LIVING THE (CODESIGN) LAB

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ABSTRACT

Design research environments are becoming visible in many places, in universities, in design schools, in companies and in public organizations. What most of them have in common is a commitment to the exploration of the possible rather than the factual.

In this paper we will discuss what define such design research environments. Looking back on how we have employed the concept of the design laboratory in the environment we have been part of, we will argue that a design research environment must adhere to programs and methodologies that reach beyond individual projects. Furthermore we suggest that the laboratories of design research must have a consistent portfolio yet design researchers still have to mobilize and join forces with the many "living labs" of the everyday.

INTRODUCTION

Design research has evolved along different strands. Some environments borrowed from the lab tradition of human factors. Other environments leaned on anthropology and the social sciences to embrace use and users in the field and yet others revived concept design and show room by borrowing strategies from the arts. Even if this scaffolding on more established traditions is still visible in design research there are also strong indications that these different strands are converging into what may be called constructive design research (Koskinen et al. 2008). This is design research that takes design proposals, prototyping and the use of design interventions as core elements in the research practice. How this is done differs from environment to environment. We have vivid environments working with the re-thinking of interactive products often in close collaboration with engineers and computer scientists (see for example Keller, 2005, Dalsgaard, 2009, Ludvigsen, 2007). Other environments employ critical design to research the relationships between things and everyday environments (see for example Mazé 2007, Wilkie & Ward 2009). Still other environments are like our own, expanding the realm for designerly inquiries, by engaging with such societal issues as ageing, sustainability and local community building (see for example Mattelmäki, 2006, Björgvinsson et al, 2010).

This indicates how widely and deeply design research is engaged in exploring the possible. What interests us here is however not the map of present day constructive design research. Instead we want to look into what may be formative for such design research environments. We will do this by looking at developments in our own environment and particularly by exposing and reflecting upon what we have called the design laboratory

HOW THE DESIGN:LAB EMERGED

Like many other designers and design researchers we have over the last decades been asked to take part in concept design and user research that could help reveal new opportunities in what Sanders has called the fuzzy front end of innovation (Sanders, 2006). The commissioners have been private companies, public institutions and often also research councils or innovation schemes. What the commissions have in common is that they have demanded a high degree of collaboration not only with the commissioner but typically also with other stakeholders whatever these are potential users of new products or services or they are providers of complementary services.

We first came to talk about such collaborations as design laboratories when we were asked to conduct design research for what was called “the experimental office”. A large real estate company wanted to team up with IT service providers to create a configurable office facility that could enable their customers to try out in real life, new office solutions that matched the project organization of the day. We were asked to participate because we had a research interest in new office concepts, and because we had done research on co-design methods for several years. We had been conducting design workshops on several occasions where we along similar lines as for example Bødker and Buur (2000) and Westerlund (2009) had brought professional partners to sketch and explore design options in collaboration with potential users and we had been suggesting collaborative events as a useful backbone for product development with many participants (Brandt, 2001). In this case the challenge was to set up a collaborative process that the partners would embark on with an only sparsely defined specification of the outcome (as the outcome was precisely what the process should make room for negotiating).

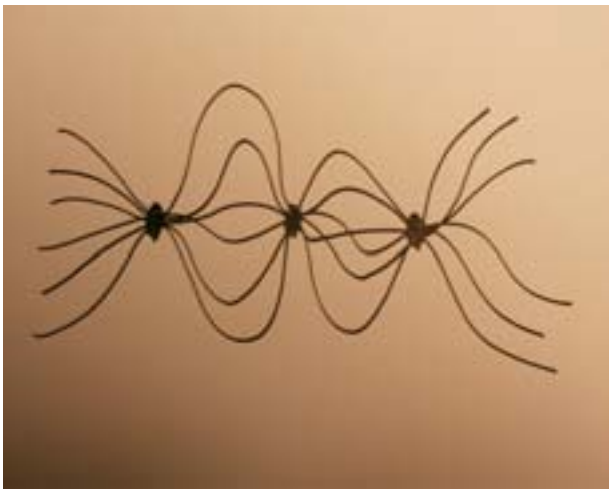


Fig. 1: The backbone of co-design laboratories is a series of collaborative events. Each event can be understood as a lens where participants with different expertise, interests and roles co-create new possible futures (Brandt, 2001).

To call this process a design laboratory seemed attractive for several reasons. The term laboratory indicates an emphasis on method rather than on outcome. The connotations to something slightly strange yet rigorous gave an opportunity to promote ways of working that were unfamiliar, and combining it with design gave a hint that what should be worked on were visions that could be grasped across professional boundaries. On a practical level the design laboratory that we negotiated with the partners became a mix of different activities kept together by a series of design workshops. We have written in more detail elsewhere about the particular collaboration as well as about the over all process, which we at the time called partner engaged design (Johansson et al. 2002, Fröst 2004). For the purpose of this paper we will only briefly outline three guiding principles that became the foundation also for new design laboratories.

THREE GUIDING PRINCIPLES

First of all we conceived of the laboratory as a mutual learning space in which participants could try out possibilities slightly protected from outside intrusions. We staged the encounters in the laboratory as dialogues where each participant was given formats to present their everyday practice. Through a process of estrangement and familiarization (Halse J, Johansson M, and Binder T 2005), new possibilities could be envisioned as the interplay between familiar practices became exposed in a new way. Here the design laboratory was inspired by learning theories of Argyris and Schön (1996) and of Wenger (1998) and there was also an obvious parallel to the change laboratory suggested by Engeström (2007).

Secondly we found that the porosity of the laboratory, where participants between encounters returned to their home setting and reiterated or expanded what had been collaboratively envisioned, contributed significantly to the strength of common suggestions. Employing a recursive process where proposals where successively staged, evoked and enacted enabled participants to reconfirm or adjust suggestions. Between events there could be a turn taking between participants in who would take suggestions further, and in each iteration the enactment of what was suggested became in itself a result that could be communicated to others.

Thirdly we learned that conducting the design laboratory call for more than facilitation. As design researchers we have an interest in methods and approaches, but we have to put more at stake in the laboratory by also participating as designers and committing to the results. In the “experimental office” we were both concept designers and hosts for the laboratory and even if we as design researchers also pursue our own research agenda it is through what we accomplish in the laboratory that our work can gain a following.

THE LABORATORY AS A PLATFORM

The design laboratory turned out to be a robust format for collaboration that served us well in a number of new engagements with outside collaborators. In its standard version it consisted of three workshops with preparatory field work with the participants and follow up work in between where design suggestions where enacted on the site of envisioned use. Pivotal to how we understood the design:lab was the concept of the meeting of language games (Ehn, 1988). Working with design games that deliberately emulated Wittgensteinian language games and at the same time were indexing the everyday practice of participants, as this was revealed in

ethnographic fieldwork, gave us a toolbox that could be taken from one assignment to the next (Brandt, 2006; Brandt et al., 2008).

The design games thus became the nexus that made the design laboratory cross over from user research to design exploration. The games had a similarity to affinity diagrams and other diagramming methods usually associated with the analysis of field material. Bringing these games into a collaborative setting that included also the informants achieved the double purpose of both making the inquiry into existing practices participatory, and providing an entry point for an exploration of how these practices might be different.

The particular way of bridging between the exposure of everyday practice as it was revealed in encounters between us as researchers and the participants and the collaborative exploration of what is possible is making the evolving language game what Muller and Druin (2007) call a third space. We had already for some years been working with improvised scenarios (like also reported by Iaccuci et al, 2002), where future users enacted a possible future practice on site and with props that embodied a design proposal (Brandt and Grunnet, 2000). In the design laboratory the familiarity of the well known practices could be collaboratively transcended as the staging of sites of intervention could draw upon the episodic accounts of everyday practice and could be directly worked upon in such design games as the landscape game or the persona game (Brandt & Messeter, 2004; Brandt et al., 2008).

New opportunities promoted by other participants could be introduced as props that could evoke responses from those familiar with contexts of use as facilitated for example in the technology game. Others such as Dindler and Iversen (2007) have pushed the limits for what can be envisioned in such encounters, but in our approach the language for these responses would still be scenarios or small enacted episodes kept within the horizon set by the initial fieldwork. These improvised scenarios can be brought back to the context of use to be enacted on site with all the familiarity of the setting brought in to counter balance any overly enthusiastic creativity at the workshop.

LEARNING FROM SCIENCE STUDIES

As we got the opportunity to promote the design laboratory towards new collaborators we started to think more deeply about the laboratory metaphor and the status of the design:lab. Is the design:lab just a pragmatic formatting of the process of collaboration or are there more to the laboratory than just a particular arrangement of fieldwork and workshops? We had been reading sociological studies of laboratory work in the tradition of Science and Technology Studies and though these studies disclosed a much more complex reality of day to day scientific practice than what is found in standard science textbooks, they still added to the reputation of the laboratory as a potent vehicle for change (see for example Latour & Woolgar, 1979).

Box 1: In the Experimental Office Project the collaborative events were staged as design games. For instance both the Person Game (top), and the Landscape Game (bottom) were based on 'ethnographically inspired field material'. Short video snippets from field studies were represented by physical game pieces and became part of the game universes. Viewing the video snippets and using the game pieces to create and experiment with various configurations on the game boards as 'future visions' are examples of how the participants simultaneously engaged in analyzing existing practices and exploring possible futures.

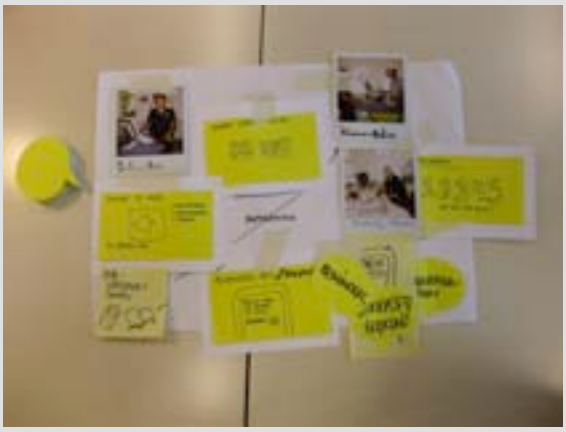
Callons study (1986) of how marine biologists of northern France rallied and mobilized networks of

politicians, fishing men and scallops both in the labs and on sea had an immediate resonance to what we experienced on a micro level as our collaborators and we wrestled with such issues as decentralized control rooms or modular cell phones. Where the scientists struggle to manage the chain of translations from collected samples of marine species over laboratory growing of these species to design guidelines for full scale growing of scallops along the French coast, so did we have our hands involved with at least part of the same chain of mediators as we produced video accounts of operator work or family life and negotiated their translations into concept design for prototype devices that could bring hardware manufacturers, IT service providers and potential users in line for new product visions. The design:lab we brought with us provided a collection of relatively stable "instruments" that could be adapted to whatever particular issues the collaboration urged us to explore. The co-design activities could be seen as lab experiments. Each playing of a design game or each enactment of a scenario exploring what actors of the theatre call the "Magic if" (Stanislavskij, 1988) did not just come into being as the result of some technique of creativity, but are carefully negotiated and staged in a process that extends far and well beyond the individual workshop. As pointed out by Pedersen (2007) there is nothing innocent about these experiments. On the contrary they are powerful devices, which have the potential to establish a new reality in the network of collaborators.

One could say that taking an STS perspective on the design laboratory threatened to do away with the laboratory as a particular site as these studies so eloquently show how the network of actors and the translation of representations always both penetrate and permeate any confined laboratory boundary. In many ways we could even see this in our own work and in the work of colleagues pursuing similar strategies of collaborative engagement. Björgvinsson and Hillgren (2004) have taken the lab approach into "the wild" by establishing long-term engagement in the workplace and in local communities. Brereton has argued that design researchers should only provide a setting with tools for potential users to explore and let new practices emerge out of these explorations (Brereton, 2009). In work that we have been engaged in we also began to see that we did not have to rely on workshops as the frame for experiments. The unity of time and place in collaborative encounters is often useful but not in any way mandatory to have a working laboratory. What defines the laboratory seemed more to be a particular mode of engagement embedded in the particular toolbox of "instruments" that was put into play: the design games and the crossing over from ethnographic accounts to the enactment of future practices. Still the concept of experimentation and the idea of a lab space cautiously sheltered from day-to-day realities continued to be useful in negotiating collaborations. In the literature on participatory design and action research it has always been a difficulty to delimit the envisioning of new possibilities from full blown change and yet this difficulty again in an STS perspective may be said to be inherent in an understanding of change as networked and emergent, it seemed at odds with a more pragmatic consideration of possible collaborations not to be able to define some sort of gate between possibilities and implementation In all this the laboratory metaphor continues to be attractive. One does not have to assume that the design laboratory is an ideally free space. On the contrary to establish a lab is to negotiate what possibilities to explore. When the laboratory is in place it is not the same as having committed fully to its outcome, but to the extend that the laboratory as a controlled environment is able to convincingly demonstrate scaleable new prototypical practices, change is brought within reach for the collaborators.

FROM EXPERIMENTS TO REHEARSALS

The design laboratory as a platform defines a particular way to become knowledgeable about future possibilities. Flexible in its particular ways of being performed, yet rigid in its underlying methodology the design:lab offers a framework in which envisioning new things and improvising new practices become closely intertwined. Prototyping in this framework is not merely to collaboratively sketch and evaluate new artifacts. What is performed as participants explore the experiences of possible use is just as much the prototypical enactment of a new practice (how much or how little this even deviates from the well-known everyday). But what does this mean and where does it take the design research that we conduct through the design laboratory? When we first wrote about the design laboratory we were influenced by ethno-methodologists such as Luff et al (2000), Crabtree (2001), and Suchman (1987). These authors gave us an understanding of everyday practice as situated interactions between people and things in a web that was continuously made sense of. There is very little we can assume a priori about this practice apart from the very important basic observation that these practices are meaningful and constantly in the making. For what we do this meant that we could see the transcendence from the present to the possible future staged in the laboratory as an only slightly forced or agitated extension of the practices that participants (with the help of our ethnographic snapshots) made visible in the lab. This seemed to be a good and simple approximation as long as what was at stake in the laboratory was relatively minor to the overall web of interactions that constituted the practices in question (like when considering a new kind of products), and these practices on the other hand were relatively stable (as for example skilled practices at work). If these conditions were met it would even be likely that what is demonstrated as viable in the laboratory could immediately be assumed to be similarly viable for others engaged in similar practices. What is missing is however to account for the particularities of the design proposals considered. They cannot come directly out of the practice studies as these



Box 2: FieldShop. Field observations and co-creation workshops are often deemed too time consuming for smaller projects. When collaborating with the design consultancy 1508 on a client assignment, we got an opportunity to challenge this claim. The FieldShop is a method to bring local practices, collaborative ideation and quick prototyping together in an intense half-day process in the concrete environment that is designed for. In one example the FieldShop is set up as an encounter between three designers/facilitators, a client representative, two unemployed citizens and a caseworker at a public unemployment center, in order to explore how new mobile technologies may enhance the experience of public services to the unemployed. The FieldShop consists of three distinct phases that resemble in miniature version, ethnographic fieldwork, co-creation workshop, and experience prototyping (Halse et al., 2010).

precisely show the coherence of everyday practice (and not some sort of cataloguing of problems). Instead design proposals as well as the over all staging of the laboratory remain externally motivated.

Three recent dissertations all relating to the novel field of design anthropology brought a radically different view to the design laboratory as they precisely made the organization of the laboratory the topic of their studies. Pedersen applied the approaches of actor network theory to a particular design laboratory and asked what was performed. He rejected, what he found to be a widespread practice in the literature on participatory design, only to report on fieldwork, workshops and other collaborative encounters. Instead he traced the yearlong negotiations that went on before and after a particular workshop. Here he showed that participation and users were performed not only as methodological devices that needed to be put to use, but also as emblematic figures that carried a direction for the design work. Broadly speaking Pedersen made the argument that the (participatory) design researchers were not in any way merely facilitating an open exploration, but rather pushed for and had to negotiate one design direction among others. In our context here one can say that Pedersen showed that design proposals were far from being external to the conducting of the design laboratory. Instead his work indicates that the design agenda live in the shadows of the participatory process (Pedersen, 2007).

Clark took a slightly different route in an anthropological study of a co-design project in which he had himself taken part. He turned to Victor Turner's concept of social drama (Turner, 1982), and showed how the project collaboration on a very concrete level could be seen as the stage for such a drama (Clark, 2008). What his study reveals is a surprisingly close resemblance between what is enacted in the interactions between project partners prior to the actual launch of the project and what is subsequently performed in the project.

Halse took the question of what is performed in the laboratory further by looking at the relationship between practice studies and design interventions. Where most authors had been focusing on practice studies as forming the base for design interventions, Halse asked how design proposals in the laboratory provided a particular kind of probing into the practices of the everyday. Like Pedersen he wanted to emphasize the agency of design researchers, and like Clark he wanted to consider the laboratory as a space of performances set aside from the ordinary. Going further into the performance studies literature he used not only Turner but also Schechner (1985) to point to how the liminal space evoked in the design laboratory makes both the present and the future become playfully explored (Halse, 2008).

These contributions sparked a reconsideration of how experimentation could be conceived. In a collaborative

project with several municipalities on sustainability and recycling in which Halse also took part, the design laboratory became the platform for researching new relationships between citizens and the professional waste and recycling industry. This time the issue was not primarily new products or services, but rather an exploration of how the many overlapping practices of everyday citizenry interact with the waste handling systems. These practices are volatile and fragile and shaped by a complex set of interactions with many professional systems. As Latour suggests we could try to provide an infra-language in which groups could form and ambiguous everyday experiences be voiced as when we organized a workshop on the fly in a local shopping mall, asking by-passers to tell stories of precious trash (Latour, 2002). But revealing the mundane is not enough. With our primary collaborators (a large metropolitan incinerator) we negotiated a number of programmatic interventions. We asked, what if waste collectors were the heroes of recycling? and invited citizens and workers in waste collection to join in an exploration of what such a program would mean.

We got involved with tenants in a troubled high rise estate and asked them what it would mean if campaigning for recycling in the neighborhood was something they organized. We worked with local caretakers and shop owners in a suburban shopping centre and asked them, what it would mean if shops became hubs for recycling and urged them to rehearse what such a program could entail.

The 'instruments' were still largely the same. The careful documentation of everyday episodes, the design games where episodes were juxtaposed and re-configured, and the improvised enactment of situated action, playfully performed with props pointing to the program, both off and on site. What was conceptually new to us in this collaboration was the deliberate emphasis of the encounters on performance as the theatrical staging of what Schechner calls the subjunctive (Schechner, 1985). In each enacted scenario there is a stage, an audience and actors that carry through a performance in which the possible is brought to life and led to completion.

Box 3: In the DAIM project, we moved the design games out into public space. With a stand in a shopping mall we invited people passing by to roll a giant dice with statements and choose two related pictures. Both the statements and the pictures were from our earlier fieldwork. We asked people to tell us stories based on their choice thus bringing our research findings into dialogues with new people.

During the day a blog was updated live as a visible evidence of what happened on the day. The blog became a live transmission of the event, as much as a virtual place for people to come by afterwards. It created an extended space for thoughts, questions and discussions.

(Halse et al. 2010, Yndigegn 2010).

But also as we zoom out we can see the entire design laboratory as a play with performances or rather again using the terminology of Schechner of proto-performances in which the new is tentatively brought to life. These encounters may still be seen as experiments in the lab, but this may make us forget that the laboratory in itself is also an experiment that is only lived through the performance of these encounters. Thinking instead of laboratory work as the programmatic rehearsing of the future, brings the spectacle of the lab and the committed involvement of the design researcher on equal footing with the invited engagement of waste workers and local tenants (Halse et al, 2010).

(LIVING) LABS ARE EVERYWHERE

There is a legacy to practice studies of contradicting grandiose planning schemes and top-down change processes. We have subscribed to this legacy as we in the past argued with system designers and planners that they neglected or overlooked the potency of an emergent everyday practice (Binder, 2002). But what we have learned as we have been journeying with the design laboratory is that engagement with change is everywhere. The people we have worked with always have their agenda whatever they are product designers at large industrial companies, municipal officers or process operators. Much as we argued in debates with rationalistic planners these agendas does not form decision machines or a rigid apparatus of implementation. But they are in a certain sense also laboratories as they forge together intent and toolboxes into hybrid networks of evolving change. A last example may shed more light on what this means for the constructive design research environment.

In a recent project we have been invited to take part in the efforts of the Copenhagen Municipality to rethink the way they offer services to elderly citizens. The project initially targets a city district with more than 10.000 citizens potentially affected by these services. The Municipality has involved us because they believe that we can help them promote co-design and co-creation of services with the active involvement of older citizens. But where to start? By making ethnographic accounts of senior life? This does not seem very promising, as being elderly does not define any sort of coherent everyday. By inviting a representative sample of seniors and then subsequently scale up the process? This appear overwhelmingly exhaustive and even the concept of representation assumes that we know the group (which is only to be formed as the agenda of the project becomes tangible). Instead of pursuing these seemingly difficult roads we initiated the collaboration by (very tentatively) elaborating a program with strong statements about a new approach to service provision and co-creation. This program was turned into a workbook that similarly to a probing kit could be carried along as we commenced a tedious process of recruitment.

We traveled the networks of the municipality, we got introductions to social clubs and we visited community centers. Along the way we looked for movement, energy and agitation that could be the "soft spots" where heterogeneity and glitches between practices opened up for interactions with "our" agenda.

Box 4: The Senior Interaction project aims at introducing social media to senior citizens to promote activity based networks. We designed props for an initial concept of "Super Dots" to evoke enacted stories and embodied reflection. The props had the purpose of introducing and staging technological possibilities. The concept was presented in a simple narrated doll scenario, interweaved by more explanatory illustrations of the props. Props made of simple cardboard in the shape of 'messenger', 'seeker', and 'screen', as well as the colored super dots representing communities were introduced. In small groups participants developed a shared story by engaging with the props. In the end each group performed a two-minute video recorded doll scenario presenting specific situations where social media could augment the networking among seniors. (Yndigegn & Foverskov, 2011)

Eventually we got ourselves teamed up with "living labs" that each in their own way were in a process of transformation. A local community of tenants in a compound of elderly homes had recently had internal quarrels over a ban on smoking in the common facilities and the tenant committee is working hard to bring new impulses to community living. Some members of the committee have been eager to bring in computers and social media to the compound and when we turned up there seemed to be a fit with our suggestions for networked services and co-creation. Another "living lab" revolves around a small company promoting physical exercise and play in public spaces. Here an enthusiastic sports coach and gymnastics teacher envisions municipal services that bring senior citizens to public parks and squares for collective work out and with our project he finds a new venue for his on-going activities. These "living labs" are recruited to our design laboratory, but in many ways we could just as well say that we were recruited to become part of their endeavors. In the light of what we have discussed above, the point is not to decide on who recruits who, but to acknowledge that what is performed in the collaboration is a lab of labs – the enactment of a merger of programs and toolboxes, that if successful enable participants to pursue the possible as it presents itself in this merger of perspectives.

LABORATORIES AFTER METHOD

So the design laboratory is no longer the very particular approach of our design research environment. Or rather: we have one very particular design laboratory ingrained with our programmatic agenda, but this is just one among many laboratories. What does this entail for other environments engaged similarly with constructive design research but pursuing different agendas?

In design and design research as in the sciences there has for long been an emphasis on method. Method has been seen as setting the standard for professional practice, but the relationship between method and outcome has often been neglected. Similarly researchers and scientist have favored to take a neutral position to what is being studied, downplaying the impact the research project may have as an intervention in the context of its collaborators. This drive towards distance and neutrality does not go well in hand with an exploration of the possible. The possible is always contingent and though research may convincingly provide arguments for certain possibilities both search and arguments have to be guided by programs that set a direction. There is an essential dialectic between program and experiments in design research (Binder & Redström, 2006) that enables the research environment to pursue certain trajectories in order to become knowledgeable. What we have tried to show in this paper is that the movement along such trajectories takes *a laboratory* that is consistent yet flexible in its methodology. The design researcher (as the social scientist) makes a world come within reach through their engagement with people, things and the networks that they form, but this world is shaped by this engagement. Following the sociologist John Law in his book "After method" (2004), we will claim that there is no way to disentangle the knowledge produced by the researcher from the theories and methods that the researcher puts in motion to become knowledgeable.

This does not imply that (design) research is not valid, but it may make us aware that such research as all other research has what Law calls *a hinterland* of programs and methodologies that let certain possibilities emerge while others remain in the shadows.

Box 5: The design laboratory is currently being prototyped as a network laboratory, in three local cultural administration units in the municipality of Copenhagen. Public libraries and cultural centers want to explore the format of the lab, as an infrastructure for co-creation, that can open up a future space for doing cultural work *with* local networks, rather than providing services *for* local groups. The network laboratory will be prototyped both as an organizational tool, that must fit the daily routines of the cultural administration, and as a practice that can operate on the border between public administration and public space. The research program wants to explore the network laboratory as a framework for new ways of performing citizenship and democratization.

For the design researcher this has at least three important implications. First of all the design researcher must consider what program she is adhering to and what laboratory she is part of. In an engagement with a changing world we will claim that there is no place outside the laboratory, and for a design researcher not consistently pursuing a program in her own lab it will only be the inclusion in other labs and other programs that makes her part of knowledge production. Secondly to acknowledge that design research is laboratory work, and that the methodology of the lab carries with it particular ways of constructing the world that the design researcher engage mean that the design researcher (or rather the design research environment) must be accountable for what is produced in these engagements. Like the design studio has its portfolio so must also the design researcher expose and be accountable for the portfolio of the laboratory. And finally as laboratories in which the possible come into being are not the exclusive territory of design researchers, design research must in a genuine sense be participatory, mobilizing and joining forces with the many "living labs" of the everyday.

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