GoNano

VALUE CHAIN

GONANO POLICY BRIEF NO. 4

The Value Chain: An approach to Implement **Responsible Research and Innovation** (RRI) practices in **Nanotechnologies Development**

How the value chain approach can support the implantation of RRI:

- It provides a schematic approach and a stepwise guide for embedding co-creation in business practices
- It helps identify hands-on suggestions to help successfully co-create along your value chain

The issue at stake

Public engagement is seen as one of the core values of Responsible Research and Innovation (RRI). Within the broad area of public engagement, co-creation requires a more active role for non-experts and non-scientists within the development of technology. Citizens and non-experts are invited to actively contribute in a variety of ways; for example, they may provide fresh ideas and creative solutions based on their perspectives about a specific technology or challenge. However, co-creation is only vaguely defined throughout existing narratives and debates around RRI. Despite this, some have experimented in applying co-creation in various areas from business to public health on the level of research and innovation agendas, as well as in specific product consultations. However, these attempts seem to follow two different rationales: one aims to increase the normative goal of democratising the research process, while the second one contributes to product improvement (see GoNano PB 5). GoNano defines co-creation as *"(…) activities*

Experts claimed that it was easier when citizens' suggestions were close to the stakeholders' own working context. They could directly relate to them and start working with the outcomes of the process.

GoNano Workshops 2019

[that] enable productive collaborations between researchers and societal stakeholders over longer timeframes, focusing on specific nanotechnology research lines, leading to tangible outcomes such as a new research avenue, proposal, product or prototype"[1].

GoNano strategy and key findings

The GoNano project took on the challenge of exploring, clarifying, and bridging the gap between democratisation-oriented formats – common in public engagement – and the practical implications required for application in business contexts. Building on experiences from the GoNano pilot studies, GoNano explored co-creation inspired by the concept of the value chain (as shown in the schematic below) to facilitate communication and to establish co-creation within an industrial and business context.

Co-creation and stakeholder engagement along the R&D value chain

Experiences from the co-creation pilots in three different research areas of nanotechnology (food, health, energy) showed the importance of context specificity, as well as awareness of possibilities to adjust the scoping of the overall process where still possible. However, still having the opportunity to change the path of technology development (or research line) according to the outcomes of the co-creation process was crucial for industry actors to be able to integrate content from the co-creation workshops. The process of discussing example research proposals with stakeholders along the whole value chain also proved helpful in further developing the scope of work.

1. GoNano D2.1: http://gonano-project.eu/deliverable-2-1/ [20-02-2020]

Key recommendations
on using the value chain approach

- Be cognisant of what changes are possible within the research and innovation (R&I) system you aim to impact upon

Make a realistic assessment of what is achievable through co-creation and identify the steps to tackle specific challenges, rather than remaining stuck at the abstract conceptual stage. Also clarify responsibilities before even starting projects, i.e. who is actually able to contribute what type of input to each step, as well as their expectations, capacities, needs and interests.

- Balance "opening up" and "closing down"

Co-creation calls for open and divergent phases, collecting the largest possible number of ideas or needs from a large and varied group of stakeholders (brainstorming), but also calls for phases where abstract ideas need to converge on concrete applications (prototyping) involving selected stakeholders. In order to be both responsive to society and effective for a successful innovation, the co-creation process should balance these rationales, thus supporting the creation of win-win situations.

- Establish understanding between stakeholders' perspectives

Finding consensus on broad societal goals is usually rather easy; however, the meanings of specific terms may differ between stakeholder groups. Successful co-creation processes must establish a respectful and trustful relationship between different stakeholder groups, as well as shared understanding and language.

- Restructuring the environment is possible: Create a culture of co-creation

The challenges outlined above cannot be carried by researchers alone – collaboration and co-creation need to become mainstream practices among all stakeholders involved in R&I. This implies overcoming a lack of incentive structures for researchers, confidentiality or privacy limitations, and other obstacles currently limiting co-creation. This cultural change requires a fundamental rethinking at the systemic level of research practices, and of research funding and incentive structures.

The EU-funded GoNano project (Governing Nanotechnologies through Societal Engagement) aims to align future nanotechnologies with societal needs and concerns. From September 2017 until December 2020, GoNano brought together citizens, researchers, industry, civil society organisations and policy makers across Europe to co-create concrete suggestions for future nanotechnologies.

The GoNano policy briefs present the results of the engagement activities and provide recommendations based on the GoNano experiences. This is the fourth of a series of seven policy briefs. Please see http://gonano-project.eu/policy-briefs/ for the complete series.

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