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Disregarding History: Contemporary IS Contexts and Participatory Design

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Abstract:

User participation has long been seen as a core topic of study within the IS field, yet its relevance to contemporary development environments and contexts has recently been brought into question. The aim of this article is to investigate the extent to which this rich history and experience is used to inform contemporary practices. We provide a survey that evaluates the degree to which PD (participatory design) is currently represented in the IS literature, the results of which reveal a low representation. Based on these findings, a number of propositions are offered.

Keywords: participatory design, user participation, information systems development, users

I. INTRODUCTION

The relevance of user participation and participatory design to the changing IS development context has been noted in numerous quarters. Described as "an old, tired concept" [Markus and Mao, 2004], user participation and participatory design have become marginalized as core topics of study within the IS field. However, minor indications suggest the need to reexamine how we incorporate this established tradition into new environments. For example, the participatory design (PD) conference centered their 2008 conference theme on "Experiences and Challenges" —posing the question as to how we can meet the challenges of future trends while reflecting on past experiences. Similarly, a special issue of the *Scandinavian Journal of Information Systems* discussed "Distributed PD: Challenges and Opportunities" [2009] in order to reflect on how best to respond to different contexts of use, while drawing on the accumulated tradition of PD.

The practice of contemporary IS development has for some time pushed the boundaries beyond in-house development focused on working practices within clearly defined organizational parameters. Current environments may concern themselves with mobile technologies, open source software, distributed development, standard software packages, social media, and cloud computing. However, these environments seemingly attract limited attention from PD researchers, perhaps because "intervention requires a location" [Beck, 2002, p. 80]. It may be challenging to precisely situate where the design intervention takes place, and, indeed, much of the technology is designed for users not known or knowable in advance. This trend is reinforced with the growth of large, generic systems that are intended to have broad appeal to a mass market of users and are situated within an increasingly competitive market for software products and services [Carmel, 1997; Sawyer, 2001]. Rather than rise to the challenge these innovations pose, the conditions are often used to justify "design as usual" [Suchman, 2007], whereby professional developers are systematically separated from prospective technology users.

In this article it is our intention to revisit the topic of PD, given the changing development context and the challenges that are posed. Our research aim is to assess the extent to which PD has been considered in the IS literature within the five-year period of 2005–2009 and to examine how PD has been applied in contemporary development environments. Based on our survey of the literature and broader readings, we offer a number of propositions for future research whereby the valuable contribution of PD can be incorporated into present-day contexts.

II. USER PARTICIPATION AND THE SCANDINAVIAN TRADITION OF PARTICIPATORY DESIGN

How best to involve users in processes of change is an ongoing conundrum that besets many disciplinary areas, such as architecture, town planning, local government, and engineering. Within information systems, user participation in the design and development of technology has long been a core concept with a distinction between North American and European traditions [Lamb and Kling, 2003]. Pioneered in Scandinavia in the late 1960s with its core concern centered on workplace democracy and empowering trade unions, participation has been accepted practice for many years [Bjerknes and Bratteteig, 1987], almost to the extent that it has become institutionalized. In the UK, user participation first took root with the proponents of socio-technical design (for example, Mumford, 1979, #66) from the Tavistock Institute which concerned itself primarily with the "fit" between social and technical aspects of systems development. Meanwhile in the U.S., user participation began to have some influence in the 1990s, mainly in large corporations and notably in relation to Computer-supported Cooperative Working [Muller, 1992] and Joint Application Development [Carmel, Whitaker, and George, 1993]. These different cultural and political settings provide quite distinct perspectives on technology and its role in the workplace [Asaro, 2000], with the North American perspective tending to view users as a "functional input" and the process being overwhelmingly technical, while the European tradition was more inclined toward the humanization of work. Although there are examples from the U.S. tradition that have critiqued the treatment of users (e.g., Beath and Orlikowski, 1994; Markus and Bjorn-Anderson, 1987), the European tradition is seen as being "more confrontational" [Lamb and Kling, 2003], adopting a more critical assessment of the role of institutional power within systems development. While it has been argued that there is a coming together of shared concerns and identifiable commonalties among these different streams of research [Asaro, 2000], in practice, PD varies quite considerably, operating on different levels across settings and application domains [Clement, Costantino, Kurtz, and Tissenbaum, 2008].

Scandinavian countries have been at the forefront of PD as both early adopters and in terms of their influence. This section of the article will focus on the principles of this tradition since our interest lies in appreciating its application

and relevance to more contemporary settings. Notwithstanding the problems with PD, as noted elsewhere in the literature, arguably PD has greater potential than the broader concepts of user involvement and user participation. It is less likely, and indeed would be at odds with its founding principles, to be operationalized for instrumental reasons—a rationality that is often all too evident to users.

Many Scandinavian research projects differ culturally and politically in that they subscribe to the notion of increasing workplace democracy: the intention being that all employees should have influence over their work situation and participate in decision-making forums, regardless of their position within the organizational hierarchy [Bjerknes and Bratteteig, 1995]. PD is based on the foundational principle of democracy [Iivari and Lyytinen, 1998] and practically translates into people participating in the design process as co-designers of the technologies they use [Ehn, 2008]. It is centered on supporting users, usually as workers, in the participation of design activities in a process of active engagement as a means of creating new ways of working together. The intentions are clear: "For us, user participation does not mean interviewing a sample of potential users or getting them to rubber stamp a set of system specifications. It is, rather, the active involvement of users in the creative process we call design" [Greenbaum and Kyng, 1991, p. 3]. In this respect, PD is often seen as being different from more conventional IS design approaches, in that users and developers "share the responsibility" for the quality of both the design and the system as implemented [Bjerknes, 1993].

The Scandinavian tradition of PD has a long history that is based on different ideologies and theories (for more detail, see Bansler, 1989; Floyd, Mehl, Reisin, Schmidt, and Wolf, 1989; Iivari and Lyytinen, 1998). However, for simplicity, we highlight two important features that have been identified as foundational principles [Ehn, 1993; Schuler and Namioka, 1993].

The Political Principle

This raises questions about power and control. The basic motivation is centered on democracy whereby people who are affected by a decision or an event should have an opportunity to influence it. This links closely with the rather contentious notion of empowerment of workers, enabling workers to codetermine the development, not only of the technology, but also their workplace [Clement and Besselaar, 1993]. Therefore, a core concern is based on the need to understand how collaborative design processes can be steered by the people that are affected by that design. This political project was critical of the "harmony perspective" [Nygaard and Sorgaard, 1987] that takes little account of circumstances where conflict is endemic and cannot simply be resolved by "open" debate. Therefore, consensus cannot be assumed; rather controversies and contradictions around systems design projects are expected. Accordingly, PD projects often sided with the less powerful (such as trade unions) with a view to developing project strategies to legitimate and facilitate effective participation (this includes early PD projects such as NJMF in Norway, DEMOS in Sweden, DUE in Denmark, and UTOPIA in Denmark and Sweden; see Floyd et al. [1989] for further details).

The Technical Principle

PD is founded on the notion that the effective participation of skilled users can contribute to high-quality products and systems, which stands in contrast to "the cult of the specialist" [Schuler and Namioka, 1993], whereby the developer is portrayed as an expert who is able to enlighten the users. Co-design is intended to counter the hierarchical and formalized stages of systems development, giving legitimacy to the tacit knowledge and aesthetic experiences of users, rather than privileging abstract specifications and graphical representations.

Without doubt, the Scandinavian tradition and its approach toward user participation has been extremely influential in the IS literature, even though it may have taken some time before its presence was felt beyond Europe. The journal *Communications of the ACM* dedicated a special issue to PD as late as 1993, where the guest editors described it as a "relatively new field" [Muller, Wildman, and While, 1993]. Undeniably, the cultural context plays a role in how PD is perceived and received, as summarized below:

> *Americans are fed a steady diet of products and ideas that include the word democracy, yet within the confines of the workplace, the concept is rarely, if ever, addressed … decision-making in the American framework is clearly management's prerogative* [Greenbaum and Kyng, 1991, pp. 35–36].

More recently, it has been suggested that there has been a convergence of approaches leading toward a body of PD methodologies that explicitly value the importance of representing users in systems design and seek to integrate them into the process [Asaro, 2000]. Therefore, for the purpose of this article, we adopt an intentionally broad definition of PD based on an understanding that projects will involve users as central actors in systems development activities.

III. RESEARCH APPROACH

In this section we analyze research that has focused on participatory design and information systems during the five-year period 2005–2009. This is in order to assess the extent to which PD is represented in the literature and to consider how its principles inform contemporary development environments. To facilitate this overview, we directed our attention to refereed journal articles since they are regarded as being of highest value, as compared to international conference papers or books. Had we elected to include conference papers (such as the European Conference on Information Systems, or IFIP WG 8.2 conference papers which focus on the organizational aspects of IT), we may have come across additional papers concerned with PD and IS. However, our concern is with papers that were deemed to be of a standard that was sufficiently high enough for international journal publication and thereby legitimized this topic as worthy of interest to an international community. In addition, we focused specifically on journals that were located within the IS discipline and considered only papers which were located unequivocally within this literature. The journals chosen had information systems as their primary focus, as opposed to management science, computer science, or information science, for example. We selected journals whose principal readership is intended for those involved in the IS field. Had we allowed ourselves to dip into the information science literature, the computer science literature, the organizational studies literature, or the management science literature, it is likely that we would have found others.

Given that our research goal was to learn about the ways in which PD is considered and addressed within the contemporary IS literature, we focused on two primary research questions:

> *To what extent has PD been considered in the IS literature within the last five years?*

> *How has PD been applied in contemporary development environments?*

With this in mind, our analysis was made using research papers in six IS journals that constitute the "basket of journals" deemed to represent the premier journals in the field, arising from the AIS Senior Scholars Forum (2007). These six journals are *European Journal of Information Systems, Information Systems Journal, Information Systems Research, Journal of AIS, Journal of MIS,* and *MIS Quarterly.* They cover both "European" and "mainstream" research traditions [Walsham, 1995] and are ranked within the top twenty-five of a range of international studies concerned with the prestige of IS journals [Hardgrave and Walstrom, 1997; Lowry, Romanas, and Curtis, 2004; Mylonopoulos and Theoharakis, 2001; Peffers and Ya, 2003].

In order to address the two research questions, a survey was used to evaluate the quantity and nature of the types of papers that have been published in IS journals which have user participation or participatory design as their primary focus. We do not claim that the survey is exhaustive, nor do we assume that a more comprehensive survey would deliver any significantly different results. The analysis carried out involved the identification of all research papers that might broadly be defined as covering the topic of PD in the selected journals. An inclusive definition was adopted, as the search was based on tracing the words *user, participation*, or *participatory design* in the title, keywords, or abstract. We assumed that papers which omitted these terms from such prominent identifiers did not have PD as their core concern.

The search returned 122 papers. Within those selected, a number of papers were rejected since they may have contained the term *user/s* in the title, keywords, or abstract, but on closer reading it soon became clear that neither PD nor user participation was the primary (or even secondary) concern of the paper. Some papers had peripheral relevance to the foundational principles of PD, in that they considered issues of power and politics (such as Bartis and Mitev, 2008; Lin and Silva, 2005; Häkkinen and Hilmola, 2008), but PD was not their core focus. At the other extreme, a number of studies touched on the technical principle of user participation, whereby users are employed to design high-quality products and systems (e.g., Jiang, Klein, and Chen, 2006; Lim, Shan Ling, and Chee Wee, 2005), but a number of these papers simply utilized participation in an instrumental way to enhance project success, and so they were also excluded.

In the next stage of analysis, the papers were categorized as either theoretical (based on synthesizing and reviewing the literature) or empirical (with a substantial field work component). Given that our concern is with the principles and practices of PD, the theoretical papers (e.g., Stahl's 2007 paper that examined the common ground between ETHICS and Critical IS research), papers that proposed conceptual frameworks (e.g., Champion, Stowell, and O'Callaghan, 2005) or methodological guidelines were then omitted even if their concern may lie with user participation or PD. This represented a limited number of papers. Of the empirically-based papers, we further divided these according to whether they were based on a factor or process-model approach (see Newman and Robey, 1992). To briefly summarize, the factor approach identifies predictors and outcomes, which are then conceived as variables that can be measured, often using a statistical technique such as regression analysis. Process models are

concerned with the dynamics of socio-cultural change and study events as they take place over time as a means of explaining how and why particular outcomes are achieved. Given that we are dealing with human actors, not human factors [Bannon, 1991], we elected to exclude papers from the factor-based approach. This "variables-centered research paradigm" is inclined to remove actors, actions, and artifacts, thereby depopulating the organizational and social terrain that is of interest and creating a world where only variables exist [Ramiller and Pentland, 2009, p. 476]. We also chose to select papers based on real-world contexts as opposed to simulated environments using student groups as substitute users.[1] By narrowing down the focus in this way, the papers that remain are based on empirical studies.

IV. RESEARCH FINDINGS

Our search returned eighteen papers that met the criteria outlined above, which points to a limited presence in core IS literature in the period studied (see Table 1). To be clear, these identified papers are not necessarily reflective of PD in the Scandinavian tradition, but they each attempt to operationalize PD practices in contemporary environments. It is in this context that the papers, taken as a whole, will contribute to the formulation of the propositions that follow.

The limited number of papers identified from the survey is surprising, given that JAIS devoted a special issue in 2007 to the contribution of Enid Mumford. The papers were categorized to draw two key distinctions. The first category included papers that focus on "design for use before use" and involve anticipating or envisioning design before it has actually taken place [Ehn, 2008]. These papers prove interesting in the ways in which they conceptualize, aim to incorporate, and reflect on participatory practices in contemporary settings, such as a land management project in India [Puri, 2007], open source projects [Fang and Neufeld, 2009], and task redesign in a client organization [Sarkkinen and Karsten, 2005]. In the second category, we placed papers that focused on post-implementation and use, also referred to as "design for design after design" [Sarkkinen and Karsten, 2005]. Within studies in the latter category, PD was rarely the primary focus; instead, their concerns centered more broadly on collaboration/involvement/engagement[2] in contemporary IS environments, ranging from enterprise systems to open source and mobile technologies. Within many of the projects, the technology design had been decoupled from the use environment, and authors were reporting on and analyzing user experiences.

How can we account for this low return from our literature survey? If we revisit the two foundational principles of PD outlined earlier, the "political" underpinnings have been prominent in the Nordic countries, given the broader sociopolitical landscape with distinctive industrial relations [Ehn, 1993]; it could well be that this fails to translate across national boundaries where cultural contexts differ. However, in recent years there has also been a decreasing interest in the political aspect of software design [Beck, 2002; Bjerknes and Bratteteig, 1995]. Although the Scandinavian approach does not have the monopoly on participatory approaches, nevertheless, it has a radical history with a number of early projects committed to promoting industrial democracy and quality of working life. However, over time this approach has lost much of its critical edge [Iivari and Lyytinen, 1998], and, in practice, the notion of joint decision-making and worker influence has virtually disappeared [Kyng, 1998]. The pioneer of ETHICS [Mumford, 1995] explains this in the context of the changing business climate and the move to "lean" techniques where notions of job satisfaction and employee empowerment no longer feature. In addition, the predominantly positivistic, managerialist tradition within IS research [Howcroft, 2009; Richardson and Robinson, 2007] leaves little space for the telling of alternative stories that do not center on the utilization of ICTs, which could explain why much mainstream research is bent toward the delivery of technical solutions with the provision of instrumentalist prescriptions. A further explanation for our survey results could be that the rhetoric of user involvement is so pervasive that it is implicit within the studies being reported and, therefore, is not highlighted specifically within the papers. Unfortunately, a closer reading reveals that the glare from technology has only served to marginalize users and PD.

Turning to the "technical" reasoning for adopting PD practices, changing spatial considerations, whereby users and developers are often physically separated, can in itself constrain co-design. Likewise, the growth of generic software products inhibits connections with a defined user base. Furthermore, the assumption that co-design can contribute to higher-quality products and systems may be seen as no longer valid. The fetish for linking user participation to system success has revealed inconclusive findings, making it difficult to determine the precise impact of user participation, if indeed any exists at all (see Olson and Ives, 1981; Cavaye, 1995; He and King, 2008). There are information systems development projects where users participate but which are not successful, yet there are also projects which are successful but where users do not participate.

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[1]   While we acknowledge that there are instances where empirical access may be difficult, we believe that students are often used too frequently as replacements for "developers" or "users."

[2]   The term *participation* was largely absent from these papers and the users became *clients.*

Despite the apparent simplicity of the technical reasons for adopting participation, it appears that we are not always able to live up to our espoused theories in practice. Without doubt, historically PD has been extremely influential in the IS literature;. However, it has been suggested that much of this debate has centered around information systems researchers rather than practitioners, which implies that the impact of this tradition on practice is questionable: "We might see more variance across national or regional boundaries in the way we talk about information systems development than in the way systems are developed" [King, 1998, p. 207]. With regard to systems development methodologies Beath and Orlikowski [1994] illustrate the incompatibility between the rhetoric of "user involvement and the actual and prescribed procedures assigned to users". They are marginalized and adopt passive roles throughout most of the development process until the system is to be signed off, at which point they are expected to step up and take responsibility for the outcomes. Similar contradictions are also reported in a study that highlights the dissonance between company policy on user participation and the reality of practice [Howcroft and Wilson, 2003]. Notions of empowerment and democracy have broad surface appeal but are often sought primarily as a way to improve business performance and not as a charitable gesture from management [Psoinos, Kern, and Smithson, 2000].

Table 1: Results of the Literature Survey 2005–2009			
Design before use			
Author, year	Journal	Title	Key words
Sarkkinen and Karsten, 2005	*Information Systems Journal*	*Verbal and visual representations in task redesign: how different viewpoints enter into information systems design discussions*	Critical discourse analysis; task redesign; verbal and visual representations; social struggle; social determinants
Puri, 2007	*MIS Quarterly*	*Integrating scientific with indigenous knowledge: constructing knowledge alliances for land management in India*	Information systems; participation: rural development; scientific knowledge; indigenous knowledge; boundary objects; India; less-developed countries
Fang and Neufeld, 2009	*Journal of Management Information Systems*	*Understanding sustained participation in open source software projects*	Communities of practice; legitimate peripheral participation; open source projects; open source software community; qualitative study
Design after design (implementation and use)			
Author, year	*Journal*	Title	Key words
Bartis and Mitev, 2008	*European Journal of Information Systems*	A multiple narrative approach to information systems failure: a successful system that failed	Information systems failure; social construction of technology; narrative methodology; organizational power; organizational culture
Scheepers, Scheepers, and Ngwenyama, 2006	*European Journal of Information Systems*	Contextual influences on user satisfaction with mobile computing: findings from two healthcare organizations	User satisfaction; mobile technology; social context
Prasopoulou, Pouloudi, and Panteli, 2006	*European Journal of Information Systems*	Enacting new temporal boundaries: the role of mobile phones	Mobile phones; temporal order; structural and interpretive properties; temporal boundaries; information systems and time
Jensen, Blegind and Aanestad, 2007	*European Journal of Information Systems*	Hospitality and hostility in hospitals: a case study of an EPR adoption among surgeons	Healthcare information systems; Electronic Patient Record adoption; user perceptions and attitudes; hospitality
Ferneley and Sobreperez, 2006	*European Journal of Information Systems*	Resist, comply, or workaround? An examination of different facets of user engagement with information systems	Resistance; compliances: workarounds; chains of evidence; case study research
Payton and Kiwanuka-tondo, 2009	*European Journal of Information Systems*	Contemplating public policy in HIV/AIDS online content, then where is the technology spirit?	Studies; public policy; Human Immunodeficiency Virus—HIV; patient education; online information services
Hääkinen and Hilmola, 2008	*Information Systems Journal*	ERP evaluation during the shakedown phase: lessons from an after-sales division	ERP systems: IS evaluation; shakedown phase; case study

Table 1: Results of the Literature Survey 2005–2009 – Continued			
Alvarez, 2008	*Information Systems Journal*	Examining technology, structure, and identity during and enterprise system implementation	Enterprise systems; identity; user resistance; deskilling
Howcroft and Light, 2006	*Information Systems Journal*	Reflections on issues of power in package software selection	Power; package software; software selection; customer relationship management; IT vendors; IT consultants
Davis and Hufnagel, 2007	*MIS Quarterly*	Through the eyes of experts: a socio-cognitive perspective on the automation of fingerprint work	Technological frames; work redesign; job characteristics theory; personal construct theory; repertory grid; technicians
Levina, 2005	*Information Systems Research*	Collaborating on multiparty information systems development projects: a collective reflection-in-action view	System design and implementation; outsourcing; management of IS projects; critical perspectives on IT; interpretive research; ethnographic research
Wagner and Newell, 2007	*Journal of the Association for Information Systems*	Exploring the importance of participation in the post-implementation period of an ES project: a neglected area	ERP; enterprise systems; participatory design; user involvement; user participation; implementation; post implementation
Olphert and Damodaran, 2007	*Journal of the Association for Information Systems*	Citizen participation and engagement in the design of e-government services: the missing link in effective ICT design and delivery	Socio-technical systems theory; participatory design; e-government; citizen engagement; capacity building
Germonprez, Hovorka, and Collopy, 2007	*Journal of the Association for Information Systems*	A theory of tailorable technology design	Technology tailoring; design theory; kantanian inquiry; information systems; information technology
Leimeister, Huber, Bretschneider, and Krcmar, 2009	*Journal of Management Information Systems*	Leveraging crowdsourcing: activation supporting components for IT-based ideas competition	Activation; crowdsourcing; ERP software; ideas competition; incentives; motivation; open innovation; theory-driven design

V. PROPOSITIONS AND FUTURE RESEARCH AGENDA

In this section we have formulated a number of propositions, along with their practical implications. These propositions are partly derived from the eighteen papers identified from the literature survey (Table 1) which provide a useful foundation on which to understand how participatory practices are operationalized in contemporary environments. The propositions are speculative and are intended to serve as possible avenues for future research.

Proposition 1: Move Downstream

Originally, participation focused on co-located activities, where developers and users collaborate face-to-face. As software products and services become increasingly commodified and are developed "at a distance" for a largely unknown audience [Quintas, 1994], the point of encounter between developers and users has been obviated. To accommodate this shifting terrain, it has been suggested that researchers need to consider the timing of user participation. This is especially pertinent for large-scale software systems, such as ERP, since it may be only at the point of "go-live" when the technology begins to affect their everyday working practices that the information system becomes salient [Wagner and Piccoli, 2007]. Research by Alvarez [2008] reveals how users, following the implementation of an enterprise system, adopt their own "unauthorized" workarounds in order to counteract deskilling. Although it may seem appropriate to assume that standard software systems are inflexible and constrain users and their practices, studies show that users interact in novel and unintended ways post-implementation [Boudreau and Robey, 2005; Wagner and Newell, 2007].

Turning toward the science and technology studies literature, we can draw on the "social learning" perspective [Williams, Stewart, and Slack, 2005] and Fleck's "innofusion" concept [Fleck, Webster, and William, 1990]. The former has been proposed to take account of the processes of learning and struggling that occur when attempting to incorporate new technologies into everyday practices. Social learning studies show how effort must be placed in appropriating the offerings from software suppliers (which are often generic and unfinished) so that the systems they provide work and are useful in adopting organizations. This often entails creative efforts on the parts of users who attempt to make the system useful and compensate for its deficiencies. With regard to innofusion, this considers the process of experimentation that occurs in local settings as users attempt to get the artifact to work in their particular environment, which may involve reconfiguration and reinvention [Pollock and Williams, 2009]. There are some links

here to the notion of tailorable technologies [Germonprez et al., 2007] whereby users can actively engage with modifying and redesigning the technology in the context of use. Similarly, research on workarounds [Alvarez, 2008; Ferneley and Sobreperez, 2006] reveals how users respond and reconfigure technology in use.

Proposition 2: Move Upstream

The predominance of the "buy-versus-build" view of systems development requires we rethink when user participation takes place and with whom. There is a clear distinction between the development and use context with developers who work in software firms focusing on "shipping" a generic product that will generate profit maximization and enhance market share. Processual activities traditionally associated with the systems development process, such as implementation, system integration, and user acceptance, are now left in the hands of the purchasing organization or third-party implementers to manage. Yet in order to maintain success in the competitive software market, firms ignore users at their peril.

In order to enroll user support in the process of product development, there are a number of studies that illustrate the benefits of drawing on a wider user base. For example, Holmström and Henfridsson's [2006] research into online gaming shows how one firm deploys a virtual community to provide input into new product development, yet this is not without its challenges. While the distributed design environment may be new, the old problem of power and politics remains as the study highlights the tensions between commercial interests and community input. Drawing on the voluntary participation of users cannot simply be about exploiting their knowledge for commercial gain if an ongoing relationship is to be built and maintained. Similarly, the Living Lab concept, which is a form of open innovation, is based on the bringing together of a diverse network of stakeholders (firms, academics, public sector authorities, citizens) to create and develop software products and services in multi-contextual everyday environments. MyHealth@Age [Bergvall-Kåreborn, Howcroft, Ståhlbröst, and Melander-Wikman, 2010] is an example of such a project. This venture is intended to contribute toward improving the health and wellbeing needs of the aging population in remote communities and aims to provide mobile ICT products and services which help facilitate a more active role in the healthcare process. These collaborations offer much potential for injecting a more radical element of co-design into projects, based on the principles of PD.

Proposition 3: Rethink the Level of Analysis

Within the IS discipline the "interpretivist turn" and its detailed case studies is a trend to be welcomed within a field that is primarily focused on the "variables centered paradigm" [Ramiller and Pentland, 2009]. While these studies are undoubtedly of value, Pollock and Williams [2009] argue that a more encompassing analysis is required that goes beyond the organizational level and incorporates the social, political, and economic influences that shape the everyday experiences of technology development, adoption, and use. Given that software is often developed spatially apart from its place of adoption, there is a pressing need to transcend merely studying these artifacts as they intersect with the user. Case studies are informative on one level, but they are ill equipped for getting to grips with the complexity of technologies, which are instantiated at multiple sites. What is required is a broader analysis that moves beyond ethnographic studies at the organizational level for studying global phenomena such as open source, standard software, Web technologies, mobile applications, etc. It would be useful to develop a literature that provides a political economy perspective on technology firms and markets, detailing the social actors that shape the macro-economic context: the industry analysts, the software suppliers and vendors, the IT consultants. This could contribute to our understanding of what shapes the local encounters of users with technology.

Proposition 4: Reframe the Concept of User

There are various means for categorizing who will participate in system development, yet, despite these taxonomies, the notion of *user* has been described as an individualized and "socially thin user construct" [Lamb and Kling, 2003] that remains underdeveloped [Millerand and Baker 2010]. It is based on the assumption that social actors are well-equipped to articulate their preferences surrounding ICTs and this perspective is well-suited to experimental settings that evaluate the task–technology fit of systems at the individual level, while statistically controlling for what are seen as autonomous categories. If we hope to bring in a more encompassing set of users, then a finer-grained conceptualization is required, particularly if we intend to cater for contemporary development contexts where users are diverse and adopt multiple roles that are continuously unfolding. Changing IS practice demands greater attention to secondary users as consumers of technology [Ferneley and Light, 2006] who engage in environments both within and beyond the workplace and whose interactions are deeply embedded in everyday activities [Yoo, 2010].

While we acknowledge that the notion of user is problematic, nevertheless, it remains a useful concept, especially given the absence of any alternative contenders. While this is not to say that the traditional conceptualization of user needs to be revisited in emerging IS contexts, nevertheless, the heterogeneity of users raises interesting questions about how they can be identified and represented, particularly when engaging in multiple systems used for distinct, as well as interlinked, purposes [Ilvari and Iivari, 2011]. Development may require multiparty collaboration across organizations, as in the case of the development of a Web-based application reported by Levina [2005]. In some

areas, such as OSS, where the developers may also be the users, the distinctions become unclear. Fang and Neufeld's [2009] study considers how to achieve the sustained participation of OSS developers, while Iivari's [2009] paper examines how non-developer users are constructed in OSS development and looks at their roles in projects. Turning to e-government, users as citizens and their participation in decision-making and e-democracy is becoming increasingly pertinent [Axelsson, Melin, and Lindgren, 2010; Mahrer and Krimmer, 2005; Olphert and Damodaran, 2007] and is an area that deserves attention, given the expanding user base. Given the evolution of the user as a concept, perhaps a new theory of PD is required in order to accommodate such changes.

Proposition 5: Build and Strengthen Intellectual Links with Related Fields, Such as STS and Work/Employment Studies

Almost two decades ago, an influential text from within the PD literature made the following observation:

> To system designers, the people who use computers are awkwardly called "users," a muddy term that unfortunately tends to focus on the people sitting in front of a screen rather than on the actual work people are doing [Greenbaum and Kyng, 1991, p. 3].

Arguably, greater understanding of "actual work" continues to pose a challenge to IS research. There have been calls to "bring work back in" [Barley and Kunda, 2001] to our studies of organizations and to more closely link the understanding from science and technology studies research with labor and workplace studies [Wajcman, 2006]. A more productive exchange between IS and the sociology of work could enable greater insights about the relations of work and the processes of technology innovation, adoption, and use, allowing researchers to focus on technology design, as well as work and consumption. Revisiting the original conceptualization of PD that was centered on understanding working practices (see, for example, Greenbaum and Kyng, 1991; Greenbaum, 2004) could offer greater purchase on our understanding of contemporary technology and its adoption.

Furthermore, there are benefits to be had from making links with ICTs in wider society that go beyond traditional organizational settings. For example, an increasing body of management literature is focusing on the work–life balance in recognition that the boundaries between "work" and "non-work" are becoming increasingly eroded [Fleetwood, 2007; Warhurst, Eikhof, and Haunschild, 2008]. The paper by Prasopoulou et al. [2006], for example, offers a study of mobile phones and how users manage to segregate their time in the public and the private sphere. ICTs play a role in the blurring of boundaries between work and leisure time, and so critical studies of the role of technology in everyday lives could add a further dimension to the debate.

Proposition 6: Learn from Participatory Practices in Other Disciplinary Fields

The subject of user participation is not unique to the IS field, nor are discussions about empowerment and democracy. We find similar trends in other disciplinary areas, and many of the challenges we currently face are echoed elsewhere. There is much potential in looking beyond existing silos to gain insights into how participation has been operationalized in other contexts. For example, in the study of GIS implementation in India, Puri [2007] draws on the development literature, which has seen a rise in more intensive participatory approaches. The techniques adopted differ from the traditional IS literature and Western approaches and provide insight into how community participation may be enabled, nurtured, and sustained. Similarly, Payton and Kiwanuka-tondo [2009] adopted a grassroots participatory research framework that is well-established in the healthcare policy literature, to encourage and support various HIV/AIDS healthcare agencies to better design and disseminate medical education information for users.

Looking toward the related areas of Human–Computer Interaction and Computer-supported Cooperative Work we find rich empirical studies of user participation. If we consider the example of problems regarding system requirements, an area that is well-documented within the IS field, we see that this also transcends to related disciplines such as product development and innovation management [Thomke and Von Hippel, 2002]. In this field, prototyping activities using "toolkits for customer innovation" [Thomke and Von Hippel, 2002] or crowdsourcing [Leimeister et al., 2009] invite customers to design and develop their own products and services rather than relying on manufacturers to act as their (often imperfect) agents [Von Hippel, 2005]. If we look further afield, we can also locate participatory practices in other disciplines, such as community design practices within architecture and urban design [Luck, 2007; Toker, 2007]. Although contexts differ when considering how to incorporate participation into contemporary environments, there is no need to reinvent the wheel; we can draw on research from elsewhere, as well as on our own rich history.

VI. CONCLUDING REMARKS

The aim of this article has been to assess the extent to which research within contemporary IS contexts engages with user participation. Our five-year survey of key IS journals reveals a low representation, which suggests decreasing relevance of PD to contemporary environments, although we recognize that a more extensive survey

may reveal contrasting results. It has not been our intention to romanticize PD, since its limitations have been well-documented, but when confronted with emerging technologies, the relevance of PD comes into question. It is worth remembering that the concept was originally constructed for computer users, often located in large organizations with a strong unionized workforce and with the trade union acting as arbiter between users and the proponents of IT-led organizational change (particularly in the Scandinavian context). Today's ICT users remain within the workforce, yet also extend beyond this environment as "experiential computing" [Yoo, 2010] encompasses users of social media, online self-services, crowdsourcing and co-creation, digital platforms and ecosystems, and e-government services. In this context, PD appears less relevant and requires reformulation.

Based on the five-year literature survey, a number of propositions have been constructed in order to suggest how PD could be reformulated to more appropriately cater to contemporary environments. Arguably, many of the propositions could have been put forward using more generic user-centered approaches without reference to PD per se. However, the crucial differentiation between PD and user-centered approaches is the political principle which is just as relevant today, given the ways in which ICTs have become increasingly embedded within a broader set of everyday activities [Yoo, 2012]. Therefore, the political principle can potentially be reoriented toward the concerns of users as citizens and consumers. The scaling up and increasing ubiquity of ICTs does not necessarily translate into equal access, usability, and literacy, and digital exclusion prevails [Kvasny, 2006]. Users may participate in multiple digital arenas, but their influence is negligible when faced with global corporations of the magnitude of Apple, Google, and Microsoft. Issues of transparency and accountability surface when technology is leveraged to complement a particular ideology, as in the case with Google's activities in China [Auletta 2010]. Likewise, concerns over trust, security, privacy, and data protection, traditionally anchored in institutional regulatory frameworks, take on a different form in the virtual arenas of social media, such as Facebook. This raises many questions about power, democracy, and voice which suggest that the relevance of the political principle of PD endures.

While some researchers and practitioners may be inclined to disregard PD as "old hat" and of little relevance, we would argue that the IS field would benefit from building on its history of understanding, on its successes and failures, and incorporating this experience and knowledge into new technologies as they present themselves. The IS community has developed a rich repertoire of theoretical and methodological tools which can be extended to study how we make sense of our world and how we shape our understanding. PD remains a worthy project as the benefits of building on the history and tradition of PD far outweigh the drawbacks of disregarding past experience.

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