Best practice V Managing social impacts and ethical issues of research and innovation: the CEN/WS 105 guidelines to innovate responsibly

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Aims and goals

The standard under development (formally named as workshop CEN/WS¹ 105) aims to provide practical guidelines for organisations to approach and evaluate the most significant ethical, legal and social impacts (ELSI) expected by the development of their innovative products, and to identify a Responsible Research and Innovation (RRI) vision and operative RRI actions (roadmap) to address them.

Description of good practice example

Recent experiences suggest that RRI implementation can support anticipation of impacts of technological innovation and prevent externalities from the early stages of product or service development. For this reason, a roadmap for RRI implementation in the industrial context is under development at the European Committee for Standardisation (CEN),² starting from the experience of the PRISMA project³ regarding RRI uptake in companies dealing with transformative technologies, such as nanomaterials, synthetic biotechnologies, Internet of Things and autonomous vehicles.

The roadmap is meant as a support tool for strategy setting, integrating technological and responsibility aspects. It is addressed to organisations involved in planning and performing technological development, with a focus on enabling technologies. It defines a set of acknowledged principles based on three key actions:

1. Integrate the analysis of ELSI from the early stages of product/service development (reflection and anticipation)

Figure V.I European Committee for Standardisation (CEN) Workshop (CEN/WS) 105: methodological steps for the design of the Responsible Research and Innovation (RRI) roadmap.

2. Perform stakeholder engagement (inclusiveness)
3. Integrate monitoring, learning and adaptive mechanisms to address public and social values and normative principles (responsiveness).

These actions are considered as a minimum requirement for RRI implementation. The methodology follows a circular process, based on six steps (Figure V.I and Table V.I). The final step is the design of an RRI roadmap, using the architecture of Innovation Policy Road-mapping Methodologies (Ahlqvist et al., 2012).

The guidelines take into account terminology and approaches of ISO and CEN standards on management systems in the areas of social responsibility, sustainability, innovation, quality and risk assessment (e.g. ISO 26000, ISO 31000, EN ISO 9001 and series ISO 56000).

PRISMA experience shows that RRI implementation is context-sensitive: what exactly it entails and what it can deliver depend on the sector, technology, type of company/organisation and business. RRI actions involve different functions and could have both tangible and intangible,

Table V.I CEN/WS 105: methodological steps for the design of the Responsible Research and Innovation (RRI) roadmap

<i>Top management commitment and leadership</i>	Ensure endorsement by the organisation of RRI values and approach
<i>Context analysis</i>	Analyse the organisation, the R&I product(s) and technologies on which to focus; identify ethical, social and legal impacts of the product and stakeholders of the product innovation eco-system
<i>Materiality</i>	Identify and prioritise: drivers and challenges for RRI; risks and barriers to overcome; stakeholders to work with; significant RRI actions to pursue
<i>Experiment and engage</i>	Perform exploratory/pilot RRI actions, engaging with stakeholders to inform the RRI roadmap
<i>Validate</i>	Evaluate impact of the roadmap on both the product development and the organisation (key performance indicators)
<i>Roadmap design</i>	Consolidate and visualise the long-term RRI strategy, covering all the R&I value chain (time to market) and product life-cycle

Note: R&I, research and innovation.

short and long-term impacts at different levels (product/service, company, stakeholders, society).

The responsible innovation guidelines provide a flexible and modular approach, that could be adapted to any size and type of organisation and implemented both through informal and formal procedures, to guide organisations to integrate responsibility aspects all along the research and innovation stages and product development.

Benefits for the organisation

These guidelines could help organisations to introduce structural changes in their usual business practices, toward more anticipatory, inclusive, responsive research and innovation practices, anticipating social or market trends or requirements, technological scenarios, possible regulatory changes and building trust and legitimacy.

Notes

- 1 A CEN Workshop (CEN/WS) is a flexible working platform open to the participation of any company, organization or interested expert for rapid elaboration of CEN Workshop Agreements (CWA). A CWA is a technical document agreed by the participants of a CEN/WS, which can be the basis for future standardization works.
- 2 www.cen.eu.

3 PRISMA project, Horizon 2020 research and innovation programme, grant agreement no. 710059 – www.rri-prisma.eu

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