

Hands-on experience with design games in collaborative design

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1. WORKSHOP AIM

Participatory Design has many similarities with playing games. Both are social enterprises, evolve over time and are based on a set of rules. When playing a game the rules set the boundaries for what is possible and structure the play of the game. In designing, the assignment, the resources, the designer's and other participant's roles and responsibilities and ways of working establish, like game rules, the boundaries for the work. In both playing games and designing the rules can be subject to negotiation and change.

Through the course of a number of projects, the workshop organizers have developed a number of design games with the overall aim to facilitate a user-centered design process for cross-disciplinary design groups early in the design process. The goal of this workshop is to provide hands-on experience of these games and other games or game-like activities introduced by the workshop participants, and discuss what role games can have in participatory design.



Figure 1. Design games.

2. USING GAMES IN DESIGN

The use of games in design is not new. Habraken and Gross [4] present a number of 'concept design games' that were used as a tool for research in design of built environments. They studied designers playing the games in order to better understand design actions and how rules for the design work were negotiated. Games have also been used to produce end results in participatory

design projects. Ehn and Sjögren [2] describe how they introduced games to support participation in change processes in carpentry and newspaper production. In this case the main use of the games was to engage workers in creating a common language, discuss existing reality, investigate future visions and make requirement specifications on aspects of work organization, technology and education.

Our motive for focusing on design games has been the challenges for ICT design posed by the recent changes in the landscape of information technology. Over the last decade new research agendas have formed around notions like ubiquitous computing [6], tangible interaction [5] and augmented reality [7] that take us beyond the technology of the traditional desktop PC. These developments have created an interest in new approaches to ICT design that address the increased contingency of use introduced by mobile devices and ubiquitous access to information and services. Product development increasingly involves several stakeholders apart from users, e.g. providers of infrastructure, terminals and services. Our goal with employing games in participatory design has been to provide multiple stakeholders with means for developing, negotiating and expressing a shared understanding of users, use contexts and technology as part of concept design activities.

In our view, using games as a framework for design activities can contribute in several ways. First, games provide structure to design activities where the rules of the game become a driving force in the dialogue rather than restricting creativity. Arguably, it seems the temporary shift in focus from the goals of the design process, and its current activities and deliverables, to the rules of the game makes it easier to generate design moves. Studies in creativity [3] show that heavy restrictions on idea generation activities actually can improve the outcome, and our experience is that rules in design games can play such a positive role of restriction. Second, by entering into the game the participants also implicitly agree to play by the rules. Arguably, this plays down external factors like power relations or conflicts between participants from the same organization. According to Burns et al [1] games may smooth collaboration in design by making it more independent on credentials: "in this context, members of the design team are removed from their common views and might contribute less self-consciously" (p. 1). Finally, apart from directing design moves to a conceptual level, we believe that the games also contribute to the levelling of stakeholders with different interest leading to a more constructive dialogue. In our view, the development of conceptual design games seems to be a

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promising approach for supporting collaboration between different stakeholders in collaborative design.

3. GET HANDS ON EXPERIENCE WITH DESIGN GAMES

The workshop participants are invited to bring design games to be played in smaller groups during the workshop. As the aim with the workshop is to get hands-on experience with several games the time for playing each design game should last maximum one hour including introduction. The workshop organizers will provide four different design games, which can be played during the workshop. These games are played on a table with game-boards and game pieces, e.g. video-snippets from ethnographic inspired fieldwork, images, or foam models. The aim of each game vary from getting to know the potential users and creating stories them as prospective users and the artefact to be designed, to creating possible futures involving activities, locations, artefacts and landscapes, and generating and exploring possible functionalities.

4. WORKSHOP PROGRAM

Introduction: The organisers introduce the workshop and the participants present themselves (0,5 hours)

Presentation of design games: Each participant present one design game: Aim, game-pieces, how to play the game, and experiences with the game. Five minutes pr. presentation (1,5 hours)

Playing design games (three rounds): The participants are divided into groups and play each other's design games. Three rounds of playing design games are arranged. This will give each participant hands-on experience from playing three design games. (3 hours)

Discussion: Based on the participants hands-on experiences with playing various design games the final discussion address reflections on the games played, including potentials and limitations of using games in design/research projects and or in relation to teaching. (1 hour)

5. INTENDED PARTICIPANTS

The workshop is targeted towards practitioners and researchers who have experience with using design games as part of collaborative design projects. All participants are expected to make a five minutes presentation of a design game. Furthermore the participants are invited to bring design games, which can be played during the workshop and hereby give the other participants hands-on experience with the games. The participants will be recruited on the basis of a position paper (max. 2 pages) or a 2 minutes video describing a design games. Please note in the

request for the workshop if you bring games to be played or not, and if any special equipment is needed.

Maximum number of participants

In order to allow workshop participants to present and try out design games the number of participants is limited to 16.

6. WORKSHOP ORGANISERS

Jörn Messeter has a background in informatics and is currently assistant professor in interaction design at Arts & Communication, Malmö University, Sweden. He is also affiliated as senior researcher with the Space & Virtuality studio of the Interactive Institute in Malmö, Sweden. His main research interests are mobile and ubiquitous computing and collaborative design.

Eva Brandt is trained as an engineering designer. She holds a position as senior researcher at the Space & Virtuality Studio of the Interactive Institute in Malmö, Sweden. Her main research interest is collaborative design processes.

Jacob Buur is a mechatronic engineer. He is professor of User Centered Design at Mads Clausen Institute, University of Southern Denmark, and manager of the Danfoss User centered Design Group. His research includes product development processes and interaction design in industrial environments.

7. REFERENCES

- [1] Burns, C., Dishman, E., Verplank, B., and Lassiter, B: Actors, hair-dos and videotape: Informance design. Presented at Presence Forum (Royal College of Art, London, November, 1997). Paper available at <http://www.presenceweb.i3net.org/papers/frameset.html>
- [2] Ehn P, and Sjögren D: From System Descriptions to Scripts for Action. In 'Design at work' edited by Joan Greenbaum and Morten Kyng, Lawrence Erlbaum Associates, publishers. 1991.
- [3] Finke R. A, Ward, T. B. and Smith, S. M: Creative Cognition – Theory, Research, and Applications. A Bradford Book. The MIT press. 1992.
- [4] Habraken H J and Gross M D: Concept design Games (Book 1 and 2). A report submitted to the National Science Foundation Engineering Directorate, Design Methodology Program. Department of Architecture, MIT, Cambridge, Massachusetts 02139. 1987.
- [5] Ishii, H. and Ullmer, B: Tangible Bits: Towards Seamless Interfaces between People, Bits and Atoms. Proceedings of CHI'97, 1997, pp. 234-241.
- [6] Weiser, M: The Computer for the 21st Century. Scientific American, 265 (3), 1991, pp. 94-104.
- [7] Wellner, P., Mackay, W., and Gold, R.: Computer Augmented Environments: Back to the Real World. Commun. ACM, Vol. 36, No. 7, July 1993.

Establishing the Web of Shared Understanding enabling Cooperative Knowledge Processing in Participatory Design

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ABSTRACT

Establishing a Web of Shared Understanding in human and non-human actor networks performing Cooperative Knowledge Processing (Baskin et al., 1999) requires improving Sense Reading and Sense Giving through the use of i) appropriate Knowledge Representations, ii) care taking of their social dimensions and iii) role of share objects in enabling mutual understanding. The intent of the workshop is to discuss what *appropriate knowledge representation* is and how to take care of its social dimension in Information System Development (ISD) with Participatory Design (PD). Our approach considers the use of Scenarios, Use Cases and Visual Models as Boundary Objects in DEUDU (Design for End User Design-in-Use, see Calzà and Jacucci, 2003).

KEYWORDS

Interaction Design, End User Design in Use, Accountability, Active Knowledge Modelling, Visual Modelling

AIMS AND GOALS OF THE WORKSHOP

Through the workshop, the organizers want to discuss with participants, views and methods to facilitate the design process in PD involving cross-disciplinary design groups by pointing to a few important hints for boosting PD and ISD research success in today's problem areas. Some approaches emphasize the "action" scenarios and their explanatory power, particularly in the design of displays of machines used by humans. Visual modelling coupled to active knowledge modelling enable powerful new approaches, validated by a crucial attention to social issues involved in knowledge representations. The goal of the workshop is to provide experience using these ideas in analysing cases, and to discuss what roles these ideas may have in PD.

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WORKSHOP THEME

Understanding Cooperative Knowledge Processing in PD

As declared in the title, the workshop regards the process of establishing the Web of Shared Understanding enabling Cooperative Knowledge Processing in Participatory Design through scenarios, use cases and visual models.

Contemporary PD has enlarged its historical scope of integrating users and designers of technology to include in the cooperation all kinds of other stakeholders of ISD projects: clients, managers, consultants, financing bodies, etc. The cooperation process to be promoted in current PD approaches consists therefore of a kind of Cooperative Knowledge Processing on the part of stakeholders that is analogous to the one involved in many other areas, such as, e.g., Concurrent Engineering (Baskin et al., 1999), and City Planning (e.g., the ATELIER FP5 EU project).

Understanding Cooperative Knowledge Processing in PD requires re-adjusting system re-presentations to intended human 'sense giving', in order to support the intended subsequent human 'sense-reading' (Walsham, see: ALOIS 2004)

The new word in ISD is Design for Emergent Use (Dourish, 2001): overcoming by design the limitations in use of allowed application scenarios, while enhancing the relevance of situation and context. DEUDU provides a way to re-adjust on-the-go system actions to human intentions. Establishing DEUDU by design on the part of original system designers requires making sense - to human users - of machine actions and of use-scenarios, allowing them to realise at use-time, context and situation induced change.

Understanding Machines: Use Cases as Boundary Objects

Mind the gap in technology-user understanding: use the CS notion of Scenarios, Use Cases and Visual Models as Boundary Objects (Star & Griesemer, 1989) between technology and users in DEUDU (Calzà & Jacucci, 2003). Aim beyond boundary objects for human sense making: the importance of end-user flexibility in innovation processes requires brokering the needs of humans for 'gestalt' and the machines' need for hierarchy.

Action in Language, Organisations, and Information Systems: displays should emphasize system action aspects, in terms of knowing how a system works, its "business" logics, rather than

just its operations. (Andersen, see: ALOIS 2004).

Understand the inter-action between humans and machines, and the relation between IT and organisations: does agency (the capacity to make a difference) lie predominantly with machines (computer systems) or with humans (organisational actors)? (Rose and Jones, see: ALOIS 2004).

INTENDED PARTICIPANTS

The workshop is open to practitioners, researchers (academic professors as well as PhD students) who have had experience in Participatory Design projects. The workshop's aim is to discuss how to establish a web of shared understanding among involved stakeholders (cooperative knowledge processing for PD). Participants are asked to submit an indication of interest (no more than 100 words long) and personal background information. Participants will be selected on the basis of the submitted indication of interest. Selected participants will be asked to submit a 2 pages long case description by July 10, 2004 (you are requested to focus on how different knowledges come into collaboration in a design project and how representations as well as objects play a crucial role in enabling a share understanding among different stakeholders). Such case description will be sent to all selected participants in advance.

Participant are requested for a full day commitment. Workshop is scheduled to take place July 28, 2004 from 9 AM to 18 PM, possibly followed by dinner somewhere in town at your own expenses. During the workshop participant are expected to make a short presentation (about 5 minutes) which will enable further group discussion.

MAXIMUM NUMBER OF PARTICIPANTS

The workshop is limited to 16 participants in order to thoroughly discuss their cases.

SCHEDULE OF THE WORKSHOP PROGRAMME

- *Introduction (9.00 – 9.30)*

The organizers (together with the help of PhD students) present themselves, introduce the workshop and participants present themselves and their backgrounds.

- *Framework Presentation (9.30 – 11.00)*

Theoretical concepts and framework will be presented together with workshop structure and objectives.

- *Design case presentation (11.00 – 13.00)*

Each participant will be asked to briefly present one PD case. The aim of this part is to collect difficulties met in the progress of the project and enabling a web of shared understanding among different stakeholders

- *Lunch and informal discussion (13.00 – 14.30)*

- *Group discussion (14.30 – 17.00)*

Participants will be grouped and they will compare and discuss their experiences on the light of the concepts introduced. The main foci in this part will be: PD issues, problem in Human and

Non-Human interaction, how to model knowledge, opportunities of using visual modeling, use cases, scenario based design and interaction design.

- *Conclusion*

All participants will be involved in a general final discussion with collection of the most important reflections reached and results. A web-blog will be set up as a follow-up.

WORKSHOP ORGANISERS

Theodor Barth, senior researcher at SINTEF Industrial Management, has interests in anthropology and philosophy approaches to facilitate the uptake of ITs by organisations.

Arthur Baskin is IIT's president and technical leader. He served on the faculty of the University of Illinois and as Director of the University's Automation Support Centre.

Frank Lillehagen, responsible for R&D Computas, is chief sw-architect for knowledge modelling and enterprise model-driven ITs at the heart of Process Quality Management.

Gianni Jacucci has a background in physics. He is professor of Information Systems at Sociology, University of Trento, Italy, researching in collaborative design & ISD.

REFERENCES

- ALOIS, 2004. "Action in Language, Organisations and Information Systems", Seminar in Linköping, Sweden, <http://www.vits.org/konferenser/alois2004/proceedings.asp>
- Baskin, A., Kovacs, and Jacucci, G., eds., 1999. *Cooperative Knowledge Processing for Engineering Design*, Kluwer.
- Binder, T., Gregory, J. and Wagner, I., 2002. (eds.). *Proceedings of the Seventh Biennial Participatory Design Conference 2002 (PDC 2002)*. Palo Alto, CA: CPSR.
- Calzà, D., Jacucci, G., 2003. *Use di Use Cases nel progettare sistemi informatici prevedendo la Progettazione da parte degli Utenti durante l'Uso*. Workshop Organizzazione, <http://www.organizzazione.org>, Firenze
- Dourish, P., 2001, *Where the Action Is: The Foundations of Embodied Interaction*. Cambridge: The MIT Press
- Ehn P., Badham, R., 2002. "Participatory Design and the Collective Designer." In: Binder et al. (eds.), *PDC 02, ibid*.
- Lillehagen, F., and Krogstie, J., 2003. *From Enterprise Modeling to Enterprise Visual Scenes*, published in: *The Vision for the Future Generation in Research and Applications*, J. Cha et al. (eds), © Swets & Zeitlinger, Lisse, Proc. Int. Conf. on CE, Madeira, Portugal, July 2003
- Star, S. L., Griesemer, J. R., 1989, "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology 1907-39", *Social Studies of Science*, Vol 19.

Teaching Participatory Design

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ABSTRACT

This full-day invitational pre-conference workshop is devoted to sharing experiences from teaching PD methods, approaches, issues and concerns to students and practitioners. Our experiences stem from teaching and coaching IT practitioners as well as students studying computer science or IT. However, people with experiences gained from working with other professions are also welcome. Short presentations from each of the participants form the starting point of the discussion to which most of the time will be devoted. The intend is not to suggest *the* way of teaching PD, rather we hope that each participant will receive valuable inspiration to help improve his or her own teaching.

Keywords

Participatory design, teaching, students, practitioners.

1. Aims and goals of the workshop

People who have taught PD to students or practitioners from any profession are invited to submit a position paper to the organizers of this full-day invitational pre-conference workshop. The aim is to create a space for reflection among participants with experiences from a wide range of professional areas.

2. Workshop theme and topic

The workshop will focus on teaching PD. By this we mean any situation in which workshop participants have been involved in teaching PD methods, approaches, issues and concerns. For many years we have been giving one semester courses to students and supervised project and thesis work as part of IT and computer science programs. Also, as part of developing a coherent method for participatory design, the MUST method, we have worked with IT practitioners helping them include PD into their repertoire for action. This comprised participatory analyses of their work practices, formal teaching sessions, and coaching during their application of (parts of) our method. Practitioners and academics with all types of experiences from teaching PD and from all types of professions are encouraged to submit a position paper. Experiences may

for instance be related to tools and techniques, coherent methods or didactical and pedagogical issues that proved to be relevant while teaching PD. Experiences may relate to one or a few sessions or to endeavors of any length of time.

3. Workshop plans and program

The workshop will be organized as a mixture of short presentations and longer discussions. Each participant will be given a chance to present key elements of their own experiences and will receive feedback in the form of comments and discussions.

4. Workshop schedule

The workshop is scheduled to take place July 28th 2004 from 9 AM to 17 PM. We, the organizers, will introduce and motivate the workshop. The rest of the day will be organized around the themes highlighted in the accepted position papers. All participants will present their work and time will be set aside for thorough discussions.

5. Intended participants

We encourage practitioners and academics who have taught PD, from all kind of professions to send us a mail with a commitment to participate when they register for the conference. In addition, please submit a position paper, max 5 pages, to us no later than July 14th. Participants are selected on the basis of these papers, so please indicate the context in which the experiences were gained and what they are. In order to admit plenty of time for discussions, the maximum number of participants will be 15 - including the organizers. Workshop participants are encouraged to bring all kinds of materials that will further the discussions.

6. Workshop organizers

The organizers have for many years been involved in teaching and research related to PD, HCI, CSCW and IS. Our book on the MUST method will be published by MIT Press during the summer of 2004. We consider the main challenges when teaching to be the following: Finding relevant literature and helping students combine knowledge obtained from reading with practical experience. As to the literature, please see the list below that includes some of the books and papers that we have used in various combinations over the years. When it comes to helping students establish relations between cases, concepts, and methodological approaches found in the literature on the one hand and emerging practical experiences on the other, we include projects as part of our courses. For these

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projects students find a small organization and conduct a design project for/with its managers and employees. One of the challenges in this endeavor is to find projects that are interesting enough to generate commitment and have the "customer" really participate, and at the same time simple enough for the students to handle. We are eager to learn from the workshop participants about their approaches and experiences with teaching PD.

7. Literature

- [1] Beyer, H and K. Holtzblatt (1998): *Contextual Design: Defining Customer centered Systems*. Morgan Kaufmann Publishers, Inc. San Francisco.
- [2] Bjerknes, G., P. Ehn, and M. Kyng (1987): *Computers and Democracy – A Scandinavian Challenge*. Avebury, England.
- [3] Blomberg, J et al. (1996): *Proceedings of the Participatory Design Conference*. CPSR, Palo Alto.
- [4] Bowers, J., G. Button, and W. Sharrock (1995): Workflow from Within and Without, in H. Marmolin, Y. Sundblad, and K. Schmidt (Eds.), *Proceedings of the Fourth European Conference on Computer Supported Cooperative Work*, Kluwer, Dordrecht, 1995, pp. 51-66.
- [5] Briefs, U et al. (1983): *Systems Design For, With and By the Users*. North Holland, Amsterdam.
- [6] Bullen, C. V. and J. L. Bennett (1990): Learning from User Experience with Groupware, *Proceedings of the Conference on Computer-Supported Cooperative Work*, ACM, New York, 1990, pp. 291-302.
- [7] Bødker, K. and F. Kensing (1994): Design in an Organizational Context - an Experiment, in *Scandinavian Journal of Information Systems*, Vol 6, no. 1, 1994, pp. 47-68.
- [8] Bødker, K, F. Kensing, and J. Simonsen: *Participatory IT Design. Designing for Business and Workplace Realities*. MIT Press 2004
- [9] Chatfield, RH: et al. (1998): *Proceedings of the Participatory Design Conference*. CPSR, Palo Alto.
- [10] Cherkasky, T. et al. (2000): *Proceedings of the Participatory Design Conference*. CPSR, Palo Alto.
- [11] *Communication of the ACM*, Vol. 36, June 1993.
- [12] *Communications of the ACM*, Vol. 38, No. 9. September 1995.
- [13] *CSCW* (1998): *Computer Supported Cooperative Work- A Journal of Collaborative Computing*, Vol. 7. Nos 3-4. Kluwer Academic Publishers.
- [14] Greenbaum, J. and M. Kyng (Eds) (1991): *Design at Work: Cooperative Design of Computer Systems*. Lawrence Erlbaum Associates, Chichester, UK.
- [15] Grudin, J. (1991): Interactive Systems Bridging the Gaps between Developers and Users, *IEEE Computer*, April 1991, pp. 59-69.
- [16] Hammer, M. and J. Champy (1993): *Reengineering the Corporation: A manifesto for business revolution*. Nicholas Brealey, London.
- [17] Hughes, J. A., D. Randall, and D. Shapiro (1993): From Ethnographic record to System Design: Some Experiences From the Field, in *Computer Supported Cooperative Work (CSCW): An International Journal*, Vol. 1, No. 3, Kluwer, Dordrecht, 1993, pp. 123-141
- [18] *Human-Computer Interaction*, Vol. 11, 1996. Lawrence Erlbaum.
- [19] Kensing, F, J. Simonsen, and K. Bødker (1998): MUST - A Method for Participatory Design, *Human-Computer Interaction*, Vol. 13, No 2, pp 167-198. Lawrence Erlbaum.
- [20] Mogensen, P and D. Shapiro (1998): When Survival is an Issue: PD in support of landscape architecture, *Computer Supported Cooperative Work - The Journal of Collaborative Computing*. vol. 1, no. 1-2.
- [21] Muller, M. et al. (1992): *Proceedings of the Participatory Design Conference*. CPSR, Palo Alto.
- [22] Naioka, A. and D. Schuler (1990): *Proceedings of the Participatory Design Conference*. CPSR, Palo Alto.
- [23] Orlikowski, W. J. (1992): Learning from Notes: Organizational Issues in Groupware Implementation, *Proceedings of the Conference on Computer-Supported Cooperative Work*, ACM, New York, 1992, pp. 362-369.
- [24] Schuler, D. and A. Namioka (1993): *Participatory Design: Principles and practices*, Lawrence Erlbaum, Hillsdale, NJ.
- [25] Schön, D (1983): *The reflective Practitioner: How Professionals Think in Action*, Basic Books, NY.
- [26] Simonsen, J., and F. Kensing (1997): Using Ethnography in Contextual Design, *Communication of the ACM*, Vol. 40, No. 7, July 1997, pp. 82-88.
- [27] Suchman, L. (1994): Do Categories Have Politics? The language/action perspective reconsidered, *Computer Supported Cooperative Work (CSCW): An International Journal*, Vol. 2, No. 3, Kluwer, Dordrecht, The Netherlands, 1994, pp. 177-190.
- [28] Winograd, T (1994): Categories, Disciplines, and Social Coordination, *Computer Supported Cooperative Work (CSCW): An International Journal*, Vol. 2, No. 3, Kluwer, Dordrecht, The Netherlands, 1994.
- [29] Winograd, T (1996): *Bringing Design to Software*. ACM Press, Addison-Wesley, NY, NY.

The Software Engineering Code of Ethics, Participatory Designers, and the Public Good

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ABSTRACT AND KEYWORDS

The Software Engineering Code of Ethics and Professional Practice, and similar codes adopted by other national computing organizations, create an opportunity for mutual learning and mutual benefit in the Participatory Design community. Some provisions of these codes, such as those that exhort software developers to “moderate the interests of the software engineer, the employer, the client and the users with the public good,” are expressions of our highest aspirations, but give little guidance to practitioners on how to realize these aspirations in their professional practice. Because the PD community engages with questions of values, the public good, and the process for achieving these aims, PD has much to offer practitioners who seek to live up to their profession’s ethical code. Conversely, discussion of the codes of ethics that govern software developers could deepen and enrich the theory and practice of participatory design. Finally, codes of ethics and PD both have a low profile in the wider community of practitioners; by making common cause it is possible that both could become more widely known, and could make a greater impact on professional practice.

Keywords

Ethics, Participatory Design, Professional Practice, Public Interest, Social Responsibility

AIMS AND GOALS OF THE WORKSHOP

The purpose of this workshop is to begin a conversation in the Participatory Design community about the codes of ethics that govern the work of computer professionals, with the ultimate goal of helping computer systems designers, and the public, to understand how to implement provisions of the code in practice. Taking advantage of the fact that this workshop takes place before the start of the main conference, the workshop participants will together create a participatory poster designed to inform and engage

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conference participants, and will create toward the end of the conference a forum for wider discussion of what PD can contribute to the enactment of the most challenging and socially relevant provisions of ethical codes, and how these codes might also enrich the PD community.

If there is enough interest among workshop participants, medium term goals for those who want to continue the discussion after the end of the conference might include creation of an essay similar to “Using the New ACM Code of Ethics in Decision Making” (see References below) which could be widely distributed to practitioners.

WORKSHOP THEME OR TOPIC

Most national and international professional associations have codes of ethics to guide the behavior of members faced with ethically salient decisions and situations. The Software Engineering Code of Ethics and Professional Practice, adopted by the two largest international membership organizations in computing, the ACM and the IEEE, articulates eight principles intended to guide software engineering practice. The Code delineates obligations to the public, to the client and employer, for the product, the profession, colleagues, and to self-development. It also outlines obligations to maintain independent professional judgment, and to be ethical managers. The Code can be found on the ACM web site at <http://acm.org/serving/se/code.htm#full>.

Many of the provisions of the Code are straightforward in concept, if not always in practice. Clause 2.02 instructs Software Engineers to “not knowingly use software that is obtained or retained either illegally or unethically.” Another provision tells software engineers to “ensure adequate testing, debugging, and review of software and related documents on which they work.” Provisions such as these can be challenging to implement, but are not intrinsically difficult to understand.

Other provisions of the Code, however, are unlikely to seem straightforward to most software engineers. The provisions contained in the first principle, responsibility to the public, are likely to pose a particular challenge. Software engineers are generally not trained to grapple

with such questions as how to “moderate the interests of the software engineer, the employer, the client and the users with the public good” (clause 1.02) or to judge whether “the ultimate effect of the work [is] to the public good” (clause 1.03). Further, “[c]onsider[ing] issues of physical disabilities, allocation of resources, economic disadvantage and other factors that can diminish access to the benefits of software” (clause 1.07) is usually not a part of the software engineer’s brief.

The PD community and its allies can make a substantial contribution to socially responsible practice by engaging with these provisions of the Software Engineering Code of Ethics and Professional Practice, and with other national organizations’ codes. Dealing as it does with both values and techniques, and with issues of the public interest in the context of software development, Participatory Design can help to fill the present gap between the lofty aspiration articulated in this and many other codes of ethics, and the realities of narrow training and constrained practice that many computer professionals face. Many of the ethical and political positions developed within the PD community, and many of the participatory methods as well, can contribute significantly to the work of making the public interest section of the software engineering code of ethics a living, functioning document.

In the workshop we will address such questions as:

- What aspects of PD practice and theory are most relevant to ethical professional practice?
- What support can we give to practitioners who wish to fulfill the highest aspirations of their professional ethical code?
- What differences of experience, nationality/culture, discipline, etc. contribute to our understanding of ethical practice?
- What can the PD community learn from the codes governing the work of systems developers?
- How would we like to continue the conversation and/or take action?

WORKSHOP PLANS AND PROGRAM

The workshop will include a variety of techniques; exact implementation will depend on the number of participants. We will begin with a “get acquainted” exercise using Lego bricks, have some conversations in small groups, and use markers and flipchart paper to plan and record the work of small groups and the larger group discussion. We will create a poster that can be posted during the conference, inviting comments of conference participants

WORKSHOP SCHEDULE

- 09:00-10:00 Arrival, get acquainted exercise.
- 10:00-11:30 Selection of particular Code provisions; small group discussions of how to help/support software engineers who strive to fulfill these obligations.
- 11:30-12:30 Small groups present their work.
- 12:30-14:00 Lunch, walking, informal discussion.
- 14:00-15:30 Debating the approaches to the provisions; revision of approaches; development of partial text.
- 15:30-17:00 Reflection, next steps, wrap up. Poster creation.

INTENDED PARTICIPANTS

This workshop is open to anyone from the PD community who has an interest in supporting ethical professional practice, and to those with expertise in professional ethics from non-computing disciplines. The ideal group would represent a range of disciplines, perspectives, backgrounds, and nationalities. Participants will be recruited by posting this workshop description on the conference web site; and by using an electronic Call for Participation, to be emailed to a broad list of possible participants.

WORKSHOP ORGANIZER

Sarah Kuhn is an Associate Professor in the Department of Regional Economic and Social Development at the University of Massachusetts Lowell. A longtime PD enthusiast, she was program co-chair for PDC’92 and PDC’98, conference co-chair in 1992, and tutorials co-chair in 2000. Her research has focused on the workplace effects of Information and Communication Technology (ICT), on the ICT workforce, and on the integration of social issues and ethical concerns into the training of engineers and software professionals. She teaches a survey course on Sustainable Development, a graduate seminar called “Software Design in Context,” and Qualitative Research Methods. She is not a professional ethicist—she is a social scientist with a PhD in Urban Studies and Planning, of all things—but believes that in spite of this it is important to start a discussion!

ACKNOWLEDGEMENTS

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REFERENCES

Ronald Anderson, Deborah Johnson, Donald Gotterbarn, and Judith Perrole. “Using the New ACM Code of Ethics in Decision Making” Communications of the ACM Vol. 36, No. 2, February 1993. Also available online at <http://acm.org/constitution/p98-anderson.pdf>.

Caroline Whitbeck, “Ethics as Design: Doing Justice to Moral Problems,” Hastings Center Report, May-June 1996

Participatory Design of a Participatory Design Book

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ABSTRACT

Participation of people in the design of artifacts, services, institutions, technology, media and social movements is key to creating futures that are effective -- and equitable. Unfortunately, there seems to be a dearth of core texts that can help orient and motivate practitioners and researchers about this perspective. At PDC 2004, we will devote one day to the development of a plan for a new, key participatory design book (and, hopefully, other PD resources).

Keywords

Participatory design, collaboration, PD book development, PD information dissemination, PD online resources

AIMS AND GOALS OF THE WORKSHOP

The goal of the workshop is to develop a work plan, including a schedule and a rough draft of a book proposal, for a new participatory design book.

WORKSHOP THEME OR TOPIC

Participation of people in the design of artifacts, services, institutions, technology, media and social movements is key to creating futures that are effective -- and equitable. For that reason, participatory design is an increasingly common approach in a variety of domains. Unfortunately, there seems to be a dearth of core texts that can help orient and motivate practitioners and researchers about this perspective. At PDC 2004, we will devote one day to the development of a plan for new, key participatory design book (and, hopefully, other PD resources) that will become a central text in our discipline. The workshop will be participatory (of course!) as will the development process leading up to the final manuscript. The issue will be, as with other PD enterprises, balancing the sometimes conflicting needs of inclusiveness and equity with efficiency and quality of the result. Since participatory design has expanded beyond the original boundaries of software development, it is important to integrate work

from other domains such as community networks, public policy, education, and media. The challenge is expanding our coverage without diluting content or sacrificing the authority that comes from experience and reflection.

WORKSHOP PLANS AND PROGRAM

This is a full day workshop to develop a group plan for a new participatory design book.

The day will be divided into six sections, each devoted to an important aspect of the book project. The plan is to begin by determining broad goals and objectives and continue determining more specific tasks and criteria throughout the day. These sections are (1) Introduction; (2) Objectives and Parameters; (3) Book Content and Organization; (4) Decisions; (5) Process; and (6) Other (including online resources and other topics that have been identified during the day).

As an adjunct to our discussions, there will be a poster board devoted to each section and to any additional areas that are identified by the workshop convener or attendees. These boards will contain information that is either generic to book development or highly desired and will be used to orient our discussion. They'll be set up in such a way to promote easy modifications and annotation and, as such, will be also used to guide our work and record our decisions. One poster will include the major components of a book proposal which we will add to throughout the course of the day.

We will also distribute a handout during the conference that will make it easy for people to contribute ideas or time to the book / resources project. The handout will consist of a brief summary of our recommendations and a form that will allow people to supply information about their interests, ideas and offers to contribute. We will also use a distribution list to sustain the process after the conference.

Techniques

The basic approach is through guided discussions. These will be guided to some degree through the use of poster boards devoted to various topics. These boards will be "seeded" in advance with suggestions, questions, and issues. The boards will provide a visual workspace that will be shared by the attendees. If possible, they should be

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placed in viewable settings at various times during the conference.

Post-its or other movable annotations will be used on the boards. Thus annotations can be added or removed. Also the relative position of any annotation can be changed. The boards can also aid the decision-making process. If, for example, a decision needs to be made related to whether the book is authored or edited, attendees can place straw poll "votes" in the form of post-its on the selection that they prefer. Other issues related to book decisions include focus, whether to use existing and/or commissioned papers, develop a book only or develop other resources concurrently, what style for the chapters (research paper or?), audience, what book type (text book?) and other characteristics

I will prepare a rough book development proposal including a possible organizational scheme for the book. This scheme will probably consist of: Introduction, motivation, context, theory, case studies, methods, education, futures, and issues.

I will also bring tables of contents from all previous PD conferences and other books to help us in developing content ideas.

WORKSHOP TOPICS SCHEDULE

Introduction

To participants, topic and workshop plan

Objectives and Parameters

Book Content and Structure

Decisions

Process

Tasks, due dates, responsibilities, communication guidelines

Other

Online (or other) resources

Additional topics identified during the day

INTENDED PARTICIPANTS

This workshop is open to any PDC 2004 attendee who is interested in contributing to the development of core materials for our discipline. If you feel that you can add ideas or learn from the experience, please consider attending. *You won't necessarily be forced into service afterwards!* Although we will focus on the development of a book we will also give some attention to the development of an online "digital library" of participatory design resources, especially considering ways in which it may be complementary to the book project. We are ideally looking for about 6 - 15 attendees who will stay with the process during the day, but we will accept up to 20 people -- including those who "drop in" for an hour or two.

WORKSHOP CONVENER

The workshop convener has been a long-time researcher and practitioner of democratic media in his role as an educator at The Evergreen State College and as an activist for Computer Professionals for Social Responsibility. He is one of the co-founders of the Seattle Community Network, a free, public-access computer network. He has organized nine Directions and Implications of Advanced Computing (DIAC) symposia for CPSR and is now the program director for the Public Sphere Project within CPSR. One of the most significant projects within the Public Sphere Project is the large, participatory "Pattern Language for Democratic Information and Communication" project. He is the author of *New Community Networks: Wired for Change* and the co-editor of six books on computers and society including *Participatory Design: Principles and Practices* (with Aki Namioka) based on CPSR's first Participatory Design Conference convened in 1990.