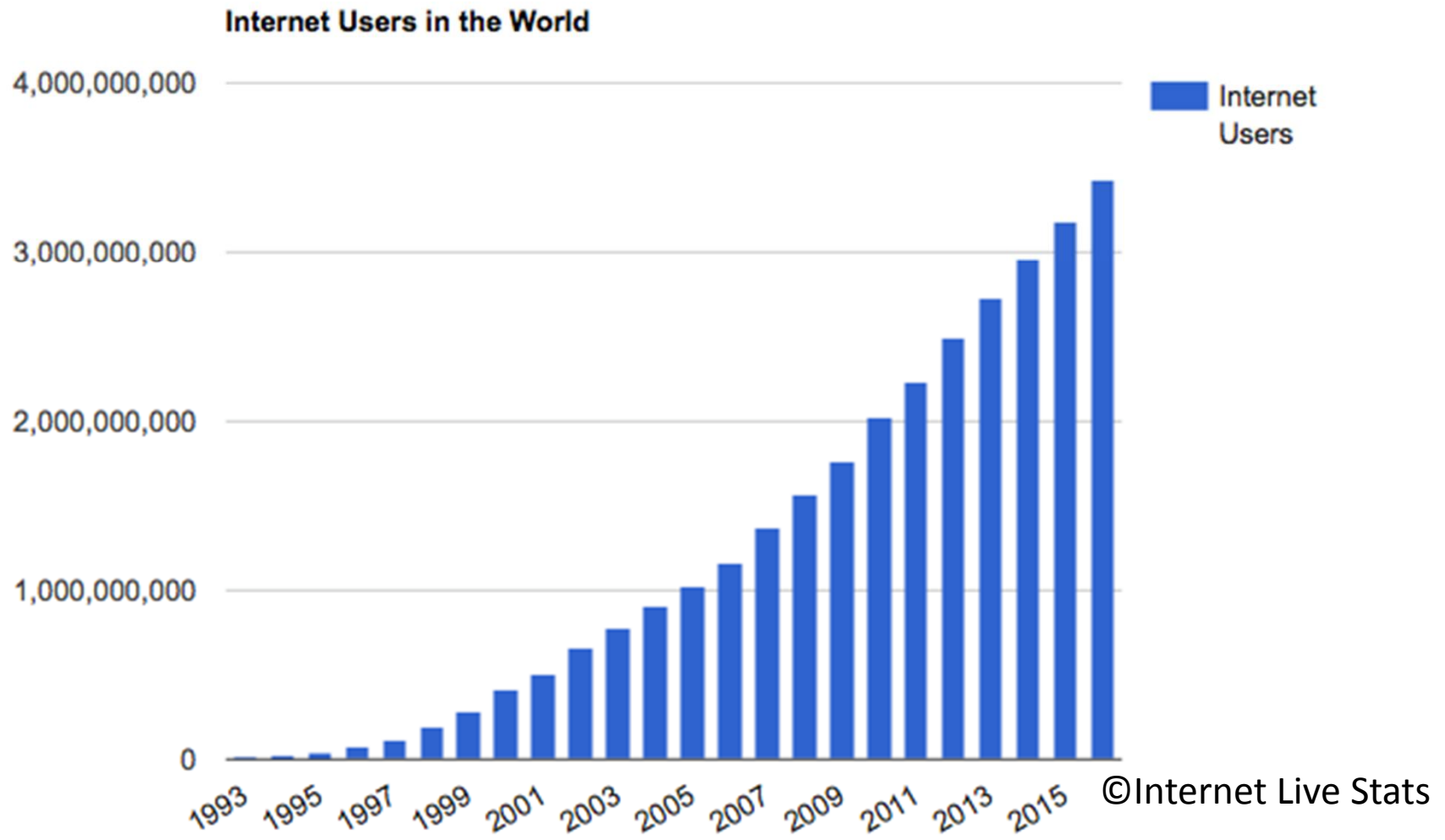
Reformation

European Output of Printed Books ca. 1450–1800*



©Buringh &
van Zanden,
2009

*without Southeast Europe (Ottoman realm) and Russia



Spread of Internet



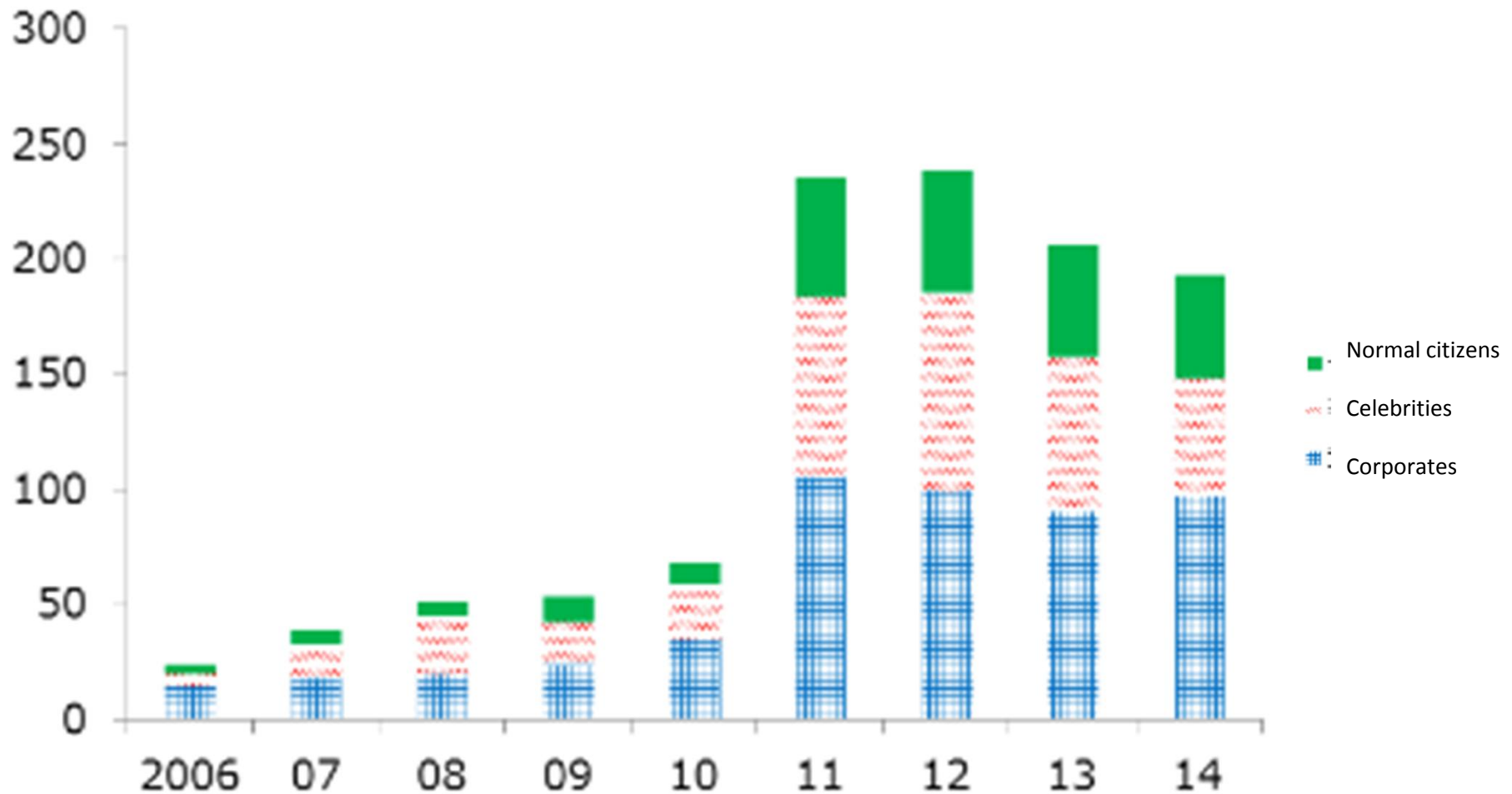
Connectivity

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Pros and Cons

- Information retrieval
- Means of communication
- Commercial tool
- Research tool
- Security alert
- Illegal or inappropriate materials
- Crimes (theft, fraud, dark market, scam, vandalism, sabotage, virus)
- Addiction

IS – the largest recruiter of soldiers since the time of Spanish Civil War



Flaming (internet): hostile and insulting interaction between internet users

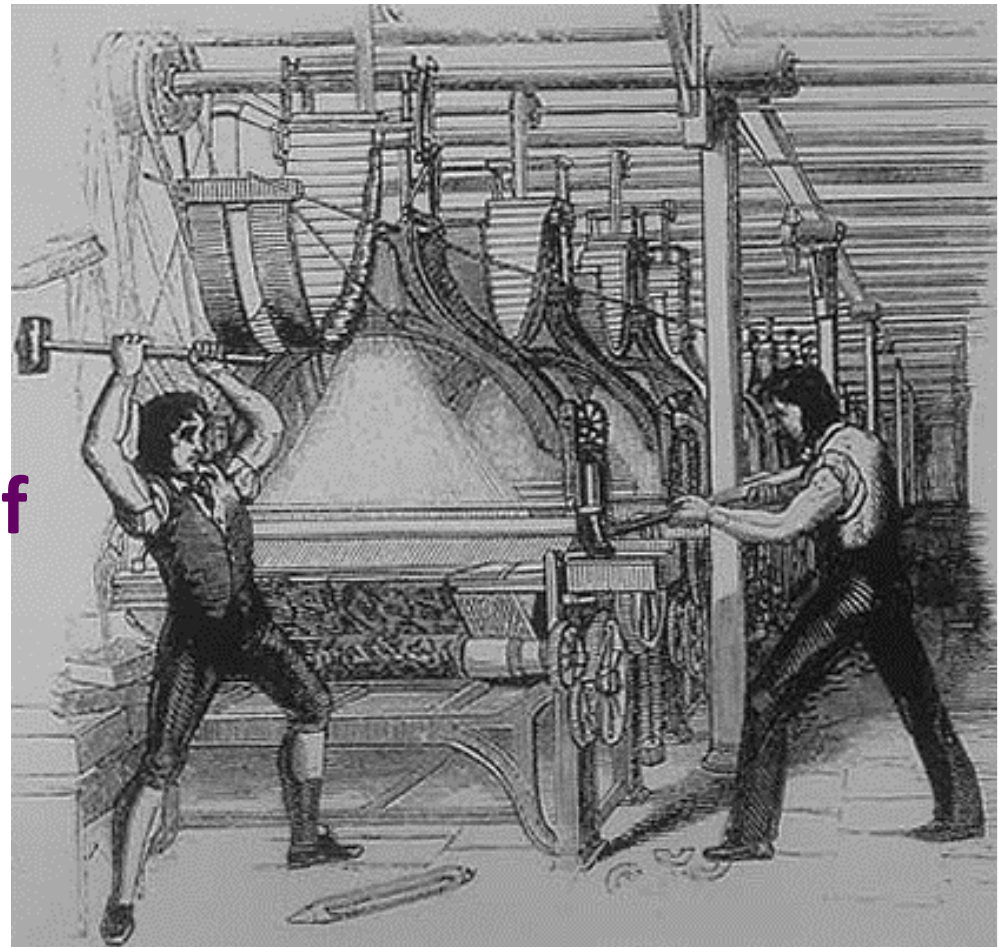


Industrial Revolution

Coalbrookdale by Night by P.J. de Loutherbourg

Societal impact

Material wealth; **urbanization**; new labour skills and relationship; **new life style**; new gender roles; **industrial capitalism**; new class system; **exploitation**; disparity of wealth; **environmental pollution**, poor living condition; **new schools of economic and political thought**





We are redefining and we are restating our Socialism in terms of the scientific revolution... The Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices or outdated methods on either side of industry.

— *Harold Wilson* —

AZ QUOTES

Harold Wilson, the 'White Heat' speech (1963)

'Silent Spring' Is Now Noisy Summer

*Pesticides Industry
Up in Arms Over
a New Book*

By JOHN M. LEE

The \$300,000,000 pesticides industry has been highly irritated by a quiet woman author whose previous works on science have been praised for the beauty and precision of the writing.

The author is Rachel Carson, whose "The Sea Around Us" and "The Edge of the Sea" were best sellers in 1951 and 1955. Miss Carson, trained as a marine biologist, wrote gracefully of sea and shore life.

In her latest work, however, Miss Carson is not so gentle.



*Rachel Carson Stirs
Conflict—Producers
Are Crying 'Foul'*

fending the use of their products. Meetings have been held in Washington and New York. Statements are being drafted and counter-attacks plotted.

A drowsy midsummer has suddenly been enlivened by the greatest uproar in the pesticides industry since the cranberry scare of 1959.

Miss Carson's new book is entitled "Silent Spring." The title is derived from an idealized situation in which Miss Carson envisions an imaginary town where chemical pollution has silenced "the voices of spring."

New York Times, 22 July 1962

Environmental concerns called into question the paradigm of scientific progress

Risk Society

Modern society is full of complicated risks. One of such risks is uncontrolled and unregulated science and technology, which is also characterized by 'organized irresponsibility' as, for all of the good intention of individual researchers, nobody is responsible for consequences.

Ulrich Beck

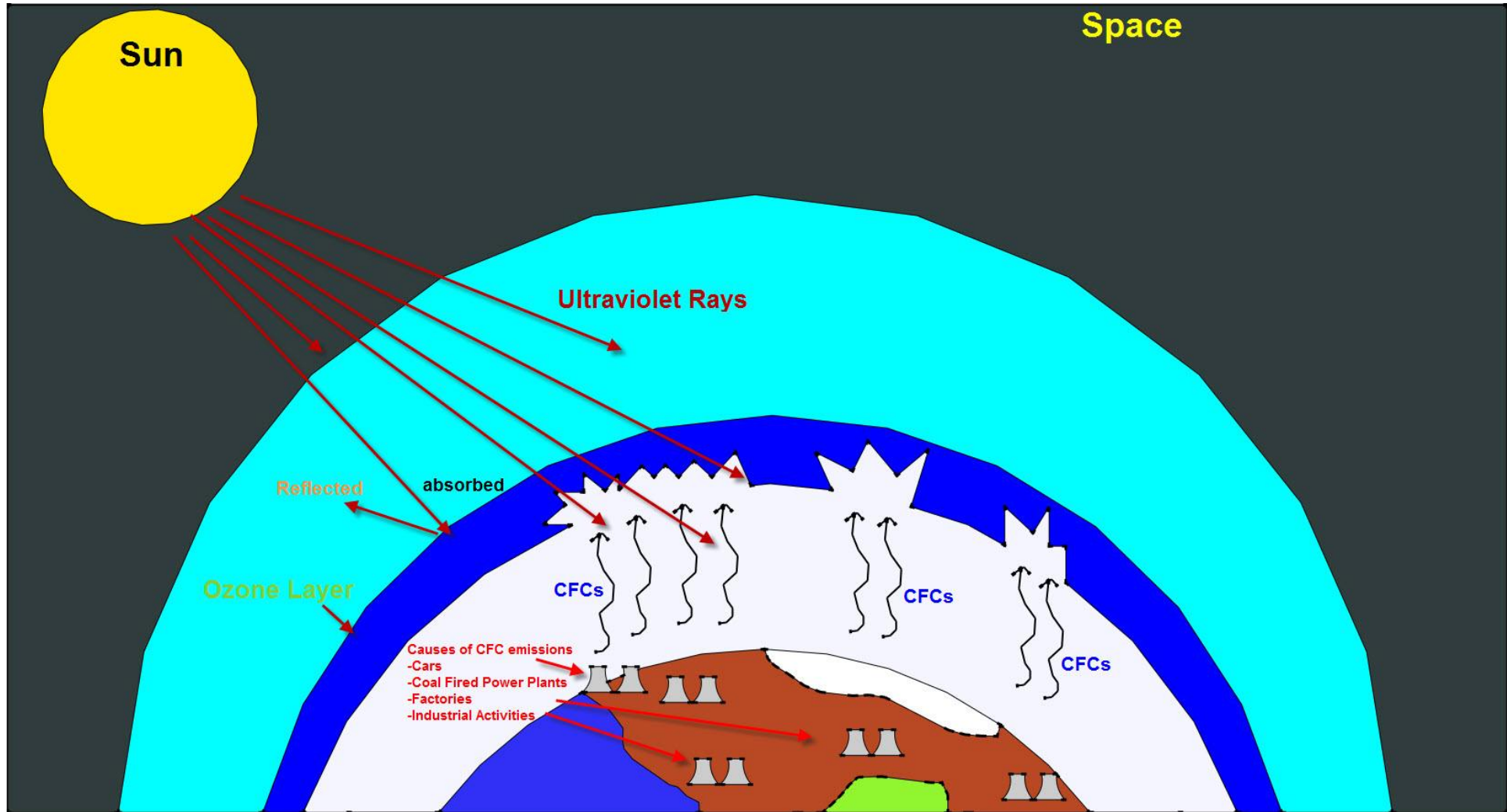
'Moral Luck'

Societal impacts of innovation can be judged in hindsight to be undesirable, even harmful. 'But, burdened with imperfect foresight, we take a chance, hoping to be excused from moral blame ...'

Bernard Williams

'Exculpatory ignorance'

Unintended Consequences



Destruction of stratospheric ozone by chlorofluorocarbons (CFCs)

Smart Energy Saving Ideas
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Birth defects associated with thalidomide



First Wessex © 2016

Mesothelioma associated with asbestos



© 2016 BBC

DDT and other pesticides poison both wildlife and the environment and endanger human health



©Oli Scarff/Getty Images

The near collapse of the global financial system brought about by the innovation of complex financial products based on sub-prime asset-backed securities.

‘You can kill or mutilate the advance of science, you cannot shape it. For it can advance only by *essentially unpredictable* steps, pursuing problems of its own, and the practical benefits of these advances will be incidental and hence doubly unpredictable.’

Michael Polanyi

In order not to kill or mutilate science ...

Responsible Research and Innovation

‘... seeks to describe how we might conduct science and innovation responsibly under conditions of uncertainty and ignorance, collectively enlarging our role responsibilities to include a greater moral dimension, to those living now, those yet to be born, and those beyond our own species.’

**Richard Owen, John
Bessant, Maggy Heintz**

Practical Framework

‘Responsible research and innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products.’

René von Schomberg



Responsible Research and Innovation in European Commission

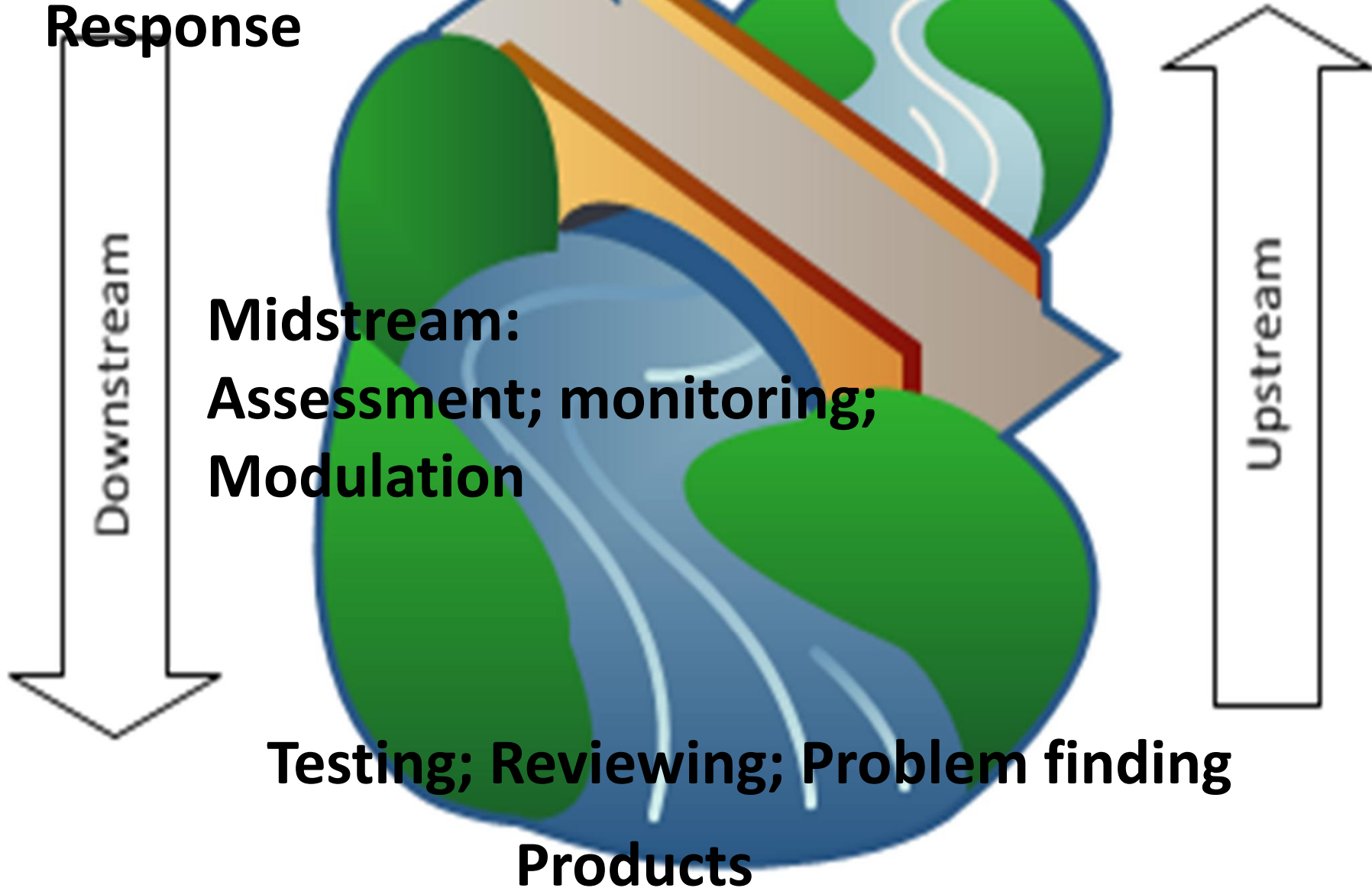
RRI – a key action in the ‘Science with and for Society’ objective

RRI – a ‘cross-cutting’ issue in Horizon 2020

4 dimensions of RRI

Anticipatory	Describe and analyse intended and unintended impacts that might arise.
Reflective	Reflect on underlying purposes and motivations of research and innovation.
Deliberative	Open up visions, purposes, and dilemmas to broad deliberation through dialogue and debate.
Responsive	Set the direction and influence the subsequent trajectory and pace of innovation.

**RRI: Anticipation: Reflection; Deliberation;
Response**



Need of upstream actions

‘Technology Lock-in’

‘... by the time we have procured knowledge that leads to a better understanding of the impacts of innovation ... the innovation may be so “locked in” to society that we may have little appetite, or power, to do anything about it. The costs ... of confront may be too great and vested interests may fight this.’



©Reuter

Nuclear power is so locked in even after the Fukushima disaster



©HUNTER

‘Dream town of atomic energy: Genkai Town

Responsible Research and Innovation: Meta-system

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graph TD; A[Responsible Research and Innovation: Meta-system] --- B[Implementation of RRI in multi-national polities]; B --- C[Implementation of RRI in countries and areas]; B --- D[Implementation of RRI at universities]; B --- E[Implementation of RRI at research organizations];
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Implementation of RRI in multi-national polities

Implementation of RRI in countries and areas

Implementation of RRI at universities

Implementation of RRI at research organizations

RRI in Japan

JST-RISTEX (Research Institute of Science and Technology for Society)

Running the Japanese version of RRI

Initiative of Osaka University

Department of Biomedical Ethics and Public Policy

Journal of Medicine, Life and Ethics, Society

International Symposium for Responsible Research and Innovation (2013)

Joint Research Project funded by JSPS

**OSRRIs: Organizations and Society for Responsible
Research and Innovation**

**STIPS: Program for Education and Research on
Science and Technology in Public Sphere
(With University of Kyoto)**

Waseda University Research Ethics Charter

1. Through academic research, all members of the university will contribute to the solution of common problems that individuals face in society, such as **human welfare and world peace**.
2. All members of the University will preserve **human dignity, respect life, strive for harmony among human beings, society and nature, protect the socially vulnerable, maintain the global environment, and positively influence the public interest.**

3. All members of the university will comply with international rules, domestic and foreign laws and regulations, social rules, the spirit of such rules, and social good sense. In addition, research will report their results timely and appropriately so that they can positively meet the demands of society.

4. During cooperative academic research activities, all members of the university will respect human rights, protect personal information, make efforts to prevent any kind of harassment and discrimination based on nationality, sex, age or any other reason, and consistently cooperate with others to prevent such behaviour.

5. All members of the university will support cooperation in society and will appropriately manage all academic research.

6. The university will strive to improve and maintain proper education and training in research ethics and the research environment while safely managing researchers so that no illegal activity occurs.

Guidelines Regarding Academic Research Ethics



Academic Research Ethical Review Committee

RRI based on deontological

An action [research and innovation] is considered morally good because of some characteristics of the action itself – the values it is based on and its purpose and motivation – not because the product of the action is good.



The Funding for Security Technology Research and Development started by the Ministry of Defense in 2014

Argument and justifications

Dual (military-consumer) use – consequentialist procedure

Military Use

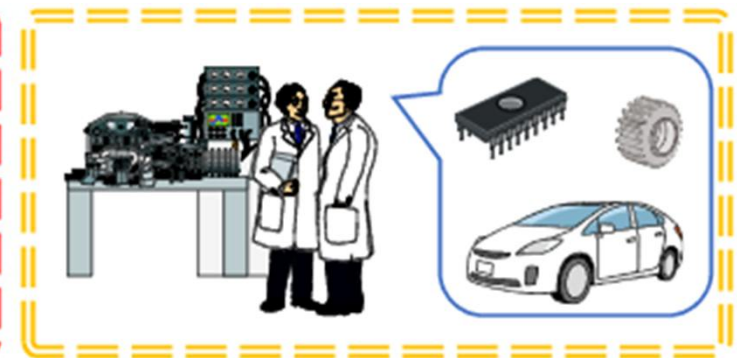


Defense

Disaster Relief

Peace Keeping

Consumer Use



©Acquisition, Technology & Logistics Agency

‘We will never carry out scientific research to help prosecute a war.’

Declaration issued by Science Council of Japan (1950)

‘We will never carry out scientific research for the purpose of war.’

Declaration for Prohibiting Scientific Research for Military Purpose by Science Council of Japan (1967)

Declarations based on deontologist shared values

Review Board for Security and Science set up by SCJ in 2016

Review the principles and policies of SCJ regarding the issue of scientific research for military purpose

Dual use – a consequentialist argument for justifying the involvement of universities in military research

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