

Doctoral Consortium

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ABSTRACT

The purpose of the doctoral consortium is to provide a discussion place for Phd candidates to present and critique their work together with established researchers in the field. This year's candidates were selected for their strong backgrounds in the participatory design field, some in terms of research objectives and others for their use of participatory project methods.

PARTICIPANTS

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Computer Supported Cooperative Work in Clinical Practice

This Ph.D.-project is a cooperation between Aarhus University, the hospital for Aarhus County and a large Danish software company. The primary objective of the project is to provide an understanding of the closeknit cooperation between healthcare professionals at the hospital and to utilise this knowledge to design a prototype for supporting this cooperation. This prototype will become a substantial part of the design requirements for a major re-design of a large mainframe-based Hospital Information System.

From a research perspective the objectives are to engage in a Participatory Design (PD) effort in product development and to learn how the cooperative design strategies can be brought into play in such a development project. Furthermore, the aim is to investigate how ideas and theories from the research field of Computer Supported Cooperative Work (CSCW) can become more design-oriented. The exact nature of the CSCW field and the object of investigation has been much debated, and it has been claimed that the field is lacking a perspective and interest in design in general, and thus has had no major impact on actual design. Nevertheless, CSCW shares with PD an emphasis on understanding the work-practices of an

organisation in order to develop computer support for this work, which is promising from a PD perspective.

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Design Artifacts

The central concept in my Phd project is "design artifacts". The project includes a focus on how these artifacts, ranging from theories and methodologies to specific tools, carry the seed for the design process and the resulting computer system. I also focus on the dialectical relation (conflict/discrepancy) between prescription and actual praxis. In particular I treat the relation between methods and the development of actual design competencies together with the relation between object oriented programming methods and the Scandinavian ideal for user involvement.

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Knowledge Structure and Knowledge Transfer

The project is an analysis of the profession of systems analysts/developers. I focus on the structure of knowledge, the transfer of knowledge and the relations to other key actors, as seen from the systems analysts. The starting point for this project was an interest in revealing whether certain types of knowledge were more central in the process of building new information systems, and furthermore, how different types of knowledge are being used.

The project has used a qualitative approach, interviewing 44 systems analysts in more than ten different organizations. It compares the practices of the systems developers with the more theoretically oriented systems literature. It also includes a survey of the use of formal methods in Norway and how Norwegian companies formally handle relations with users.

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In *PDC'96 Proceedings of the Participatory Design Conference*. J. Blomberg, F. Kensing, and E.A. Dykstra-Erickson (Eds.). Cambridge, MA USA, 13-15 November 1996. Computer Professionals for Social Responsibility, P.O. Box 717, Palo Alto CA 94302-0717 USA, cpsr@cpsr.org.

Development, Selection and Adaption of domain-oriented Systems

Domain-oriented systems are commercial software products (package software) developed for a domain. For the development of domain-oriented systems it is necessary to investigate work settings specific to that domain in several organizations. The work settings usually have a lot of similarities but there are also some differences. Domain-oriented systems should be able to handle these differences which means that on the one hand they need to be general enough to capture the generic tasks of the different work settings. On the other hand however, they should be tailorable for specialized ones in a particular organization.

In my thesis the first step is to develop a characterization of the concept of a domain where the primary focus is on the work tasks of the domain experts. The second step is to use the developed characterization to support developers designing domain-oriented systems which can be tailored to specific use contexts and to support users selecting and adapting domain-oriented systems. The background of my work is a one year cooperation project with a hospital.

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User-participation in Tailoring

The general problem addressed in this thesis is how to bridge the gap between developers and users of computer systems. This is motivated by an interest in empowering end-users to participate in the process of adapting (tailoring) their computer systems at a time and place chosen by themselves. The problem is approached by first showing that there are two incompatible aspects of a computer system: (1) a system-of-codes, and (2) a system-in-use, and then arguing that if the gap between these two aspects is not bridged end-users will be under the control of the people who have constructed the system-of-codes (primarily programmers and software engineers). This is particularly relevant in situations in which programmers and end-users have had little contact during the system development process. An approach for how to solve the problem is proposed. It is a new method for system development which results in giving end-users potential access to the parts of the system which have to be addressed in order to tailor it.

The method answers the following questions in the context of the system-in-use: (1) Where can I make changes, what have already been done?, what can I do?, and how can I do it? It is argued that this approach will help users regain control of their computer systems. Techniques from object-oriented programming have been used to make sure that the changes done by end-users will not destroy what already works. It therefore supports end-users in making safe, understandable extensions to their own computer systems.