

Workshop proceedings

Towards a manifesto of Living Lab co-creation

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Towards a manifesto of Living Lab co-creation

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Program

09:00 - Welcome and introduction

09:15 - 10:15 - Presentations: Goals, challenges and best practices

Nystedt, von Schoultz: Skaftkärr Energy Living Lab

Budweg, Kristensen: Co-creation in distributed ICT Living Labs

Semolic: Lessons learned by the business case of LENS Living Lab

Gulliksen, Kviselius, Ozan, Andersson, Gazarian, Edenius, Oestreicher: Key Principles for User Innovation in a Living Lab

10:15-10:30: Break

10:30 - 11:15 - Groups: Goals, challenges and best practices

Goal: Reach key goals, challenges and best practices to achieve Living Lab co-creation

11:15-11:45 - Plenary summary

Each group summarizes findings (5 minutes each). Questions and discussions.

11:45-12:30 Lunch

12:30-12:45 Info on funding possibilities for Nordic-Baltic Living Lab activities

Mattias Esbjörnsson, VINNOVA - The Swedish Governmental Agency for Innovation Systems: Information about the upcoming possibilities to apply for funding of Nordic/Baltic Living Lab activities.

12:45-13:45 - Presentations: Tools and methods

Ihlström Eriksson, Svensson: Experiences from Halmstad Living Lab

de Jong, Kuijer, Bakker: Codesign of sustainable innovations in the Delft Open Innovation Session

Wolkerstorfer, Geven, Tscheligi, Obrist: User innovation through the Digital Participatory Design Living Lab

Hammer-Jakobsen, Goldman: Piip!

13:45-14:00 Break

14:00 - 14:50 - Groups: Tools and methods

Goal: Describe important and promising tools and methods to improve Living Lab Co-creation. Strengths and weaknesses. Needed research and development

14:50-15:15 Plenary summary

Each group summarizes findings (5 minutes each). Questions and discussions.

15:15-15:30 Break

15:30-16:45 Plenary session: Manifesto for Living Lab Co-creation

Goal: Reach key issues which should be the basis of the manifesto, based on findings in previous group sessions as well as new issues.

16:45-17:00 Feedback on open review and discussion process

The workshop preparatory period has included the posting of all accepted contributions at the OWELA, with opportunity for commenting and discussion. Feedback on the process wanted.

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Introduction

1 Workshop topic

Living Labs is an approach to user-centred innovation and development, where the users are involved within a familiar context; preferably their every-day environment. Living Labs has lately generated a great deal of interest in Living Labs within the field of information and communication technology (ICT), particular seen in an explosive growth of the European Network of Living Labs (ENoLL) which now includes more than one hundred Living Labs across Europe (ENoLL, 2009).

The concept of Living Labs is still evolving. It is therefore important to engage practitioners and researchers in dialogue to gain a common understanding of Living Lab co-creation as an approach to tap into the innovative potential of the users. The concept of co-creation is typically explained as a creative collaboration process between users, developers and stakeholders. Instead of being a passive recipient of the outcome of innovation and development, users in Living Labs can actively be engaged in innovation and development processes. ENoLL has emphasised the importance to achieve co-creation in Living Labs (ENoLL, 2009). Co-creation may also be seen in relation to user-driven innovation and open innovation, even though these concepts are only partially overlapping.

We are only at the beginning of exploring suitable processes in how Living Lab participants should be involved in innovative co-creation processes. Different Living Labs might also have different context for the co-creation process, as well as different innovation purposes. Future research should therefore identify contexts that are most promising to facilitate co-creation for certain innovation goals.

A recent literature review shows that co-creation is a Living Lab characteristic reflected in about half the existing literature on Living Labs. However, even though co-creation clearly is an emerging Living Lab trend, there is – apart from a few notable exceptions (e.g. Pierson and Lievens, 2005; Näkki and Antikainen, 2008) – an acute lack of descriptions of processes and method supporting Living Lab co-creation (Følstad, 2008). The interest in Living Lab co-creation is dramatically increasing, but at present there exist no explicated set of processes and methods to support such co-creation.

2 Workshop objective

The workshop objective is to explore Living Lab practices for co-creation, and on this basis develop a manifesto for Living Lab co-creation. Currently, the experience and knowledge of Living Lab co-creation seem to reside among Living Lab practitioners rather than researchers, and the workshop organizers therefore judged it particularly important to engage Living Lab practitioners in the workshop.

The main idea of the workshop organization was to use a preparatory period to explore Living Lab co-creation practices, and then to reach a draft manifesto for Living Lab co-creation at the workshop itself. The draft manifesto is to be refined after the workshop, in dialogue with all contributors.

3 Submission and review process

In our call for contributions we challenged researchers and practitioners belonging to existing Living Labs to present their co-creation practices in less than 1000 words. We received 10 contributions, which were all made subject to review by two independent reviewers. Eight of the submissions were accepted.

All accepted submissions and the associated reviewer comments were made publicly available through the workshop blog, set up at the OWELA virtual Living Lab. This was done in the hope that the participants would discuss between them before the workshop, but such discussions did not materialize. The reasons for this will be explored at the workshop.

4 The accepted papers

The accepted papers cover several aspects of Living Lab co-creation, from Living Labs of a range of different application areas. We have chosen to group the papers in two, but several other groupings could have been possible:

1. Goals, challenges and best practices
2. Tools and methods

In the first section, the papers serve to draw up basic questions related to the purpose of Living Labs and principles on how to serve these purposes. In the second section, the associated papers to a larger degree focus on implementations of Living Lab co-creation, through methods and tools.

Several of the papers do not adhere to the initial 1000 word limit expressed in the call for contributions. This is good, as it allows for more in depth presentations of relevant challenges in different types of Living Labs. We hope that both the practitioner and the researcher will find papers of interest among the accepted papers.

5 At the workshop and beyond

The workshop is structured in two main sections, following the two main groupings of contributions. In each section the paper contributors may present their position in 10 minute presentations. Following the presentations, the workshop participants will divide in groups to discuss key issues related to the section.

The results of the group discussions will provide the basis for a plenary discussion at the end of the workshop, where the aim is to reach a set of key issues which should be the basis of a manifesto of Living Lab Co-creation

After the workshop, the draft manifesto for Living Lab co-creation will be refined through an open process. The manifesto should cover process and method recommendations for all relevant stages of the innovation and development process. The workshop organizers are planning to pursue the publication of the manifesto both as a scientific paper and as an edited Springer publication in the HCI series.

Acknowledgements

The workshop organizers represent four Living Labs and Living Lab projects, and wish to acknowledge these:

- The RECORD online Living Lab, Norway (www.recordproject.org)
- The Airport Living Lab at Arlanda, Sweden (<http://www.airportlivinglab.com>)
- The OWELA (Open Web Lab) of VTT, Finland (www.owela.vtt.fi)
- Open Living Labs Sweden (www.openlivinglabs.se)

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Skaftkärr Energy Living Lab

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1 Introduction

A new energy efficient residential area is being planned in Porvoo, Finland. Together with the city planning process a Living Lab focusing on energy efficiency is planned. The area will have at least 6000 inhabitants and the objective is that all the inhabitants would be part of the Living Lab being created.

The Energy Living Lab will serve as a product development platform where companies can develop and test their new products in a real environment, in people's homes. Because of the size of the area there are many possibilities for interesting comparing R&D work. Different user profiles and different building types can be compared. The Energy Living Lab will provide substantial amount of data that can be very valuable for research activities. The inhabitants will gain from the Energy Living Lab by getting focused energy advisement, having good indoor air quality, being able to monitor the behavior of their homes, having reduced energy consumption, having a database with all the information about their house and so on.

2 Technology development as a user-driven process

The development of the Energy Living Lab needs to be user driven at the same time being dependent on the technology development. The technological solutions are based on developed energy and indoor air quality monitoring and the co-use of different building technologies. The different systems will be managed through an integrated platform which can be regarded as the technological base for the Energy Living Lab. The community is committing to the implementation of the integrated platform by connecting the technology to the building lots. In practice this means that when you buy a building lot from the community, you get the integration platform for free.

The technological solutions are being developed in other R&D projects. The information exchange between the projects and the Energy Living Lab development project is very important for a successful process. The cooperation is working very well since the project managers are working in the same organization and in the same office being able to discuss on a daily basis. Based on the data that this technology offers, different sorts of information and services is developed to the inhabitants.

3 The challenge

It is a challenge to take the future inhabitants into the development process of the Energy Living Lab because of its high dependency on the technology development. Before the technology is enough developed, there might be a reluctance to involve end-users in the process. In order to overcome this problem the companies developing the technology are taken into the planning process from the very beginning. Workshops have been organized together with companies representing the HVAC field and the ICT field. There was a great interest to start up a framework for an Energy Living Lab and the involvement of end-users in the process was considered interesting. In this stage there was, however not yet any concrete ways to realize this involvement process.

Another challenge is to find the end-users. In the planning phase it is not yet known who the actual end-users will be. The method to find a representative group and getting them motivated is a challenge.

4 Test-Living Labs

One way to go forward with the process is to create “test-Living Labs”. The monitoring technology being developed will be installed and tested in real buildings with real inhabitants. Most likely these inhabitants will be so called Pro Amateurs with a specific interest in the development process of new technology. The first test Living Lab is being implemented spring 2009 in a one family home in Porvoo, Finland. There are also plans about creating a “show case Living Lab” which would be a building with all the technology installed. The building would be open for the public and serve as a exhibition building for the companies involved. It could also serve as a way to get people interested in the Living Lab concept and getting them to become involved in the development process. This group of people that could be found this way would also, most likely, be Pro Amateurs.

5 Connecting city planning process and inhabitants involvement

In the city planning process future inhabitants are involved. Traditionally they are given an opportunity to comment on completed plans. In this city planning process the involvement process will be extended. Efforts will be made to get the future inhabitants involved already in the planning process. The Energy Living Lab development process should, together with the city planning process, together work with this involvement process in order to get as much input from the end-users as possible.

6 Ways to get the people involved

In order to get in touch with the people, you can either try to get them to come to you or you can go to them. By working together with different local organizations you can find a natural way to interact with the people. People meet up for example through local boating clubs, the voluntary fire department, the scouts and local political groupings. By getting the leaders of

these groups interested you can get in touch with a larger group of people. You can also get a diversified group of people by connecting to different sorts of organizations.

One incentive for the involvement could be that the people involved could get a priority to the building lots. This option has, however, to be considered carefully regarding legal issues and equality issues.

Co-Creation in Distributed ICT Living Labs: A reflection on communicative practices

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„At its core, software development is people inventing and communicating”
(Alistair Cockburn)

1 Introduction

The ECOSPACE Integrated Project (www.ip-ecospace.org) aims to explore the vision of eProfessional collaborative working by co-creating cooperative tools, technologies and processes with end-users throughout the project within three different Living Labs. This vision takes the anticipated needs of future knowledge workers as a point of departure; specifically their need to engage in seamless, dynamic and creative collaboration across teams, organizations and communities, through a personalised and interoperable collaborative work environment (Prinz et al 2006). The ECOSPACE project has developed collaborative work environments for eProfessionals, including CWE tools and technologies being introduced and appropriated in real working situations within the domains of project management, media collaboration and professional communities for innovation (Schaffers et al. 2009). Training, demonstration and support activities have contributed to ECOSPACE Living Lab efforts to support end users in adopting tools that are personally meaningful to improve their condition. Through these activities, various communicative practices emerged including basic user feedback collection to improve tools and technologies, mediating between the spheres of design and use as well as ‘meta communication’ within the Living Labs around tool usage and appropriation practices. As much as possible we have implemented training strategies as ‘learning by doing’ and part of the appropriation and change processes experienced by the users.

2 Technology standpoint: Collaborative Work Environments and Computer-supported Cooperative Work Technologies

Our Living Lab work within the ECOSPACE project has been targeting practices around how people work with other people, supported by IC technologies and across organizational and time-space boundaries (Budweg 2008). From a technology standpoint, Collaborative Work Environments (CWE) have been a prime target of CSCW technologies and research, building tools that support both co-located and distributed as well as synchronous and asynchronous communication and collaboration practices. Prominent examples of tools and technologies that are closely related to the CSCW research strand include messaging systems, groupware

platforms, wiki systems and communication technologies like blogs, instant messaging or video-conferencing.

3 Co-Creation as Reflective Communicative Practice

3.1 Appropriation or meaningful means

The complex interplay between technology development and appropriation towards evolving meaningful technology-supported work practices is a long-term issue in research. While early developments often evolve from a concrete, specific context and use-cases, publicly released applications are often positioned as ‘universal’, non-specific tool-sets.

While the processes of appropriation related to the meaningful adoption of technologies for personal practices are relevant for all different kinds of tools, technologies aiming for collaborative contexts like groupware systems face additional challenges. Bansler & Havn relate to systems like groupware platforms as „general-purpose media that [...] must be adapted to the organizational context and appropriate conventions for use must be established. Otherwise the technology will not reflect local conditions, work practices or communication norms and is, therefore, likely to be underutilized, misused or outright rejected [...]” (Bansler & Havn 2003: 135).

Bentley and Dourish (1995) argue for a design approach that includes both openness and flexibility of collaborative technologies in terms of a ‚medium’, allowing end-users to customise both the interface and the functionality of the system. However, openness and flexibility in cooperative use settings increase the need for evolving locally meaningful appropriations as well as negotiating understanding and use conventions.

In a similar way, Living Lab co-creation has to deal with bringing ‘universal’ technologies (aiming beyond one specific use context) to locally contextualized, embedded real world users.

3.2 Experiences from Living Labs in Innovation Communities

Creating successful innovations in an open community setting is a complex undertaking that requires careful coordination of a number of different stakeholders and roles across the innovation lifecycle: Clear responsibilities and ownership are critical success factors, and the level of ambition should be coherent with the resources available to avoid further fragmentation and situations where initiated activities are not completed, undermining the reputation of living labs as a systemic approach. Without clear leadership and proper clarification of ownership of the required support activities, there is a risk that valuable initiatives fail because activities critical for the outcomes are missing or executed with poor quality.

Engaging and invigorating external, dispersed user communities for volunteering to adopt and use our tools has been challenging, even in cases where the tools introduced aimed in providing benefits compared to current ways of working. Coping with initial change resistance towards ‘yet another tool’ represents a challenge. Local community building represents a strong strategy for creating a user base, however even then a clear benefit needs to be communicated to users to be convinced to participate in early technology experiments. The importance of usability cannot be overstated. In certain situations it has been difficult to

sustain the use of tools beyond the initial testing stage. Equally, user engagement has been hindered because some of the tools were not sufficiently mature and needed additional technical testing. Thus, there is a clear limit to user-led co-creation (see “The role of Living Lab Facilitators” below).

Despite these challenges, selected tools are still in weekly use by some pilot participants, and increased use is expected as 1) more users are perceive individual benefits adopting the tools, and 2) tool developers act on end user feedback and implement suggested improvements, to better align the tool offerings with end user requirements and desired way of working.

4 The role of Living Lab Facilitators

A number of challenges affect effective co-creation in Living Labs, and Living Lab facilitators can play a crucial role in bridging between the spheres of design and use. A fundamental ‘disconnect’ or gap can otherwise occur due to the following:

- Developers would like end user feedback as early as possible, and use end users to discover bugs and issues and hence shift some of the workload related to internal testing over to users. This is partly also motivated by a preference for getting feedback on their priority issues, the ‘big concepts’, not what is regarded as trivialities such as interface issues, bugs etc.
- Users would like to use only tools that they believe work, and with a strong perceived value statement. And, depending on the tool’s real usability compared to the expectation, they increase use, maintain limited adoption, or stop using it. End users are not so much into research for the sake of research itself. Their primary concern is to develop their daily work or businesses, and they are (potentially, although there is still some adoption resistance¹) interested in things that have a strong perceived value statement in terms of e.g. time savings or quality improvements.
- There appears to be a ‘threshold value’ below which both developers and end users lose their motivation for full engagement. This threshold value combined with asymmetries in the value distribution across different stages of development for developers and end users respectively is causing an adoption gap that should be carefully monitored by LL facilitators. This threshold is ideally targeted by enabling the different stakeholders to develop a spirit of common interest and collaboratively bring the process forward. Living Lab facilitators play an important role in this important ‘perspective brokering’ between the different Living Lab stakeholders.

5 Outlook: Growing Collaborative Communication Cultures & Tools supporting Co-Creation

In our position paper, we have described some experiences from our Living Lab work related to technology development for distributed, cooperative work settings. Building on research and results from Computer-supported cooperative work as well as appropriation theory, we see the following challenges and activity areas for co-creation in distributed, virtual Living Labs:

¹ See e.g. the “9x problem” <http://andrewmcafee.org/blog/?p=121>

- Attentive Awareness for the heterogeneous interests, requirements and communicative practices of the different stakeholders involved in distributed Living Lab activities.
- Accounting for the appropriation activities involved in creating personally meaningful practices and establishing shared tool usage.
- Co-Creation as reflective communicative reciprocity, supporting the collection, exchange and negotiation of diverging assignments of meaning, purpose and use.
- An ongoing need for both methodology evolution and new tool support to create, maintain and tap the full potential of mutually beneficial interactions in Living Labs.

From a methodology perspective we expect to see a growing support for reflective co-creation by methods explicitly addressing the different expectations, personal objectives as well as individual assignments of meaning and purpose of heterogeneous stakeholders involved, thus enabling to better benefit from the rich diversity found in Living Labs.

From a tool perspective, we see an increasing demand for supporting tools enabling perspective taking, reflection in use as well as increased means to share locally meaningful appropriations of technologies.

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Lessons Learned by the Business Case of LENS Living Lab - High Performance Manufacturing¹ Living Laboratory

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1 Introduction

Technological and organizational excellence is the key element for business success in a modern industrial manufacturing environment. This paper presents findings as results of research and practice from the high performance manufacturing living laboratory development, named “LENS Living Lab”. “LENS” presents the R&D focus on identified areas of this living laboratory and its technological specialization.

2 What is high performance manufacturing living laboratory?

High Performance Manufacturing Living Laboratory is a real-life research and operational laboratory with the focus on R&D of a new innovative high performance design and manufacturing technologies (HPM) and supporting systems development, as well its operational use. The main mission of such laboratory is to support manufacturing SMEs by development and enabling the infrastructure for inventing, testing, prototyping, use and marketing of a new materials, products and high performance manufacturing and supporting technologies. The *High Performance Manufacturing Living Laboratory* main stakeholders' value:

- **Manufacturers (SMEs):** solution of their technological problems, easier and quicker development and acquisition of new technologies, better competitiveness,
- **Manufacturing and researchers network organizers and supporters:** solution and support to their networks set-up, management and development,
- **Researchers:** better understanding of industrial users' needs, open R&D market, “testing ground” and “early users” for R&D outcomes,
- **Independent researchers and experts:** possibility to participate in collaborative R&D projects,
- **OEMs:** solution of their technological problems, set-up and maintenance of development suppliers networks,

Other stakeholders: better understanding of customers' needs and support to development of their products and services.

¹ High Performance Manufacturing - high performance design, manufacturing and supporting technologies

3 Living laboratory as the part of authentic business model of modern manufacturing SMEs

The important part of modern manufacturing SMEs is the ability to design and permanently innovate and develop the authentic business model (see Figure 1), with the use of collaborative networks supported by professional platforms (see Figure 2).

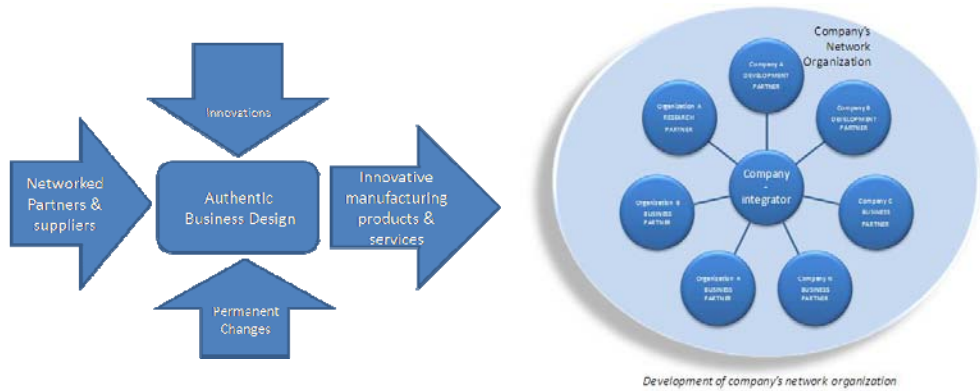


Figure 1: Innovative business designs and networked manufacturing companies



Figure 2: Functional and structural components of virtual collaboration platform (Semolic & Imtiaz, 2009)

The Table 1 shows the example of *High Performance Manufacturing Living Laboratory* framework and its basic collaboration principles, areas of services and support, by the use of LENS Living lab practical business case.

Such systems create the international virtual environment and market for manufacturing companies outsourcing needs, innovative entrepreneurship and creation of new technologies, as well services for operational support. Professional platforms create a “value space” for all

stakeholders of manufacturing industry. These stakeholders are manufacturing companies, vendors, suppliers, business partners, researchers, experts, companies' managers, advance users, governmental and regional development agencies etc. The main benefits for small and medium sized manufacturing companies are:

- Window to the new technologies,
- Outsourcing of knowledge and services,
- Affordable acquisition of new technologies,
- Access to the world-class pool of research and development resources,
- Transformation of fixed costs to the variable costs,
- Better access to the global market.

General Principles of Work	New Concepts	Testing & Early Birds	Implementation & Operation Support	e-Project Office & ToolEast e-Platform
Customers Value, Collaboration Trust & Partnership, Equality, "Win-win approach", Accessibility, One Stop Shop, Adaptability, Interoperability, Security and Privacy, Serviceability,	social networking support, Researchers , experts and advance users virtual communities support Knowledge base exchange New research initiatives test and support, Virtual research teams (VRT) support Creation of virtual knowledge repository Knowledge share system development and support	social networking support, Researchers , experts and advance users virtual communities support New technology testing support Development project support	social networking support, Developers , experts and end users virtual communities support New technology Implementation support High performance manufacturing knowledge base services	social networking support, Researchers , developers, experts and end users virtual communities support, Research, development and implementation project management kit and methodology support, e- project management support TE CRM open sourced SW support TE ERP open sourced SW support NING – social networking SW support Q-NET International training center support

Table 1: The example of High Performance Manufacturing Living Laboratory framework and it basic collaboration principles, areas of services and support – LENS Living Lab Case Study

The measurable key performance indicators for manufacturing sector are:

- Number of new technologies,
- Number of improved existing technologies,
- Number of new R&D services,
- Number of new operation services,
- Value of fixed costs replaced by variable costs,
- Relative reduction of development costs,
- Number of valuable information from the network.

The most important factors to establish and sustain research within virtual collaboration are presence of:

- Visible and understandable business models and governance structure,

- Open virtual research groups - virtual research communities related to the domains which are relevant to the manufacturing industry. These communities need to be mixed and open for all researchers, developers, experts and advance users from the manufacturing companies, vendors etc. – which has interest to collaborate in specific research domain,
- Solid and user friendly e-infrastructure,
- Sustainable leadership of coordinators, professional support and
- Proper attitude to the intellectual property rights and trust.

The main components of the Virtual Collaborative Networks (CVN) governance:

- Governance of open virtual research groups (OVGs),
- Collaborative joint venture programs,
- Collaborative joint venture projects,
- Governance of regional clusters,
- Governance of e-collaboration platforms.

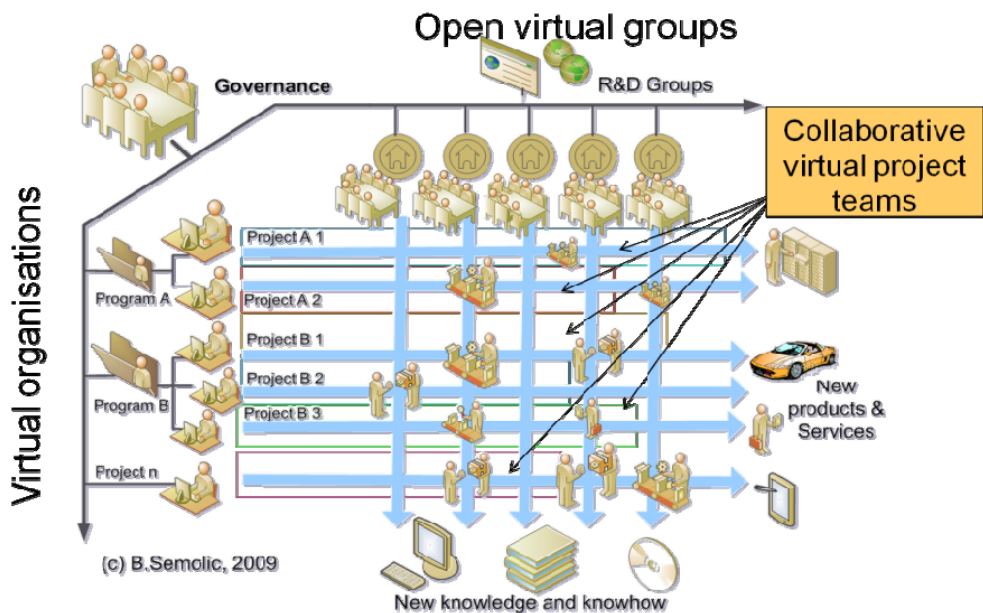


Figure 3: A representation matrix of distributed governance and collaboration

There is no doubt that the successful collaboration networks needs the new corporate culture of manufacturing companies. The new corporate culture need to be placed by the holistic and sustainable development strategy with the incorporated technical, organizational and behavioural strategy of change.

Key Principles for User Innovation in a Living Lab

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1 Case – Airport Living Lab

The context in which our ideas on the integration of the field of human computer interaction and open innovation meet is a living lab project that we have been involved with for the last couple of years. The Airport Living Lab (ALL) project is a joint effort between the Swedish Aviation Authority, SAS Ground Services and CSC Sweden to establish a Living Lab that can continuously improve the airport processes at Stockholm-Arlanda Airport. The project is also performing research on the evolution of the Living Labs concept with respect to open innovation in collaboration with the National IT-user Center at Uppsala university and Stockholm School of Economics.

The vision of the Living Lab is to make Stockholm-Arlanda Airport one of the world's most innovative and user-friendly airports. This could happen by harnessing the concept of multi-organizational open innovation. Stockholm-Arlanda Airport will multiply its pace of innovation by involving all airport stakeholders, such as passengers and personnel, into the innovation process.

The Airport Living Lab project has two main objectives:

- To perform high-quality research on open innovation and Living Labs concepts and adapting these to an airport environment.
- To establish a self-sustaining Airport Living Lab at Stockholm-Arlanda Airport.

2 Key Principles for User innovation in a Living Lab

One major effort during the ALL project has been focused in the establishment of a common platform of definitions. Several workshops have been held to this purpose, and it was found that the best way of defining this common platform was through the definition of a number of key principles that were considered to be fundamental to the work towards the Airport Living Lab. The reason for this approach is that a principle is a commonly accepted fundamental rule or law that can be used to define other principles. Therefore, by defining a concept through a set of key principles you are able to communicate the basic values underlying a specific philosophy. Following are the key principles for User Innovation in a Living Lab that were successively developed and/or identified in the workshops:

2.1 User-centered innovation

These principles cover the role users play in the idea generation, design, development and evaluation of new ICT solutions.

- **User-centered innovation** – Innovation is performed by and/or in close interaction with users.
- **Innovation of products/services/processes** – The Living lab should be able to in a flexible way handle various types of innovation – also outside the domain of ICT
- **Users as innovators** – Users are actively involved throughout the development from idea management to concept development
- **Users themselves are experts in their own area** – No one knows better what a user wants/needs than the user her/him self. Therefore, solutions based on real user's statements of needs/wants will be more prone to succeed.
- **Embrace user knowledge** – User must be seen as those most knowledgeable about their processes.
- **Expand user participation** – Consistently evaluate how user participation can be expanded in the “framework”.

2.2 The power of numbers

One of the major new insights from open innovation is the effect of getting input from a large number of users, but this also requires new methods for dealing with the amount of input.

- **Mass involvement** – The quantity of input overrides the contribution of single geniuses.
- **Crowd sourcing** – Ideas and solutions are discussed, developed, tested and refined based on stakeholders' open discussions.
- **User communication** – Establish channels are needed for user-stakeholder communication and between users in the innovation process.
- **Allow a rich set of channels for contribution** – Relying in the innovative capabilities of individual contributions through various types of media.

2.3 Business values, economical gains as driving forces

Economical gains, user benefits and potential stakeholder gains are the driving forces that support the innovation process and shows all parties involved what it is all about.

- **Value for money** – Stakeholders should be attracted to join/maintain interest in the Living Lab due to the fact that it provides increased innovation and in long term profitability.
- **Economic sustainability** – The Living lab should be able to operate for an exclusive period of time without external (=outside stakeholder group) support.
- **Satisfied customers => Profit** – The main aim should be “Satisfy customer/user needs and wants”, not “Make short term profit”. This attitude will ensure long-term profit.
- **Risk aversion** – The Living lab must be prepared to win-a-few, lose-a-few by adapting a risk-averse attitude.

2.4 Openness of information/innovation

The innovation process may never be closed in any stage, all development should take place in an open manner thus fostering interests from participants encouraging active contributions and avoiding my-baby syndromes and unfruitful competition on the development side.

- **Minimize corporate secrets.** The more the users and partner organizations know about the situation at hand, the better collaboration and results the Living Lab will have.
- **Open progress** – No phases of the development takes place behind closed doors.
- **Transparency** – Stakeholders should be kept informed of what is going on in the Living lab. This creates commitment.
- **Openness** – Openness regarding IPR/outcomes, methodologies, stakeholder participation etc.
- **Dare to let your customers interact** – Yes, when your customers interact, some of them will say some mean stuff about you. But, with the right tools, this dialogue can be used to create creative solutions to the discussed issues.
- **“I want others to succeed”** – Realize that in helping other organizations to succeed, you will build long term trusts that you will profit greatly from in the end.
- **Brain power outside the project** – A base for our argumentation is that there is a high possibility that smarter and more innovative people exist outside the core project group.

2.5 Development-related principles

Open innovation requires a contextual agile process where requirements can change and develop throughout the process, facilitated by an expert in the field.

- **Iteration** – Involvement is managed through short development cycles.
- **Incremental structure** – Break down ideas to facilitate continuous development.
- **Contextual presence** – The Living Lab and all its activities take place in the actual environment of the identified “Problem”.
- **User innovation facilitator** – The Living Lab is managed and supported by a development facilitator.
- **Concrete progress** – All phases of development is made concrete and understandable for all stakeholders.

2.6 Basic values controlling evolution

The core values in the development organizations as well as the values among all involved stakeholders need to support issues relating to sustainability, holism, and creative cooperation in the projects.

- **Positive climate** – Encourage creativity through positive feedback and engagement.
- **Open partner culture** – All participating partners should have an open innovation culture.
- **Holistic perspective** – IT, business, organization and people all develop dependent on each other.
- **Focus on innovation** – Focus should be on innovative development rather than incremental problem solving. Experimentation must be allowed.
- **Sustainability.** Ethics. Environment. Social responsibility. Accessibility.

2.7 Organizational/Stakeholder structural conditions

The organizational structures and the governing rules and regulations must be in line with the key principles of the Living Lab.

- **Management support** – Active involvement and support from management is essential to make user-centered innovation happen.
- **Governmental Framework** – Providing government (e.g. legal) frameworks ahead of time (proactively) they are needed (e.g. before idea reaches commercialization)
- **Multi organizational innovation** – The Living Lab can create value by matching needs and provide a collaborative platform for involved stakeholders.
- **Foundation of structural capital** – Structural capital should be built in order to decrease the sensitivity of HR changes.
- **Well-defined “boundaries”** – The Living Lab must define what user processes are/are not included in the environment.
- **Define why you are active in the Living Lab** – For each stakeholder; know the reasons to participating in the Living Lab. These reasons do not have to be the same for all partner organizations, but they do have be defined and aligned.

3 Applicability

The key principles as presented here have been recognized as forming a base for the continued work. Although the intention is to provide a general framework by these principles, it has to be acknowledged that they have been derived during a process of defining a Living Lab. The principles listed here are considered to be generally applicable to the Living Lab implementation, and as such constitute a good starting point for the communication of ideas when forming a Living Lab.

Still there is a large amount of work to be done on how to use the principles in the process, and how to assess the different key principles in relation to each other. This still undone, we are positive that the key principles are of great value. The next step will be to incorporate the principles into the larger Process Framework within a Living Lab.

If one would view the Living Lab from the organizations that set it up, one finds a need to have a structure and grouping of the user-generated ideas. Of course ideas can be placed in categories that refer to the different phases that the user could experience.

But within these categories there would still be clusters of similar ideas, or even identical ones, that seek to solve the same underlying problem. If one would group ideas according to what problem they intend to solve, one will be able to extract ideas from the system in a very logical way. However, this concept can be difficult for end users to fully comprehend, which can lead to great ideas not being submitted at all.

Co-creation in Living Labs - Experiences from Halmstad Living Lab

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1 Introduction

Halmstad Living Lab was established in 2007 with the application areas of health technology and media, but has been working with co-creation since 2004. Our experiences from co-creation is derived from four research projects, two within media (DigiNews and UbiMedia) and two from health technology (Secure at Home - Living Lab and Secure at Home - Smart Locks). We have conducted 100 user involvement activities with around 500 individuals in face to face activities and over 7000 individuals in online surveys. The empirical activities all relates to different innovation processes concerning both products and services. The innovation processes has involved different stakeholders such as companies, researchers and users who have worked in an open environment to create and validate innovations. Below we discuss our experiences.

2 Different methods and techniques

We have worked with different types of methods such as future workshops, prototyping, surveys, test, evaluation and validation and used a multitude of techniques, e.g. personas, scenarios, mock-ups, image boarding, interviews, questionnaires, diaries, observations and think aloud.

Our experiences of the future workshop method are mainly positive. These workshops have served as a foundation for both generating ideas but also making them tangible by the usage of scenarios and mock-ups. Low-fi prototypes generated by users are quite easy to analyze, both as a way of finding new design solutions, but also to use as input data for other users to evaluate and comment on. User generated scenarios, personas, mock-ups and image boards are quite similar to low-fi prototyping, with much information easily gained.

In the projects these techniques have generated valuable information leading to new design solutions as well as shaping existing IT-solutions. The information has also served as a base for new ideas of IT-products and services which in two cases this have lead to spin off development projects. Furthermore, the techniques have served as a base for finding requirements and guide the developers of how to shape IT to better fit specific target groups. From a Living Lab perspective the methods and techniques have generated valuable input in all phases of the innovation process. However, the extensive work that has been conducted within the research projects might be problematic to implement in innovation processes, due to the extensive resources needed.

3 Different degree of user involvement

In the four projects we have elaborated on three different degrees of user involvement, decision, information and creation. In our cases, surveys, questionnaires, tests, evaluation and validation have formed the base for the decision degree of user involvement. The methods and techniques that have been based on the information degree of user involvement are primarily interviews, diaries and observations. Moreover, the first phase in the future workshops has also served as an information gathering activity. The third degree of user involvement (creation) has been used in the future workshop and prototyping methods used in our projects.

Our experiences regarding different degrees of involvement are that the decision degree is the easiest to apply to methods and techniques. Asking direct questions about preferences, use behaviour or what design solution that is preferred are rather straight forward. These activities are also less resource dependant, both to conduct and to analyze. To work with the information degree of user involvement requires a higher amount of resources and is also harder to analyze, but generates a rich set of data.

The creation degree of user involvement is from our experiences the most challenging and demanding way to incorporate in methods and techniques. The facilitator's ability to provide a creative environment for the users to work within as well as the group composition affects the outcome of the methods and techniques that we have worked with. Though, if successful, the material generated by for example mock-up activities can prove very valuable as guidance for design decisions in the prototype phase in innovation processes.

4 Different types of users

Users can be categorized in different ways and it's important to keep in mind that different user groups can differ in more than how they put a specific product or service to use. In some cases, they might also have conflicting values depending on diverse views on what the products purpose is. It's also important to keep in mind that a user's characteristic is very hard to pin down. Based on our experience it doesn't matter what kind of category of users you are dealing with; the group dynamic and consensus of a group of users is still very fragile and can easily be effected by individual members of the group. This puts a lot of pressure on the facilitator of the workshop who has to be able to balance this in order to let everyone add to the discussion.

We have also noted the importance of having dedicated users taking part of the workshops. To get satisfying results from an activity the users have to be both interested and dedicated to the cause. This might be even more important in a Living Lab approach since the users are supposed to be a part of the whole development process from the start until the end. This raises the question of how dedicated users can be identified during an early stage and how they can be supported during the innovation process to keep them dedicated.

5 Challenges

We have identified the following challenges with co-creation activities in a Living Lab setting.

- a) Finding a heterogeneous group of engaged and motivated users that complement each other.
- b) Using the "right" mix of methods and techniques that delivers the data needed for a specific stage in the innovation process.

- c) Working with different degrees of user involvement in different phases of the innovation process to secure the development of usable products and services.
- d) To be able to involve more users in their home environments (i.e. the real life setting), there is a need to translate methods and techniques to work in a distributed way over the internet.

Codesign of sustainable innovations in the Delft Open Innovation Session: Experiments in bathing practice within European Living Lab Design Study

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1 Introduction

Technologies to reduce resource consumption are widely available, yet little insight has been generated so far on the use of them, which is often not as intended, reaching no or opposite effects for sustainability (Hertwich, 2005). In order to reach the goal of reducing resource consumption of the household, more knowledge is needed about the current and preferred behaviour of consumers. The present open innovation session was part of the Living Lab design study and more specifically of setting its research agenda (Bakker et al, 2008), which has the aim to further adoption of sustainable innovations at the home by offering a European research infrastructure. One of the objectives of the present design study is to develop research methods to generate insights for innovations that enable people to reduce their resource consumption at home.

The proposed research method to collect insights for the session combines social practice theory with co-design techniques. Social practice theory is a method to describe, understand and possibly change daily activities. Its application to issues of design was proposed by Shove et al (2008). Co-design actively involves users (people) in the design process, for example by giving them assignments to do at home (Sanders and Stappers, 2006). Our research method is based on the concept of participants doing experiments in their daily routines (Scott, 2008), since traditional social scientific approaches are not simply transferable into design, we aim to connect gathering insights on possible new ways of doing daily activities with present codesign approaches.

The idea behind the approach proposed in this study, is that taking a broader, household activity oriented approach to sustainability can lead to larger gains for resource efficiency of households. The approach takes practices (everyday routine activities such as cooking, working, bathing, and so on) as the basic level of analysis, thus stepping away from the level of single technologies and single product-user interaction. The broader perspective could help product development to find possibilities for radical changes in human behaviour towards less resource intensive practices, thus complementing existing technology and user efficiency oriented approaches. As Munneke (2007) explains, in practice oriented design the main objective of the designer is not to make products, but to configure practices. Taking practices as the unit of analysis opens up possibilities on the level of multiple uses of products and product ecologies.

The topic chosen for the study is bathing because resource consumption of bathing (water, energy, soap) is strongly related to the user's behaviour and because bathing accounts for a significant and increasing portion of water (and energy) consumption in the household (Shove, 2003; Foekema et al, 2008). The term bathing is used here as a collective understanding for all kinds of washing activities at home, such as showering, washing at the sink and so on.

2 Method

An open innovation session was set up to find out if and how insights from the participants' experiments can be taken as a starting point for product innovations. The objective of the session is to generate insights for product innovations on a practice level that enable people to reduce resource consumption around the home on their own preferred way.

Two weeks prior to the session, participants were asked to describe their bathing practices at home and execute experiments with the aim to reduce resource consumption while searching for acceptable or perhaps even preferred changes in daily routines. In order to take the long term character of new ways of doing into account - which is supported by experiences from similar studies (Sleeswijk Visser, et al., 2005; Scott, 2008) - it was decided to take a time span of two weeks for insight generation at home. Individual workbooks with assignments and reflective questions, loosely guided the participants in this process. During the second week of experiments, participants were asked to interact online on a blog.

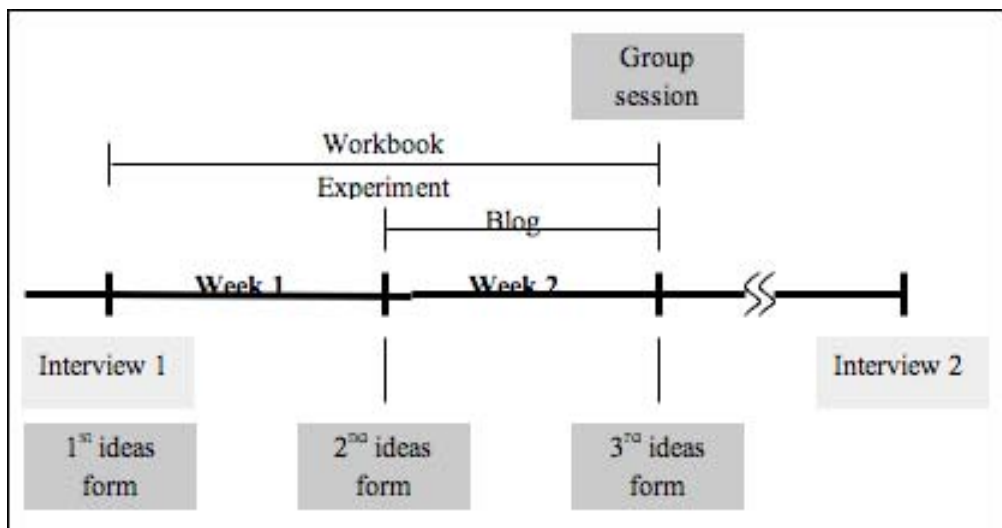


Figure 1: different elements of study on a timeline

During the session participants translated insights gained during this period into new ways of bathing, and subsequently to new products to support this, by applying various creativity techniques. At the end of the session the participants were asked to select one or a couple of ideas that were posted on the walls and work this out into a complete bathroom concept in about 15 minutes and then present it to the group. Two interviews were held, one at the beginning of the study to explain the procedure and the second one three months after the study to ask about ongoing experiments at home.

3 Participants

Sixteen participants were involved in pre-work (workbook, experiments, idea forms, blog). Their background was: designers and design students, Living Lab members, sustainability experts, professionals in bathing companies, architect, and hotel school students.

Ten participants of the pre-work groups were involved in the open innovation session: seven participants, three researchers, and one professional facilitator.

The three researchers and seven participants work together - researchers with explicit instructions not to be dominant – throughout the day in varying smaller groups of five.

The participants in the study were two male and fourteen female persons. All participants were aware of the mixed nature of the group of participants. The age of the participants varied from early twenty to early forty. No specific attention was paid to achieve a specific spread in age or other qualities of the participants. All participants were asked to sign a consent form addressing privacy issues related to data gathering and processing and intellectual property right issues.

4 Type of experiments

Most experiments were based on changing user behavior in current shower practice, e.g. shower duration, shower temperature, shower in the dark, use of cosmetics (Kuijer and De Jong, 2009). Four participants that sought replacement of (part of) their shower, got to the level of practice innovation. When showering was partly replaced, either in the weekend or every other day, they were replaced with washing at the sink, using a washcloth. In the two cases where all showers were replaced, this was done by washing body and hair from a bucket, using cup or washcloth to apply warm water from the bucket to the body. Apart from the biological soap and Ghassoul (a natural soil to clean hair and skin used in the Arab world) the different products used were things participants already had available in their home. The two participants that collected water to flush the toilet needed an extra bucket to do so.

Advantages and disadvantages of the experiments mentioned in the workbooks were mainly: not feeling clean, getting cold, losing comfort and taking more time.

More specifically, related to the three main bathing innovations mentioned above (reducing shower duration, washing at the sink and washing from a bucket) experiences reported were that reducing the duration of one's shower is often experienced as pressurizing or stressful. Things have to be done more efficiently, it is easier when time pressure is already available and more difficult when the purpose of the shower is to care for the inner body (get warm) or mind (get relaxed). But even participants that were used to taking a shower in the morning, which is expected to have a higher time pressure than evening showers, reported feelings of stress.

The two participants that had replaced their showers with washing from a bucket were much more positive about integrating it in their daily routine, despite the fact that they reported they felt cold and a little uncomfortable squatting or bending over to reach the water.

5 Outcomes – innovation session

Figure 2 shows an example of idea generation during the session. Here the white notes indicated technology related issues which participants came up with during the experiments, but with which they had experienced negatively because of other issues such as getting cold. The coloured notes indicate numerous ideas for solving problems concerning getting cold when turning the tap off and so on.

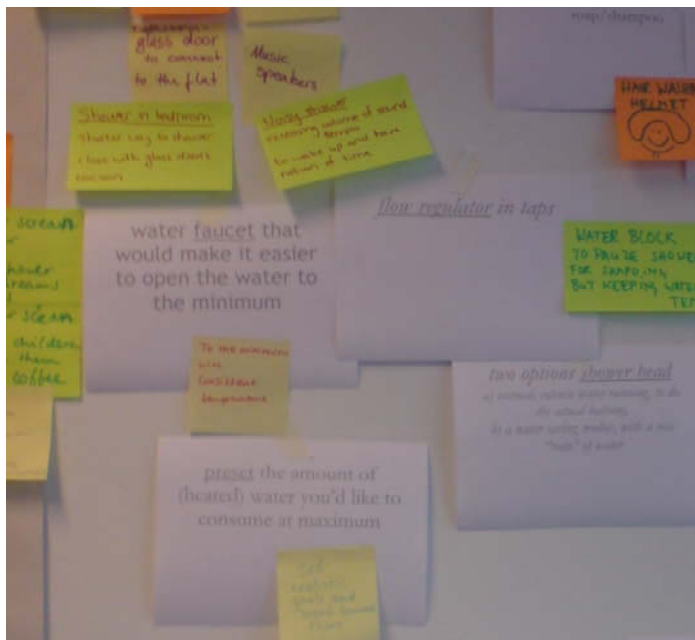


Figure 2: example of idea generation, white notes being prior ideas collected from the idea forms, and coloured notes from session with ideas generated there.

The majority of the final ideas (seven out of nine) are no more related to the current practice of showering and related products, but to new practice concepts of ‘quick wash at sink’ and ‘shower/bath hybrid’, clearly based on the sink wash and bucket wash experiments. The outcomes of this final step resulted in nine ideas (see Table 1).

idea	bathing practice
1* games in shower	Shower/bath hybrid
2 private hamam	Quick wash at sink
3 sink	Quick wash at sink
4* wellness cave	Shower/bath hybrid + quick wash at sink
5 show water flow	Feedback
6 reuse shower water	Grey water
7 bathing pod	Shower/bath hybrid
8 cocoon bathroom in bedroom	Shower/bath hybrid
9* reservoir shower	Shower/bath hybrid

**Ideas 1, 4 and 9 were worked out by researchers who had not participated in the two week experiment phase of the study but fully participated in the session.*

Table 1: overview final outcomes innovation session

Ideas 5 and 6 assumed existing bathing practices; they are directed at reducing waste by reusing water in a grey water system, without requiring changes in bathing behaviour

(technology oriented approach) or changing bathing behaviour through feedback on water use, assuming the practice of showering (user behaviour oriented approach).

6 Input for the session

Participants of the session indicated to have learned from the process of actively capturing their current bathing process and rethinking their bathing routines. During the session they continuously referred to their own situation and used it in their ideas. Also, they stated afterwards in the discussion that they had not considered rethinking their bathing routines concerning sustainability aspects before, and only by participating in the study did they understand how much it actually involved and how difficult it was to understand why they did things the way they did it. During the experiments they had found time to think about the consequences of changing the way they bathe, and how they experienced that in relation to other needs of bathing such as relaxation.

Also, this made it possible for them to think out-of-the-box more easily since they had already thought about alternatives for showering during their experiments, and the needs it fulfilled for them.

The experimenting method was diary based and a physical booklet was used to capture the ideas and experiences, which did not offer a readily basis for exchanging information with other participants. For this purpose, a website had been opened a week before the session to write short text messages to other participants. However, this site was only used for introducing themselves and sharing their experiments, but there was no active communication back and forth between participants before the session. Still, the experiments that were mentioned on the site were explicitly mentioned during the session though, so it might offer a basis for exchanging ideas before and during a session when applied or used more intensely.

Participants indicated that they liked receiving the booklet, which stimulated them to do the experiments, and that they enjoyed going through it, although they felt it was a bit too extensive.

In an open innovation session, one of the most critical aspects for giving away information is the Intellectual Property Rights (IPR). We covered this by proposing a standard form, which was agreed on by all but one participant, because of concerns about giving away company information to competitors. This may have influenced the information that they brought into the session but also the way they participated in it although we have not noticed that during the session. Only after the session some discussions took place within participating companies about the usefulness of the IPR forms and the information and ideas that companies wanted to reveal within such a session.

7 Conclusion

The applied social practices research method has shown to provide participants with sufficient means to actively rethink their bathing routines and to come up with ideas for changing it in ways that they thought would fit in their daily lives and which would be less resource consuming. Also, it showed them the needs other than cleaning, such as relaxation, that had to be met in developing a potential new bathing practice. The experiments done by participants were actively applied in the session and were reflected in the ideas. Issues open for discussion are:

7.1 Experiments as input for open innovation sessions

The experiments contributed largely to the discussion and ideas within the session. The participants had their own free choice in deciding what experiments to choose. However, it could be useful to support participants in a way to help them try out alternatives, which might not be easily tried out at first. Also, the experiments could include exchanging ideas between participants, to further the connection between participants within the session.

7.2 Exchanging information between participants

The method provides insight into people's future usage and experiences with products, which explains how they fit into their daily life. Furthermore, participants can alter things to try out how it works out and what they prefer. However, documenting the experiments and experiences was mostly diary-based, which could be optimised further into internet-based documentation to fully capture and exchange it with other participants.

7.3 IPR issues

Although IPR issues were described and negotiated beforehand, there were still questions and concerns of companies during and after the session. Similar production companies of bathing products and systems were involved in the session, which might have contributed to the difficulties we experienced when assessing IPR issues beforehand. Also, the final ideas involved the discovery of potential valuable market niches, which are an important innovation strategy for companies. This resulted in some unclear issues concerning the ownership of the final ideas and the expectations of the role of the companies within the session, which ultimately counteracts the open nature of the innovation session.

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User Innovation through the Digital Participatory Design Living Lab

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Abstract. In this paper we present a concept for a participatory design (PD) Living Lab. The concept is based on over 10 years of experience in running usability laboratories and conducting user experience research. We describe a combination of methods and their supporting infrastructure. The Living Lab we conceptualize overcomes geographical, methodological and organisational limitations (like sample sizes for test participants & required resources of researchers, incentives for participants). Additionally implemented research infrastructures & tools will allow advanced participatory design methods in different contexts (home, office, street, “in the wild”...).

Keywords: participatory design, user experience, Living Lab, research environment, research framework

1 Introduction

Participatory design – short: PD – puts the end-user into the centre of the design process. The method is used to gather innovative input from end-users. In today’s world where big parts of economy and society depend on digital solutions the design of the according interfaces is also a democratic challenge. Where PD methods evolve (Beck, Obrist, Bernhaupt, & Tscheligi, 2008) we observe that tool and infrastructure support does not catch up: currently we see no framework to support end-user participation for innovative participatory methods. Hence every study setup is individual and consumes a lot of setup-resources. A first step we took to overcome this hurdle was to develop novel and more flexible techniques for collecting fast users feedback, in particular enabling the users to become creative and design scenarios for future products/services within a short time span (see for instance the Instant Card Technique / short IC-Technique – Beck et al. 2008). Although this technique is applicable for different domain areas, it has its limitations as it is still analogue. The solution we propose within this paper provides a set of generic methods and a completely digital infrastructure, which eliminates the drawbacks we experienced in our daily work.

Living labs are about involving users in the ideation for and development of new ICT-based services and products. Living Labs aim to contribute to a new Innovation System where users and citizens become active actors and not only passive receivers. Although the idea is very good, there are still limitations regarding the used methods and set up, which is often very time and resource intensive.

2 Current Approach

Based on an existing case study we want to line out why there is a need to create a Living Lab for participatory user experience design. The case is a mobile GIS (geographic information system) application for pedestrian navigation. The goal was to elicit which information the end-users need on the PDA, when they need it, and how it should be presented.

Figure 1 below shows the current analogue scenario: the end-users scribble their design input on a device representation, which we call the “PD device”. In this case end-users scribbled geographical information requirements during the conduction of a navigation task in the field. At every decision point during their walk they designed the according screen. The designs of the different users have been photographed, analysed and the final design has been derived.



Figure 1: Left: The analogue foam board prototype – the analogue “PD device” - with scribbled GIS information. Right: End-user in PD session scribbling information & user interface requirements.

The main drawbacks we experience with such solutions are:

1. Test participants have to come to a certain location.
2. The researcher must accompany test participants.
3. Photographing or scanning must be done to transfer the scribbles.
4. For every scribble there is the need for a “clean” foam board prototype (in this case it was done by erasing the surface; it was possible due to the fact that we covered the foam board prototype with a plastic skin and used a non-permanent marker for scribbling).
5. Participatory design with two users (e.g. who are in a communication process) is impossible.
6. Incentives are handled manually.
7. Limited number of participants.
8. Geographic limitations.

3 PD Living Lab

We believe that moving from analogue to digital PD in a Living Lab can solve most issues lined out above. Figure 2 shows the conceptual architecture of the Living Lab. Researchers can run different PD sessions from interconnected control facilities.

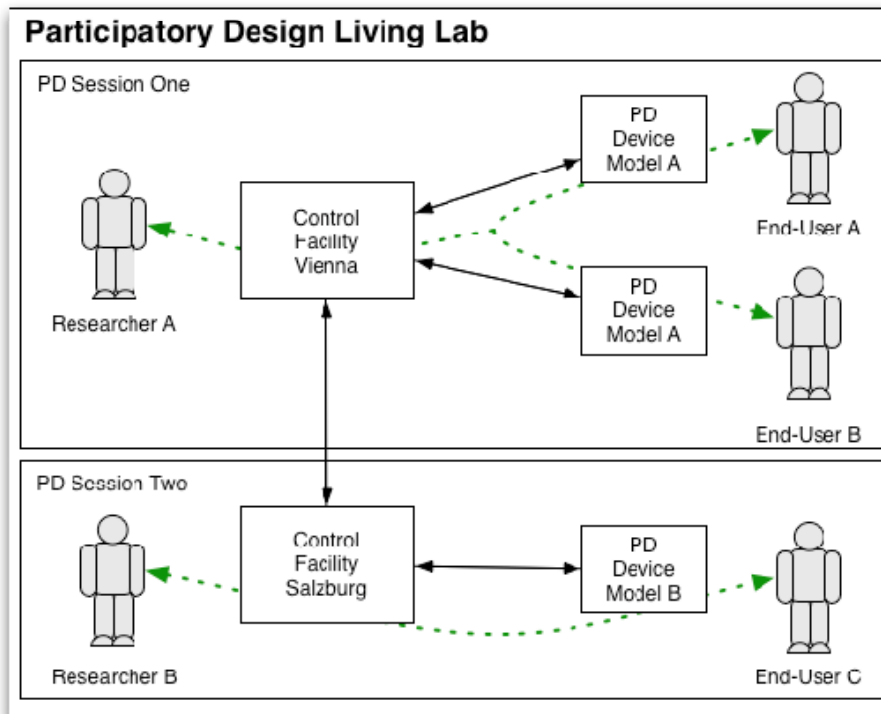


Figure 2: Shows a schematic diagram of the PD Living Lab control facilities with 2 ongoing PD sessions – one with two, one with one end-user. The PD devices are their digital counterparts to the analogue PD device shown in Figure 1. The dotted lines visualize the human communication during the sessions, either between the researcher and the end-user or between the end-users among each other.

The Living Lab will support User-Driven Innovation in the early stages of idea generation and overcome current limitations through:

- OTA (over the air) remote access to end-users with innovative potential including possibilities to remotely provide incentives for participation.
- URM (user relationship management) will enable researchers to select the 'right' people for the right job depending on specific usage criteria.
- Advanced methodology (including tools & infrastructures) for involving users in the ideation phase (quantitative and qualitative methods such as digital probing or ESM).
- Geographically dispersed testing facilities (based on two usability laboratories: one at the ICT&S in Salzburg and one at CURE in Vienna).
- Qualitative remote tools for methods such as diary study and cultural probes can easily be implemented in the generic PD Living Lab framework.

3 Conclusion

Participatory design is easy to conduct when it is done the analogue way. Pushing PD to the next level means to go digital. Done so, we expect to be able to exploit much more of the potential of PD. The concept we lined out solves some serious issues – most of them relate to

methods or to invested resources. Providing optimized methods & infrastructures in the appearance of a Living Lab will allow cheaper and faster research results based on end-user input. We believe a PD Living Lab will strengthen user experience research in general as it leaves more room to concentrate on the methods & research and not on tools & infrastructures.

Acknowledgements

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Piopl

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1 Background

As part of the Danish engagement in the development and implementation of user driven innovation methodologies, the Danish Enterprise and Construction Authority has co-funded the development of a new innovative tool supporting user involvement in innovation. The tool is called “Piopl” (see www.piopl.net)

2 Piopl: the people involvement and innovation platform

Piopl is a Web 2.0 application for facilitating user-driven innovation, co-creation, product or service improvement, change management, user research and similar processes that benefit from group interaction and sharing. Piopl helps companies, government agencies, and researchers involve users in capturing, organizing, and discussing their observations and insights using pictures, video, and text.

Piopl is a powerful tool to help you gain insight into people’s experience with your product or service that can then be fed back into the development cycle. It is a critical tool in these lean times to help companies ramp up their research capacity, speed up their processes, involve users in the design process, and compensate for cut travel budgets,

Piopl provides a secure, closed site where a facilitator or “host” can set up activities around a topic or theme. They can then invite participants and ask them to submit their observations in the form of text, video, or photos. The host can then engage participants with this content using various activities such as tagging, prioritizing, and organized discussions.

We’ve taken a host-facilitated process flow and layered it on top of a familiar social networking environment, opening up new potential for scaling up your discovery processes and engaging your end users wherever they may be, via the web or their mobile phone.

3 Benefits

For example, rather than just giving participants a journal and a camera, and hoping they come back with interesting observations, piopl lets you see the data as it arrives, in real-time, enabling a more dynamic workflow. If the information coming in doesn’t seem relevant, you can redirect participants or rephrase the activity to yield better results.

Piopl also allows participants to engage and collaborate with one another in ways that weren’t possible before, and they don’t need to be in the same room, the same city, or even the same time zone. Some people are using piopl to compensate for travel budget cuts they are experiencing in their departments.



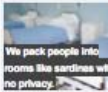
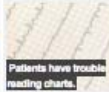

pipl
Cancer Care
 How can we provide the best patient experience in cancer treatment?

Logged in as ezra | Profile | Admin | Help | Log out
 Host
 Ezra
 ezra@pipl.net

Overview **Responses** People Comments Messages Just in

Cancer Care

Activity: **What makes patients feel uncomfortable?** Do activity
 20 responses from 9 participants

 I hate waiting.  These hallways put me to sleep!  We pack people into rooms like sardines with no privacy.  Patients have trouble reading charts.  Who knows where these people are going or what's wrong...



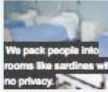
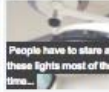

[More results](#)

Activity: **What do people want?** Do activity
 33 responses from 9 participants

boring charts children **comfort** confusion drugs flowers fresh air fresh food fruit turn
 gourmet greasy hallways **healthy food** hope interior kids **light nature** pits play
 progress simplicity space technology toys trees vegetables views







[More results](#)

Activity: **What is the biggest problem that we can address?** Do activity
 11 responses from 7 participants

 It's pretty boring to walk through the hospital.  These rooms are not very pleasant.  We pack people into rooms like sardines with no privacy.  People have to stare at these lights most of the time...  These hallways put me to sleep!




[More results](#)

Recent observations

 We should strive to be leaders in high tech and comfort...  I read this great book by Robin Guarner and Gail Vittori...  This is a crazy idea but maybe we could take some...  Here's the hospital I used to work at: Bronson Methodist...  These guys seem to have out some nice daylight in their...  Now here's a movie watching experience!

[All observations](#) [Add observation](#)

Signals

 Thomas is the most active commenter in this project with 5 comments.
 Ezra has made most observations with 7 in total.
 Thomas has completed 7 activities and Ezra has made 15 responses to activities.

The most used tags are: light, comfort, healthy food, fresh air, nature

Figure 1: Pipl screenshot

Capturing behavior that occurs infrequently or privately is now easier giving you the potential to gain access to insights that would be more difficult to develop with other methods. Once you collect it, you never have to worry about server space or backup since even enormous amounts of data are held for you on our server. Your data is yours and is kept completely confidential.

Pipl is ideal for:

- product design and innovation projects
- public sector service improvement
- cultural probes and user studies

Pipl helps answer questions like:

- how do people use our product or service?
- how do people feel about our product or service?
- how can we improve our product or service?

The workshop participants will in this presentation, through examples and background explanation, learn about the new possibilities for engaging users in different way, at different points in the innovation process.

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www.owela.vtt.fi

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