



**UvA-DARE (Digital Academic Repository)**

**Questioning the normative core of RI**

*the challenges posed to stakeholder engagement in a corporate setting*

Noorman, M.; Swierstra, T.; Zandbergen, D.

*Published in:*  
Responsible Innovation 3

*DOI:*  
[10.1007/978-3-319-64834-7\\_13](https://doi.org/10.1007/978-3-319-64834-7_13)

[Link to publication](#)

*Citation for published version (APA):*

Noorman, M., Swierstra, T., & Zandbergen, D. (2017). Questioning the normative core of RI: the challenges posed to stakeholder engagement in a corporate setting. In L. Asveld, R. van Dam-Mieras, T. Swierstra, S. Lavrijssen, K. Linse, & J. van den Hoven (Eds.), *Responsible Innovation 3: A European Agenda?* (pp. 231-249). Cham: Springer. [https://doi.org/10.1007/978-3-319-64834-7\\_13](https://doi.org/10.1007/978-3-319-64834-7_13)

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

**This paper was published as:**

Noorman, M., T. Swierstra, D. Zandbergen. (2017) Questioning the normative core of RI: the challenges posed to stakeholder engagement in a corporate setting. In L. Asveld, M.E.C. van Dam-Mieras, T. Swierstra, S.A.C.M. Lavrijssen, C.A. Linse & J. van den Hoven (eds.) *Responsible Innovation, Volume 3: A European Agenda?* Dordrecht: Springer, 231-250

## Questioning the normative core of RI: the challenges posed to stakeholder engagement in a corporate setting.

Merel Noorman, Tjalling Swierstra and Dorien Zandbergen

# Questioning the normative core of RI: the challenges posed to stakeholder engagement in a corporate setting.

Responsible Innovation (RI) is basically a normative conception of technology development, which hopes to improve upon prevailing practices. RI is both described in terms of substantive norms regarding the outcome (sustainability, etc.) or – more usually – in terms of procedural norms regarding the process. If the latter, some form of stakeholder involvement or participation in the development is invariably presented as being at the core of the process. At the same time, the notion of RI is unfortunately still fairly vague and general. Davies and Horst (2015) point out that RI is usually “situated at the macro-scale: its actors are policy organisations, countries, governments, or societies, and their field of action comprises entire innovation pathways, national regulatory systems, or ‘the environment’” (p. 52). Many RI projects have a policy-oriented focus, looking for governance and regulatory mechanisms for technoscientific developments in fields such as bioengineering and nanotechnology. As yet, fewer RI research projects focus on developing ways to make innovators in corporate settings and in smaller scale technological projects take account of concerns about the embedding of technology in society (Van de Burg & Swierstra 2013).

Stakeholder engagement in RI does not come with a handbook of tools and methods and it can be difficult to achieve in practice. To enhance reflection on the possibilities and constraints regarding stakeholder involvement, we will describe our attempt to introduce a form of it into an innovation project of a start-up organisation with social aspirations. In section 1 we explore the normative content of RI, and discuss literature that explores how these ideals are translated to the innovation practice. In section 2 we describe our participation in a start-up organisation that aimed to develop a digital platform that would allow citizen-users extensive control over their data. We soon realized that our RI ideals were far removed from practice on the ground, since the organisation did not invite a wide range of stakeholders to the design table. Rather than simply deploring this situation, in section 3 we try to explicate the ‘reasonable reasons’ not to do so. In section 4 we follow how the project leaders developed their own approach to be responsive to various stakeholders’ needs and values through tinkering and improvisation. In the concluding section 5 we reflect on our findings. Should practice be lifted to theory; should RI adapt its theory to make it more practicable and realistic; or should we do both at the same time?

## **1. Responsible Innovation and stakeholder involvement**

RI is only the latest sibling in a whole family of approaches that aim to improve technology and its chances to be successfully embedded in society, like

constructive technology assessment (CTA), interactive Technology Assessment (TA), real time TA, participatory TA, participatory design, ESA/ELSI-research, value sensitive design, public engagement with science, socio-technical integration, anticipatory governance, etc. Compared to these and other approaches, RI probably stands out in the more prominent role it attributes to ethics (Van den Hoven 2014, p. 5). For example, RI is explicitly aspirational in character: it is not geared primarily at avoiding negative consequences, but rather at realizing “the right impacts” (Von Schomberg 2011, 2013; Owen et al. 2013). Another particularly prominent aspect in RI is the foregrounding of responsibility issues: who is responsible for what (Grunwald 2014), and then particularly with respect to an uncertain and open future (Owen et al. 2013). Furthermore, RI tends to provide more space to the morally ambiguous aspects of technology, in comparison to other approaches that either do not pay much attention to normative uncertainty or tend to reduce value conflicts to stakeholder interests (Grunwald 2014). Finally, RI hopes to solve moral value conflicts through smart innovation (Van den Hoven et al. 2012).

These differences should not hide from sight the fundamental affinity between RI and the other approaches mentioned. They have all been developed as critical alternatives to more traditional, expert driven and *post hoc* forms of TA. They constitute a broader democratisation trend in science and technology governance and research (Delgado 2010; Lövbrand et al. 2010). As such, they all advocate exploring in advance possible impacts of a technology together with the stakeholders. The term 'stakeholder' here refers to a broad range of parties affected by the innovation, including partner companies, governments, authorities, inspection agencies, research institutes, as well as non-governmental and civil society organisations, activists groups and the general public.

As technological innovation is political (Stilgoe et al. 2013), stakeholders should engage in dialogue and deliberate with the aim of arriving at mutual understandings and shared goals, values and expectations. These different parties, with their wide ranging interests and expectations, should be brought into the innovation process at an early stage, while the technology is still fluid and responsive to external influence. Because the future is essentially open and unpredictable, the decision process should be continuously reflexive so as to allow for informed incremental response to changing circumstances (Guston and Sarewitz 2002). The deliberations can either lead to a sociotechnical design that matches the norms and values resulting from this deliberation, or to a reevaluation of existing values and interests in the light of the possibilities opened-up by the new technology. In either case, deliberation will increase legitimacy by helping to ensure a match between values, interests, and technologies.

Besides increasing legitimacy, deliberation offers additional benefits, according to RI advocates. It helps to anticipate and accommodate challenges as well as to develop better user-centred technologies, empower citizens, crowd-source design, and resolve value conflicts through smart design (Lund Declaration 2009; Siune 2009; Von Schomberg 2011, 2014; Owen 2013; Wickson and Carew 2014; Taebi et al. 2014). Moreover, according to Von Schomberg (2013) such deliberations also enable co-responsibility of stakeholders. Stilgoe et al. (2013)

place a similar emphasis on stakeholder deliberation as “taking care of the future” (p. 3).<sup>1</sup>

Siune et al (2009) explicitly tie RI to the ideal of deliberative democracy: “In policies and activities concerned with public participation in science and technology, the normative ideals of deliberative democracy have become highly influential” (p. 28, see also p. 35). Here they build on a previous EU report; *Taking European Knowledge Society Seriously*, which already pleaded for increased interactions between reflective citizens and scientists. (Felt and Wynne 2007) Owen et al (2013, p. 35), Von Schomberg (2014, p. 40) and Chalmers et al (2014) similarly link RI to the ideal of deliberative democracy. Without using the exact word, Wickson et al (2010) do so too. The core idea behind deliberative democracy, harking back to Habermas’ idea of communicative reason (1985; 1996), is that interests and preferences should not be treated as given and static, but instead approached as subject to rational reflection, deliberation, and revision. Deliberative democracy is essentially not about how to get what we want given that others have conflicting wants, but about what we *should* want (Elster 1998). Its core is thus not aggregating votes and negotiating amongst interest groups, but collective deliberation about the public good. For the outcomes to be binding and persuasive, deliberation has to meet certain normative standards, for example that no one is excluded from contributing, that all participants have equal access to relevant information, that everything can be put on the agenda, and that participants sincerely assess the validity of arguments (Habermas 1996; Gutmann and Thompson 1996).

The trend towards deliberative democracy within science and technology policy, has met with criticism from the start. It has especially been accused of being naive and unrealistic. Horst (2007) for instance questioned the optimistic belief, inherent to deliberative democracy, that rational consensus is always possible. Stirling (2008), although clearly in favour of deliberative democracy, highlighted the tension between ‘opening up’ a decision-making process by inviting stakeholders, and the need to ‘close down’ that process in order to achieve closure and to move on. More generally, Lövbrand et al (2010) questioned whether the constructivist and contextualising assumptions of STS research are indeed compatible with the more rationalist and universalist assumptions of deliberative democracy, and whether increased deliberation indeed results in increased legitimacy. Pandza et al (2013) showed that technology actors have difficulty accepting responsibility for uncertain and coproduced impacts, which makes RI hard to achieve. More recently Van Oudheusden (2014) showed that neither on the EU level, nor on the Flemish level, RI conceptions allow for something like ‘politics’, understood as the constitution and contestation of power. And even Stilgoe et al (2013) themselves pointed out that stakeholder inclusion is a problematic concept (p. 5). It should be about opening up, but what that entails is under discussion. Is it public dialogue, pure forms of engagement, or are there other approaches that are good enough? Are there power differences that frustrate deliberation? When and how should different voices be

---

<sup>1</sup> Stakeholder involvement has by now been embedded in the Horizon2020 program, and is formalized as one of the RI requirements in a number of recent EU policy documents (for instance recently in Strand et al 2015 and Kuhlman et al 2016).

brought in and the process opened up? How should decisions be made in case of lingering disagreement? (For an excellent overview of these issues see Delgado et al 2010)

Finding answers to these questions requires studying how the deliberative ideal fares in practice. There exists little RI research on what opening up to more voices and responsiveness means for companies or start-ups that aspire to responsibly innovate to address particular societal challenges. Blok and Lemmens (2015) point out that such projects are very different from the RI projects on large-scale technoscientific developments. In the latter type of projects, RI is usually argued for from a scientific and research perspective, and there is room for consensus forums, citizen panels etc. Corporate practices, according to them, pose different constraints that complicate such deliberative methods. They critique the idea of RI for its often naïve conception of innovation. The call for transparent innovation processes, for example, conflicts with common incentives for firms to exploit information asymmetries between stakeholders to gain a competitive advantage or to receive economic or societal support. Based on research in food innovation, Blok et al. (2015) argue that power imbalances, pressure to maintain a competitive advantage, time load, fear of losing control, and conflicting interests stand in the way of sharing information and engaging in conversation on a regular basis with stakeholders. The idea of co-responsibility is also misplaced, according to Blok et al., as only the investor can be responsible as he or she makes the decision to fund the development and dissemination of the product. In some cases it is also not in the interest of non-economic stakeholders to be co-responsible or to engage in product development, because they would have to give up their critical stance.

This analysis seems to leave little room for RI related stakeholder involvement in the corporate sphere. To further explore this, we selected a small start-up company, but one working with an explicit social mission, i.e. to build digital products that allowed its user's to have control over the data they shared through and across these products with other parties. Given the centrality of the values of trust and empowerment through transparency and control, the social mission of this organisation is aligned with the ideals of RI. Yet, in line with the analysis of Blok and Lemmens we found that this did not straightforwardly translate into inclusive stakeholder involvement, given several restrictions the innovators had to work with. However, we also found that within those limits they tried to be responsive to stakeholders by iterative mediated consultation.

## **2. RI in practice**

In this section we analyse some of our early findings of a case study of a start-up company, which we will call Datashare, in order to further explore the challenges posed to stakeholder involvement based on deliberative democracy ideals in a corporate setting. In this case study we employed various methods, including participatory observation and interviews and we intended to organize workshops, in order to explore how stakeholders are made part of the development of an innovative digital product and how the position of weaker stakeholders can be strengthened in this development.

### *A tension to be resolved*

Datashare is an organisation initiated in 2014 by an energy network operator. It is a small organisation with a relatively young staff, consisting mostly of contract employees. In the following, we will focus on the first seven months of our involvement with the organisation. During this time, the number of people working for the organisation grew from about 10 to around 25. The staff had a diverse range of expertise from business development, marketing and management to information architecture, interface design and software development. The company differed somewhat from other start-up companies that still have to look for investors or that have multiple investors in that it was entirely dependent on the energy network operator for its funding from the start. Nevertheless, like other start-up companies Datashare was under continuous pressure to show its relevance to the energy network operator.

In our first conversations with Datashare's team leaders, whom we will call John and Chris, they explained that they were developing and implementing an online platform that would enable residents of neighbourhood, governments organisations and service providers to exchange local, neighbourhood-based information. We will call this product *Platform*. *Platform*, they explained, was a first step towards their ambition of creating a data-sharing platform or network that would allow citizens control over their data. An internal document states: "People don't trust third-parties with their data", particularly when it concerns data related to the private sphere of the home, such as data about energy usage. Datashare wanted to create a trusted environment in which people would want to share such data. To this end, Datashare was in the early stages of developing a second product or service, which we call *Own*. *Own* would enable users of data-dependent services to control the conditions for the exchange and sharing of this data. What this would look like was unclear at the time and subject to continuous negotiations. One possibility that was discussed was integrating *Own* in *Platform* such that it would become a platform for privacy-friendly data sharing. Another option was that *Own* would take a more distributed form of a network application that would pop up when consumers used certain services, as a sort of third party guarantee that these services were safe to use from a privacy perspective.

From the outset it was clear that a tension existed between the principles underlying *Platform* and *Own*. In order to make these products attractive to potential users in terms of services provided as well as commercially sustainable, they would have to attract businesses interested in accessing the personal data of the citizen-users. As one of the team members expressed it: "Datashare is not only about giving control to residents regarding their data, but it is also about giving businesses access to the data of residents". This conflicts with the principle underlying *Own*, i.e. the idea that data control might also lead to people restricting access to their data. Moreover, a project that both offers data control as well as data-gathering sits uneasy in the context of the societal debate where both these positions are situated at polar ends: on the one end of the debate are critics who envision data control to be incommensurable with commercial gathering and repurposing of data. They call for more education of the general public so as to be more critical towards commercial data-sharing

platforms. On the other end of the debate are commercial entities whose profit models depend in large part on their ability to gather and repurpose data willingly provided by users. These entities, thus, depend on a public that trusts data-exchange platforms hosting commercial services. For Datashare, both these groups are important stakeholders, necessary to further and legitimate their cause. Yet, the tension between these visions poses a challenge to the Datashare team leaders seeking to integrate the seemingly conflicting values that these visions embody, such as privacy, personal control of data, autonomy and efficiency, ease of use and profit, into their project.

The fact that Datashare needs to balance the interests of the various different stakeholders and their values, makes it an interesting case to investigate the applicability of RI's focus on deliberative approaches to dealing with tensions between stakeholder positions. As we have seen in the previous section, RI here suggests upstream stakeholder dialogue, resulting in binding collective goals. In the following section we further explore some of the reasons why this approach proved problematic in our case study

### **3. Reluctance to engage non-commercial stakeholders: reasonable reasons**

Our research at Datashare combined observation and intervention: we explored Datashare's ways of engaging their stakeholders as well as the possibility to complement them with our own RI-inspired methods and tools for organising the innovation process. In the first months of our research, we discussed with team leaders the possibility of facilitating a series of workshops, designed to open their innovation processes to a wide variety of stakeholders. In these workshops we would focus on the articulation of implicit values, biases and interests of Datashare's proposed technical design. We would also explicate values, norms and viewpoints together with stakeholders of the system, including users, developers, privacy organisations and third-party business partners. The aim of these workshops was to start a conversation as a first step towards establishing a shared vision about the values that Datashare's products should embrace and how these should translate into its sociotechnical design. However, our proposals of upstream engagement with stakeholders were dismissed by the project leaders.

This turn of events rendered our proposal a useful heuristic device. It highlighted and explicated points of friction and mismatch between, on the one hand, our RI-informed approach and, on the other, the particular ways in which Datashare pursued stakeholder engagement in its own way. In the following, we discuss two reasons why Datashare was reluctant to participate in deliberative approaches to involving a wide range of stakeholders, in order to highlight some of the problematic aspects of RI.

#### *a) The difficulty of securing and maintaining engagement of stakeholders*

In one workshop, we intended to invite a group of about 20 stakeholders from diverse backgrounds, including commercial companies, public institutions, and potential users, to explore expectations about their roles and responsibilities in a

particular workflow design for *Own*. But when we proposed such a stakeholder workshop to two team leaders, they expressed several concerns.

The first concern regarded their own relationships to the stakeholders. Blok et al. (2015) in their overview of critical issues for RI in corporate contexts point out that it is a challenge for firms to engage stakeholders in a context where outcomes of innovations are uncertain. For Datashare engaging certain stakeholders also took considerable effort. First, a group of stakeholders with a high priority for Datashare were the commercial companies, civil society institutions, and governmental organisations. The Datashare members considered them both as their (potential) customers and as the reason for citizens to use *Platform* and *Own*. In this latter sense, Datashare “wanted something from them”, according to one of the team members working on business development. These parties were supposed to offer their services on *Platform* to registered users, and eventually offer their services through *Own*. Furthermore, some of these clients were also regarded as potential business partners in the further development of *Own*. They were, for instance, invited to collaborate in developing products or services that would integrate *Own*. As a new organisation, Datashare had to prove that it would be in the interest of these potential customers and partners to work with Datashare. This was not always easy, team members concerned with business development told us that most companies and organisations were only partly interested in privacy solutions, and even less in users’ control of data. The relationship with clients and business partners was, thus, considered to be very fragile and in need of careful nurturing.

The second concern regarded Datashare's relation with potential users and non-users, another important stakeholder group that proved difficult to engage. Like many other start-ups, Datashare did not yet have a fully-defined vision of what it was developing. At the time we suggested the workshops, they were still developing the concept of *Own*: what it was for; who it was for; what it would do? They also did not have a design for an information or technical architecture for *Own* and were still reviewing and experimenting with various possible technical solutions that could provide a basis for further development. This made it difficult to explain what Datashare was to potential users or even to identify potential users or ‘residents’ to engage in conversation. Moreover, the project leaders were doubtful that at this stage the residents could be reliable reporters on their interests and values. The team members assumed that there was a “latent need” for privacy, but it would be difficult to ask people about it. Datashare’s team leaders told us that they believed most people, or residents, would not be able to discuss concerns about privacy and data control because they lack the appropriate knowledge and understanding. It would take too much time, according to them, to explain to them the current state of Datashare.

Not only the relationship between Datashare and business partners and residents was perceived as fragile or problematic, the interaction between the various stakeholders was as well. For example, Datashare members also talked with privacy activists, who were considered to be future privacy-critical users as well as sources of potential resistance or expertise. These stakeholders were considered important conversation partners, because they could help Datashare further explore the problem of privacy and data control and test the robustness

of their provisional solutions by critically reflecting on them. However, in order to maintain credibility amongst their business partners, as one of the team leaders told one of the authors, Datashare did not want to associate itself too much with what they feared business customers or partners might consider to be “tin-foiled hats”, as privacy activists are derogatorily referred to. At the same time, one team member told us that if Datashare wanted to become a leading voice in a movement focused on privacy and data control, they had to be careful associating themselves with the business of data gathering and trade, in order to remain credible amongst privacy activists. Getting these two stakeholders groups to participate in deliberations would thus present a significant risk from the perspective of Datashare.

The perceived fragility of both the relationships between Datashare and its different stakeholders, and of the relationships amongst the various stakeholders, thus stood in the way of inviting the different stakeholders to directly participate in collaborative or deliberative activities. The project leaders did not assume that stakeholders were eager to participate in deliberation, as RI does, but had to be enticed and persuaded. A direct confrontation between the different perspectives constituted a substantial risk, rather than a way to resolve tensions through explication of different perspectives and deliberation.

#### *b) Time pressure and the need to produce*

Like Blok and Lemmens (2015), we found that time and financial constraints put pressure on the organisation and limited the opportunities for stakeholders engagement. Like many start-up organisations, Datashare was under pressure to show its potential to its investors. The organisation at the time was fully funded by the energy network operator that initiated the organisation. A steering group consisting of influential people within the energy network operator was responsible for making decisions regarding budget and continuation of the project. This stakeholder remained invisible to us and to most of the Datashare team members, yet it showed its presence and influence indirectly through the feedback they regularly gave to John and Chris. For them it was not always easy to explain to the steering group what their team was doing. The steering group, they told us, had difficulty grasping the concept, putting pressure on the team to quickly produce tangible and visible results, either in terms of an actual product or service or in terms of 'proof' that there was an actual demand for it.

The Datashare team was inspired by the *Lean startup method* in the way it worked on these 'proofs'. This method provides a strategy for developing businesses and products in a 'learn-by-doing' manner (Ries 2011; Blank 2013). It assumes that traditional ways of creating a business or product - through developing a business plan and then building a product or service before releasing it - do not work for new start-up organisations. These organisations are not able to write a detailed plan, according to creators of the method, because they are still looking for a business model and cannot yet know who their customers will be. There are too many uncertainties to meticulously plan. Moreover, they usually do not have the financial resources or time to develop a detailed plan before creating the product and getting customers. They have to move quickly and establish early on whether their idea fulfils a need or not. If an

idea is able to quickly gain 'traction', i.e. interest from customers, then the organisation has to 'persevere' in pursuing the idea; if not then it has to 'pivot' and adjust its idea. The method therefore promotes experimentation through an iterative and incremental method of validated learning consisting of short cycles of building, testing, measuring and refining a 'minimal viable product' (MVP).

One consequence of this *lean* mind-set for the organisation of Datashare was that, in their day-to-day activities, the different divisions of Datashare worked separately on different parts of the products and on different short-term goals. The Technological Development (TD) team was focused on finishing and launching *Platform* and later on testing and fine-tuning it based on feedback from users and business partners. The business development (BD) team was concerned with getting companies and organisations to publish on *Platform* as well as with building relationships with potential business partners for collaborating on further developing *Own*. The Lab was a division set up to test products and explore the needs of users. Marketing and Communication (MC) was responsible for the communication about the products to users and business partners as well as finding a way to connect Datashare with the public debate on privacy and data-security.

To Datashare, this way of working accommodated the uncertainty regarding the relationship between *Own* and *Platform* as well as the ways in which these two products would be integrated both technically and in terms of governance structure. At the time we proposed our workshop, *Platform* was at the verge of being a 'MVP', having a clear concept and ready to be launched. With respect to *Own*, however, Datashare was still mostly in, what one member of the management team called: 'service design', or the hypothesis testing phase. At this stage, data control was more a matter of branding, business-development and generating 'proof of concept' than something that could actually be built. As John put it, they were still looking for "evidence for something that did not exist yet".

Given this context, the workshop we proposed, explicating the technical architectures and governance models of *Own*, was, according to John, "out of scope". Moreover, as both team leaders feared, trying to integrate all aspects of the project would merely produce confusion both for team members as well as for other stakeholders. This was further illustrated when we addressed questions of technical architecture with Jarell, head of the Lab and responsible for prototyping *Own*. At the time, Jarell was in the process of collecting 'evidence', or 'proof of concept' that data-sharing services offering some control over data to users would appeal to potential future users. When one of us enquired about the technical measures needed to guarantee 'trust', 'data-ownership' and 'privacy', Jarell frowned and admitted he had no idea. This led to some confusion for Jarell. In the absence of clear solutions regarding these issues, Jarell now worried that Datashare was only selling a promise without living up to it. To John and Chris, this instance proved why Datashare is not served well by open deliberations about the many different components of the project. As John told us:

*In the context of Datashare's day-to-day practices, team members need to work on the goals that have been clearly defined, in short iterations. In this setting, it is our job to protect them from unnecessary confusion and abstract questions.*

The example illustrates the aim of the team leaders to carefully manage the flow of information through the organization. The team leaders did want the staff to think about the larger visions, but only at particularly designated and carefully managed occasions, such as team days. Questions that would lead team members working on particular parts of the problem away from their immediate goals would endanger the innovation process of Datashare. Our workshops with a focus on technicalities, while connecting different aspects of the project, were considered to be too early, too 'upstream', and distracting from the process.

#### **4. A different approach to resolving the tension**

The reluctance of the team leaders to open up the innovation process did not mean that they were not responsive to a wide range of voices. Rather, they took a different approach to dealing with the perceived tension between the different stakeholder needs and values, focusing in particular on discursive strategies. In this section, we explore some of these strategies.

The *lean startup method* provided a basis for Datashare's approach to negotiating the perceived tension between the call for more data sharing and calls for data control. The method is not only about breaking up tasks according to short-term goals, but also about being responsive to stakeholders' needs: through continuously consulting with potential 'customers', a lean-start-up organisation aims to develop products or services in a way that is responsive to customer needs (Ries 2011). An early internal strategy document about the development of *Own* provided an example of what this entailed. The document described a stepped process, in which Datashare would first, in collaboration with business partners, develop a set of product and services ideas, called 'propositions'. Through interviews with potential users of these products and services they would then validate their assumptions about the problem or need that the proposition would address. If the latter step demonstrated that a proposition could potentially be successful, they would develop a prototype of this proposition in collaboration with business partners in the next step. The prototype would then be 'tested' with the existing users of *Platform* and the response measured. The final step in this sequence was to improve the propositions on the basis of the interpretation of the measurement data and the lessons learned.

So rather than directly deliberating with a wide range of stakeholders in order to plan the development of a data-sharing network or platform that enabled residents to have control over their data, Datashare adopted an incremental approach to test and refine 'hypotheses' through mediated interactions with stakeholders. These mediated interactions kept the external stakeholders separated, while the members of Datashare would act as translators. As part of this process, the team leaders considered it their task to carefully manage and

“cultivate” the information, as John described it, that flows through the organisation. Moreover, they saw translating and negotiating between all the different stakeholders as part of their core activities. In the following we describe how these translating practices on the one hand meant gathering information about perspectives and testing assumptions and hypotheses about the needs of various stakeholders; and on the other hand translating and adjusting concepts, visions and products to perspectives of different stakeholders.

*a) Gather information and testing assumptions*

The way that Datashare approached residents provides an illustration of how the team members would gather information and test their assumptions about the needs and interests of particular stakeholders. Although Datashare’s team did not directly engage ‘residents’ or potential users and non-users in deliberations, one of their aims was to explicate the ‘latent’ need for data control via multiple translation steps. In their bi-weekly team meetings, for example, individual team members would often reflect on what they, their neighbour, or a family member might think about the particular way that Datashare framed privacy in its designs. In these reflections, they explicitly framed themselves as ‘average potential users’ of the system. The Lab team, as part of their ‘lean’ way of working, took a more explicit approach to substantiate and refine their assumptions about people’s needs regarding data sharing and their views on privacy. John explained to one of us that he believed that if you ask people directly whether they are concerned about their data they will say no, but if you ask them in the context of a concrete example you may get a different answer. That, according to him, was what they were doing in the Lab. In order to validate and refine their assumptions about people’s needs regarding data sharing and their views on privacy, they would develop and test propositions with small focus groups and respondents recruited by an agency. Or as described in the previous section, they would use mock-ups of interfaces to gauge how people would respond to particular representations of Datashare’s ideas. The team members framed this type of work in terms of ‘translation’ - with the Lab providing the context in which users’ preferences could be made explicit.

The insights about the needs of the user stakeholder group were further augmented through consultation of professionals and experts. During one of the team days an external company presented the result of a trend analysis, performed at the request of Datashare, of online sentiments and public opinions about personal data and privacy. The analysis was based on automated text analysis of blogs and news sites. It was intended to sketch the various ways that people thought about privacy. On the same team day, the authors were asked to give a presentation on what was happening in the field of privacy. Datashare also consulted other professionals about the perspectives of individuals in neighbourhoods. For instance, they talked on several occasions with the social innovation team, employed by the energy network operator. This team went into neighbourhoods to talk with people about what concerned them. Datashare also provided funding to a small agency that developed creative solutions for informal care in neighbourhoods. By remaining in contact with them and occasionally accompanying them on one of their visits to neighbourhoods John

hoped to learn about the needs in such neighbourhoods. Conversations with the various experts, professionals and academics were intended to help translate the needs of residents and the general public to the team members, and in particular team leaders and members of the business development team, who in turn would selectively use this information to further develop their propositions.

Some stakeholders were more directly involved as conversation partners in the development process. For example, an explicit goal of the BD team in their conversations with potential clients and business partners was to learn about their needs and expectations concerning privacy and data sharing. Moreover, Datashare was planning to develop a more collaborative relationship with a few chosen business partners. These particular partners were selected based on their interest in addressing privacy issues and data protection concerns, as well as their willingness to take part in more experimental development projects. The aim was to have the partners provide concrete examples of the kind of problems *Own* was to solve and to co-create a proposition based on the *Own* concept in the Lab. These business partners, thus, had a more direct influence on the decision-making process, being only mediated by the Lab and the BD team.

Through the mediated interactions with stakeholders Datashare intended to gather information about stakeholders' needs, interests and values without confronting them with the tension between the different perspectives on data sharing. Using mock-ups and prototypes as well as face-to-face conversations they aimed to elicit and elaborate the different perspectives to inform the further development of Datashare's products and services.

#### *b) Adjusting concepts, visions and products*

To negotiate the tensions between the different perspectives, Datashare team members would use the information gathered to continuously mould multiple propositions and visions. Illustrative of this moulding is that in the period described, the team continuously changed the terms used to refer to *Own*. At first they would emphasise privacy, but later they would shift the focus to trust, then to control and personal autonomy, to then emphasise privacy again. These terms mattered with regard to how different stakeholders perceived *Own*, as we mentioned above, but also in relation to the technological and governance design of *Own*. A recurring discussion, for example, was whether personal data would be located at the business partners' databases, in residents' homes or elsewhere. If *Own* would offer a privacy solution than the first option was conceivable, but if it were to offer residents a high-level of control than the latter would preferable. At the time, Datashare did not commit to one option, but explored, adjusted and refined multiple possibilities through the use of stories, propositions, mock-ups and prototypes.

Datashare, thus, did not have a singular vision, but juggled multiple visions as part of its translation activities. It would present different stories to different stakeholders regarding their product, emphasizing different parts of their products to these different stakeholders. All the while, these stories were constantly tweaked and changed according to the context. To their business partners, Datashare offered the prospect of better, more intimate contact with

residents, who act as customers, consumers and generators of data simultaneously. When Datashare brought up the topic of data control in this context, it did so in a way that responded to the specific legal and commercial needs of these parties: telling them they would offer privacy as a service; to unburden them from the complex legal requirements vis-a-vis privacy and data control as imposed by European legislation. At the same time, Datashare's story to privacy activists was about designing privacy, autonomy and data control into their products; showing them Datashare was aware of the political, social and ethical issues around data sharing, gathering and profiling. In this way, Datashare profiled itself as *the* alternative to other commercial data-sharing platforms. In its ambition to gain a monopoly position in this area, its social vision was that of protecting the public from 'data-hungry, immoral' data-sharing monopolies such as Google or Facebook. In the story they developed for residents, Datashare aimed to offer more insight and understanding of what happens in their neighbourhood. It proposed trusted services that would allow them more easy access to neighbourhood services and products and more intimate and responsive connections with neighbours, service providers, municipalities and health professionals. As part of these multiple stories, the Datashare team leaders drew on multiple conceptions of residents' attitudes towards sharing their data, as either privacy-prone, as disinterested in privacy-issues or as in need of Datashare's intervention as forerunner in a *movement* focused on education and raising awareness about privacy.

As such, a central strategy employed for dealing with the tensions intrinsic to the conceptualization of Datashare, was to keep different stakeholder groups and different stories about Datashare, carefully separated from each other. This upholding of ambiguity is a common approach in innovation contexts with multiple different stakeholder values (Stark 2011). As Barta and Neff put it: "when multiple values are in play simultaneously [...] then the work of innovators is to recognize how to keep these multiple values ambiguous in order to appeal to different kinds of people" (2016, p. 520). Rather than constructing one unifying story applicable to all settings, team leaders instead allowed for ambiguity and carefully managing the information flows that went back and forth between the different groups.

Resolving the tension between the different stakeholders was, thus mostly a discursive strategy, at the time, as part of an incremental process of translation, vision development, testing and adjusting. Team members took on a mediator role to translate the different perspectives and negotiate a solution in the form of a business concept/service design to be later elaborated in a technological application, which had yet to take place.

## 5. Discussion

In this paper we explored the feasibility of the ideals of RI in a small-scale corporate context by looking at the ways in which Datashare managed the tensions between different stakeholder interests and perspectives. In particular, we focused on the ways in which Datashare mitigated the central tension of its project between its ambitions to provide 'data control' on the one hand and, on

the other, its development of services that invite people to share more data with third parties. Each side of this tension represents a different stakeholder group with different ideas regarding the question how 'data control', 'trust', 'user-autonomy', 'privacy', etc. should be organised both technically and socially in our information society.

We argued that the applicability of RI methods proved problematic in the specific context of Datashare. For a start-up organisation there are many uncertainties about the feasibility and demand for the products or services it is developing. These uncertainties pose a challenge for stakeholder engagement. Moreover time and financial constraints require start-up organisations to quickly make progress and show results even when the long-term bigger picture is not clear. An RI approach, facilitating the exposure of tensions, conflicts and aiming to establish a common vision regarding the outcomes of the innovation process, does not account for these constraints. The question then is whether practice should be lifted to theory - i.e. whether Datashare should be urged to change its mode of innovating - or whether RI should adapt its theory to make it more practicable and realistic. We propose a combination of both.

RI researchers, we suggest, have a lot to learn from Datashare's approaches to stakeholder involvement. Datashare's team leaders had 'reasonable reasons' to reject our RI-informed workshop intervention and showed us different ways of involving stakeholder perspectives that they felt were more sustaining of the overall project in the long-run. Their careful negotiation of stakeholder perspectives and iterative and parallel development trajectories suggest an alternative to ideal-type RI approaches. This alternative approach is more fitting for a flexible and uncertain setting where antagonistic public debates, multiple opposing stakeholder groups and complex digital infrastructures seek to strike a balance in ways that cannot be predicted beforehand.

Yet, Datashare's strategies for dealing with stakeholder tensions also have features that sit uneasy with RI's goal of securing sustainable commitment to innovations by multiple stakeholders; *and* RI's premise that the success of this depends on the extent to which this involvement is genuinely inclusive. According to RI, careful nurturing of inclusive commitment generates the robustness necessary for dealing with strong antagonisms that can reasonably be expected to challenge sociotechnical systems in the future. This brings to light two issues for the RI-research agenda.

#### *RI without strong stakeholder commitment*

Datashare's strategy of 'controlled ambiguity' is successful at balancing multiple perspectives and engages both market players and privacy activists. The advantage for Datashare of this approach is that, for its continuation, it was not dependent on the continuous commitment of stakeholders to progress. In the absence of a unifying vision, Datashare as well as stakeholders have an opt-out possibility without the whole project collapsing. In addition, its flexible, *lean* way of innovation prevented Datashare from being tied to a pre-defined plan and enabled the team to more easily divert from particular trajectories than if it had committed to a more specific goal or vision agreed upon by various stakeholders.

The advantage for Datashare was that this enabled the organisation to demonstrate its potential to shareholders on a regular basis.

However, from an RI perspective this flexibility and ambiguity leave open the question of the sustainability of the moral orientation of the organisation. By not committing to a single vision and maintaining multiple representations of its vision - i.e. by not making any promises - Datashare has little accountability towards their stakeholders, other than their shareholders. This begs the question what happens if the tension cannot be resolved or if the team changes? Will the market players in the end determine the conditions for data-sharing or is it up to the privacy activists to define its trajectory? Both options have different consequences that will need to be decided upon: if *Own* were to live up to the radical visions of data control held by some of these activists it would have to rely on decentralized infrastructures of storage and control, demanding a lot of technical expertise both from residents and third-parties. If *Own*, on the other hand, were to live up to the commercial vision of data control held by businesses, its most important feature would be to merely create a 'sense of trust', without limiting data-sharing and repurposing. Due to this lack of stakeholder commitment and a shared unifying vision, the extent to which Datashare's products and services will be responsive to these questions primarily depends on the responsiveness and the ethics of the team. Whatever the team decides then, can only be challenged or averted by leaving the system, even if this poses financial or social disadvantages to resident-users. From an RI-perspective, this would be a less-democratic way of managing the relationship between users and sociotechnical systems. The challenge for the RI-research agenda is, thus, to cope with innovative contexts in which not all stakeholders are strongly committed: what tools and methods can enable companies to innovate responsibly in a sustainable way in the absence of this strong stakeholder commitment?

### *Balancing inclusion*

Datashare's strategy of mediating and translating stakeholder visions to each other, in a tightly controlled way, gives them several advantages: it protects the fragile stakeholder relationships by not exposing them to confusing and contradictory perspectives and by tuning into the specific needs and contexts of each of the stakeholders. From an RI perspective, however, the flipside of this approach is that not all stakeholders are granted an equally strong voice in the innovation process and that it narrows the scope for exploring ways of deliberating with stakeholders. The approach favours business partners with aligned interests as conversation and collaboration partners in the development of the business concept. They are enlisted to help frame the problem and its possible solutions, and to validate whether an idea solves a particular problem.

Residents or users, as we saw, play a different role: as part of the differing stories told to different stakeholders, they are objectified and made to represent different values. Where their opinion is solicited, it is done in a rather restricted way: they are allowed to pick one of a limited number of options, but not to contribute to the framing of the problem. This restricts their capacity to participate in deliberations as subjects capable of voicing their own concerns and setting their own terms for the discussion outside of pre-established

interests. Datashare's team members, a few professional academics and critical activists are brought in as mediators for potential users, but there are few channels through which these stakeholders can speak for themselves about the definition of problems and their solutions. Moreover, their mediators are used as informants, but not as co-decision makers and there is minimal critical reflection on the representativeness of these mediators. As a result, powerful stakeholders have more weight in the decision-making process: only those with financial resources or exit threats, are really listened to.

As the literature on RI has stressed, the risk of excluding certain stakeholders from the decision-making process is that eventual products or services may not match well with the needs of more vulnerable groups. Developing ways of making multiple voices, especially of weaker stakeholders, part of the decision-making processes while enabling innovators to perform their balancing act between stakeholders is another challenge for the RI research-agenda. For instance, one avenue to explore is the role and position of mediators or translators in the decision-making process.

To conclude, while acknowledging the good reasons for not committing to the ideal-type setting of RI in the organisation of Datashare's innovation process, we observe a need to explore additional and alternative ways for addressing these issues of stakeholder commitment and inclusion. If only for the reason that granting data control to user-residents is a worthwhile goal from RI's perspective, and that it would be a shame if this project failed because of a lack of sustainable commitment or fall-out.

### **Literature list**

Barta, K., & Neff, G. (2016) Technologies for Sharing: lessons from Quantified Self about the political economy of platforms, *Information, Communication & Society*, 19(4), 518-531.

Blok, V., & Lemmens, P. (2015). The emerging concept of responsible innovation. Three reasons why it is questionable and calls for a radical transformation of the concept of innovation. In *Responsible Innovation 2* (pp. 19-35), Springer International Publishing.

Chalmers, D., McWhirter, R. E., Nicol, D., Whitton, T., Otlowski, M., Burgess, M. M., Foote, S. J., Critchley, C. & Dickinson, J. L. (2014). New avenues within community engagement: addressing the ingenuity gap in our approach to health research and future provision of health care. *Journal of Responsible Innovation*, 1(3), 321-328.

Delgado, A., Kjølberg, K. L., & Wickson, F. (2010). Public engagement coming of age: From theory to practice in STS encounters with nanotechnology. *Public Understanding of Science*, 1–20.

Elster, J. (1998). *Deliberative democracy*. Cambridge University Press.

- Grunwald, A. (2014). Technology assessment for responsible innovation. In *Responsible Innovation 1* (pp. 15-31), Springer Netherlands.
- Guston, D. H., & Sarewitz, D. (2002). Real-time technology assessment. *Technology in society*, 24(1), 93-109.
- Gutmann, A. & Thompson, D. (1996). *Democracy and disagreement*. Harvard University Press.
- Habermas, J. (1990). *Moral consciousness and communicative action*. MIT press.
- Habermas, J. (1996). *Between facts and norms* (W. Rehg, Trans.). Cambridge: Polity Press.
- Horst, M. (2007). Public expectations of gene therapy scientific futures and their performative effects on scientific citizenship. *Science, Technology & Human Values*, 32(2), 150-171.
- Koops, B. J. (2015). The Concepts, Approaches, and Applications of Responsible Innovation. In *Responsible Innovation 2* (pp. 1-15). Springer International Publishing.
- Lövbrand, Eva, Roger Pielke, and Silke Beck. 2010. A democracy paradox in studies of science and technology. *Science, Technology & Human Values*, 36(4), 474-496.
- Lund Declaration (2009). Europe must Focus on the Grand Challenges of our Time. *Swedish Presidency Research*. [<https://era.gv.at/object/document/130>]
- Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., Fisher, E., & Guston, D. (2013). A framework for responsible innovation. *Responsible innovation: managing the responsible emergence of science and innovation in society*, 27-50.
- Pandza, K., & Ellwood, P. (2013). Strategic and ethical foundations for responsible innovation. *Research Policy*, 42(5), 1112-1125.
- Siune, K., Markus, E., Calloni, M., Felt, U., Gorski, A., Grunwald, A., Rip A., de Semir, V., & Wyatt, S. (2009). *Challenging Futures of Science in Society. Emerging Trends and cutting-edge issues*. Brussels, Belgium : MASiS Expert Group, European Commission.
- Stark, D. (2011). *The sense of dissonance: Accounts of worth in economic life*. Princeton, NJ: Princeton University Press.
- Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568-1580.
- Stirling, A. (2008). “Opening up” and “closing down” power, participation, and pluralism in the social appraisal of technology. *Science, technology & human values*, 33(2), 262-294.
- Taebi, B., Correlje, A., Cuppen, E., Dignum, M., & Pesch, U. (2014). Responsible innovation as an endorsement of public values: The need for interdisciplinary research. *Journal of Responsible Innovation*, 1(1), 118-124.

- Van der Burg, S., & Swierstra, T. (2013). *Ethics on the laboratory floor*. Palgrave Macmillan.
- Van den Hoven, J., Lokhorst, G. J., & Van de Poel, I. (2012). Engineering and the problem of moral overload. *Science and engineering ethics*, 18(1), 143-155.
- Van den Hoven, J., Doorn, N., Swierstra, T., Koops, B. J., & Romijn, H. (Eds.). (2014). *Responsible Innovation 1: Innovative Solutions for Global Issues*. Springer.
- Van Oudheusden, M. (2014). Where are the politics in responsible innovation? European governance, technology assessments, and beyond. *Journal of responsible innovation*, 1(1), 67-86.
- Von Schomberg, R. (2013). A vision of responsible research and innovation. *Responsible innovation: managing the responsible emergence of science and innovation in society*, 51-74.
- Von Schomberg, R. (2014). The quest for the 'right' impacts of science and technology: a framework for Responsible Research and Innovation. In *Responsible Innovation 1* (pp. 33-50). Springer Netherlands.
- Wickson, F., Delgado, A., & Kjølberg, K. L. (2010). Who or what is 'the public'? *Nature Nanotechnology*, 5(11), 757-758.
- Wickson, F., & Carew, A. L. (2014). Quality criteria and indicators for responsible research and innovation: learning from transdisciplinarity. *Journal of Responsible Innovation*, 1(3), 254-273.