

Responsible Research and Innovation in ICT

Edinburgh, 19.06.2017



Overview of the session

Welcome and introductions (10 min)

Introduction to RRI (20 min)

What is RRI?

Why should you be interested in RRI?

Background and theory

Case study, initial intuition (20 min)

The AREA-4P framework (30 min)

The EPSRC AREA framework

Why RRI for ICT?

Case study group work (50 min)

Every new technology raises questions



- Who benefits?
- What are the risks?
- What if we're wrong?
- What are the alternatives?
- Who decides?
- Who's in control?
- Who's responsible?



RESEARCH COMMUNITY

RRI is a way to do research that takes a long-term perspective on the type of world in which we want to live



RRI will strengthen research and innovation projects,
making them more open, transparent, diverse,
inclusive and adaptive to changes



RRI enables a broader way of defining researchers
and their role in society, helping both science
and society to consider long-term issues



Engaging all actors in research according to RRI values can
yield results better suited to societal needs



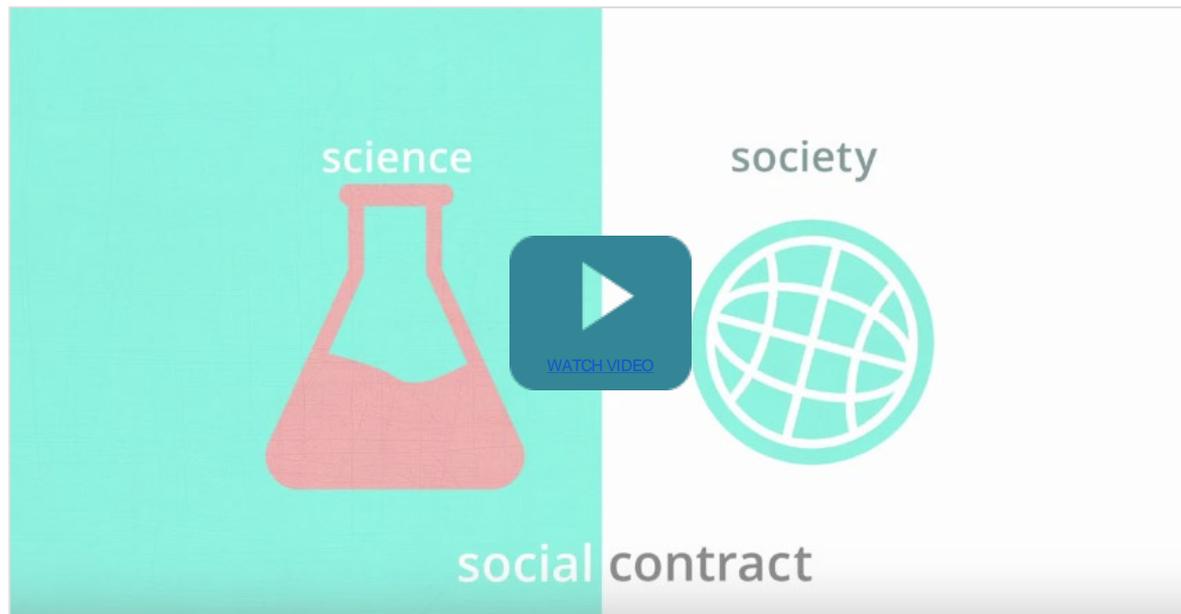
“The further you advance into research,
the more specialised it becomes. The risk is to end up
with a restricted view of your discipline”

Jean-Pierre Bourguignon, President of the European Research Council



"We need ambition at a policy level to support
the best science for the world and
not just the best science in the world"

Morten Østergaard. Former Minister of Science, Denmark



Researchers, innovators, research managers, public affairs and communication officers, and **all those people who support the diverse aspects of the R&I system belong to this group.**



Case Study Part I

Initial intuition

Individual exercise (5 min)

The ORBIT training cases contain short overviews of real-life proposals or topics of research interest. They are deliberately short. Where information is missing, please use your experience to fill in relevant blanks.

Read the case. Spend 5 minutes noting down your impressions on the following:

Who are the stakeholders in this case?

How are they affected?

Do you see any ethical / social issues arising from the case?

How could or should these be addressed?

Group work (15 min)

Select a note taker and a presenter.

Compare your notes from the individual work. Do you agree on the answers to the questions:

Who are the stakeholders in this case?

How are they affected?

Do you see any ethical / social issues arising from the case?

How could or should these be addressed?

Prepare a brief summary / slide covering your answers

The RRI Framework

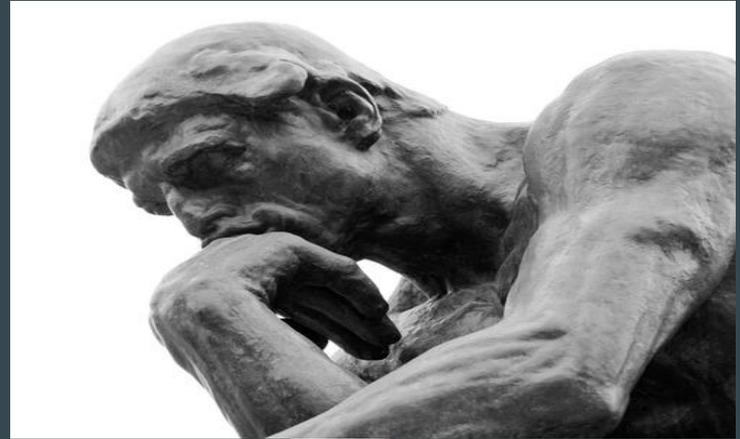
- **Anticipate** – describing and analysing the impacts that might arise.
- Foresight, technology assessment, and scenario development
- But also informal, everyday decisions
- What if? What else ...?



<http://fromov.com/2012/08/strategic-foresight-and-scenario-sourcing/>

The RRI Framework

- **Reflect** – reflecting on the purposes of, motivations for and potential implications of the research.
- Make visible dominant values: “holding up a mirror” to one’s own assumptions
- Pausing for a moment



<http://geopoliticsandpolicy.com/post/43206182652/the-reflexivity-of-philosophical-reflection>

The RRI Framework

- **Engage** – opening up such visions, impacts and questioning to broader deliberation, dialogue, engagement.
- Inclusive
- Participatory
- Workshops, focus groups
- But also encourage users to reflect on *their own* assumptions; open up the



<https://www.theguardian.com/books/blog+booker-prize>

The RRI Framework

- **Act** – using these processes to influence the direction and trajectory of the research and innovation process itself.

- Being *responsive*
- Not once-for-all;
pragmatic customisation
of technologies
- Adapt to emerging knowledge



[/www.keystroke.ca/blog/](http://www.keystroke.ca/blog/)

The AREA Framework

<https://www.epsrc.ac.uk/index.cfm/research/framework/>

Anticipate – describing and analysing the impacts that might arise.

Reflect – reflecting on the purposes of, motivations for and potential implications of the research.

Engage – opening up such visions, impacts and questioning to broader deliberation, dialogue, engagement.

Act – using these processes to influence the direction and trajectory of the research and innovation process itself.



RRI in EPSRC

Expectations of the research community

We expect our research community to

conduct their work in an **ethical and legal** manner.

reflect on their own personal and collective **motivations** for conducting their research.

[...] enter[...] into **dialogue** with the public and other stakeholders where appropriate, and respecting the views of others.

inform EPSRC and their own research organisations about any concerns, dilemmas and opportunities that a Responsible Innovation process surfaces **as these become apparent** during the research and innovation process.

RRI in EPSRC

Expectations of Research Organisations

We expect research organisations in receipt of EPSRC funding to

acknowledge and respect these Responsible Innovation principles and the role they have in promoting them.

encourage and support researchers to develop responsible innovation approaches as a core capability, working with others across disciplines and beyond the research organisation itself.

EPSRC will

Promote reflection, understanding and training about Responsible Innovation approaches [...] in order to **develop capacity** for responsible innovation.

Welcome funding requests within EPSRC research grant proposals that seek to explore aspects of Responsible Innovation as an integral part of that research endeavour.

Be vigilant to potential social, environmental, ethical and regulatory challenges [...]

Ensure that Responsible Innovation is prominent in our **strategic thinking and funding plans**, including proposal assessment.

Alert policy makers in Government and regulators to emerging issues and opportunities associated with new

RRI in EPSRC

Humans at the heart of ICT

<https://www.epsrc.ac.uk/research/ourportfolio/themes/ict/introduction/crossictpriorities/people-at-the-heart-of-ict/>

- [...] encourages the development of better ICT by asking researchers to acknowledge the relationship that people have with ICT
- [...] consider these relationships and impacts throughout the research process from planning to implementation.
- [...] move beyond abstract notions of 'the user' and develop a more detailed and realistic understanding of the stakeholders in their research [...]
- [...] increases the complexity of a research question leading to exciting challenges and opportunities
- [...] not about improved Human Computer Interaction
- [...] is primarily about encouraging a long term behavioural change in the community. Applicants are encouraged to consider the priority when submitting any proposal to the theme through the council's standard schemes.

RRI - The 4 Ps

Process: covers all activities in preparing research, undertaking data collection and analysis, storage and presentation of data and interaction with respondents.

Product: can refer to products or services. It includes the consequences of use as well as misuse of research products and the impact that research has on the natural and social environment.

Purpose: covers the question why research is undertaken at all.

People: are at the heart of RRI and need to be explicitly considered.



	Process (speed or innovation & diffusion)	Product (Ubiquity & Pervasiveness)	Purpose (Logic malleability)	People (Problem of many hands)
Anticipate (Opportunity)	Is the planned research methodology acceptable?	Will the products be socially desirable? How sustainable are the outcomes?	Why should this research be undertaken?	Have we included the right stakeholders?
Reflect (Considerations)	Which mechanisms are used to reflect on process? How could you do it differently?	How do you know what the consequences might be? What might be the potential use? What don't we know about? How can we ensure societal desirability? How could you do it differently?	Is the research controversial? How could you do it differently?	Who is affected? How could you do it differently?
Engage (Alternatives)	How to engage a wide group of stakeholders?	What are viewpoints of a wide group of stakeholders?	Is the research agenda acceptable?	Who prioritises research? For whom is the research done?
Act (Capabilities)	How can your research structure become flexible? What training is required? What infrastructure is required?	What needs to be done to ensure social desirability? What training is required? What infrastructure is required?	How do we ensure that the implied future is desirable? What training is required? What infrastructure is required?	Who matters? What training is required? What infrastructure is required?

RRI - the European View



Pillars/ policy areas of RRI in the EU

Ethics

Gender equality

Governance

Open access

Public engagement

Science education

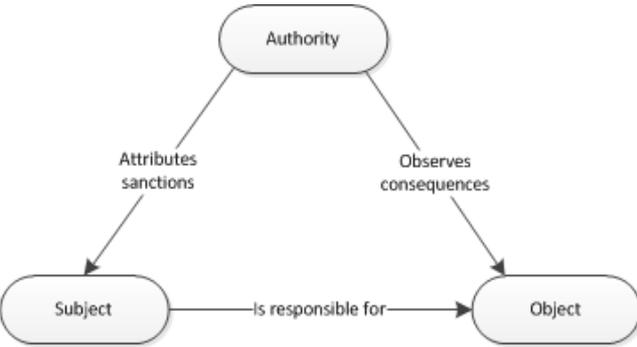
And sometimes added:

Sustainability

Social justice



RRI as Meta-Responsibility



The role of RRI as a meta-responsibility is to

shape,

maintain,

develop,

coordinate and

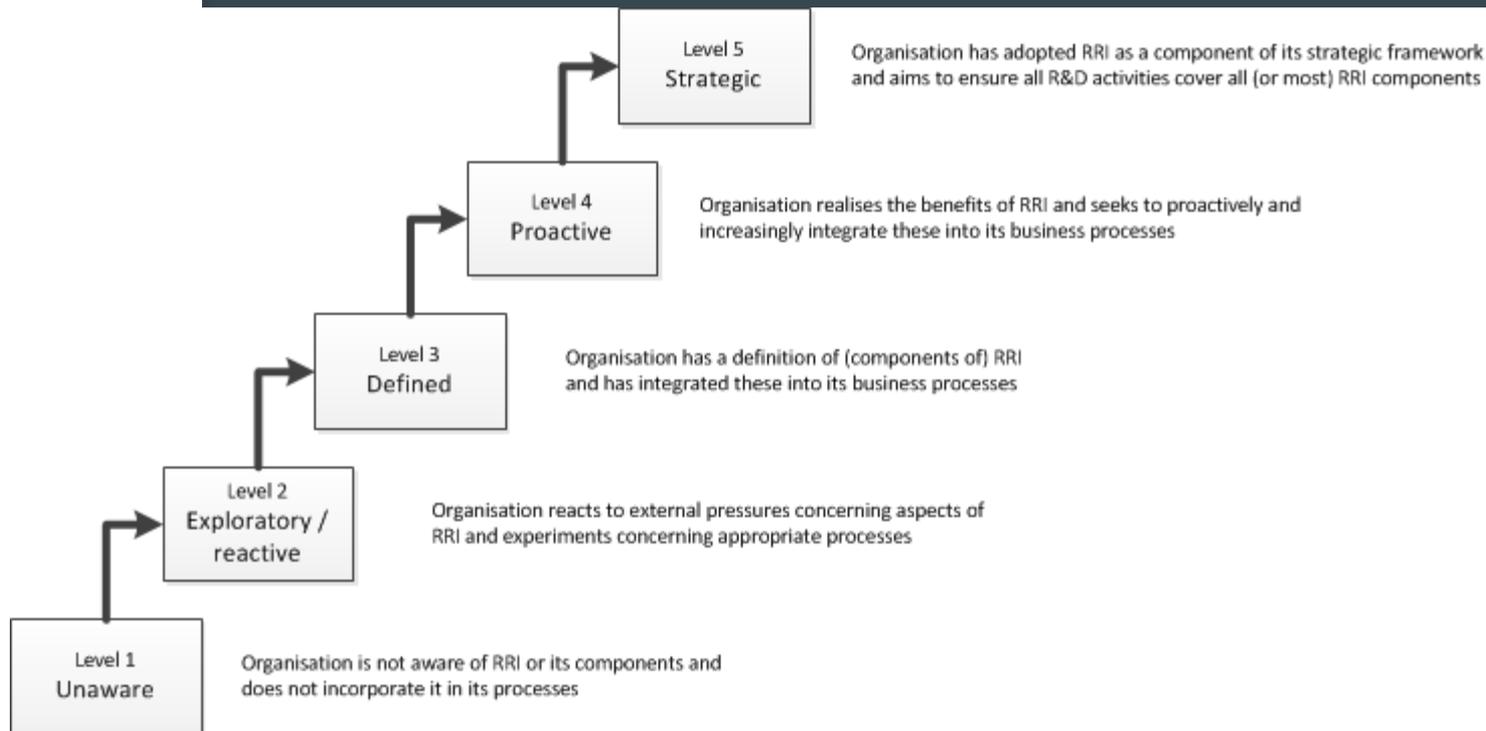
align

existing and novel research and innovation-related

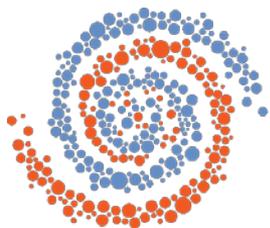
processes,

actors and

The RRI Maturity Model



RRI Maturity Model - Application Example



ORBIT

Limits of RRI

RRI cannot

Predict the future

Avoid all problems arising from research,
innovation and technology development

Eliminate value conflicts

Relieve researchers/ funders/ industry from
responsibility

Be a panacea

RRI can

Stimulate an intelligent conversation about R&I



Why RRI for ICT?

Characteristics of ICT that pose challenges for RRI:

Ubiquity and pervasiveness

Speed of innovation and diffusion

Limitations of extant governance mechanisms

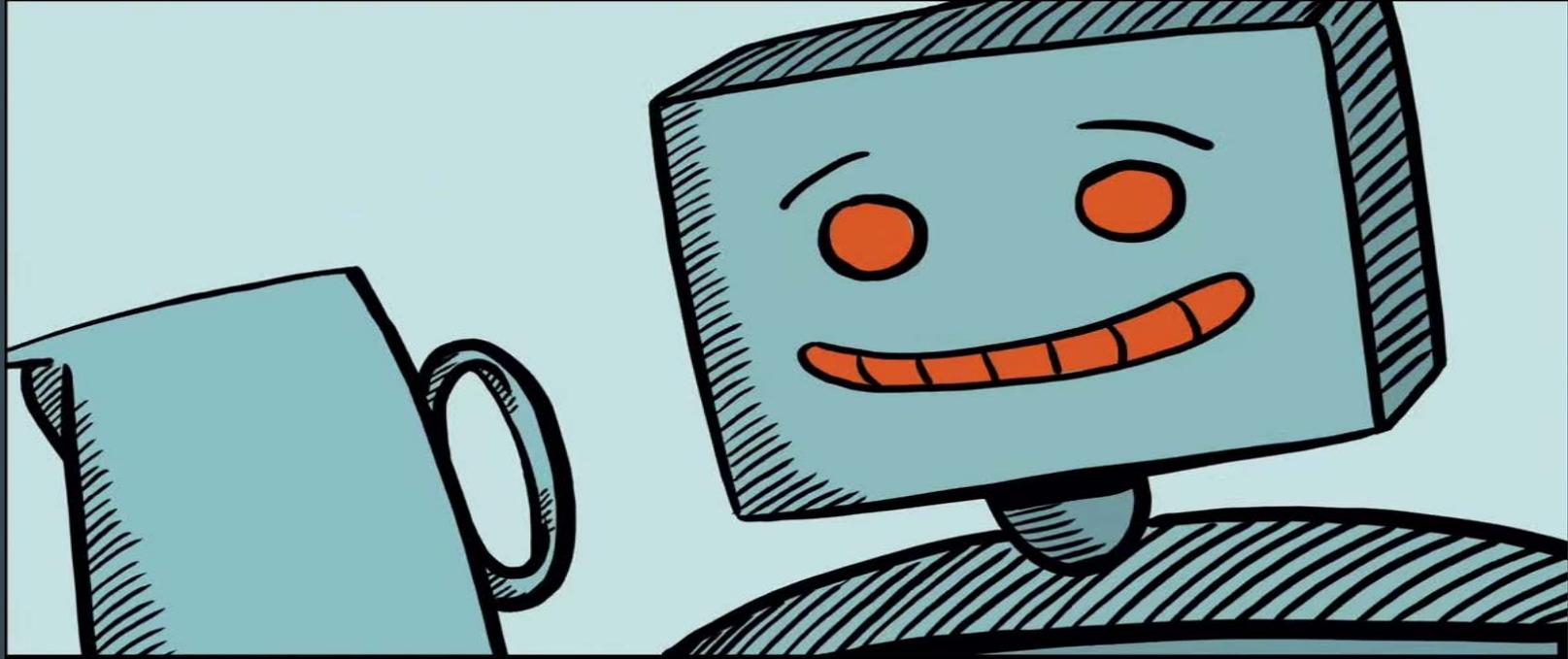
“The problem of many hands”

Logical malleability / interpretive flexibility

Risks and uncertainties



RRI – an Example



Case Study Part II

Observatory for Responsible Research and Innovation in ICT

AREA Framework (30 min)

Apply the AREA-4P framework to your case. When doing so, go through all the fields in the matrix and note which ones are relevant.

Discuss the questions in the relevant fields. Do they affect how you think about the case?

Revise your initial responses in light of the AREA-4P framework.

Prepare a brief presentation covering

The case

Your proposed action plan (who should do what, when, how to address possible issues)



Observatory for Responsible Research and Innovation in ICT

EPSRC

Pioneering research
and skills

ORBIT- Overview

Some key facts

Service contract signed 25.01.2017

Collaboration between DMU and Oxford
(collaboration agreement pending)

3 year contract with an option to extend to 5 years

Financial value: £450k

DMU	Oxford
B. Stahl	M. Jirotko
Director: Martin De Heaver	Project Officer: NN
Webmaster: Paul Keene	Marketing Officer: NN



Orbit Aims

ORBIT will provide information and services to ICT research and development communities to support them in undertaking their work responsibly. It will be a community resource allowing the exchange of information, networking and reflection on ICT research. By helping research stakeholders harness their creativity and imagination, it will contribute to better research processes and outcomes, thus ensuring that ICT research and innovation are socially desirable and acceptable.



www.orbit-rri.org

Orbit Activities



A website to serve as the knowledge base for the exchange of information, which will include

An open access online journal

A self-assessment tool for RRI in ICT

Training provision targeted at

Academic audiences (e.g. DTCs)

Commercial audiences (SMEs, multinationals)

Consultancy services for

Proposal development

Organisational structures for RRI

Research

Orbit Value Proposition



1. To the **publicly funded UK ICT research community** by allowing researchers to **access to funding** by funders who value RRI, such as EPSRC or the European Commission.
2. To **small and medium size enterprises** in ICT by offering services that support **compliance** in relevant areas such as data protection, research process regulations (animal research, clinical trials), research integrity or ethics assessment. SMEs will also benefit by joining up their R&I activities and using RRI to express the value they place on **customer** and societal perceptions
3. To large **multinational companies** by helping them extend their **corporate social responsibilities** to cover their R&I activities

Conclusion

Observatory for Responsible Research and Innovation in ICT

Open Discussion

What did you learn?

What will you change?

What support will you require?

How can we improve this training?

What can ORBIT do for you?



Thought leadership

What does it mean to do R&D responsibly

Training and education

Introductory training

Bespoke workshops on particular topics

Train the trainer

Continuous professional development

Support services

RRI strategy development

Proposal development support