User Involvement in IT Artifact Product Development – A Critical Poststructuralist Review

Netta Iivari

Department of Information Processing Science, University of Oulu, Finland
Email: netta.iivari@oulu.fi

Abstract
This paper suggests a critical, poststructuralist approach to information technology (IT) research and utilizes it in the analysis of user involvement in the IT artifact product development context. Central concepts of the approach are outlined. Textuality of IT artifacts is emphasized. Afterwards, user involvement literature addressing the product development context is critically reviewed. In this context Human Computer Interaction practitioners are hired to 'represent the users'. Especially the literature addressing this work is subjected to scrutiny.

Keywords: Poststructuralist, discourse, textuality, user involvement

1 Introduction

This paper suggests a critical, poststructuralist approach to information technology (IT) research, and concretizes the approach by utilizing it in the analysis of user involvement in the IT artifact product development context. IT artifacts are 'bundles of material and cultural properties packaged in some socially recognizable form such as hardware and/or software' (Orlikowski & Iacano 2001: 121). IT artifact product development refers to the development of commercial, generic IT artifacts for external use. This type of IT artifacts are developed typically for large and heterogeneous user and customer populations in a situation in which they both might be not identifiable before the product is in market, as well as very difficult to be in touch with during the development. (Grudin 1991, Grudin 1993, Grønbak et al. 1993, Keil & Carmel 1995.) Generally, one could state that in this context an ideal is that "anonymous and unlocatable designers (…) deliver technological solutions to equally decontextualized and consequently unlocatable users", an ideal which can be labeled as "design from nowhere", which is "closely tied to the goal of construing technical systems as commodities that can be stabilized and cut loose from the sites of their production long enough to be exported *en masse* to the sites of their use" (Suchman 2002: 95).

However, it has been emphasized that users should be involved while developing IT artifacts, also in the product development context. Especially Scandinavian trade unionist and recent participatory design (PD) traditions have been influential in emphasizing active user participation in IT artifact development (Greenbaum & Kyng 1991, Iivari & Lyytinen 1998). Also the field of Human Computer Interaction (HCI) has highlighted the importance of involving the users in approaches such as of UE (Usability Engineering) and UCD (User-Centered Design). In HCI, however, user involvement has traditionally been accomplished by 'representing the user' in the development; users do not actively participate in, but they are represented in, the development. It is argued that the rhetoric on 'representing the user' has altogether been crucial for the legitimacy and identity of the field of HCI. (Cooper & Bowers, 1995.) In HCI literature, the responsibility to 'represent the user' is assigned to a group of HCI practitioners labeled e.g. as usability/human factors/UCD/UE specialists (e.g. Aucella, 1997, Bødker & Buur, 2002, Borgholm & Madsen, 1999, Fellenz, 1997, Grønbak et al., 1993, Grudin, 1993, Tudor, 1998).

However, even this type of 'representative' user involvement has proven to be challenging in the product development context. This is because in this context even identifying and getting

in contact with the users are difficult. The development is often totally isolated from users. The development cycle is also typically very short and therefore there is no time for involving the users or for iteration. (Beyer & Holtzblatt 1998, Carmel & Sawyer 1998, Cooper 1999, Grudin 1991, Grudin 1993, Grønbak et al. 1993, Keil & Carmel 1995, Kyng 1994, Mayhew 1999b, Poltrock & Grudin 1994, Rosson & Carroll 2002.) The literature also highlights the difficulty of having the work of these HCI practitioners accepted in organizations. Their position is often weak, their credibility questioned and their work undervalued. (Aucella 1997, Borgholm & Madsen 1999, Kyng 1994, Mayhew 1999a, Mayhew 1999b.)

Nevertheless, product development context should be considered as a critical, even though a very challenging context for user involvement. The context is critical, since IT artifacts, be they developed in custom IS or product development context, always shape social practices. They always impose new ways to work. Users' work practices are redesigned, but often this happens only implicitly, even though explicit redesign is recommended to be carried out. (Beyer & Holtzblatt 1998, Cooper 1999, Rosson & Carroll 2002, Suchman et al. 1999.) Altogether, even though technological determinism has been rejected and interpretive flexibility of IT artifacts highlighted, it is maintained that during development 'users are configured'. This means that during development users are defined and parameters for their work practices established (Grint & Woolgar 1997). In all, also in the product development context 'users are configured', and in doing so, some attention to the users should be paid.

This paper critically analyzes user involvement in the challenging product development context by utilizing a critical poststructuralist approach informed by Foucauldian tradition. The approach has been popular in literary criticism, feminist and media studies and generally in social sciences. However, increasing interest has been paid to this type of analyzes also in the IT context, related to which typically also a metaphor of text has been utilized; IT artifacts have been perceived as texts that are written in the development context, and afterwards read in the use context (e.g, in Grint & Woolgar 1997, Suchman et al. 1999, Wilson 2002). Regarding Foucauldian analyses, some studies (Cooper & Bowers 1995, Finken 2003) have examined HCI and PD in a Foucaultian spirit as discourses constructing their objects of study in particular ways and legitimizing their existence. Altogether, studies relying on Foucaultian tradition have proliferated in the IT context (e.g. Clarke 2001, Doolin 1999, Sayer & Harvey 1997, Wynn et al 2002). Regarding studies on user involvement, the literature warns us that involvement may be used only as a buzzword or weapon for achieving managerial ends (e.g. Hirschheim & Newman 1991, Howcroft & Wilson 2003). However, these studies have been carried out in the custom IS development context. Altogether, there is a clear lack of studies critically examining user involvement in the challenging IT artifact product development context, addressing particularly the development, not the use context. This paper starts to fill in this gap.

The next section outlines the critical, poststructuralist approach and the metaphor of IT artifacts as text and their development as writing. Based on these constructs, the third section analyzes user involvement literature addressing the IT artifact product development context. Finally, the fourth section discusses the results, reviews their implications and outlines interesting, unexplored paths for future work.

2 Poststructuralist Approach

2.1 Power, Discourse, Subjectivity

Within the critical poststructuralist[1] approach informed by Foucaultian tradition, language, subjectivity and power are central notions. Language is in a critical position: language doesn't represent reality, but actively produces it. However, it is also acknowledged that different languages and different discourses using the same language produce different kinds of realities. (Hall 1997, Weedon 1987, Weedon 2004.) Discourses, following Foucault, are 'certain ways of speaking' that systematically form the objects of which they speak (Foucault 1972: 49). Generally one can say that Foucauldian discourses define how one can meaningfully talk about a topic (Hall 1997). They define and produce the meanings attached to our social reality. Meanings are socially constructed and differ in different discourses. (Weedon 1987.)

Foucault highlights that both knowledge and power are articulated in discourses. Also 'truth' is different in different discourses, and needs to be linked to power. Any statement, to be considered true, needs to be 'within the true' in the first place (Foucault 1972: 224). Societies have their 'general politics of truth', which refers to the discourses that are accepted and made to operate as 'true'. However, there is a battle 'around truth', referring to the battle related to rules that separate 'true' and 'false' and attach power to the 'true'. Important is to acknowledge that the battle is never 'on behalf of the truth', but on the status of truth and on its political and economic role. (Foucault 1972, Foucault 1986).

In the analysis of discourses one should focus on the struggle over meanings – and 'truths' - that takes place in language. The discourses compete to disseminate preferred understandings of the world. (Foucault 1972, Weedon 1987.) Altogether, discourses need to be seen as assets – 'limited, desirable, useful assets that pose the question of power': 'discourses need to be seen as objects of political struggle' (Foucault 1972: 120). In the analysis of discourse one should ask: who has the right to speak, ability to understand, access to the statements and capacity to invest the discourse in decisions, institutions and practices? These rights are limited. Furthermore, one must also consider the function the discourses play in the field of non-discursive practices and ask where are these discourses used? (Foucault 1972, Foucault 1980.)

Also academic communities take part in these discourses and in the production of meanings. Therefore, science and scientific theories need to be seen as discourses that, among other discourses, take part in the social construction of reality and try to disseminate preferred understandings of the world. Foucault strongly criticizes scientific discourses and their power to define meanings. According to him the influence of ideology in scientific discourse and the ideological functioning of science should be addressed. (Foucault 1972, Foucault 1986, Weedon 1987.)

Subjectivity is another central concept in poststructuralism. Subjectivity refers to the 'individual's sense of herself and her ways of understanding her relation to the world', it refers to the positions with which we 'structure our sense of ourselves' (Weedon 1987: 32, 33). Poststructuralism assumes subjectivity to be fragile, contradictory and constantly constituted in discourses. (Weedon 1987, Weedon 2004.) Discourses offer individuals modes of subjectivity through subject positions that must be occupied while participating in the

[1] The description of poststructuralist approach follows 'feminist poststructuralism' outlined by Weedon (1987)

discourses (Foucault 1972, Foucault 1980, Weedon 1987). The discourses 'make sense the most', 'become meaningful' and 'have effects' through these subject positions. People become discourses' subjects by subjecting themselves to the discourses. (Hall 1997: 56.) People are continuously persuaded as subjects in the discourses constituting individuals as 'subjects of certain kind'. However, people do not only adopt the discourses and the modes of subjectivity offered, but the discourses can also be questioned and challenged. Prevailing notions may be contested as well as reproduced. (Weedon 1987, Weedon 2004.) Nevertheless, some discourses are more readily available and more influential than others. On the other hand, access to the discourses might be limited; only a limited number of individuals might have the right to participate. (Foucault 1972, Weedon 1987.)

Altogether, in the analysis of discourses important is first to analyze the formation of objects (e.g. madness, sexuality) of the discourses. One needs to focus on 'certain ways of speaking' that exclude other ways. Foucault (1972: 118-119) maintains that 'everything is never said' and 'few things are said of the totality,' due to which one needs to concentrate on statements that have emerged, and figure out what 'allows them to emerge to the exclusion of all others'. One has to consider the multiplicity of silences, and what is not said, in addition to what is said. Second, one needs to analyze the subject positions individuals must occupy to take part in the discourses. One needs to analyze what kinds of subjects individuals are made to be. However, one needs to consider both those who can and those who cannot speak. (Foucault 1972, Foucault 1980, Weedon 1987, Weedon 2004.)

2.2 IT Artifacts as Texts

In the analysis of user involvement in the IT artifact development, a metaphor of text is utilized. IT artifacts are perceived as texts that are first written (developed), after which they are read (used) (Grint & Woolgar 1997). The textuality of IT artifacts leads us to media and cultural studies, in which the production and reception of different kinds of media texts have been focuses of study. In these studies there has been a shift of focus from the texts to the audiences. In the beginning, the interest was focused on the effects of the texts on the audience. The audience was perceived to be only a passive receiver of the texts. The critical tradition influential in media studies also focused strongly on the ideological functioning of the texts, and studies were textual analyses of the ideological messages the texts were trying to deliver. Later, however, interest started to turn to the uses of the texts as well, and to the active audiences making sense of the texts. The focus shifted to the multiplicity of audiences, to their heterogeneous interpretations and to the varying contexts and practices of reading. (Ang 1992, Fiske 1987, Hall 1980, Weedon 1987, Weedon 2004.) It was acknowledged that even thought the 'writers' may encode a 'preferred reading' into texts, the readers can negotiate or even oppose it (Hall 1980).

Also in the IT context the metaphor of text has been utilized (e.g, Grint & Woolgar 1997, Suchman et al. 1999, Wilson 2002). Also technological determinism has been rejected, and interpretive flexibility of IT artifacts highlighted (e.g. Grint & Woolgar 1997, Suchman et al. 1999). However, as already mentioned, it is also acknowledged that during the development 'users are configured' (Grint & Woolgar 1997). It is assumed that 'writers' inscribe 'predictions about the world' into technological artifacts. The writers produce projected, anticipated 'readers' with specific competencies, motives, tastes and aspirations, as well as the relationships between the different actors in the use setting. In all, the writers assume certain kinds of relationships between the artifact and the surrounding actors, and attempt to predetermine the prospective use setting. However, again, technological determinism is not

assumed, but instead it is assumed that the 'readers' are able to react to what is prescribed or proscribed in different ways. (Akrich 1992, Akrich & Latour 1992.)

Altogether, in this paper it is assumed that the IT artifact texts are full of potential meanings, but also capable of suggesting a 'preferred reading' to the readers. Furthermore, it is assumed that discourses play a role in here; they function in the writing as well as in the reading of the texts. Discourses function to structure the texts and they are realized in the texts (Fiske 1987). It is assumed that during the writing practice the user-readers are socially constructed, i.e., they are configured through offering them 'natural, obvious' subject positions making the text easy and obvious to make sense of. The subject positions must be occupied and the messages decoded accordingly before the message can 'have intended effects' and 'be put into use'. In a situation, in which the reader decodes the message in terms in which it has been encoded, an ideal of 'perfectly transparent communication' is achieved. However, the subject positions offered may also be resisted, and the messages decoded in a negotiated or even opposing way. (cf. Fiske 1987, Hall 1980.)

Critical tradition suggests that the 'preferred reading' of a text is defined by the dominant ideology advocating the interests of the elite groups in patriarchal and/or capitalist society/organizations. In the IT context one can also argue that the 'preferred reading' is encoded into the IT artifact texts – preferred reading being in this case defined typically by the management.

3 'Reader Involvement' in the IT Artifact Product Writing

3.1 How to Involve the 'Readers'?

The field of HCI developed in the context of product development (Grudin 1991), in which user involvement has traditionally been accomplished by 'representing the user' (Cooper & Bowers, 1995). The responsibility to 'represent the user' has been assigned to HCI practitioners. The term 'represent' implies that user involvement is indirect; i.e., user influence is exerted through intermediaries (Mumford 1983). The verb 'represent' denotes 'one person standing for another' having delegated authority usually resulting from election (Merriam Webster online dictionary http://www.m-w.com). In 'representative user involvement' - i.e. there is a representative group standing for a user population – (preferably elected) user representatives are involved in the design process and are assigned some decision-making power (Mumford 1983). HCI practitioners are positioned as 'user representatives' 'standing for the user population' in development 'configuring the user' (Grint & Woolgar 1997), but the users have not elected them and there is not delegated authority.

Users' role is informative or consultative (Damodaran 1996) at the most: users are allowed to comment on predefined design solutions and/or to act as providers of information and objects of observation, but they do not actively participate in the design process or have decision-making power regarding the design solution. Furthermore, also HCI practitioners' role can be classified as informative, consultative or participative (cf. Damodaran 1996). HCI practitioners might only act as providers of information and as commentators of predefined design solutions. Typically in HCI methodologies (e.g. Beyer & Holtzblatt 1998, Nielsen 1993, Mayhew 1999b, Rosson & Carroll 2002) empirical user testing and/or usability inspections are to be carried out to evaluate design solutions, and these evaluations are typically to be organized by HCI practitioners. Therefore, HCI practitioners are positioned as 'providers of information' and as 'commentators of predefined design solutions' delivering

'user data' and 'user/usability feedback' to development. Furthermore, also empirical inquiries regarding the users, their work practices and the contexts of use are typically suggested in the HCI textbooks. Again, if applied by HCI practitioners, who afterwards deliver this 'user data' to the development, these methods position HCI practitioners in an informative role.

However, it has also been acknowledged that in an informative or consultative role HCI practitioners are trying too late and ineffectively to contribute to the 'configuration of the user', i.e. their work is carried too late having no effects on design (Aucella 1997, Bødker & Buur 2002, Borgholm & Madsen 1999, Grønbak et al 1993, Grudin 1993, Kyng 1994, Rosson & Carroll 2002). It has been acknowledged that HCI practitioners should be able to contribute earlier and more directly to the design, i.e. HCI practitioners are to be in a participative role (cf. Damodaran 1996) in 'configuring the user'. Designers and HCI practitioners should cooperate and HCI practitioners should be perceived as team members and allies (Aucella 1997, Bloomer & Croft 1997, Cooper & Bowers 1995, Fellenz 1997, Mayhew 1999a, Mayhew 1999b, Tudor 1998). Altogether, it is argued that HCI work should become an integral part of IT artifact development, and HCI methodologies should be integrated with the IT artifact development process as well as with the computer science curriculum (Fellenz 1997, Mayhew 1999a, Mayhew 1999b, Nielsen 1993).

However, critical tradition argues that the 'writing strategies' should be subjected to scrutiny. They can be disruptive or conservative, or in feminist studies feminine or masculine (Hall 1980, Fiske 1987, Weedon 1987, Weedon 2004). Interesting also in the IT context would be to consider whether the writing strategies are disruptive, conservative, feminine or masculine. Furthermore, in recent studies in anthropology and in feminist, media, cultural, racialized and queer studies there has been a call for previously 'marginalized' and 'neglected' authors (female, black, homosexual, working class, non-Western…) to speak for the marginalized groups they represent, who have earlier been totally dismissed, or only situated on the side of the reader. The authoritative writers have had full control to write the texts and they have utilized writing strategies advocating only the interests of dominant groups. However, now it is argued that a voice should be given to these marginalized groups. Either they are encouraged to write themselves, or at least they are invited as co-authors into the writing practice (Clifford & Marcus 1986, Clifford 1988, Weedon 1987, Weedon 2004.)

In this paper the focus is on reader involvement in the IT artifact writing practice. Does this imply that also in the IT context the marginalized, neglected groups (users) have been given a voice and the right to speak for themselves due to these ethical concerns? To a certain extent: yes. However, future discussion reveals that there is a multitude of motives for involving the reader-users in the writing practice, of which many do not consider the rights of these 'marginalized', 'neglected' readers nor the ethical issues surrounding both writing and reading of the IT artifact texts.

Finally, as a last point of this section it is mentioned that the calls for more 'reader involvement in the IT artifact writing practice' (e.g. studies arguing IT artifact development is to be altered to incorporate more user/HCI practitioner involvement) can also be read as texts inscribing 'predictions about the world' written by the ones advocating reader involvement in the IT artifact writing practice and read by the ones expected to change – by those who are to involve the readers or who are to be involved as readers. The writers of these inscriptions are again producing projected, anticipated readers (i.e. designers, HCI practitioners and users) with specific competencies, motives, tastes and aspirations, as well as relationships between

these actors in the reading (i.e. IT artifact writing) setting. However, again, textual determinism is not to be assumed, but instead the prospective readers are able to react to what is prescribed or proscribed in different ways. (cf. Akrich 1992, Akrich & Latour 1992.)

3.2 Why to Involve the 'Readers'?

The motivations offered for user involvement in the IT artifact product development context are next discussed by adapting Iivari's (1991) approach for the analysis of systems development methodologies. By following it, the role and value of user involvement are considered. Related to the role of reader involvement, the approach can be means-end oriented, interpretive or critical (cf. Iivari 1991). In the means-end oriented approach reader involvement 'provides means knowledge for achieving certain ends without questioning the legitimacy of the ends' (cf. Iivari 1991). Within the interpretive approach, on the other hand, the aim of reader involvement is to 'enrich peoples understanding of their action and of how social order is produced and reproduced' (ibid.), i.e. reader involvement is needed for understanding the 'readers' viewpoint'. The aim is to understand the shared meanings among reader community, which necessitates contact between readers and writers (cf. Hirschheim & Klein 1989, Iivari & Lyytinen 1998). Finally, the critical approach postulates that reader involvement has 'a critical imperative: the identification and removal of domination and ideological practice' and it is maintained that the goals of reader involvement 'should be subjected to the critical analysis' (cf. Iivari 1991). Managerialist agendas, 'preferred readings' and dominant ideologies inherent both in the texts and in the writing practice are to be questioned (cf. Asaro 2000, Hirschheim & Klein 1989, Howcroft & Wilson 2003, Iivari & Lyytinen 1998).

Typically, in the user involvement literature addressing the product development context the goal of reader involvement is usability (and in some cases also usefulness) of the IT artifacts. A part of HCI literature advocates particularly *usability*, defined as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction, in a specified context of use" (ISO 13407 1999). The term UE explicitly emphasizes the development of usability, in this case through systematic engineering methods and techniques (Karat 1997). UCD, on the other hand, emphasizes creativity rather than engineering (Karat 1997), however, also aiming at usability (ISO 13407 1999). Altogether, the assumption is that 'reader involvement' is needed for building usable (and useful) IT artifacts. It is assumed that reader involvement is needed for writing IT artifact texts that effectively and efficiently enforce the 'preferred reading'. Involvement is a means to this end, which needs not to be questioned. (Asaro 2000, Hirschheim & Klein 1989, Howcroft & Wilson 2003.) The goal is 'functional empowerment of readers', maintaining that readers need to be empowered to read the texts effectively, efficiently and within the range of the 'preferred reading' (cf. Clement 1994). 'Democratic empowerment' (ibid.) of the skilled readers, maintaining that readers need to be empowered to participate in the decision-making in their work place, is not mentioned.

Furthermore, the value of reader involvement is interpreted to refer to whose interests' reader involvement serves (cf. Iivari 1991). In all, either the interests of the capital or the labor are emphasized. In the case of emphasizing the interests of the labor, the reader is constituted as an oppressed 'labor reader'. Within this orientation the management goals are contrasted with the goals of the labor and the goals of the labor are the ones advocated (Asaro 2000, Hirschheim & Klein 1989). Within the ideology of managerialism, on the other hand, the management goals are the main motivators for reader involvement. This orientation emphasizes profit maximization, work intensification, successful implementation and

competitive advantage achievable through reader involvement (Asaro 2000, Hirschheim & Klein 1989). Aim is to improve the writing practice (to identify better requirements, validate writing options, deal with change in requirements) and/or to facilitate the reading practice (ensure follow-up, overcome resistance, ensure acceptance) (cf. Nandhakumar & Jones 1997) through reader involvement. Readers are involved for increasing management control and productivity, and for decreasing resistance (Howcroft & Wilson 2003).

HCI literature argues that usability/UCD/UE should be 'sold' into organizations. Business perspective is emphasized. It is argued that HCI work should contribute to the business success of the development organization. (Beyer & Holtzblatt 1998, Bloomer & Croft 1997, Cooper 1999, Fellenz 1997, Mayhew 1999a, Mayhew 1999b.) Generally, usability is postulated as an important competitive edge in maturing software markets (Grudin 1991, Nielsen 1993, Rosson & Carroll 2002). HCI practitioners should take care that their work makes sense from the business perspective and is related to achieving key business goals. Especially important is to show the benefits achieved. (Beyer & Holtzblatt 1998, Bloomer & Croft 1997, Cooper 1999, Fellenz 1997, Mayhew 1999a, Mayhew 1999b.) Altogether, the ideology of managerialism is evident. Management goals are postulated as the main motivators for reader involvement. Profit maximization, work intensification, and competitive advantage achievable through reader involvement are highlighted.

3.3 Summarizing the Results

One can summarize that reader involvement in the IT artifact product development context aims at contributing to the writing practice in a way that the subject positions offered to the readers are 'natural to occupy' and make the texts clear and easy to make sense of. These subject positions are to make the readers decode the texts accordingly, i.e. to adopt the 'preferred reading of the texts' so that the texts 'have intended effects'. The readers are to become 'certain kinds of reader-subjects' by accepting the subject positions offered to them. The intended effects are related to profit maximization, competitive advantage and intensification of the reading practice in the reader community. In addition, the literature addressing reader involvement in the IT artifact product development context also aims at contributing to the writing practice by offering 'a rewritten writing practice' as a text. Again, this text offers subject positions to the readers (designers, HCI practitioners and users in this case) that are to make the readers decode the texts accordingly, i.e. to adopt the 'preferred reading of the texts' so that the texts 'have intended effects' that in this case are related to profit maximization, competitive advantage and intensification of the writing practice in the writer community. Therefore, one can argue that discourses that advocate these issues as legitimate concerns speak through these texts, through their writers and through those readers who have adopted the subject positions offered to them.

However, to achieve these ends, it is assumed that the user-readers (but surprisingly not the designer-readers reading the rewritten writing practice as a text) are to be somehow involved in constructing these texts. 'Reader involvement' necessitates offering and adoption of certain kinds of subject positions - making the readers certain kinds of 'involved readers' and the writers certain kinds of 'involving writers' negotiating various discourses inscribing IT artifact writing. Related to these subject positions, either it is assumed that the readers are to be in a position to influence what kind of subject positions and 'preferred readings' are offered to them, or they are to be in a position capable of indicating what kind of subject positions and accompanying 'preferred readings' are natural, obvious and understandable to them. The HCI literature advocating 'surrogate reader involvement' in the IT artifact writing practice legitimizes its existence largely with the latter argument. In the product development

context it is typically assumed that the writers are incapable of constructing subject positions that make the texts easy and obvious to make sense of. They encode the 'preferred reading' and subsequent subject positions into the texts, but too often they have been resisted or simply not understood by the readers, due to which 'involved reader' is needed and the involvement is to be organized by practitioners having expertise in positioning 'readers as involved' and in constructing these 'natural subject positions' into the IT artifact texts. These practitioners, furthermore, aim at gaining the position of a co-author in the IT artifact writing practice, but, however, their role might be restricted to be only informative or consultative, i.e. they may be only consulted related to how to write a particular part of a text, or they may be only allowed to comment on already written pieces of text.

4 Concluding Remarks

This paper has suggested a critical, poststructuralist approach to IT context, and utilized it in the analysis of user involvement literature addressing the IT artifact product development context. As a result, user involvement is conceptualized as indirect 'surrogate reader involvement' in the IT artifact writing practice aiming at encoding the 'preferred reading' into the IT artifact texts.

Regarding the limitations of this paper, I emphasize that I do not suggest that IT artifacts are (only) texts, but instead that interesting issues can be revealed while considering them as texts. However, this metaphor is a limited one particularly when applied in the IT artifact use context. Conceptualizing implementation/adoption/use of IT artifacts as only 'reading' does not do justice to the heterogeneity and multiplicity of material and non-discursive practices and consequences of the implementation/adoption/use. IT artifacts are not only texts waiting to be read by the readers, but they are texts that will actually be 'put into use' and 'have effects' in a much broader sense than e.g. television programs or advertisements, safety-critical systems as an extreme example. Furthermore, also recent media studies have acknowledged the limitedness of the concept of 'reading', and argued it should be replaced by concepts such as appropriation, domestication, taming or consumption.

On the other hand, in the writing context the metaphor emphasizes important issues. Following Suchman et al. (1999) I argue that the metaphor succeeds emphasizing the interrelated but at the same time uncertain nature of the relationship between design and use, and the impossibility of controlling it as well as the importance of respecting it. Furthermore, IT artifact development is not only metaphorically writing, but it actually largely is writing. This applies especially to the IT artifacts packaged in software. Furthermore, this applies also to some extent to the work of HCI practitioners, who write 'representations of the users and their work' and in some instances are also allowed to write parts of the IT artifact texts, or at least comment on them. Overall, the metaphor of the text is capable of emphasizing the problematic nature of IT artifact development. As argued, in the development the users are configured and the parameters for their work practices established (Grint & Woolgar 1997), through writing (a) text(s). HCI practitioners try to ensure that the users and their work practices are defined in the text in a way that suits the users. However, afterwards these texts are 'run', i.e. they are put into use and have effects, and in this case not only in peoples minds. Related to this, no matter how fancy the methods and techniques developed for 'understanding the user', for 'user task redesign' or for 'user evaluation', ultimately they only contribute by providing background knowledge based on which/despite which the IT artifact texts are written.

The paper relies on interpretive and critical research traditions. Generally, in this type of research, relevance to practice has not been the main goal. Furthermore, I experience difficulties in positioning myself as a 'writer' providing inscriptions to the practitioners involved in the writing of the IT artifact texts – as writers, as the ones involving the readers or as readers being involved. I experience it to be uncomfortable if not impossible to define these anticipated practitioner-readers, relationships between them as well as their prospective work practices. Furthermore, empirical audience studies referenced in this paper have sometimes defined as their main goal to produce results that are NOT utilizable by the media industry. Audience researchers should be careful NOT to produce tools for the media industry to utilize in exploiting the audiences. (Ang 1992.) Of course it depends on the definition of relevance for practice (results directly usable by managers for making profit vs. results reshaping the mental models of practitioners) whether it is in contradiction with the critical tradition. Relevance for practice in this paper is of this latter type.

Regarding paths for future work, studies on our representational practices and articulations of our authority (see e.g. Clifford 1989, Clifford & Markus, 1986) are recommended. In this study I have not reflected on these issues, i.e. the reflection on my representational practices is lacking. Therefore, I recommend reflective, critical examinations of the role of researchers in the production of scientific knowledge on the phenomenon of user involvement in the IT artifact product development: we are writing 'stories' related to which one should critically examine for whom these stories are produced and why; what kind of subject positions do they offer to the writers (the researchers) and to the readers (other researchers and the practitioners writing the IT artifact texts, involving the readers or being involved as readers); and, altogether, how do they contribute to the construction of our identity as a field and how do they try to legitimize our existence (c.f. Cooper & Bowers 1995, Finken 2003)?

Regarding empirical research, I recommend especially studies on user involvement in the IT artifact product development context. The metaphor of IT artifacts as texts, their development as writing and user involvement as 'surrogate reader involvement in the writing practice' should be utilized further. Furthermore, one could examine the writing strategies (conservative, disruptive, masculine and feminine) in more depth, and particularly from the viewpoint of the 'writer'. IT artifact texts could be analyzed as embodying and realizing particular discourses encoded into the texts by the writers. The construction of particular subject positions and associated preferred readings could offer a multitude of interesting paths for future work. Finally, also studies on reading the IT artifact texts including analyses of the offered and occupied subject positions and associated preferred, negotiated and opposed readings would be interesting, even though this metaphor provides a limited viewpoint for the analysis of the use context. At least one can state that studies in the use context would contribute by making the voices of the readers heard, voices clearly silenced in this paper, in which user involvement of indirect nature has only been discussed.

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