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Open Design Spaces Supporting User Innovation: Perspectives and Challenges

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Introduction

“End-users, as owners of problems, bring special perspectives to collaborative design activities that are of special importance for the framing of problems. The ‘symmetry of ignorance’ requires creating spaces and places that serve as boundary objects where different cultures can meet. Boundary objects serve as externalizations that capture distinct domains of human knowledge, and they have the potential to lead to an increase in socially shared cognition and practice.” (Fischer 1999)

The successes of platforms like Wikipedia, Facebook Apps, Yahoo! Pipes, Scratch or the whole Firefox Ecosystem are only some examples of the enormous extent of social creativity and user innovation that emerged in the Web and beyond recently. Active communities of users in the role of co-designers are more present and important than ever before. This is amplified by the current trend of evolutionary software design (in Web 2.0 terminology also known as perpetual beta), where systems are subject of continuous development with a constant participation of its users. The underlying socio-technical concepts create the opportunity of designing new and innovative spaces for participation. We call this vision the development of *Open Design Spaces supporting User Innovation*, where people with different interests and cultural backgrounds can meet. The term Open Design Spaces reflects our intention to span across related concepts and visions of different communities and focus on developing and analyzing spaces for user-driven innovation and co-creation. These spaces and places serve as a structure, having a social, organizational, and technical face.

Enterprises, communities and organizations increasingly discover this new way of thinking as a chance to set up new forms of end user integration. By empowering end users to participate and providing spaces for communication and collaboration, user innovation could lead to economic benefits in product innovation and quality improvement and to new business models such as Open Innovation (Chesbrough 2003) or Crowdsourcing (Howe 2006). Affected organizations need to develop concepts and methodologies to manage end user integration and face the upcoming challenges with the aim to tap the full potential of the social creativity of an active community of co-designers.

Dimensions of Open Design Spaces

These issues were addressed by the *International Workshop on Open Design Spaces supporting User Innovation (ODS '09)* that was held in conjunction with the *2nd International Symposium on End User Development (IS-EUD 2009)* on March 2nd 2009 in Siegen, Germany. More than 30 participants from countries like Argentina, Belgium, Denmark, Germany, Italy, Norway, the United Kingdom and the US took part in the workshop. Several dimensions of Open Design Spaces were discussed, such as:

- Who participates and how is participation legitimated?
- What design activities should be supported – creating ideas, creating solutions?
- What are the roles, incentives and motivations of the participants?
- What are the underlying ideas and how are they realized in concrete (social & technical) systems and methodological approaches?
- How to evaluate user participation and validate user contributions?

- How to deal with specific challenges such as long-term or massively distributed approaches?
- How to manage and integrate user participation in business?

Accordingly, one major interest of the workshop has been the cross-fertilization of the different perspectives on the topic, identifying similarities and differences, deducing common patterns, good practice solutions and, last but not least, discussing new opportunities of realizing *Open Design Spaces* in times of Web 2.0 and Social Software. The main focus of the workshop was on winning users as an active community of co-designers – including user acceptance, quality improvement, efficient processes, and economic benefits?

Perspectives on Open Design Spaces

Six presentations by workshop participants were held during the workshop, starting with an invited talk and continuing with five presentations focusing each on another topic related to Open Design Spaces.

Pelle Ehn was invited to give an introduction on Open Design Spaces from his point of view. To Ehn, Open Design Spaces are either a place, environment, area, or platform to create “things” based on creative commons and supported by open ended infrastructures, architectures for creative production, living labs, or similar. “Things” can be governing assemblies and places, collectives of humans and non-humans, or events in the life of a community. Unlike design artifacts being participating representatives, Ehn considers “things” as socio-material assemblies.

Liesbeth Huybrechts, Tanguy Coenen, Thomas Laureyssens, and Priscilla Machils discuss the role of *boundary objects* in participatory design processes. They observe that designers and technology developers go out to be engaged in activities in the field. Like impressionists in the 19th century, they leave the closed environment of their studios and design labs in order to get in direct contact with open, living spaces. However, the opportunities offered by new media and technologies also shape the way the spaces are structured and represented.

Interested in participatory design processes, Huybrechts et al. take up the question of structuring and representing such spaces by studying practices of *mapping* in design projects. They show that mappings can serve as boundary objects since they are plastic enough to be viewed or used differently by several communities and stable enough to serve as interfaces between these communities. Therefore, mapping practices are essential methods for collaboration as they allow knowledge sharing in open, living design spaces. The authors describe the application of such boundary objects in different use cases and discover that a hybrid set of boundary objects can be used for communication between different communities and users.

In line with the observations of Huybrechts et al., *Michael J. Huber, Ulrich Bretschneider, Jan Marco Leimeister, and Helmut Krcmar* present a classification of tools and functionalities that can be used to support creative processes within *Communities for Innovation*. Their theoretically based analysis focuses on the domain of software development with the aim of fostering collaboration and creative activities that lead to new ideas and ultimately result in customer-driven innovations. Huber et al. emphasize the importance of opening up innovation processes, especially for small and medium sized software companies. This approach is often referred to as *Open Innovation* (Chesbrough 2003). It suggests that innovations should not be developed exclusively within the borders of one company but should be co-created in networks of heterogeneous stakeholders. Similarly, *Tobias Schwartz, Johanna Meurer, and Gunnar Stevens* interpret Open Design Spaces mainly as places for Open Innovation that enable contact with new ideas, knowledge, or technologies created by others. By means of a case study, they show how a software company can get in contact with external knowledge and successfully adopt it.

Living Labs are also strongly related to Open Design Spaces and Open Innovation as they are usually characterized by user-centric environments for open innovation that support the early and continuous involvement of users (Schaffers et al. 2007). *Asbjørn Følstad* reports on co-creation through user feedback based on the RECORD Living Lab. This Living Lab is based on a panel that includes about 3000 potential respondents and serves as representative sample for Norwegian Internet users age 15-40 years. Combining a panel and a Living Lab approach, the RECORD case provides interesting insights how these two might enrich each other.

Finally, *Jörg Niesenhaus* classifies several forms of user involvement in the development of digital games. Since user involvement in game development has already some history, possible adoptions of successful concepts to non-gaming contexts were discussed. Niesenhaus points to concrete examples where gamers successfully took part in game development and improvement.

Future Challenges of Open Design Spaces

The workshop closed with a panel discussion on future challenges of Open Design Spaces. One line of discussion was concerned with challenges regarding the implementation of Open Design Spaces. Some important issues identified are:

- Openness and structure need to be balanced to provide space for both creativity and guidance. Too much openness can, however, overburden users. Vice versa, too much structure and guidance can limit their creativity.
- Users should be involved from beginning to end in order to enable them to be competent co-designers. All team members must be aware of a possible increase of time-consuming discussions.

- There is a need for a common language between users and developers as they have different mental models. This could lead to a conceptual design vocabulary that is sufficiently expressive and equally understandable to users and developers.
- Design artefacts (e.g., layouts, protocols, drafts, objects, prototypes, etc.) and design environments should enhance team communication and play a key role in the implementation of any Open Design Space. Collaboration environments are vitally important.

In a second line of discussion, economical challenges were raised. It was asked how economical benefits and a return of investment can be ensured in the implementation of Open Design Spaces:

- Cost-benefit models need to be developed providing metrics how to evaluate qualitative effects (e.g., higher user experience).
- Investigating Open Design Spaces in long-term studies is crucial in order to get a better understanding of the economical benefits.
- Real user innovations need to be identified and evaluated.
- The integration of externals (e.g., customer, subcontractor, etc.) requires a special consideration of trust and economic issues.

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References

- Fischer, G (1999): ‘Symmetry of Ignorance, Social Creativity, and Meta-Design’. *Proceedings of the 3rd ACM Conference on Creativity and Cognition*, pp. 116-123.
- Chesbrough, H. (2003): *Open Innovation*. Harvard Business School Press, Boston.
- Howe, J. (2006): The Rise of Crowdsourcing. In: *Wired*, vol. 14, no. 6.
- Schaffers, H.; Guerrero Cordoba, M.; Hongisto, P.; Kallai, T.; Merz, C.; van Rensburg, J. (2007): ‘Exploring Business Models for Open Innovation in Rural Living Labs’. *Proceedings of the 13th International Conference on Concurrent Enterprising*.