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# Seeding social technologies: strategies for embedding design in use

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## Abstract

This paper reflects on the changing nature of participation and design in the context of social technologies and, in particular, our evolving understanding of what it means to do design. When designing social technologies we are effectively creating containers or scaffolds; their shape is formed through participation and user driven contributions and that shape changes over time. In designing successful social platforms around which communities grow, evolve and share, our role as designers extends beyond researching, defining, creating and releasing a product. The facilitation of participation by the 'future community' also becomes a central concern.

In this paper we present, explore and reflect upon the notion of seeding as a useful concept for approaching the facilitation of participation in social technologies. Seeding is concerned with the process of embedding and connecting design within the real world. It draws our attention to the work that needs to be done for design to become part of people's everyday lives, and our role as designers in creating conditions under which this is likely to occur. The theoretical reflections and arguments presented in the paper are based on empirical research into the impact of social technologies on exploratory design research methods used in the early stages of a design project. We present potential strategies for seeding early in the design process that emerged from our research and reflect on the questions about participation, protocol and practice that they raise.

## Keywords

design practice, methods, participation, seeding, self-reporting, social technologies

This paper reflects on the changing nature of participation and design in the context of social technologies and, in particular, our evolving understanding of what it means to do design. When designing social technologies we are effectively creating containers or scaffolds; their shape is formed through participation and user driven contributions and that shape changes over time. Services such as Facebook, Flickr and YouTube not only invite engagement, but also depend on contributions to be successful. Furthermore, through our contributions and participation we affect the experience of others. As designers, we may have always conceptually understood design to be 'actualised' in use (Dourish, 2001) however social technologies bring a renewed attention to the relations between design and use because so much of their form is constituted *through use*. Social technologies put a new emphasis on user participation.

In designing successful social platforms around which communities grow, evolve and share, our role as designers extends beyond researching, defining, creating and releasing a product. The facilitation of participation by the 'future community' also becomes a central concern. This is particularly so in community and social settings where uptake and use of systems by individuals is voluntary. Our responsibilities as designers extend to include helping to ingratiate the project with potential users (DiSalvo, Maki, & Martin, 2007); transferring project ownership from designers to the user community (Merkel, et al., 2004) and allowing design to change and grow

through user participation (Dittrich, Eriksén, & Hansson, 2002). This points to new skills for designers whose expertise has traditionally focused on the creation of artefacts (Brereton & Buur, 2008; Merkel, et al., 2007). It also suggests changing priorities during the design process.

It is one thing to build a participatory platform, but another to have people take it up and use it. In developing collaborative mapping tools for use by members of the public, DiSalvo et al. (2007) found that more attention needed to be paid to engaging the so-called stakeholders or participants of the system. It is quite possible that at the beginning of the design process there will be no clearly identifiable existing community of users, rather this community will have to be 'brought into being' as part of the project (ibid). DiSalvo et al. warn of falsely assuming a motivated public willing and eager to participate and emphasise the actual work that has to be done to move from the idea of a participatory system, to an actual 'functioning' one.

In this paper we explore the notion of seeding as a useful construct for considering how we can approach the facilitation of participation. Seeding is concerned with the process of embedding design in the world. It draws our attention to the work that needs to be done for design to become part of people's everyday lives, and our role as designers in creating conditions under which this is likely to occur. It refers to the work that we might do as part of the design process to try and 'bring into being' a community around a project. We present three strategies for seeding early in the design process as the basis for theoretical reflection and discussion. These strategies emerged out of practice-led research into social technologies and their impact on early design research methods.

The research in this paper extends earlier work on the concept of seeding (Hagen & MacFarlane, 2008); our motivation is to contribute to an ongoing discussion on the nature of design and participation in the context of social technologies. Whilst for the sake of readability we use the term 'designer' in the paper, we anticipate that the notion of seeding and the theoretical reflections about participation documented here will be applicable to both researchers working in academic contexts as well as designer/researchers working in industry.

The paper begins with a brief discussion of context and motivations, including a summary of the empirical research upon which the paper is based. The concept of seeding is defined, and then the three potential strategies for seeding early in the design process identified in our research are presented. These examples inform the following discussion and reflection about approaches to managing participation and the shifting priorities in design that seeding suggests. The final section draws attention to challenges involved in 'selling' seeding to clients and the nature of design in the wild. The paper concludes with a summary of the issues raised.

## **Background**

This paper reports on one aspect of a larger practice-led research project into the impact of social technologies on early design research methods. Interested readers can find a fuller account of the research here (Hagen, Robertson, & Gravina, 2007) and here (Hagen & Robertson, 2009). For the purposes of grounding the paper we provide a brief background of motivations and a summary of the research below.

Our research is motivated by the changing nature of design and participation in the context of social technologies and the methodological challenges and questions this raises for designers. Traditional methods designed for stationary, workplace contexts cannot be expected to account for the emergent and complex nature of social technologies and designers attempting to apply conventional methods in the context of social technologies face various challenges.

For example traditional contextual methods assume the ability to identify and access the context of use, but users of social technologies are diverse, geographically distributed (Bergvall-Kåreborn & Ståhlbröst, 2008) and potentially anonymous (Clement, 2008; Ehn, 2008). The form of social technologies themselves is emergent and use is constituted through co-experience (Battarbee, 2003). In addition, technology use is now mobile, domestic and woven through complex, ongoing social contexts (Bødker, 2006; Isbister & Höök, 2009). Researchers and designers attempting to gain access to authentic situations of use are challenged both by the pervasive, diverse and emergent aspects of social technology as well as its increasingly personal and social nature.

One way in which designers are responding to these challenges of access is through the extension of self-reporting methods (Hagen, Robertson, Kan, & Sadler, 2005). Increasingly, traditional self-reporting methods such as diaries and probes are being augmented with social technologies *themselves* as tools for documentation, e.g., (Hulkko, Mattelmäki, Virtanen, & Keinonen, 2004; Palen & Salzman, 2002; Pering, 2006; silverinnovation, 2009). We refer to this emerging group of techniques as Digital Self-Reporting (DSR).

Our empirical research focused on the iterative design and evaluation of a DSR method, Mobile Diaries, in a commercial context. To summarise here, the method was designed over two field studies and then deployed on two further commercial projects. Participants were given mobile phones and cheap video cameras from which they were able to create rich personal messages and document snap-shots of their lives through audio, text and images. In the later two studies these were posted to private research blogs or 'participant diaries'. These blogs became a platform for reflection, comments and discussion between participants and researchers.

The DSR method was intended as an early design research method for use in the design of community platforms and it was evaluated from two perspectives: its capacity to immerse designers in the everyday worlds of potential users, and its ability to support participants to contribute to, and participate in, the design process. We found that the digital, mobile, networked qualities of the tools enhanced the *in situ* nature of the method increasing the sense of immersion for designers. We also found that the *in situ* nature of the method, and the use of social technologies *themselves* as tools for design opened up new opportunities for people to participate in the design process by blurring practices of research, design and use. Specifically activities that were usually understood to be part of *using* social technologies, (such as generating content, sharing daily experiences through image and text, interacting and communicating through blogs and sms) became available in the design research phases. For the remainder of the paper we explore these opportunities through the concept of seeding. We reflect on the assumptions about practice and protocol the concept of seeding prompts us to reconsider, and the larger implications for design, research and participation it suggests.

## Seeding

According to the Macquarie Dictionary ("Macquarie Dictionary," 2003) the term *seed* refers to the germ or beginning of anything. *Seeding* is a commonly used metaphor in texts that address design, use and participation e.g., (Botero & Saad-Sulonen, 2008; Darren, 2007; Fischer, 1998; Light, Briggs, & Martin, 2008; Merkel, et al., 2004). It is often used to refer to activities that can act to germinate participation. For example, in an online marketing campaign a solid and well-targeted seed list of email addresses increases the chances of campaign success because of the higher number of likely send-ons. In the development of early virtual communities, the use of seed content, conversations and groups was an important strategy for

encouraging, prompting and guiding new contributions and members (Figallo, 1998; Merkel, et al., 2004; Rettig, 1998; Rheingold, 1993). In developing community tools for use in civic contexts, Botero & Saad-Sulonen (2008) make use of living seed prototypes to understand how people might put new technologies to use in context, while Merkel et al. (2004) draw attention to the need to seed ownership of design within communities.

As a design concept then, seeding allows us to talk about the movement and relations between design and use, specifically, the work that needs to be done to move design from the 'abstract' into what Lee (2008) refers to as the concrete places where people live. Successful designs are taken up as part of people's existing 'ecologies of devices' in people's 'already ongoing life-worlds' (Ehn, 2008). Seeding draws attention to how it is that happens, and our role in creating conditions for that to occur.

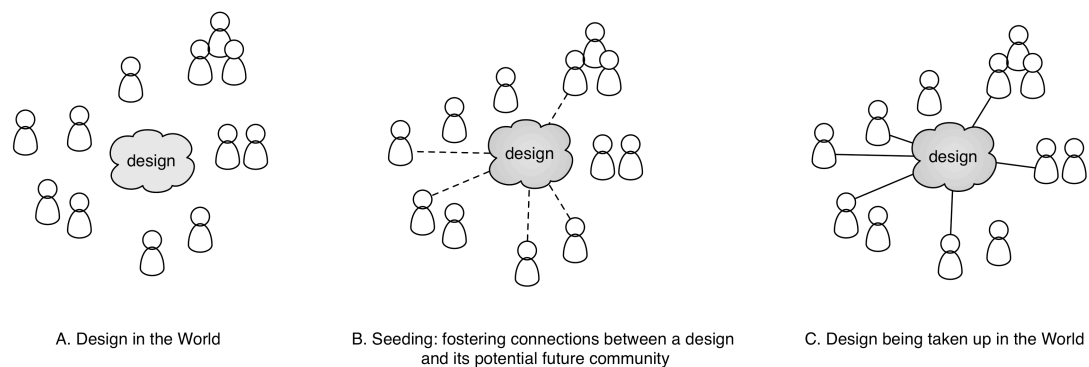


Figure 1. Three different states of design.

Figure 1. depicts, in simple terms, three different 'states' of design. Design existing or 'released' into the world as a public object (A). The seeding of connections between the design project and people's daily lives (B), and (C), design having been appropriated and taken up as part of (some) people's existing ecology of devices. Seeding serves to name activities we can do within the design process, as designers, to try and bridge the gap between A and B; to embed design in the world and to create connections between the design project and the people who may use it. In (C) the design is not taken up by all the people, because, even in such a simplistic representation, it is important to acknowledge that we can only create conditions *for* participation through seeding, we cannot guarantee it.

Seeding, in the context of this paper, places value on opportunities to embed the design project in its potential, future context of use, during project-time. This is based on the assumption that building a sense of interest, ownership or connection with potential future community members during the design project, increases the likelihood that those individuals may then take up the design as a public object, and appropriate it into their everyday lives.

## Strategies for Seeding

In this section we present three potential strategies for seeding design early in the design project. We identify these as: socialising the research; bridging gaps between current practices and future practices; and developing early content. Below we describe these three strategies and how they emerged as a result of our research into social technologies as tools for self-reporting.

## Socialising the research

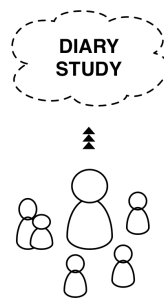


Figure 2. Participating in the diaries becomes a shared activity for participants.

Socialising the research describes the seeding of interest and momentum around the project through participants sharing the research with their wider network. We found that the use of social technologies and tools such as mobile phones and blogs encouraged participants to socialise the research project with friends and family. It was common for participants to include others in the creation of their diary reports, and to share the images and comments from their private blog-diary. The act of participating in the research generated discussions with friends, family and colleagues around both the research and the topic being explored. At least one participant shared experiences of the study on her MySpace page whilst another asked permission to post her diary material on MySpace as well as on the private blog. Figure 2 depicts participation in the diary study as an inclusive activity.

This sharing and socialising of the project takes on a particular significance in the context of developing community platforms. The inclusion of friends, family and peers connects the design project with a larger group of people, increasing the visibility and momentum around the project. Even in small numbers the individuals recruited for the studies could become an important seed community, sharing and promoting the project or future system with wider networks.

Sharing the research is a way in which participants are able to exercise ownership over the process, appropriating the project into their daily lives, activities and relationships. In doing so they indicate how the design project intersects with existing energies and interests in their lives offering designers potential start points and direction for the next steps in the design. We attribute the propensity for participants to 'socialise the research' to the nature of the research tools; in using these tools for research we had appropriated both the tools of social technologies as well as the practices of sharing and communication they made possible.

## Bridging the gap between existing and future practices

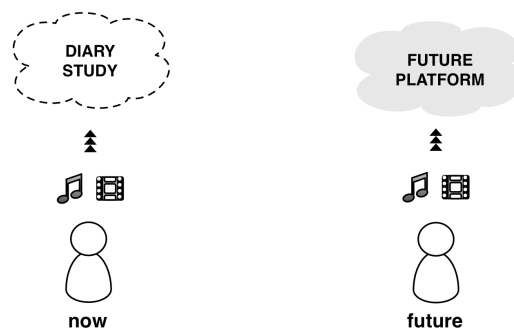


Figure 3. Activities and skills required for the research are the same, or similar, to that of using the future platform.

This strategy talks to the ways in which some design methods can act to bridge the gap between existing practice and future practice. In discussing their use of living research prototypes Botero and Saad-Sulonen (2008) state: “the types of engagements that prototypes and interventions afford offer an interesting and viable path to develop not only systems themselves but the practices that surround them and ultimately make them viable” (p. 269).

We found that digital self-reporting created a similar ‘path’. Participants created videos, sent picture messages, sent mobile blog posts (mo-blogs) and commented on blog messages. As Figure 3 suggests, the activities were similar, if not the same, as those that characterise participation in community platforms. In many cases participants were using these technologies for the first time. By participating in the studies, participants were developing the skills and technology knowledge needed to participate in the social technologies we were aiming to design. In addition to providing insight into future users, the self-reporting method allowed participants to develop skills and seed practices that would make our future designs viable by bridging current and future practices.

### Developing early content

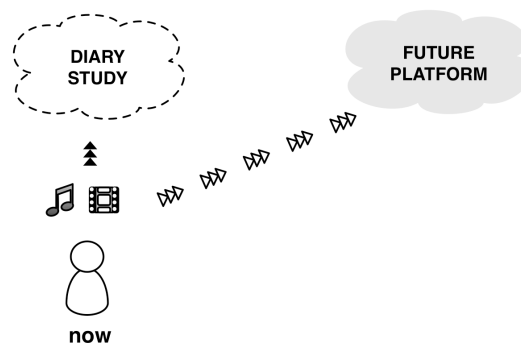


Figure 4. Material generated in the study could also be interpreted as seed content.

Social technologies are driven by the contribution and interaction of users and these contributions shape their form. Our research showed the potential of creating User Generated Content (UGC) early, prior even to development of a specific platform.

In the digital self-reporting studies, we found at times little difference between the material participants produced and what we would hope to see on the user generated sites or platforms we were designing, other than the framework under which it was produced. Figure 4 indicates how material generated during the studies could also be interpreted as seed content. This was due both to the subject matter of the reports i.e., personal images, stories and videos about a particular topic of interest, as well as the format in which they were produced i.e., MMS, blog-posts and MPEG-4 video, all formats developed for publishing and distribution.

UGC developed early in the design process can act as seed content around which the design of the platform can be shaped. Themes, navigation, taxonomies and potential features could evolve in response to this early understanding of the kind of content people might contribute. Whilst acknowledging that participants would censor their material in different ways were it public, reading the early self-reporting material as potential seed content gives insight into how the topic becomes meaningful in peoples lives, as well as how people might go about communicating and sharing it with others. It also creates a greater personal connection between the design project and participant - inviting them to play the role of author and contributor prior even to the development of the platform itself.

## Summary

Socialising the research, bridging current and future practices and developing early content are examples of strategies for seeding early in the design process, identified in our research. They demonstrate ways in which the project started to take on its own energy and momentum within the lives of a particular group of participants and their wider networks, in some cases well beyond the formal boundaries of the design research project. The project became a public object in the world 'bringing into being' interested and willing potential community members.

## Reflections on seeding, design and participation

In the previous section we identified a number of strategies for seeding design early in the design process. Here we discuss how our capacity to leverage these opportunities was limited by assumptions embedded into our design and research process about participation and the role or relationship of participants to the project. Seeding suggests new values and priorities within design research not necessarily accounted for in traditional approaches. We reflect on these assumptions and findings below as part of developing a better understanding about how such design activities could be framed and supported.

## Managing participation

The limitations we encountered are interrelated and stem from assumptions about the kinds of contribution and modes of participation that are possible so early in the design process. Many of our traditional frameworks and protocols for managing participation are modelled around the assumption that activities of research, design and use progress in a relatively linear sequence. Early design research focuses on activities such as understanding user needs (Rhea, 2003), informing and inspiring design (Sanders, 2005) and potentially ideation and concepting (Sanders & Stappers, 2008). These assumptions about what design and participation look like do not anticipate the kinds of participation emphasised through our examples of seeding, or the blurring of research, design and *use* that social technologies make possible.

In traditional early design research, the value of the method is largely realised in the material that is generated. Whether it be to inform understandings of practice e.g., (Grinter & Eldridge, 2003), inspire design e.g., (Gaver, Dunne, & Pacenti, 1999) or foster empathy e.g., (Mattelmäki & Battarbee, 2002) the emphasis is on the generation of design material. This frames the value of the activity around tangible research deliveries, and participation around the generation of that material. It also limits participation to the specific design research project, e.g., a self-reporting study. A close relationship is fostered with participants over this period of time, but when the study stops, so does any formally resourced relationship with participants. Rather than participating in the design process as a whole, participation is limited to that particular research activity.

It is standard research protocol to protect the identity of participants when the outputs from design research activities are then published or shared beyond the immediate design team. These consent protocols don't anticipate the potential to transition or reinterpret the design material into published content, limiting the use of the material produced to the purposes of the research project. Consent forms that assume participation should be represented anonymously make less sense in situations where we might want to facilitate, or make it possible for, participants to engage in the design process in the role of author, contributor or content creator.



These protocols assume a division between the private practices of research and the public spaces in which we live that does not necessarily exist, or that may no longer make sense in the context of social technologies. Predicating participant engagement by guaranteeing anonymity restricts designers and clients in their capacity to develop authentic relationships with participants, and assumes particular roles for participants in the design process. Strategies for seeding such as 'socialising the research' and the development of seed content encourage much more public, uncontained and shared levels of participation. Activities usually associated with use, such as generating content and *using* social technologies, move into the early phases of research and design, making it hard to tell where the research stops and the community starts. Our obligation to our participants needs to be rethought in the context of social technologies and the forms of participation in design that they encourage and make possible.

Another barrier to seeding is the tendency to model participation and user involvement around the notion of 'representative users'. Recruitment is often focused on identifying people who represent different 'user types' from an identified 'target audience'. Under this model participants' primary role is that of 'representative user', rather than as an individual. Seeding, on the other hand, emphasises opportunities to build connections with potential future community members, authors and contributors. This places value on the relationships we can build with specific individuals and their networks.

The concept of seeding suggests that our frameworks for managing participation need to enable different kinds of relationships with participants that privilege them as community members, and empower participants to take on a range of ongoing roles in the design process. When our goals are to seed content, connections and community our protocols for consent need to embrace, support, and appropriately protect participants while also enabling them to participate as authors and contributors, choosing how and with whom their context is shared.

Approaches we might learn from include Participatory Action Research (PAR) and Participatory Design. For example in discussing issues of consent McIntyre (2008) describes the negotiation of consent as a collaborative and evolving process to be renegotiated with participants throughout the process. Participatory Design has always understood research to go beyond data collection and promotes continuous collaboration throughout the ongoing process of design (Ehn, 2008).

## **Changing priorities and values in design**

Putting value on opportunities for seeding participation during project-time also shifts the priorities within the design process. As our goals in the design process begin to expand to include seeding participation and bringing 'into being' community (DiSalvo, et al., 2007), what were once opportunities to conduct contextual research, such as self-reporting, also become opportunities to build momentum and interest about a project in the context of where it might be taken up.

The concept of seeding sensitises us to the value of new design experiences such as socialising the research, and seeding content, and other less tangible outputs including the value of maintaining relationships with participants beyond the various formal research and design activities they might be participating in. The relationships, momentum and connections that are built up with individuals and their networks as a result of the participating in such activities go beyond the time frame of the study and outside the bounds of the research phase.

In presenting an argument for rethinking the nature of the 'design project' Ehn (2008) suggests that we understand design tools (he uses the example of prototypes) as

both representations of the evolving state of design, as well as socio-material public things which support communication or participation across the design project; “they are potentially binding different stakeholders together” (p. 95). Ehn’s statement suggests that in the context of designing for participation, the value of design methods is not just to support and inform the creation of artefacts, but also to foster connections between design projects and their potential future community. Seeding puts emphasis on the potential for making connections and content, and even more importantly, maintaining energy, interest and momentum around the project during project-time. In order to prioritise and place value on these additional design outcomes, strategies for seeding design need to be written into our design briefs and effectively resourced.

### **Selling seeding: design in use**

We have suggested that seeding is a way to strategise and communicate about embedding design in use. However embracing the notion of seeding into the design process, and ‘selling’ it to clients, is not without its challenges. As a design metaphor the concept of *seeding* sensitises us to a number of important aspects to designing social technologies. Two aspects in particular that we have encountered in the course of our research pose particular challenges for selling seeding to clients, these are the risks inherent in seeding and its lack of measurability, and the open-ended approach to design that seeding privileges.

In the context of design, planting seeds doesn’t guarantee the survival or sustainability of a project, but it may increase the likelihood of that project being taken up in the world. We may put effort into seeding activities, into building relationships with future community members, but we can’t ensure they will be successful, or lead to observable outcomes. This is simply the nature of design in the wild (Hutchins, 1995). Both the risk and the intangibility is something that we need to be able to effectively articulate to clients as an inherent aspect of designing for participatory technologies.

Similarly, the act of seeding necessarily means relinquishing some control over its form whilst simultaneously opening up opportunities for it to be shaped by that exposure. Seeding is about embedding the design in the world, which means making design “a public thing open for controversies” and, “from which new objects of design can emerge in use” (Ehn, 2008 p. 96). Seeding acknowledges the shaping of the nature of the project through the way in which it becomes meaningful to people in the real world.

The majority of commercial design projects are brokered with the assumption of specific tangible outputs at particular milestones, for a particular cost. Seeding, as an alternative approach suggests the value of investing in design activities that can orient the design around existing momentum, interest or energies in the community. This requires a greater degree of flexibility by the client. Botero & Saad-Sulonen (2008) found that their client, the local council, was initially unwilling to invest in seed prototypes, though they embraced the process once the results were demonstrated. Further case studies and appropriate frameworks will assist clients in building confidence about such open-ended approaches.

### **Concluding remarks**

Traditional Human Centred Design methods equip us well for asking how we might research, ideate, iterate and produce a design object; they prepare us less well for how we bring into being a community around that object. We suggest seeding as a useful concept for approaching and strategising about this increasingly important

aspect of design. The examples and discussion above sensitise us to a number of aspects important to consider in the development of social technologies and raise a number of questions for future work. The participatory nature of social technologies prompts us to reflect on, and perhaps reconsider how participant involvement in design is being managed, and the kinds of assumptions some traditional approaches have embedded in them about how participation takes place. The emphasis on participation and the role of users in actualising the design of social technologies also brings to the fore a number of issues with regards to our relationship to clients and the way we structure, resource and strategise about 'design projects'.

We propose the notion of seeding can inform and support an evolving approach to managing the relationship we have with participants, and our own evolving roles and skills as designers. It can also assist us in framing new shapes for design, naming and describing the work important to embedding design in use. In the design of social technologies we are encouraged to find opportunities to move research and design out into the wild, where it can take seed and be nurtured as part of people's already ongoing life-worlds.

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Penny specialises in design strategy for online and interactive community projects in Australia and New Zealand. She is an experienced practitioner of human-centred-design approaches and works collaboratively with clients and their stakeholders on social change projects. Penny recently left Digital Eskimo after 3 years as their Projects Director/Strategist to complete her PhD in participatory design methods for social technologies at the University of Technology, Sydney (UTS).

### **Toni Robertson**

Toni Robertson is Associate Professor in Human-Computer Interaction at the University of Technology, Sydney (UTS). She is a specialist in the study of human practice and technology design, and the application of qualitative and participatory research and design methods. She directs the Interaction Design and Human Practice Lab and co-directs the Centre for Human Centred Technology Design Research.