



**Responsible innovation in finance: a culture of testing,
public deliberation and shared knowledge**

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Abstract

Since its creation in January 2011, the Observatory for Responsible Innovation has been promoting debate and developing insights for the advancement of responsibility in innovation. Emphasis has been put on one particular domain: finance. A dedicated working group, composed of researchers from a variety of backgrounds (sociology, economics, philosophy, management) and practitioners with direct experience of financial engineering and regulation, has developed an analysis of the governance of financial innovation inside investment banks with practical proposals for improvement and immediate policy implications. A public debate on responsibility and irresponsibility in financial innovation organized at Mines ParisTech has contributed to collective awareness and opened paths for understanding. A set of remarkable initiatives in financial regulation, asset management and valuation approaches have been signaled and prized for their contribution to a culture of responsibility in financial innovation. What can we learn from all this? In this short piece, Annalivia Lacoste, Project Manager of the Observatory for Responsible Innovation, and Fabian Muniesa, Executive Director, present some insights that were gained from this collective experience.

As Professor Michel Callon would have put it, innovation is a very demanding profession. It requires imagination and audacity. But it also requires precaution and care. Imagining innovation means imagining, in the fairest possible way, how the world at large will be affected by innovation - for the better and for the worse. And this is a task that innovators cannot fulfill alone. It is a collective task. In short, innovating is about taking responsibility for the consequences of innovation. And this is a very difficult job indeed because in today's world, the consequences of innovation are radically uncertain. Most of the time, the actual consequences become precisely known when the innovation is already out-there in the world. What should be done, then? And how?

The notion of "responsible innovation" has been developed precisely to address this question. This notion is today widespread in technology assessment and in science and technology policy, especially in areas such as nanotechnology, biotechnology and nuclear energy, areas the Observatory for Responsible Innovation is familiar with. The idea of responsible innovation is not to be confused with the notion of "corporate social responsibility" or "socially responsible investment" or with the notion of "sustainable development". First, the

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notion of responsible innovation tackles innovation proper. It considers situations in which radically new products, methods or procedures are designed and put to work. Second, it envisages responsibility quite globally, not only as a social or environmental variable. Responsible innovation is responsible socially, environmentally, but also economically, technically, and so on.

What are the characteristics of responsible innovation? This is an open question. But the research carried out at Mines ParisTech and the debates and reflections developed at the Observatory for Responsible Innovation point to three main directions that we would like to share here.

The first characteristic of responsible innovation is testing. Innovating responsibly requires a culture of testing, a culture of precaution and vigilance, a laboratory culture. Of course, we all know that what one can control inside a laboratory can become unmanageable when it is released into the wild. The behavior of an innovation can become uncertain when it reaches the market. Unintended hazards, unforeseen developments can take place, often in an irreversible manner. How can we take responsibility for this? Here, the inspiration for responsible innovation comes from the biomedical sector. Pre- and post-marketing testing, pharmacovigilance networks and recalling programs are good examples of how players in the industry and regulatory agencies can organize the reversibility of a situation gone wrong.

The second characteristic of responsible innovation is deliberation. Innovating responsibly requires a culture of democratic assessment and of public debate. Going ahead with an innovation program means taking into account the remarks and objections of potentially affected parties. Why? If the risk is collective, then the decision to go ahead should be collective too. Making innovation publicly debatable is what characterizes today the most critical areas of science and technology policy in Europe, in the United States and elsewhere. Deliberative polling, consensus conferences and national debates are among the regular instruments for policy making in areas such as nuclear waste management or nanotechnology. These procedures are far from perfect, but they appear as the guarantee of collective, mutual responsibility.

The third characteristic of responsible innovation is distributed knowledge. Innovating responsibly requires a culture of shared knowledge, of mutual awareness and of the multiplication of viewpoints. An innovation that is crafted inside the comfort of an opaque silo is likely to fall outside the scope of responsible innovation. Why? Because when it gets out of the silo just a handful of experts will be able to understand it and cope with it, and the others will be left just facing a monster, a monster not of their own design. Complex innovations behave in a complex manner and in order to reach a state of collective awareness, all stakeholders need to have access to detailed descriptions of this behavior and

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of the risks associated with them. Responsible innovation relies in this sense in a culture of open data repositories, of the multiplication of models and assessment techniques, perhaps also in a culture of distributed calculation. Information technologies allow responsible innovation to create common languages and a safer environment.

Those three characteristics of responsible innovation, namely testing, deliberation and distributed knowledge, are familiar to practitioners in the financial services industry, although perhaps not enough. The Observatory for Responsible Innovation is interested in areas such as renewable energy and molecular engineering. But the reason why it has been focusing on finance from the beginning is precisely that the principles of responsible innovation still need to be worked out in that area. We have been exchanging with bankers, regulators and politicians about this shared concern, and our feeling is that there is a real collective awareness in the sector. Our impression is optimistic: actors from the financial services industry are genuinely concerned with negative externalities, mutual responsibility and the dangers of opacity.

It is also our impression that the initiatives that received the 2012 Dufrénoy Prize for Responsible Innovation in Finance are good illustrations of the importance of this characterization of responsible innovation. The Observatory for Responsible Innovation launched an open call for nominations at the beginning of 2012 with the objective of detecting a fresh understanding of responsibility in innovation in the financial world. A jury panel was constituted with members of the Working Group on Responsible Innovation in Finance, which include researchers from a variety of backgrounds (sociology, economics, philosophy, management) and practitioners with direct experience of financial engineering and financial regulation. The jury panel discussed the nominations and proceeded to a secret vote. Three initiatives emerged out of this process. The Reserve Bank of India, India's Central Bank, was nominated for its calibration policy in the regulation of financial products. The jury panel concluded that the Indian regulatory approach to OTC derivative markets, known for its precautionary gradual approach to the introduction of financial innovation, is a crucial source of inspiration for the development of a culture of responsible financial innovation in today's world, a culture of testing and of attention to potential negative effects in the diffusion of new, sophisticated financial products. EGAMO, the asset management service of the MGEN (Mutuelle Générale de l'Education Nationale, a French mutual insurance company), was nominated for its distinctive mutual approach to finance. The jury panel observed MGEN's commitment to alternatives to a financial logic focused solely on high returns, and to the democratic governance of financial decisions. MyHemera, a community web-based platform that aims at gathering and sharing several quantitative approaches for the valuation and risk assessment of complex derivative financial products through a simple modular architecture, was nominated for its potential contribution to a sound collective appraisal of financial products and the ensuing reduction of negative externalities in financial innovation. The jury panel considered this initiative as a promising path for a safer financial environment.

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The Observatory shall follow attentively the evolution of the three prized projects in the future, each one representing an encouraging sign for the advancement of responsible innovation in the financial industry, and above all, for a mutual collaboration between financial practitioners, regulatory bodies and the civil society to advocate for more transparency in the financial sector, a reinforcement the Observatory has been promoting since its creation.

In 2011 the Observatory's Working Group on Responsible Innovation in Finance was also busy with an investigation on the potentials of New Product Committees for the development of responsibility at the level of innovation governance inside investment banks. We realize that the improvement of New Product Committees can also be read in the light of the improvement of a culture of testing, public deliberation and shared knowledge in the innovation process. How?

This work started with two interrelated questions. The first one was: what can "responsible innovation" possibly mean for the financial services industry? Several possible answers were identified, debated inside the Observatory and then exposed to further debate with colleagues, practitioners and discussants. The second question was: in which empirical site can a practice of responsible innovation be located, constructed and improved? In the financial services industry, the notion of New Product Committee or New Product Approval refers to the organizational structures and group meetings in which the development and launch of a new financial product or service are discussed. Risks and opportunities are assessed, decisions are validated, and tasks and responsibilities are attributed. Product approval processes have been in operation for quite a long time, for instance in the form of project development groups. It appeared that revisiting these organizational spaces with the several interpretations of the idea of responsible innovation in mind could prove particularly interesting, not only for fleshing out abstract principles and putting them to the test of actual implementation, but also for crafting concrete policy recommendations, both towards managers within the bank and towards regulators.

The results of this thinking resulted in a paper titled "Towards a practical approach to responsible innovation in finance: New Product Committees revisited" which appeared in 2012 in the Journal of Financial Regulation and Compliance, volume 20, issue 2, pages 147-168 (the individual co-authors of the published version are Margaret Armstrong, Guillaume Cornut, Stéphane Delacôte, Marc Lenglet, Yuval Millo, Fabian Muniesa, Alexandre Pointier and Yamina Tadjeddine, but the paper counted on crucial feedback from other collaborators). The paper concludes on the need to better formalize the functions and functioning of New Product Committees, introduce procedures that allows every concern to be expressed, make participants accountable and make their responsibility more traceable, institute New Product Committees as an obligatory passage point in the structure of careers and reward systems

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within the bank, and open them more to external audit and to public scrutiny and consultation. New Product Committees can very much indeed be thought of as one possible locus for the development of a culture of testing, public deliberation and shared knowledge within the bank and, why not, beyond it.

Of course, these proposals require a further reality check, and the Observatory for Responsible Innovation is working today in that direction: discussing the initiative with managers inside investment banks and with officials in regulatory institutions. Also, these insights may benefit in the near future from the Observatory's engagement in quite different domains, such as energy technologies in the built environment or uncertainty in molecular engineering.

In early 2012, the Observatory for Responsible Innovation formed a Working Group on Built-In Renewable Energy in Architecture with the aim of addressing today's challenges of responsible innovation in energy production, exploring new different ways of conceptualizing responsibility, and improving it, in both industrial procedures and national and international policies. A key objective of the group is to clarify the implicit conceptions of social responsibility that underpin innovative solutions to local energy production, organizing public debates bringing out different viewpoints (architects, engineers, energy suppliers, policy makers), with a variety of expertise and disciplinary backgrounds.

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