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Exploring the Rhetoric on Representing the User: Discourses on User Involvement in Software Development

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EXPLORING THE RHETORIC ON REPRESENTING THE USER: DISCOURSES ON USER INVOLVEMENT IN SOFTWARE DEVELOPMENT

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Abstract

It is widely accepted that users should be involved in interactive systems development. However, involving users is often difficult and quite rare in software development organizations, especially in the context of product development, referring to the development of commercial software products or systems. This paper critically examines the position of user involvement in three software development organizations that operate in the product development context. Through analysis of the empirical, qualitative material gathered from the case organizations, five distinct discourses on user involvement are identified. The discourses are (1) user centeredness as a tradition, (2) user involvement as imago factor and selling argument, (3) user involvement as a waste of time and money, (4) user involvement as a controllable and measurable quality improvement effort, and (5) user involvement achievable through persuading, marketing and manipulating. These discourses construct user involvement in different ways in these organizational settings. Furthermore, the discourses can be related to the wider discursive field in which the human-computer interaction community participates and contributes. Some of these discourses can be criticized from the Scandinavian tradition of systems design of being forms of technological colonialism and in some cases merely silencing the users instead of giving them a voice.

Keywords: Discourse, user involvement, qualitative research

Introduction

This paper critically examines the position of user involvement in software development organizations operating in the context of product development, referring to the development of commercial software products or systems. It is widely accepted that users should be involved while developing interactive systems, both in information systems research and in human-computer interaction (HCI) literature. Participatory design has been especially influential in emphasizing the importance of active user participation (Greenbaum and Kyng 1991; Kujala 2003). The field of HCI also has addressed the development of usable, useful interactive systems by highlighting the importance of understanding users through approaches such as of usability engineering and user-centered design (Bannon 1991; Cooper and Bowers 1995; Gould and Lewis 1985; Karat 1997).

Different approaches such as participatory design, usability engineering, and user-centered design all emphasize the importance of user involvement in interactive systems development. However, user involvement is a very vague term, and it can be interpreted to range from active user participation in the design process to the involvement of users as mere providers of information and as objects of observation (Carroll 1996; Kujala 2003). Altogether, there are a variety of views of what constitutes user involvement and how "taking users into account" should be accomplished (Asaro 2000; Carroll 1996; Kujala 2003). Therefore, an analysis of these different views of user involvement is carried out. The views are all based on the assumption that understanding users and their work and tasks is a necessary basis for design, that the design involves redesign of users work and tasks, and that one has to be in direct contact with the users in order to succeed in the effort of designing useful, usable interactive systems. However,

at a more specific level, the views have clear differences in their assumptions related to the goal of *why the users should be involved,* and related to the guidelines for *how to involve the users.* This paper distinguishes an approach to user involvement that is labeled *consultative user involvement*, which will be in the focus in the empirical part of the paper.

Even though the importance of user involvement has been generally accepted both within the HCI and information systems communities, involving users has proved to be difficult and quite rare in practice, especially in the product development context (Grudin 1991, 1993; Kyng 1994; Poltrock and Grudin 1994). In-house development is the traditional context for user involvement—the need for user involvement became apparent with in-house development a decade earlier than in product development (Grudin 1991). However, even with in-house development, an large number of problems has been reported related to user involvement (e.g., Axtell et al. 1997; Gärtner and Wagner 1996; Hirschheim and Newman 1991; Kirsch and Beath 1996; Nandhakumar and Jones 1997; Nielsen 1999; Symon 1998). In product development, furthermore, even more problems have been encountered. This is because, in this context, even identifying and getting in contact with prospective users is difficult. Development is often organizationally isolated from users. The development cycle is also typically very short and, therefore, there is no time for involving users or for iteration (Grudin 1991, 1993).

The literature also highlights the difficulty of getting user involvement accepted in organizations. The position of usability specialists, the spokespeople for users (Gronbak et al. 1993) hired in the product development context (Grudin 1993), is often weak, their credibility questioned and their work undervalued (Bloomer and Croft 1997; Gould and Lewis 1985; Kyng 1994; Mayhew 1999; Rosenbaum et al. 2000). Development organizations lack knowledge of user involvement, users, and the context of use (Gronbak et al. 1993; Gould and Lewis 1985; Kyng 1994; Rosenbaum et al. 2000; Tudor 1998) and user involvement has not become a standard part of development (Aucella 1997; Grudin 1993; Gould and Lewis 1985; Mayhew 1999). User involvement is brought to the process too late and with no effect on design (Aucella 1997; Gronbak et al. 1993; Grudin 1993; Kyng 1994; Poltrock and Grudin 1994). Finally, the perception of user involvement as expensive and delaying is also problematic (Bloomer and Croft 1997; Kyng 1994; Mayhew 1999; Rosenbaum et al. 2000; Tudor 1998). As is evident, the facilitation of user involvement has proven to be difficult, especially in product development.

We adopted a critical approach informed by the Scandinavian tradition of systems design for the analysis of user involvement in software development. We critically examine discourses on user involvement, referring to the ways user involvement is constructed, both in practice (in the case organizations involved in this study) and in academia (in the HCI literature). Existing literature has made us aware that user involvement might be used only as a buzzword or as a weapon for achieving some kind of ends that are not related to empowering the skilled worker. These studies show that user involvement has been used only as a buzzword or a slogan (Catarci et al. 2002; Hirschheim and Newman 1991; Kirsch and Beath 1996; Nielsen 1999; Symon 1998, Tudor 1998). However, these studies have been carried out in the context of in-house or contract development. Empirical studies in the context of product development seem yet to be lacking. One might assume, however, that studies in this context are especially needed, while considering the challenges encountered in involving the users in this context.

Furthermore, except for Nielsen's (1999) study on discourses on user participation, in which it is shown that the discourses were mainly used for increasing management control, no empirical studies were found to examine user involvement at the discursive level. However, discourses are argued as being very influential in affecting the way people perceive themselves and the social reality around them (Weedon 1987). Furthermore, it is argued that the active role of academic communities in imposing meanings to social reality should also be considered (Cooper and Bowers 1995; Finken 2003, Weedon 1987). Studies by Cooper and Bowers (1995) and by Finken (2003) have examined HCI and the collective resource approach in a Foucaultian spirit as discourses constructing their objects of study in particular ways and at the same time legitimizing their existence.

The paper is organized as follows. The next section analyzes different views of user involvement through identifying a set of assumptions related to *why the users should be involved* and *how to involve the users.* The views show clear differences even though all advocate user involvement of some sort. The results will be utilized in the analysis of the empirical material. The third section presents the cases involved in this study, and the procedures of data gathering and analysis. The fourth section presents the discourses on user involvement identified from the empirical material. The discourses are related to the particular organizational settings, but also to the wider discursive field in which the HCI community participates and contributes. The final section discloses the central themes and observations of the paper and discusses the implications of the findings.

Literature on User Involvement

As mentioned, participatory design advocates active user participation in systems design. In this paper, we are referring to the field of participatory design that is influenced by the Scandinavian collective resources approach, which is based on an ideal of

industrial democracy and the quality of work and product. IT is seen as devaluing workers' craft skills and, due to this, the workers have to be empowered. They need be able to participate in decision making in systems development (Asaro 2000; Bodker et al. 1988; Ehn 1993; Greenbaum and Kyng 1991; Spinuzzi 2002). However, over the years, the emphasis has changed from industrial democracy to the participatory nature of the design process, and political issues have decreased in importance (Asaro 2000; Bodker 1996; Spinuzzi 2002). Furthermore, the participatory design tradition emphasizes that design needs to be seen as cooperative work including mutual reciprocal learning. The principle of "design by doing" emphasizes hands-on experience and learning by doing. The hands- on experience—experiencing with early design solutions—is important for the imagination of the future use situations (Bodker 1996; Bodker et al. 1988; Ehn 1993; Greenbaum and Kyng 1991; Spinuzzi 2002).

However, as mentioned, with the term user involvement, one can denote anything from active user participation in the design process to the involvement of users as mere providers of information and as objects of observation (Carroll 1996; Kujala 2003). In this paper, usability engineering and user-centered design also are conceived as approaches to user involvement, approaches mainly advocating involvement of the latter type. All approaches are based on the assumption that understanding the users and their work and tasks is a necessary basis for design, the design involves resign of users' work and tasks, and one has to be in direct contact with the users in order to succeed in the effort of designing useful, usable interactive systems. The approaches differ, however, in their assumptions about *why* users should be involved, *how* to involve users, and *how* to facilitate user involvement.

Related to the assumptions about *why users should be involved*, it has been argued that user involvement aims at empowering the users, but the empowering can be related either to the democratic empowerment that maintains that workers should be able to participate in the decision making in their work place, or to the functional empowerment that highlights that workers should be able to do their job effectively and efficiently (Clement 1994). Different reasons for user involvement have been identified (Nandhakumar and Jones 1997) to improve the design process, to facilitate the implementation, and/or to address ethical principles. Altogether, the goal of user involvement can be oriented toward Marxism or capitalism. A Marxist orientation emphasizes conflict between capital and labor and aims at emancipation of the workers. The capitalist orientation, on the other hand, emphasizes management goals: profit maximization, work intensification, and competitive advantage achievable through user involvement (Asaro 2000; Hirschheim and Klein 1989; Spinuzzi 2002).

Related to the assumptions about *how to involve the users*, first, the view of the design may vary depending on whether the creative or engineering aspects are highlighted (Bodker et al. 1988; Löwgren 1995). Design can be seen as a creative and communicative process that involves interplay between setting and solving the problem, mutual reciprocal learning, and design by doing (Bodker et al. 1988; Löwgren 1995). On the other hand, design can also be seen as a structured engineering process in which the problem to be solved should be fully described, use situations and needs are to be known beforehand, and the task is to find the solution through a rationalistic, objectivistic process (Bansler and Bodker 1993; Löwgren 1995). Furthermore, there are differences in whether the conflictual and political nature of the design process is acknowledged. If the design process is seen as neutral and value free, then the designer is seen as playing a neutral, objective, expert role. On the other hand, design can be seen as a very conflictual and political process, in which the designer should act as a warrior, partisan, emancipator, or social therapist (Bodker et al. 1988; Hirschheim and Klein 1989).

The orientation can be either positivist or antipositivist. Antipositivism opposes the scientific-objectivism view of design as a rationalistic decision-making process and the reduction of skills to what can be formally described. Instead, reality is seen as socially constructed and can only be understood from the point of view of individuals who are directly involved in the activities to be studied. In this situation, user involvement is needed to figure out the shared meanings among the users, and this necessitates meaning negotiation between the designers and users (Asaro 2000; Bodker et al. 1988; Hirschheim and Klein 1989). Positivism, on the other hand, emphasizes scientific, rigorous, objective investigations, and basing research on systematic protocol. It is assumed that there are general laws that help to explain and predict reality, and user involvement is a means for deriving the objective facts from the reality by following the scientific method. Design, then, is a rational decision-making process based on these objective facts (Asaro 2000; Bannon 1991; Hirschheim and Klein 1989).

Finally, related to the role of users in the process, the role can be seen to be a human actor (active agent) or a human factor (passive object of study) (Bannon 1991). Involvement can be of a consultative or a participative type (Damodaran 1996). In the consultative type of design, users comment on design solutions or act as providers of information and objects of observation, but do not actively participate in the design process nor have decision-making power regarding the design solution. In the participative type of design, on the other hand, users are actively and continually involved in the design process and have power to make decisions (Carroll 1996, Damodaran 1996). In the participative type, user involvement is direct: the users are capable of directly influencing the design. On the other hand, in the consultative type, the involvement is indirect: the users are not active agents in the design process, have no decision-making power nor the ability to directly influence the design. In this situation, there

usually is some sort of mediators responsible for being in direct contact with the users and representing the users in development. This task of representing the users has actually been crucial for the whole legitimacy and identity of the field of HCI (Cooper and Bowers 1995). However, as already mentioned, the position of these mediators can be problematic in the organization (Bloomer and Croft 1997; Gould and Lewis 1985; Kyng 1994; Mayhew 1999; Rosenbaum et al. 2000). Therefore, their role should be considered. Since it is argued that these mediators often work in isolation and their work does not have any effect on the design, it could be argued that their role can be classified as consultative or participative as described by Damodaran (1996). In this paper, the focus will be on the consultative type of user involvement, in which the users act as providers of information and as objects of observation. Usability specialists, the mediators, whose role might resemble either the consultative or the participative type, represent the users in development.

Finally, related to the assumptions about *how to facilitate user involvement*, clearly divergent views were also identified. A part of the literature implies that there is a one best way to successfully facilitate user involvement (of consultative type) in organizations. These studies outline a set of universally valid activities and principles for practitioners that could and should be applied in any organization. Generally, this literature suggest the following aspects as critical in the successful facilitation of user involvement. Developers are seen as the most important target group (Aucella 1997; Bloomer and Croft 1997; Fellenz 1997; Mayhew 1999). The project teams should buy-in to usability (Aucella 1997) and perceive usability specialists as allies (Fellenz 1997; Mayhew 1999; Rosenbaum et al. 2000). Developers' involvement in the user involvement activities is seen as very important (Aucella 1997; Bloomer and Croft 1997; Fellenz 1997; Tudor 1998). Their participation should start early in order for their activities to affect the design (Aucella 1997). However, a strong, centralized group of usability specialists also is recommended (Fellenz 1997; Mayhew 1999; Vredenburg et al. 2002) and the importance of experienced, professional usability specialists highlighted (Aucella 1997; Fellenz 1997).

The literature also highlights creation of documentation of best practices (Aucella 1997), descriptions of the methods and techniques for user involvement (Fellenz 1997), and a formal development process including user involvement activities (Fellenz 1997; Mayhew 1999) as important. Management commitment is also seen as an important criterion for success (Fellenz 1997). Furthermore, as an addition to the facilitation of user involvement, there usually are other change efforts in the organization. The usability specialists should be perceived as allies to these initiatives (Bloomer and Croft 1997; Mayhew 1999). In addition, cooperation should be initiated with marketing, training, and documentation. The usability specialists should act as change agents addressing many different target groups in their organizations. They should tailor their message to the language each target audience understands (Bloomer and Croft 1997; Mayhew 1999; Rosenbaum et al. 2000). Altogether, user involvement should be sold to organizations (Mayhew 1999). The business perspective is highlighted (Bloomer and Croft 1997; Fellenz 1997; Mayhew 1999; Rosenbaum et al. 2000): user involvement should make sense from the business perspective and be related to achieving key business goals. The consideration of the costs and benefits is recommended, since cost-benefit tradeoffs may play a major role in the adoption of user involvement (Vredenburg et al. 2002). The resources for user involvement should also be planned and budgeted (Aucella 1997) to assure that user involvement doesn't increase development costs and time (Bloomer and Croft 1997).

On the other hand, other studies have taken a more relativistic position and argue that one should understand the context in which user involvement is to be facilitated more thoroughly in order to select the most suitable strategy. The studies highlight that emphasis should be on supporting developers' ingenuity, reflection, and improvisation (Bansler and Bodker 1993; Nandhakumar and Jones 1997; Thoresen 1993). Furthermore, the social and organizational context should not be neglected (Axtell et al. 1997; Butler and Fitzgerald 1997; Grudin 1993; Gärtner and Wagner 1996; Nielsen 1999; Symon 1998; Thoresen 1993). Organizational politics and conflicts should also be acknowledged (Bodker 1996; Butler and Fitzgerald 1997; Gärtner and Wagner 1996; Kirsch and Beath 1996; Nielsen 1999; Symon 1998). The concept of culture is brought up in the literature (Bloomer and Croft 1997; Butler and Fitzgerald 1997; Catarci et al. 2002; Gärtner and Wagner 1996; Mayhew 1999; Nandhakumar and Jones 1997; Symon 1998; Thoresen 1993). One should understand the particular usability myths, beliefs, values, and attitudes in the organization. They define the usability culture of the organization. The myths, beliefs, and attitudes may act as cultural obstacles to user involvement (Bloomer and Croft 1997; Mayhew 1999). Cultural norms can constrain user involvement and limit possibilities for interaction (Catarci et al. 2002; Nandhakumar and Jones 1997).

Some striking differences are highlighted in the advice presented above. The first one is related to the difference between a structured strategy (a cookbook strategy) and an unstructured strategy to the facilitation of user involvement. One part of the literature offers step-by-step guidance on how to introduce user involvement into organizations, advice that could be mechanistically executed in any organization. On the other hand, some studies highlight that, first, the context should be understood in depth, and improvisation, reflection, and ingenuity are always needed. Another clear difference can be revealed by utilizing the distinction between a capitalist and a Marxist orientation in the strategies for the facilitation of user involvement.

Some advice has an overtly capitalist orientation, emphasizing competitive advantage and competitiveness in the marketplace achievable through user involvement, selling user involvement to organizations by highlighting the business point of view and cost-benefit analyses, and using language that sales, marketing, and management understand. Worth noticing in this strategy is the manipulative, seductive aspect: the group introducing user involvement should seduce other people to accept user involvement. In stark contrast is a strategy with a Marxist flavor that relies on the notion of democratic empowerment of workers. Within this strategy organizational politics and conflicts are highlighted and the needs of the management are contrasted with the needs of the workers, whose needs are the ones that should be acknowledged.

Research Design

In this research effort, we utilized an interpretive case study method, in which researchers assume that our knowledge of the world is gained through social constructions, and they attempt to make sense of the world, not to explain it in the sense of predicting. In the focus are the meanings attached to the phenomenon studied. The aim is to capture the native's point of view, to produce thick descriptions, and to gain a thorough understanding of particular cases. Theories are used only as sensitizing devices; they are not aimed at being falsified, as is the case in the positivist case studies (Denzin and Lincoln 2000; Klein and Myers 1999). The interpretive case study method is thus suitable for studying how user involvement is constructed in organizational settings operating in the product development context. In the focus are the meanings related to user involvement and their construction in which the organizational members participate.

Case Description

Three organizational units (cases A, B, and C) from three software development companies were involved in this study. All units are product development units of the software development companies producing commercial software products or systems for international markets. Unit A is a product development unit of large global corporation. Units B and C are product development units of small- to medium-sized enterprises (SMEs). The units have from 20 to 30 employees. All units participated in a research project concerned with facilitating user involvement in software development organizations. Unit A has a background of involving the users for a few years. There are four usability specialists in the unit. In unit B, user involvement has been part of development for 10 years. The unit had a group of usability specialists, but only one remained at the time of the study. Finally, unit C has very little background in involving users. There is one usability specialist in the unit. She has carried out the user involvement activities mainly as student work. The practical ways of taking the users into account resemble that of the consultative type in all case units. The users do not participate in nor do they have decision-making power in the design process. The usability specialists represent the users in development, which is a typical situation in the product development context (Gronbak et al. 1993; Grudin 1993). The usability specialists have carried out customer visits (interviewed and observed the users) and evaluated design solutions by using methods such as laboratory usability testing, paper prototyping, and different kinds of usability inspection methods. Users have been involved as providers of information and objects of observation (Bannon 1991).

Data Gathering

The research material was gathered over 3 years. The material was collected while conducting process assessments in the units, and while supporting the units in the facilitation of user involvement by offering workshops and training. In the process assessments, we interviewed the personnel of the units related to their ways of working in a selected project and evaluated whether user involvement activities were carried out in the projects. The research team also regularly had meetings with the personnel of the units. Memos from the meetings, the assessment reports, and all e-mail correspondence have been saved for the purposes of the research. The research team has written field notes from all joint events.

In addition, we experimented with multiple methods for data gathering in the units. First, we experimented with organizational culture surveys and gathered quantitative data from the units. Afterward, we interviewed the personnel and gathered feedback from the survey results. We interviewed both the usability specialists and people whose work is directly related to the units' core mission. In the interviews, we discussed the context for and the process of user involvement in the case units. An interview results report was produced. We subsequently organized workshop sessions in which we discussed and evaluated the interview results in a group. The results report was updated after the sessions. Finally, we organized additional workshop sessions in which results gained though the different techniques for data gathering were compared and contrasted with the results of other units. In addition, before the workshop sessions, we went through all the memos, e-mail, field notes, and assessment reports produced in relation

to the case units. From this material we listed the user involvement activities carried out in the units, the reported problems related to the activities, and the expressed preferences for future actions. We presented this material in order to allow the participants to comment on that material.

Data Analysis

The data analysis proceeded in different phases. Case study write-ups were produced related to each unit, and commented on by the interviewees and by the workshop participants. In the analysis of the approaches to user involvement adopted in the units, as mentioned, we went through all the empirical material gathered the during 3 years, and listed the user involvement activities carried out in the units and the preferences for the future the units had expressed during the years. The workshop participants commented on this material presented in the workshop sessions. Therefore, the technique of member checking was utilized extensively.

Afterwards, we utilized a critical social discourse analytic approach. Within this approach, language has a critical role: language doesn't represent reality—it produces it. Language is seen as a site where all prevalent definitions are constructed. Discourse is a specific manner of speaking, a specific form of language use (Fairclough and Wodak 1997; van Dijk 1997; Weedon 1987). Discourses are both socially constituted and socially constitutive: they constitute situations, objects of knowledge, and social identities of people and groups of people. On the other hand, people, while participating in the discourses, contest as well as reproduce the prevailing notions (Fairclough and Wodak 1997). Discourses are produced, manipulated, tailored, and unraveled in the discursive fields of societies. Within these fields, meanings are produced, reproduced, and negotiated. Academic communities participate in and contribute to these fields. Discourses are also competing with each other; the struggle over the meanings takes place in language. In social discourse analysis, it is important to analyze who uses the language; how, why and when. Participants are involved in the interaction as members of social categories, groups or institutions. Within the critical tradition important is to analyze how the discourses contribute to the maintenance of meanings. There is a struggle to disseminate the preferred understanding of the world (Fairclough and Wodak 1997; van Dijk 1997; Weedon 1987). Finally, we viewed the material as discourses adopted, adapted, produced, and reproduced by the personnel of the software development organizations. We searched for recurrent themes in the material (on the discursive level of language use) related to user involvement: why users should be involved, how to involve the users, and how to facilitate user involvement, paying special attention to who says what, why, and when. We critically examined the material to reveal the social construction of meanings related to the user involvement in each organization. The discourses are presented in the following section.

Discourses on User Involvement

Five discourses on user involvement—ways of constructing user involvement and its facilitation effort—were identified: (1) user centeredness as a tradition, (2) user involvement as imago factor and selling argument, (3) user involvement as a waste of time and money, (4) user involvement as a controllable and measurable quality improvement effort, and (5) user involvement achievable through persuading, marketing, and manipulating. The discourses are related to the particular people in particular organizational settings, but also to the discourses within which the HCI community participates and contributes. This will be illuminated by referring also to the literature on user involvement in relation to each discourse. Next the discourses are presented in more detail.

User Centeredness as a Tradition

First of all, it was clearly evident that all case organizations wanted to emphasize that, in their organization, taking the users into account is acknowledged as important.

> Our products are easy to use from the point of view of the users. So it [user centeredness] has been there, even though not systematically. Already in the beginning of the 90s, and in the end of 90s.…We have tested, not usability, but similar kinds of things. We have had these; representatives of customers have gone through these and thought of these issues. And ergonomics and things like that have been a starting point for industrial design. It is a kind of culture in this firm. (Manager, Unit C)

He [former boss] was very ambitious in that. He thought that it is not enough to do the usability tests, there needs to be more. There needs to be a usability strategy and this and that.…He fought for these issues with other bosses and helped me. My work was never questioned. I have always been allowed to do this because it was his [former boss] own idea, it has always been, and usability has always been his pet child. (Team leader, Unit B)

When two years ago I went to [another] unit to present myself, they asked me that how many usability people there is in our unit. I said 20; the whole team. [Laughing] They started crying in the [another] team.…I don't even doubt; I'm sure that our group has a positive attitude towards this job. (Manager, Unit A)

The path has been smoothen a lot probably because management has had such a positive attitude and has marketed this thing [user involvement]. (Usability specialist, Unit A)

Management in all case units highlight the importance of user-centeredness. User centeredness is important and a tradition for doing things. This discourse illustrates that, in these organizations, the importance of usable products and user orientation have been acknowledged—as is the case in HCI literature, in which the rhetoric on representing the users, as mentioned, has been crucial for the legitimacy and identity of the field (Cooper and Bowers 1995). However, the literature also warns us that user involvement might be used only as a slogan and a buzzword (Catarci et al. 2002; Hirschheim and Newman 1991; Kirsch and Beath 1996; Nielsen 1999; Symon 1998; Tudor 1998). From this viewpoint, this discourse might be criticized only as rhetoric without any evidence of the actual aim to involve the users. However, next we will review arguments that offer motives for assigning user involvement such a central position.

User Involvement as Imago Factor and Selling Argument

Within the second discourse, meanings influenced by a clearly business-oriented viewpoint are assigned to user involvement. User involvement is deemed as useful since it can be used as an imago factor and selling argument:

I think it [user centeredness] has been a selling argument and a thing that we have had, but not necessarily the competitors. We have been the most progressive in this respect. (Team leader, Unit B)

From the viewpoint of the image of the company, one of our goals is to be a pioneer.…If we talk about our strengths as a company, we don't only talk about customer centeredness but we say that we have this competence; we have behavioral scientists, research, and cooperation with universities.…Because this is quite exceptional. (Executive, Unit B)

Eric [the manager] told me the basic reasons why we would participate [in the user involvement effort]. We need to be more convincing in the eyes of the customer. That way we could dictate some things, for example, user-interface issues. The project would offer facts, which could enable us to do that.…Improvement of the image of our company, it is one of the main reasons why we participate in this project. (Usability specialist, Unit C)

Customers do not know what is good for them. The company has to convince the customers that the company knows better. One way to do that is to appeal to the fact that the company participates in the university project dealing with usability issues. This might give authority to the company in relation to the customer. (Field Notes, Unit C)

User involvement has been constructed as useful in overcoming user resistance and in ensuring acceptance (Nandhakumar and Jones 1997); the customer as well as the users need to be convinced that the company knows better. Within this discourse, the capitalist management orientation is evident: profit maximization and competitive advantage achievable through user involvement (Asaro 2000; Spinuzzi 2002) are highlighted. This discourse can be criticized as being a "realization of Scandinavians worst fears" (Spinuzzi 2002), since the original aim of user involvement—the democratic empowerment of the skilled worker—is totally missing. On the other hand, part of the HCI literature clearly advocates this kind of discourse, while emphasizing the business point of view, and business benefits achievable through user involvement (Bloomer and Croft 1997; Fellenz 1997; Mayhew 1999; Rosenbaum et al. 2000). From the managerial point of view this seems to be a rather tempting discourse to adopt; it emphasizes positive aspects of user involvement from the business point of view. From the usability specialists' viewpoint, this can be seen

as a discourse to utilize in selling user involvement to the organization (Bloomer and Croft 1997; Mayhew 1999; Rosenbaum et al. 2000). However, one also can criticize this discourse as being rhetoric without any aim to actually involve the users.

User Involvement as Waste of Time and Money

The discourses on user involvement do not necessarily glorify it. In some of the case units, the participants have adopted a rather negative opinion of user involvement.

> Of the cooperation Pete [a developer] mentions that, as a result, something concrete and visible needs to appear. Usability activities have not resulted in that so far. (Field Notes, Unit C)

> Our developers considered user involvement activities as useless. (Usability specialist, Unit C)

> Yes, sure, sometimes it feels like the usability issues become kind of useless speculation.…Sometimes the usability work is over-emphasized. If we are in a hurry, it might be that we don't have time for these speculations. (Developer, Unit A)

Altogether, within this discourse, user involvement is condemned to be inefficient and time-consuming. This is quite alarming, and apparently a problem acknowledged by the HCI community, since the literature on user involvement warns that one should assure that user involvement does not increase development costs and time (Bloomer and Croft 1997), and that cost-benefit tradeoffs may play a major role in the adoption of user involvement (Vredenburg et al. 2002). It was stated in unit A that

> It is problematic to get money and the permission from the projects to do this; it's not easy to get permission to spend money on doing usability. (Manager, Unit A)

Another important issue is that one should be able to show the benefits achieved (Mayhew 1999; Rosenbaum et al. 2000). Within this discourse, the case organizations have placed strong emphasis on concrete results achieved and on money spent in achieving them.

> The company is expecting some concrete advantages [from the user involvement effort] to appear.…The product should be more usable, and there should appear clear savings in money and increase in sales. (Manager, Unit C)

> When we were making the budget for this year [spending resources on the user involvement effort was questioned]. It costs money when people participate in this; they spend time on that. What can you get out of this?…This type of questioning exists and it is good, because it all comes down to money and resources. We have limited resources and must have clear arguments. (Manager, Unit C)

In this particular organization, the financial reasons eventually led the organization to abandon the whole user involvement effort.

> When compared to the costs one can raise [the question] what has been received? The company has spent much more money to the [on the user interface] design than what was planned.…Eric [the manager] says that the company has moved backwards: in the beginning this [user involvement effort] was a big thing, but now the situation is that soon nothing is done. Eric asks Rick [another manager]: has usability become a curse word? (Field Notes, Unit C)

> According to Eric, Rick has decided that no user-centered design activities will be carried out in the new product development project.…The term usability will not be mentioned for a while due to the bad reputation it has currently. (Field Notes, Unit C)

The personnel responsible for the technical development—the managers and the developers—participated in this discourse. This discourse condemns user involvement as useless unless proven otherwise. The negative aspects of user involvement are highlighted. The HCI literature, which highlights the importance of developers' and managers' buying into usability (Aucella 1997; Bloomer and Croft 1997; Fellenz 1997; Mayhew 1999; Rosenbaum et al. 2000) can be read as an implicit fear of the existence of this discourse.

User Involvement as Controllable and Measurable Quality Improvement

In so far as user involvement is viewed as useful and worth facilitating, the facilitation effort can be constructed by relying on different kinds of discourses. One possibility is to adopt a discourse that constructs user involvement effort as a controllable, measurable quality improvement program that could and should be treated like other large-scale quality improvement programs in organizations. This was the case in unit A, in which it is assumed that the facilitation of user involvement should be carried out by controlling projects to do quality job. As mentioned, in unit A, "it is problematic to get money and the permission from the projects to spend money on doing usability" (Manager Unit A). The discussion proceeded as follows:

> Yes, if we think these things separately. But if we think it from the viewpoint of our everyday job, the question is that do we get permission to do quality job [laughing]? (Usability specialist, Unit A)

> Yes, do they allow us to stop the projects wasting their time and effort [laughing]?…I don't think that in the long run usability work costs a lot in the projects. And afterwards you save money through high-level usability plus it increases productivity. And it produces money to the customers also. (Manager, Unit A)

Doing usability' refers to "doing a quality job" that stops projects from wasting their time and effort. This discourse postulates user involvement as improving the design process (Nandhakumar and Jones 1997)—as improving the quality of the process and the product. Furthermore, in this context, it is assumed that control and monitoring are needed.

> When you bring usability orientation into an organization you have to be a police in the beginning. The developers don't have the knowledge needed in their head, and you have to act as the police. (Usability specialist, Unit A)

> Here we have a quality organization [that] perceives quality within a rules-oriented approach. Numerical things are highlighted, bugs and stuff like that. We have quality plans and report the bugs and follow the projects. It's visible to people in the projects. Bugs have to be removed and so forth.…We have these control mechanisms, and they are very powerful. If you try to compete with them, and you are not in the control mechanisms, then you are left out. Because these control mechanisms set the pressures. (Usability specialist, Unit A)

> Controlling, constant controlling and monitoring, its part of normal project work. Maybe it comes from there, the monitoring. I don't know whether you think this way, but if the usability work can be measured and controlled, then it's more natural, then it's just part of your job. (Team leader, Unit A)

Within this effort, written work descriptions also are seen as useful, as is suggested by part of the HCI literature: documentation of best practices (Aucella 1997), description of the methods and techniques for user involvement (Fellenz 1997), and a formal development process with user involvement activities included (Fellenz 1997; Mayhew 1999) are recommended. In unit A, a software process model with user involvement activities included has been produced and is deemed as helpful in integrating the user involvement activities into normal project work.

> Now, when the new process is being implemented, now those (user involvement activities) are planned, and then you have permission to do them and time to do them. They are included in the schedules. (Team leader, Unit A)

This discourse was evident in unit A. Not only the usability specialists, but also the developers and managers, participated in it. This discourse might be viewed as constructed largely inside the organization, reflecting issues the organizational members consider important and useful in their context. On the other hand, prescriptive literature on software development emphasizes that software processes should be explicitly defined, managed, measured, and controlled (e.g., Paulk et al. 1993). Relying on this literature, it would be natural to view user involvement effort as a definable, manageable, measurable, and controllable phenomenon.

User Involvement Achievable through Persuading, Marketing, and Manipulating

Finally, this discourse on user involvement is distinctive in its view of user involvement as a phenomenon that should be sold to the organization preferably by sneaking in, in secret. This can be accomplished through the usability specialists employing influential positions.

> I think that it is very important from the point of view of user centeredness that our manager is a usability specialist, that there is that kind of competence. We can avoid a lot of unnecessary work, because our manager makes the decisions. We can trust her; we don't have to question her decisions, because we know that she has thought of them thoroughly.…This user-centered viewpoint kind of affects other things in secret. I think it is strategically very important that a usability specialist was nominated as a manager who can make the decisions regarding the product. (Team leader, Unit B)

Within this discourse, usability specialists act as change agents addressing different target groups and tailoring their message to languages each target audience understands (Bloomer and Croft 1997; Mayhew 1999; Rosenbaum et al. 2000):

> [Knowledge of user centeredness] spreads through my and Ellen's [both former usability specialists] personalities, what we are able to tell about it. We forcefully talk about user centeredness when [sales and marketing] want to hear what we do." (Team leader, Unit B)

> Here the discussions between development and marketing, they happen through me [former usability specialist]. The developers don't discuss directly with marketing and marketing doesn't contact the developers directly. I function as a mediator. (Manager, Unit B)

However, developers are viewed as the most important target group who should buy into usability and perceive usability specialists as allies (Aucella 1997; Fellenz 1997; Mayhew 1999; Rosenbaum et al. 2000):

> This is not only a few people's job, but all should understand what user centeredness means and how much should I apply those principles and in which part of my job.…I think that it is better that all know a little about it than that we have a dozen of usability specialists and the rest of the personnel know nothing about it, because this situation is a battlefield. Or there should be a developer and usability specialist doing things together all the time, but in this situation the developer becomes a usability specialist almost naturally. (Team leader, Unit B)

> Doing things together, it is the most effective way to teach. It is much more efficient than to produce fancy guidelines for how things ought to be done, at least for part of our personnel. Some people might be good in following written work descriptions, but those are quite rare here. (Manager, Unit B)

It is argued that taking the users into account should be accomplished by the usability specialists actively cooperating with the developers who otherwise might ignore the results of user involvement (of the consultative type). The control and monitoring strategy for making developers take the users into account is condemned as ineffective. Only the personnel from unit B participated in this discourse. However, this discourse, unlike the previous one, has a clear resemblance with part of the HCI literature. This manipulative, seductive strategy for the facilitation of user involvement has already been recommended; it has been argued that the ones introducing user involvement should seduce and manipulate other people to buy into usability (Bloomer and Croft 1997; Mayhew 1999; Rosenbaum et al. 2000).

Discussion

This paper has examined the position of user involvement in software development organizations that operate in the product development context. We examined why the case organizations highlight user involvement as important, and how they try to accomplish their goal to involve the users. Through analysis of the empirical, qualitative material, five discourses on user involvement were identified: (1) user centeredness as a tradition, (2) user involvement as imago factor and selling argument, (3) user involvement as a waste of time and money, (4) user involvement as a controllable and measurable quality improvement effort, and (5) user involvement achievable through persuading, marketing, and manipulating. These discourses construct user involvement in different ways in the case organizations. Furthermore, it is argued that the discourses can be related to a wider discursive field in which the HCI community participates and contributes.

Existing literature has made us aware that user involvement might be used only as a buzzword or a slogan (Catarci et al. 2002; Hirschheim and Newman 1991; Kirsch and Beath 1996; Nielsen 1999). The first discourse assigning user centeredness a visible position apparent in every case organization might be viewed as an indicator of the same phenomenon. The other discourses identified, however, indicate that this important position has not been fully realized. The second discourse, which constructs user

involvement as useful since it can be used as an imago factor and selling argument, warns us that, within this discourse, management goals are the main (sole?) motivator for user involvement. User involvement is useful for the company in making more profit and in improving the imago of the company. Furthermore, the third discourse, which condemns user involvement as a mere waste of time and money, implies that this tradition of user centeredness, even though highlighted at the discursive level by the management, is not very strong. Software developers are unwilling to accept user involvement, and the business benefits of user involvement must realized before it will be accepted. The financial reasons led one case unit to abandon the whole user involvement effort.

The fourth and fifth discourses, however, illustrate that in the other two case units, user involvement has been facilitated further. These discourses show, nevertheless, that the facilitation effort can be viewed from very different angles. Usability can be constructed as a measurable, controllable quality criterion with usability specialists acting as policemen who control and monitoring the projects with the aim of doing a quality job. In this case the focus is on the quality of both the process and the product. On the other hand, user involvement can also be viewed as a phenomenon, which is to be sneaked in, in secret. The developers are seen as an important target group and they are supposed to become usability specialists themselves in secret through doings things together with the usability specialists. The usability specialists should also aim at employing influential positions in their organizations. In this situation, their competence can also sneak in, in secret.

The Scandinavian tradition of systems design, based on an ideal of democratic empowerment of skilled workers and on the view of these workers active agents in the consensus type of design, which is a political process full of conflicts that need to be acknowledged, is next contrasted with these discourses on user involvement. In doing so, the results achieved within this study can be seen as quite alarming. From the viewpoint of the Scandinavian tradition, some of the discourses on user involvement can be interpreted to be in stark contrast with the original aims. Within these discourses, the goal of user involvement is expressed in terms that appeal to management; they highlight the money-making and money-saving aspects of user involvement. User involvement is seen as helping the projects to do a quality job and to get it right the first time; user involvement is constructed as useful for money-saving purposes. On the other hand, user involvement is also highlighted as a selling argument and imago factor for making a profit. This discourse can be criticized of being overtly capitalist, and even labeled as a misuse of user involvement. The management goal of convincing the customer with the help of user involvement might even be viewed as a way of silencing the users (Asaro 2000), instead of giving them a voice.

Altogether, this type of capitalist orientation in user involvement efforts identified from the product development organizations might be viewed as a realization of the worst fears of Scandinavians (Spinuzzi 2002). This can also be interpreted to be technological colonialism (Asaro 2000) dressed in the gown of user involvement. Technological colonialism refers to the situation in which developers—like anthropologists who were serving the interests of colonial control while producing representations of the other, exotic, primitive cultures that were not able to contribute or argue against these authoritative representations (Clifford and Markus 1986)—are serving the interests of technological colonialism while producing representations of users and at the same time disempowering them for the sake of management goals. Users, furthermore, while participating in the design process, can be seen as contributing to the production of these texts—the representations of themselves. From this viewpoint, user participation can be seen as a way of silencing the users—users cannot easily reject the system anymore, since they have participated in the process. However, the users are never equally equipped in producing these texts or participating in the discourses on technological development, due to which the technological elites—like the anthropologists—ultimately have the authority to produce the representations of the technologically illiterate, primitive, exotic other (see Asaro 2000). In the case units, the developers were not necessarily producing representations of the prospective users; instead, they condemned user involvement as a waste of time and money. Management, nevertheless, disempowered the users by appealing to user involvement for convincing and silencing them.

This type of critical study can be argued as lacking relevance to practice which seems to be a very important goal in HCI research. However, as a defense for this type of study one might argue that relevance can be achieved in many ways. For example, researchers can act as a conscience for the society (Lee 1999), and reshape the practitioners (and managers) thinking and actions in the longer perspective (Lyytinen 1999). These issues also have been interpreted to be relevant for practice. Therefore, critical examination of user involvement in product development organizations should be considered useful while highlighting the risk of user involvement becoming merely a buzzword or a slogan whose acceptance and utilization is totally dependant on short-term financial motivations. Finally, the influence of the academic community should be considered. They have been shown to have power to impose meanings on social reality and to construct their objects of study in particular ways (Cooper and Bowers 1995; Finken 2003, Weedon 1987). It could be recommended that the HCI community should carefully reflect on what kind of discourses on user involvement it advocates and deems as legitimate.

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