

# Responsible-Industry



Responsible-Industry

GA 609817

## D2.1-Delphi\_Exercise\_Questionnaire -2014-07-AIRI.docx

*Elisabetta Borsella, Elvio Mantovani, Andrea Porcari  
(AIRI - Italian Association for Industrial Research)*



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 609817.

# 1 Introduction

This questionnaire will be used for the first round of the two stages Delphi Study, part of WP2 (Implementation) of the Responsible Industry project, having the aim to assess the position of relevant stakeholders about the implementation of Responsible Research and Innovation (RRI) in the domain of Information & Communication Technologies for Health, Demographic Change and Wellbeing (ICT-HDCW).

Within task 2.1 (Delphi Study), this deliverable refers to task 2.1.1 (*“Preparation of the Delphi questionnaire”*). This questionnaire will be distributed to an ample list of relevant stakeholders identified with the contribution of all the project partners. The analysis of responses to the 1st stage of the Delphi Study will lead to the preparation of the 2nd stage questionnaire. Results of this second step will lead to the final results of Task 2.1 (Delphi Exercise report).

The questionnaire has been prepared on the basis of WP 1 activities, including draft results of task 1.1 (*Current Discourse of RRI, health, demographic change and wellbeing*) and task 1.2 (*Tools Survey and Matrix for RRI in Industry*). The results of an interview with a representative of an ICT industry carried out for a first testing (straw test) of a draft of the questionnaire have been also taken into account. Different versions of the document, including the final one, have been circulated amongst all the Consortium partners. The present version incorporates the inputs and comments received.

Full details on the procedures and methodologies used for preparing the questionnaire and the whole Delphi Exercise will be described in the Delphi Exercise report.

The main objective of the questionnaire is to identify and evaluate stakeholders opinions, attitudes and proposals in particular on:

- gaps, needs, controversial positions, critical issues
- good practices
- incentives/disincentives
- prospective needs and activities in relation with RRI implementation

The 1<sup>st</sup> round questionnaire is structured in four main areas plus few optional additional questions and demographic data.

Each area includes a set of questions (between 4 and 9 for each area) and for each questions closed options are given (yes/no, or Lickert scale). Open text fields for additional comments are available in most of the questions.

The questionnaire is designed with the scope to collect quantitative information for statistical analysis, as well as optional qualitative inputs from experts (via the open text fields). The 2<sup>nd</sup> stage questionnaire will be designed with the aim to collect more qualitative data.

The chosen format should facilitate wide participation (concise, quick compilation), and analysis of results (structured quantitative data).

In the following pages are reported the introductory text for the stakeholders to be contacted, the questions and the concluding remarks of the questionnaire.

The questionnaire will be sent to a large number of stakeholders to get a representative sample of respondents. The objective is to send the questionnaire to over 500 stakeholders.

## 2 Questionnaire presentation

Dear Sir or Madam,

Subject of this online survey, that is the first part of a larger, two stages, Delphi Study, is to evaluate stakeholder's attitudes towards the *Responsible Research and Innovation (RRI) in Business and Industry* with a focus on the *Domain of Information & Communication Technologies for Health, Demographic Change and Wellbeing (ICT-HDCW)*. RRI aims at anticipating and preventing problems deriving from Research and Innovation (R&I) by taking into account wider societal, ethical and environmental issues.

The European RRI policy agenda is outlined in the European Commission *Responsible Research and Innovation* leaflet:

[http://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)

In the following, R&I will refer specifically to products and applications of ICT-HDCW.

The survey questionnaire is divided in the following parts:

- **Awareness about the Concept of RRI**
- **Measures for Integration of RRI into the Product Value Chain**
- **Responsible Governance**
- **EC RRI Policy Agenda**
- **Optional Additional Questions**
- **Demographic Information**
- **Concluding Remarks**

Answering all questions will take some 20-25 minutes. Thank you for your kind support!

While answering the survey questions you can go back and forth through your answers at any time using the navigation buttons at the bottom of the page. When you click the [done>>]-button on the last page, the survey will be closed.

***Important note: All data entered into this questionnaire will be treated strictly confidential and will not be shared with third parties.***

The questionnaire is part of the Responsible-Industry Project. Please find detailed information about the Project on the website:

[www.responsible-industry.eu](http://www.responsible-industry.eu)

## 3 Questions

### Awareness about the Concept of RRI

**Definition of RRI:** *Responsible Research and Innovation (RRI) 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 (in order to allow a proper embedding of scientific and technological advances in our society).*

(R. Von Schomberg, 2011)<sup>1</sup>

- 1. The concept of RRI as given above is relatively new and rapidly evolving. Have you been aware of the RRI prior to this survey?**

*Yes*

*No*

- 2. Are you aware of measures taken by the government of your country to implement the adoption of the RRI?**

*Yes*

*No*

*If yes, could you list/describe some of these measures?*

- 3. Are you aware of initiatives carried out by your company/organization to ensure that research and innovation are done responsibly?**

*Yes*

*No*

*If yes, could you indicate some of these initiatives?*

---

<sup>1</sup>Von Schomberg, R. (2011) "Prospects for Technology Assessment in a framework of responsible research and innovation". In: M. Dusseldorp and R. Beecroft (eds). *Technikfolgen abschätzen lehren: Bildungspotenziale transdisziplinärer Methoden*, Wiesbaden: Vs Verlag.

**4. Have you been personally involved in these initiatives?**

*Yes*

*No*

*If yes, what is your role in these initiatives?*

**Measures for Integration of RRI into the Product Value Chain.**

**5. In your opinion, in which case ICT-HDCW could arise societal and ethical risks?**

**Please indicate on a scale of 1 (irrelevant) to 5 (extremely high) the level of risk.**

*Health monitoring through “sensing systems”  
e.g. wearable or implantable sensors for daily monitoring of physiological parameters*

1 2 3 4 5

*Real time monitoring of the user life-style through “sensing systems”  
e.g. environmental sensors for surveillance applications at home*

1 2 3 4 5

*“Reasoning systems” for medical data analysis  
e.g. detection of trend anomalies in vital signs to alert caregivers or family members*

1 2 3 4 5

*“Reasoning systems” for privacy-sensitive data analysis  
e.g. noise analysis for activity recognition*

1 2 3 4 5

*“Acting enabling technologies”  
e.g. automatic control through actuators, artificial muscles*

1 2 3 4 5

*Machine to machine “communication systems”  
e.g. transmission of medical data from the user smartphone to care management portals*

1 2 3 4 5

*Transmission of privacy-sensitive data to a third party  
e.g. transmission of personal data from the user smart phone to e-service portals*

1 2 3 4 5

- Public Data Storage and Analysis*  
*e.g. cloud computing*  
1 2 3 4 5
- Human-machine interaction*  
*e.g. robotics*  
1 2 3 4 5
- Brain-computer interface*  
1 2 3 4 5
- Others (specify)*  
1 2 3 4 5

**6. Which of the following domains is most susceptible to ethical and societal risks in relation to the design and development of ICT-HDCW? Please indicate up to 3 options.**

- Environment*
- Health*
- Personal Safety*
- Social Safety*
- Social Isolation*
- Justice, access and equality*
- Individual rights and liberties (privacy, rights to freedom of movement, etc.)*
- Autonomy, authenticity and identity (free will, ability to have one's own thoughts and make one's own decisions, to develop social identity)*
- Human dignity*
- Bodily integrity(self-determination of human beings over their own bodies)*
- Dual use of developed technologies.*



**7. At what stage of the value chain for the realization of a new ICT product/system the above mentioned potential societal risks and ethical issues should be addressed? (more than one option can be indicated)**

- Agenda setting*
- Basic technology research*
- Proof of concept*
- Prototype demonstration*
- Product development, engineering and testing*
- Go to market*
- Along the entire value chain*
- Other (please specify)*

**8. Which department within the company/organization should be responsible of this task? (More than one option can be indicated)**

- Planning*
- Research & Development*
- Marketing*
- Sale*
- Legal*
- CSR (Corporate Social Responsibility)*
- Others (optional - please specify)*
- I do not know*

*Could you please specify which role should the responsible department(s) play in RRI?*

**9. Who should be involved in the identification and evaluation of the potential societal risks and ethical aspects of R&I in ICT-HDCW? (more than one option can be indicated).**

- Policy makers*
- Legislators*
- Public bodies*
- Ethics Committees*
- Research Funding Bodies*
- Professional Associations*
- Company and Industry Associations*
- Civil Society Organizations*
- Consumer Organizations*
- Educational Institutions*
- Research Organizations*
- Individual Researchers*
- End Users*
- General Public*
- Others (please specify who is missing, if any)*
- I do not know*

**10. Which tools should be used to identify potential societal risks and ethical aspects of R&I in ICT-HDCW? (more than one option can be indicated)**

- Moral intuitions*
- List of moral values/principles*
- Precautionary Principle*
- Operative guidelines*

*Others (optional - please specify)*

*I do not know*

**11. Which procedures should be used to evaluate potential societal risks and ethical aspects of R&I in ICT-HDCW? (more than one option can be indicated).**

*Risk Assessment Procedures*

*ESIA: Environmental and Social Impact Assessment*

*Ethical Assessment*

*Anticipatory Technology Assessment*

*Pilot studies for evaluating different scenarios*

*Others (optional - please specify)*

*I do not know*

**12. How should the general public and other relevant stakeholders be involved for the identification and evaluation of the potential societal risks and ethical aspects of R&I in ICT-HDCW? (more than one option can be indicated)**

*Brainstorming events*

*Focus groups*

*Citizen's juries*

*Formation of networks including researchers, funders, policymakers, individuals and user committees*

*Other initiatives (optional - please specify)*

*I do not know*

**13. Which approach should be adopted by the involved public and other relevant stakeholders to implement RRI in the development of ethically acceptable and socially sustainable ICT products/systems? (more than one option can be indicated).**

- Crowd-sourcing*
- Prototype trial*
- Participatory design*
- Human-centered design*
- Human-driven design*
- Other initiatives (please specify)*
- I do not know*

## Responsible Governance

**14. What type of governance framework would be more effective to implement the adoption of the concept of RRI in ICT - HDCW?**

Please specify on a scale of 1 (very low) to 5 (extremely high) the level of importance.

- Self-reporting measures*  
1 2 3 4 5
- Code of conduct/Principles*  
1 2 3 4 5
- Existing related standards (such as ISO 26 000 Social Responsibility or the AA1000 Stakeholder Engagement Standard (AA1000SES))*  
1 2 3 4 5
- Global Initiatives*  
1 2 3 4 5
- New standards*  
1 2 3 4 5
- I do not know*

*Optional comments:*

**15. Who should be involved in the development of a governance framework for responsible R&I in ICT-HDCW? (more than one option can be indicated).**

- Policy makers*
- Legislators*
- Public bodies*
- Ethics Committees*
- Research Funding Bodies*
- Professional Associations*
- Industry Associations*
- Industries*
- Educational Institutions*
- Research Organizations*
- Individual Researchers*
- Civil Society Organizations*
- Consumer Organizations*
- End Users*
- General Public*
- Others (please specify who is missing, if any)*

**16. Do you think that the compliance with RRI in R&I activities in ICT-HDCW should be :**

- Voluntary*
- Legally binding*
- Regularly monitored and evaluated through audit procedures*
- Regularly reviewed by ethics committees*

**17. What could be effective measures to stimulate companies/organizations to comply with RRI principles? Please indicate on a scale of 1 (very low) to 5 (extremely high) the level of usefulness.**

- Integration of RRI into research funding through evaluation criteria*  
1 2 3 4 5
- Availability of ethical funds*  
1 2 3 4 5
- Support for crowd-sourcing*  
1 2 3 4 5
- Requirement to integrate RRI into public procurement tenders and contracts*  
1 2 3 4 5
- Adherence to RRI principles (certification mark) to discharge legal liability*  
1 2 3 4 5
- Others (please specify)*
- I do not know*

**18. To what extent do you agree that the acceptability and market penetration of ICT products/systems for HDCW could be increased by the creation of a ‘certification mark’ including adherence to RRI principles increase?**

- Strongly disagree*
- Disagree*
- Neither agree nor disagree*
- Agree*
- Strongly agree*

**19. Which key performance indicators would you propose to measure the effect of RRI implementation on ICT products/systems for HDCW?**

Please specify on a scale of 1 (very low) to 5 (extremely high) the level of importance.

- Economic (market penetration, profit, turnover, access to financial support)*  
1 2 3 4 5
- Organizational (use of human resources, team cooperation, gender equality...)*  
1 2 3 4 5
- Strategic (competitive advantage, customer satisfaction ...)*  
1 2 3 4 5
- Societal (product sustainability, desirability, acceptability and safety, effect on quality of life and health of customers...)*  
1 2 3 4 5
- Scientific and Technological (degree of innovation in products and systems, product quality and reliability)*  
1 2 3 4 5
- Others (please specify)*
- I do not know*

## European Commission RRI Policy Agenda

**20. To what extent do you agree on the issue that the general public need to be better informed on R&I and to be engaged in debates on impacts of ICT products/systems for HDCW?**

- Strongly disagree*
- Disagree*
- Neither agree nor disagree*
- Agree*
- Strongly agree*

**21. Do you think that open access to scientific information and research results when funded by public money (as in EC Projects involving both academic and industrial partners) should be guaranteed to researchers, innovators and general public?**

- Yes*
- No*
- I do not know*

*Optional comments:*

**22. Do you think that Companies developing new ICT products/technologies should ensure the public access to easy-to-understand information about where and how new products/technologies are being used?**

- Yes*
- No*
- I do not know*

*Optional comments:*

**23. Which tools are more effective for the public to obtain/receive information and form their opinion on new ICT products/technologies and their potential impact? (more than one option can be indicated).**

- Internet*
- Social media*
- Science sections in national newspapers*
- Specific articles in popular science magazines*
- Dedicated television programs*
- Science festivals*
- Education initiatives at Universities and other HD Institutions*
- Others*
- I do not know*



24. Do you think that ensuring public access to easy-to-understand information about new ICT products/technologies will help to build public acceptance of innovation products/systems?

- Yes
- No
- I do not know

*Optional comments:*

25. Please indicate on a scale of 1 (not important) to 5 (extremely important) to what extent the principles of Openness and Transparency could be hindered by IPR (Intellectual Property Right) issues

1 2 3 4 5

*Optional comments:*

26. To which extent do you agree on the following statements :

✓ RRI issues should be part of the training and education at all levels, from undergraduate through to doctoral training.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

✓ RRI issues should be considered an aspect of continuous professional development for researchers.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

## Optional Additional Questions.

**27. Are there any ethical and societal issues relevant to your daily activity?**

*Yes*

*No*

*If yes, please specify.*

**28. Do you discuss ethical issues with your colleagues?**

*Yes*

*No*

*If yes, please specify.*

**29. Is there in your opinion any problematic aspect in the concept of RRI?**

*Yes*

*No*

*If yes, please specify.*

**30. What could be in your opinion possible obstacle/s to the application of RRI?**

*Please, specify.*

**31. Any other additional remark, comment or reference you would like to add?**

Open field

## Demographic data

*The following data are necessary for internal statistical purposes only.*

✓ **To which of the following stakeholder groups does your organization belong?**

- Public Research Institutions** (Universities, Governmental Research Institutes, National Laboratories, etc.)
- Industry**(production, retail, insurance and finance, industrial/professional organizations, health care providers, etc.)

Number of employees: ≤ 10  ≤ 50  ≤ 250  ≥ 250

- Policy Related Institutions** (policy makers such as government departments and agencies, R&D governing bodies, regulatory and standards agencies, technical and ethical committees, trade unions, technology assessment/health technology assessment policy advisors, etc.)
- User/practice** (public sector service organization, social security system, care organizations, consumer, patient/public health, environmental, labor associations and organizations, Non-governmental organizations (NGOs)).

✓ **In which Country is your organization located?**

*Please, specify*

✓ **Which is your role in your organization?**

*Please, specify*

If this survey has been forwarded to you by other than the address [survey@responsibleindustry.com](mailto:survey@responsibleindustry.com), or you prefer to modify the data we have used, please fill the fields below:

**Name:**

**e-mail:**

This will allow us to inform you on the results of the survey and propose you the second (and final) Delphi survey.

---

## **Concluding Remarks.**

Thank you for participating in this first part of the Responsible-Industry Delphi Study. The project team will analyze the responses to identify key aspects and core components of RRI. The results will be assessed through a second Delphi Survey, which will lead to the development of a draft implementation plan. This document will provide guidance to industries on how to implement responsible research and innovation in their activities and will inform future EU policies on this theme.