Communicating Quality

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INTRODUCTION

The notion of quality-in-use, comprising aesthetical, ethical and constructional quality aspects of actual IT use, is a way of approaching the question of what it means to design "good" IT artifacts. We claim that a repertoire of quality-in-use examples is a necessary basis for well-founded design decisions as well as assessments.

The Qualitheque (http://qualitheque.ics.lu.se) is a virtual forum for the professional IT community to communicate such quality-in-use examples. In concrete terms, the Qualitheque is a place on the Net where visitors can browse and debate multimedia re-presentations of computer systems in use. We invite workshop participants to investigate examples already existing in the Qualitheque and bring their own examples of quality-in-use. The workshop will be used to compare, contrast and otherwise analyze the different examples with the aim of reaching a better understanding of what quality-in-use means and how it may be re-presented, constructed and debated. And ultimately used to design IT artifacts for quality-in-use.

Quality-in-use

In systems development and software engineering, notions of product quality and process quality are routinely used to assess the value of an IT artifact. However, both of these perspectives are severely limited in that they scarcely address the real use context. The limitations become more apparent as information technology turns into a tool or medium for social use, in work settings as well as at home. To understand the interplay between the artifact, the user's individual experience and the social context in the actual use situation is essential for well-grounded systems development.

The participatory design movement of the 70s and 80s can be partly understood as an attempt to bring integrative perspectives on the use situation into the development process, but there were few concepts for capturing the experience and abilities of the designer in the domain of IT innovation and assessment.

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.

Activities before the workshop

Prospective participants are adviced to submit a short written presentation of an IT artefact in use, in which the aspects of quality-in-use are emphasized. The exhibits in the Qualitheque can serve as indications of what would be deemed appropriate in terms of contents, if not in presentation and size.

Before the workshop, each participant studies the presentations and browse the exhibits in the Qualitheque concentrating on the different ways of discussing and re-presenting quality-in-use

Activities during the workshop

The workshop will be organized in the following way:

A. Presentation of the Qualitheque and the ideas behind.

B. The participants study the presentations and browse the exhibits in the Qualitheque concentrating on the different ways of discussing and re-presenting quality-in-use.

C. Exhibits from the Qualitheque, the submitted presentations and the notion of quality-in-use are discussed with the overall goal of constructing a better understanding among the participants and highlighting relevant issues. A tentative list of discussion topics might include:

- What is quality-in-use?
- How can it be re-presented?
- How do aesthetical, ethical and technical quality aspects interrelate?
- How do we tell a good example from a not-so-good one?
- How can a designer build a repertoire from re-presentations?
- How can a collection of examples be used in designer education?
- How does the notion of quality-in-use relate to other empirically oriented techniques of inquiry (ethnography, activity-theoretical studies, etc.)?

D. Participants will be asked to present an IT artefact in use, in which the aspects of quality-in-use are emphasized. The exhibits in the Qualitheque can serve as indications of what would be deemed appropriate in terms of contents, if not in presentation and size.

The immediate deliverables of the workshop include a discussion for publication in the Qualitheque. On a slightly longer time scale, the workshop participants are invited to revise and extend their initial submissions and publish them as exhibits in the Qualitheque. The results from the workshop should be most valuable guidance in doing so.

Administrative details

The workshop will be limited to 24 participants. Participants can register for the workshop before the conference by sending an e-mail to editors@qualitheque.ics.lu.se. Prospective participants who submit a short case description of an IT artifact in use to the same adress have priority. Selected participants will be notified no later than the 1 of November. At the same time, they will receive copies of all the recieved submissions.

An In-depth Look at a Participatory Design Method: Projective Expression through Image Collages

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ABSTRACT
In response to feedback from participants in the workshops conducted by the first author at the two previous PDC conferences, we decided to focus on one of the methods we use frequently to uncover the more emotional components of user needs. We call this method Projective Expression through Image Collaging. Our intent this year is to help the workshop participants learn how and when to conduct it on their own. We also plan to use the workshop as a forum for further exploring the uses of this technique, and for exploring the ways by which to analyze the data that emerge from its use.

Keywords
Participatory design, projective, image, collages

PROCEDURE
The workshop will begin with a 20-minute presentation of Image Collaging as a participatory design research method. We will show how this method has been used early in the design development of many types of products, systems, and spaces. Through examples, we will also discuss the situations and places in the design development process where we have found this set of tools to be most appropriate and effective. We will also provide a brief explanation of how to use this method in conjunction with other methods (both traditional as well as participatory).

The remaining two-and-a-half hours will be a learning-by-doing experience in which workshop participants will learn how to design, implement, and analyze the use of an Image Collage tool kit. We will first focus on how to create an appropriate image collaging tool kit for a given design situation. We will then use previously existing collage data to provide an in-depth look at the data analysis and interpretation stage.

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In Part One, we will introduce a hypothetical design inquiry such as the design of information organization and management tools for knowledge workers. (The topic will be one for which all workshop participants could possibly be actual research participants.)

Participants will:

- define the questions they hope to answer through the research (and specifically through this method);
- choose appropriate tool kit "parts" for a given set of respondents. The educated selection of the words and images in the development of this tool kit is crucial to its success. We will discuss guidelines for putting together the right set of "parts" and;
- draft a discussion guide for the moderator using the tool kit. We will focus on the mood and language that elicits the most effective and in-depth response from the respondents, both in a one-on-one and group setting.

In Part Two, the participants will segregate into teams and be given a real data set to analyze. Some of the more lengthy steps from the process of summarizing the image collaging data will already have taken place before the workshop (*e.g.*, data frequencies, transcripts of verbal protocols, key words in context, etc.) Workshop participants will use the summary materials provided to analyze, draw interpretations, and develop design criteria from the data. Each team will then present their findings and a comparison of the team findings will take place.

We would like to end with a group discussion about other ideas for analyzing the data that emerges in the use of image collaging tool kits. As time permits, we would also like to extend the discussion to ideas about new additions to the image collaging tool kit, as well as ideas about new situations of use.

PARTICIPANTS
Because of the "props" needed in these methods, it will be necessary to limit the number of participants to about 12. People with any kind of background are welcome.

RESULTS
Instruction in the preparation and analysis of a new participatory method: teamwork, hands-on-learning, fun!

Unemployment by Design: Participatory Design and the Changing Structure of the Workforce in the Information Society

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The aim of this workshop is to discuss the changes taking place in national employment structures, and relate these changes to the changing intentions and practice of participatory design.

Participatory design was a means

- to add social perspectives to the technology centered design by inventing the „user" (Langefors)
- to negotiate social and technical perspectives aiming at a fair compromise (Mumford/Hawgood/Land)
- to add task perspectives during the design process rather than afterwards (Ciborra)
- to integrate user representatives in the managerial planning and decision process of system design (Sandberg)
- to shift power from external involvement by representative bodies (shop stewards) to the internal involvement of employees themselves (Bjoern-Andersen; Kubicek)

The European approaches (Scandinavian, German, British, French, Italian) in the seventies and eighties were based on debates about the political bias (democratization versus alienation and expropriation) and the functional bias (user-centred systems versus efficiency) of systems design. Some saw users taking part in design as hostages of the development process (Ehn/Sandberg) others saw them as partners in a negotiation process (Hawgood). But generally, the aim was to strengthen industrial democracy and to increase the quality of working life (Clement & Van den Besselaar).

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Today, the focus of the discussion has changed, and we discuss methods for how to explore work practises including tasks, workflows, artifacts, interactions, mental models, and metaphors.

We do this through context inquiry, participatory research, ethnography, in-depth study, speaking aloud, and so on. Designers behave in organizations and work practices - late chairman Mao described it - "like fish in the water".

Participatory design as a design methodology and the corresponding methods and tools seem to have changed from „political instruments" to „apolitical tools".

The legitimization of this change can partly be found in the idea that improving the quality of working life, the return to skilled work, and the participation of the workforce, is a necessity in a modern globalized economy (Piore & Sable). If that is true, and if 'das Ende der Arbeitsteilung' (= end of division of labour = Kern & Schumann) is approaching, the changed role and content of participatory design is adequate. If not, we have to rethink participatory design strategies, approaches, and tools again, from an emancipatory perspective.

To clarify this issue, empirical research is needed into the changing structures of the workforce in the developed world. Are skill levels rising? Is autonomy rising? Are 'business process reengineering', 'lean production', 'total quality management', and other modern management strategies dependent on a highly skilled, empowered workforce? If so, are these developments the same for all groups on the labour market? What about the 'tele- or distance workers', what about the dual labour market, and about industrial relations, social security, and the welfare state?

The role of workforce has changed dramatically during the last thirty years. So has the interaction between designers, users, and employers, the goals, and the quality of methods in system design. Participatory design needs a new basis taking the actual developments into account. The following questions arise:

On the macro level

1. What are the trends in employment structure, the labour market, and industrial relations in modern information societies?
2. Are the promises of 'the new industrial divide (Piore & Sable), and 'das Ende der Arbeitsteilung' (Kern & Schumann) becoming true?
3. Have the context and the constraints for participatory design changed?

On the micro level

1. Has participatory design lost its emancipatory stream? What are the effects of participatory system design for working life - unemployment, amount and quality of jobs, self-determination, salary ..?
2. Were the first participatory design approaches naive social romanticisms based on an optimistic view of society? Are we more realistic now; is the actual use more appropriate for those involved in design?
3. Is participatory design a fiction or a fact in system design?
4. If „users" are nothing but an invention of designers and researchers, what new interplay of different roles and attitudes leads to co-constructed systems?

In this workshop we discuss the trends in the level and structure of employment, the changes in industrial relations during the transition to the 'knowledge-intensive information economy', and rethink the possible role and content of participatory design within this context. The result should be a set of statements about actual and future participatory design as a human-centred approach. In the workshop, reports from different countries will be given as a basis for discussions. We would like to explore the above-mentioned changes through participation and dialogue.

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Participatory Design of Open Organizations

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ABSTRACT
This workshop provides an introduction and discussion of processes for involving a software development organization's people in the redefinition of its values, roles, and procedures. The workshop introduces a key part of our participatory organizational self-definition process and incorporates time for participants to try the process out and discuss their reactions to it.

We start with an overview of the whole process, discussing the issues which get in the way even when management supports creating an open organization. We show how to enable participatory design by creating conversations which allow people to recognize and address process issues. We introduce the idea of using the organizational designs to derive values participants can believe in. We end by discussing how to create role definitions which make explicit how the role maintains the value of the organization, and what procedure is to be followed when a value might be violated.

The workshop is organized as a mix of presentation, group work, and open discussion. We will use a case study from our own work to introduce parts of the process, splitting into teams to allow people to practice applying them to problems from their own home organizations.

Workshop Description

- *Introduction to organizational self-definition:*
  We discuss the problems that get in the way of participatory organizational design, drawing on participants' experience of organizational change. We show how the techniques we will cover fit into an overall approach to involving people in designing their own organizations.
- *Organizational metaphors:*
  We introduce the role of metaphors in helping people see process: the process they are in, their organizational context with respect to the rest of the company, and alternative processes they might adopt.
- *Exercise: Using metaphors*
  Participants brainstorm key issues for software development organizations that they want to address. We break into teams to develop metaphors for software development organizations which address these issues, and use them to envision new organizational structures.
- *Using visions to derive values and roles*
  We discuss the derivation of values and roles from organizational visions. We describe the advantage of such an approach in making values concrete. We introduce a structure for defining a role, including the role's responsibilities, identification of how the role supports the values, definition of the role's sphere of independent action, and explicit definition of what procedures are triggered when the role acts against the values.

  We share and discuss the organizational visions the teams developed. Together, we identify the values each vision implies, and derive a set of role definitions from the vision.
- We end with an open discussion of the use of these techniques in defining open, values-based organizations.

The Presenters
Karen Holtzblatt and Hugh Beyer are co-founders of InContext Enterprises, a firm specializing in process and product design from customer data. Holtzblatt is the inventor of Contextual Inquiry, an approach to collecting data about how people work from them as they work. Together, Holtzblatt and Beyer have developed CI into a full product design process, and have also used CI principles to drive the design of organizations to meet the needs of their clients and of their people. Having worked extensively with software development organizations on their design process, they are now using techniques such as those presented in this workshop to help clients design the basic structure of their software development organizations.

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How can Participatory Design practice be taught?

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ABSTRACT
Participatory design is characterized by diversity both as a field of research and as a work practice. For many of us, it seems self-evident that designing good quality systems calls for work in close contact with those people who will be using the systems in the future. However, there are a multitude of different approaches and methods within participatory design practice.

How should participatory design practice be taught in educational programs for systems designers? How can past experience of and practical skills in participatory design be handed on to students of systems design? How can we enable students to engage in and further develop high quality participatory design practice?

These questions are important and need to be brought up for discussion in systems designers classes. Part of the answer seems to be that the students also need to be given opportunities to practice participatory design in real life situations.

In this proposal for a workshop about Participatory design in university courses we invite those of you who are interested in these questions to a session of discussions and sharing of experience in this area.

THE RONNEBY EXAMPLE

In Ronneby, Sweden, we are working with a master program called *People, Computers and Work*. The focus in this program is on analysis of work practice related to IT artifacts and on design of artifacts for cooperation and learning. In many of our courses we integrate the disciplines Computer Science and Human Work Science. One important aspect in the study program is that the students repeatedly practice and learn to use different ethnographic methods to study work.

People, Computers and Work is influenced by the so called Scandinavian approach, of which participatory design is an important part. From the first semester onwards, the students do field studies in work places. These field studies include observation, description and analysis of work and, from the second year onwards, user-oriented design of alternative IT solutions. In this way, participatory design practice is introduced early on and stressed throughout the study program.

During this workshop we will briefly present our own experience from two courses where we have tried to work explicitly with participatory design aspects. These are the courses *Computers and learning* and *Computers in use.*

Computers and Learning

During 15 weeks of a full time one semester course on Computers and learning, the students become IT-competence mentors in a work place. This means that the students take on responsibility for helping users solve IT-related everyday problems in a school, a library or some other workplace. The students may start their mentorship by helping the users with simple problems, or supporting users who are learning to use a new program, or finding a useful program for a specific context, such as teaching mathematics on a certain level.

During the IT-competence mentorship period students and users together identify a relevant area in which to develop a prototype of some kind. The development work is done in close cooperation with the users.

Computers In Use

During the first year of the *People, Computers and Work* program, the students spend half their time learning to work with systems development tools, mainly focusing on Object Oriented Analysis and Design, using Small Talk as their main programming tool. The rest of the time during the first year they learn about and practice ethnographic methods for doing field studies of work practice. By the end of the first year, they will have completed a project based on their own experience of using and reflecting on methods for this type of field studies.

The second year starts with a 10 week course where the students are expected to actively integrate understanding acquired through an ethnographic field study of a work place with design and rapid prototyping. Participatory design aspects are used as one way of bridging the gap between studying work practice and doing actual design work. The students are instructed to base their prototyping in a use situation and to develop the prototype in close cooperation with the users.

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THE ORGANIZATION OF THE WORKSHOP

During the first hour of the workshop, we plan to have the participants (including ourselves) give a brief presentation of their own experience of applying a participatory design-perspective in education. The rest of the time we will discuss and reflect on using and developing participatory design practice in teaching systems design. How we choose to organize these discussions will depend on the number of participants.

The Politics of Knowledge: Participatory Design and the Location of Expertise

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Participatory design has strong roots in struggles for workplace democracy, but the politics of design has grown more difficult. The initial premise that the knowledge of those doing the work must be recognized and incorporated in design intended to affect the work has not proven to be consistently achievable, and while the resistance may emphasize that knowledge is inherently political, it also shows how much design is part of industrial politics. Then, too, our understanding of the workplace as polity has grown more complex, recognizing that workers may not be unified or have identical interests, mirroring the nature of politics in the world at large (Bjerknes and Bratteteig, 1995). The location of both designers and intended users in corporate organizations clearly embeds both in corporate politics, and yet it is unclear exactly what an organization is or how its politics might work (Orr, 1995). It is both necessary to identify the powers and interests of different factions around a design problem and very difficult to do so.

In some sense, an emphasis on participatory design is an attempt to escape the politics of location. One of the basic premises of participatory design is the assumption that designers and those for whom they design can produce useful artifacts together once the cooperative relationship is established. However, designers work to a brief established by management that may include presumptions about where expertise is and where it should be. Intended users who have been repeatedly told by those more powerful that they are simply following rote instructions may not acknowledge their own understanding and expertise, nor is there any good reason that they should cooperate in an enterprise designed to relocate their expertise to an expert system or telephone hotline.

Some workers recognize the power inherent in their own knowledge. In Crowfoot's experience, a community successfully resisted attempts to disseminate its particular knowledge to other parts of the workplace by helping to produce a sufficiently arcane artifact that no one outside their community could make sense of it (Crowfoot, 1991). From the perspective of the enterprise as a whole, it would have made sense to have the knowledge more generally available, but this might well have cost the jobs of those presently performing that function.

The project discussed in Orr, 1995, was based on fieldwork suggesting that real expertise resides with those doing the work, although the common corporate assumption is that knowledge is located in the center and needs to be delivered to the periphery. The principal goal of the project was to assist the circulation of local knowledge and avoid appropriation or other interference from the center. This was relatively successful, but the corporate assumptions remain substantially unaffected by this example.

We see these issues as part of the politics of knowledge. We are particularly interested in questions such as what counts as knowledge, who is acknowledged as knowing and under what circumstances, and how questions of design deal with these issues of knowledge within the organization with reference to the desired location of expertise. We have come to these questions from our own experiences in ethnography and design, and we suspect we are not alone in these experiences. We invite you to come discuss the politics of knowledge with us in our workshop.

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