

SMART·map

RoadMAPs to Societal Mobilisation for
the Advancement of Responsible
Industrial Technologies

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How the SMART Map has been drafted

Stakeholder mapping and the Industrial Dialogues

The SMART Map for 3D printing in the biomedical field is the outcome of two workshops that brought together actors from industry, civil society and the public sector with the goal to co-design tools that will enable businesses to address questions of social and environmental responsibility they face in their innovation processes. The workshops took place in the first half of 2017, in Munich, Germany (February), and in Milan, Italy (May).

The project designed a custom format for these workshops, called “Industrial Dialogues” that builds on the two principles of inclusion and co-design. Inclusion is key to advancing responsible innovation because different stakeholders represent diverse viewpoints, experiences and concerns. The workshops recruited a broad range of stakeholders, provided enabling conditions for stakeholders to deliberate among equals regardless of their background, and encouraged mutual learning. Co-design leveraged inclusion and was supported by an interactive workshop format that led in several steps from participant-defined concerns to concrete tools for responsible innovation.

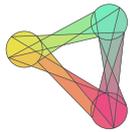
In preparation of these Industrial Dialogues, the SMART-map team mapped the organisations, which already actively partake in the innovation systems of 3D printing in the biomedical field in Germany and Italy with a focus on the greater Munich and Milan area. In addition, the team tried to include organisations that are not directly involved in the innovation system today, but whose voices ought to be heard in order to ensure the inclusive and responsible development of this health technology area. In a self-classification exercise at the beginning of each workshop, many participants described themselves as representing more than a single institutional position. Moreover, the participants complimented the diversity of viewpoints included.



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Introduction of the workshop & identification of key topics

In the initial session of the workshop, the participants were provided with background information about the project's aim, the policy context of responsible innovation, and the state of the art in 3D printing in the biomedical sector in order to create a common foundation. Next, the participants were divided into groups for a first breakout session, with the goal to brainstorm about needs, challenges and opportunities they perceived for advancing 3D printing in biomedicine innovation in a responsible manner. The groups brought their findings back into the plenary where they jointly identified similarities and convergences between their findings, leading to a number of discrete themes. These themes then served as the basis for the next set of group work.

Fast prototyping

The participants were asked to develop ideas about how innovation in 3D printing in biomedicine could be better aligned with the topics outlined in the commonly identified themes. Within the same breakout session, the groups proceeded to 'fast prototype' tool proposals that translated these ideas into concrete actions that could empower companies to innovate responsibly. As the term fast prototyping suggests, the priority was to create many tool proposals in a short amount of time. Each breakout group presented their tool proposals during a subsequent plenary session, where the participants could vote for those proposals they considered particularly relevant and for those they would like to develop in more depth during the final breakout session.

Design and mock-up of tools

During the final design session, the activity had a deliberate 'hands on' character. As the participants went about creating more detailed prototypes of their preferred tool proposals, they were encouraged to build a **physical** model with tools and craft stuff such as scissors, glue, play dough and string. The design teams received comments from the other groups and had a chance for a final round of improvements, before presenting their designs in a concluding plenary.

