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Selecting users for participation in IT projects: Trading a representative sample for advocates and champions?

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ABSTRACT

The selection of users for participation in IT projects involves trade-offs between multiple criteria, one of which is selecting a representative cross-section of users. This criterion is basic because trading it for other criteria means basing designs on information biased toward some user groups at the expense of others. Based on interviews in development and customer organizations we find that their criteria for user selection favor persons who can contribute to the progress of the IT project over persons who are representative of the full range of users. A highly valued contribution from participating users is the ability to advocate a vision for the system and champion its organizational implementation. A survey in one customer organization shows that respondents' personal traits explain up to 31% of the variation in their experience of aspects of the usability of a recently introduced system. Thus, unless participating users are representative as to these personal traits, IT projects may, inadvertently, bring about systems that will fail to satisfy many users.

1. Introduction

User participation is considered a core element in the development of usable information technology (IT), and recommendations about how to practise user participation in IT projects abound (Beyer and Holtzblatt, 1998; Bødker et al., 2004; Gould, 1988; Greenbaum and Kyng, 1991; Mumford, 1983; Rosson and Carroll, 2002). The group of intended users of a system is, however, normally too large for everybody to participate in the project, and participation is therefore restricted to user representatives. While the importance of selecting an appropriate group of participating users is well recognized, recommendations and techniques about user participation rarely provide detail about how user selection is to be accomplished in practice. For example, Beyer and Holtzblatt (1998) and Nielsen (1993) mention representativeness as an important factor in selecting users for participation in IT projects but provide neither dimensions along which representativeness must be ensured nor techniques for identifying such dimensions. Similarly, research aimed at improving our understanding of user participation often bypasses user selection and focuses on the selected users' participation. For example, Saarinen and Sääksjärvi (1990) do not mention user selection in their review of the association between user participation and project success. Bødker et al. (2004) do not mention representativeness, except for advising against selecting techno freaks and technophobes; they instead recommend selecting users that have a good overview of the work domain, enjoy respect among their colleagues, and are committed to the project. This will typically be characteristics of unusual users.

This study investigates the selection of users for participation in IT projects. We contend that attaining a representative cross-section of users is a basic selection criterion because it implies a focus on not excluding some user groups from participation and, thereby, missing information, needs, and priorities specific to these groups. To be able to select a representative cross-section of users it is, however, necessary to know the dimensions along which users differ in ways relevant to the IT project. Relevant dimensions may include stakeholder groups, which are mainly work-related, adopter categories, which are technology-related, and customer segments, which are person-related. While we expect that criteria concerning stakeholder groups are normally considered in the selection of users for participation in IT projects, we doubt that this is also the case for adopter categories and customer segments. In addition to criteria consistent with selecting a representative cross-section of users (e.g., periodically replacing the user representatives), the selection of users for project participation may involve criteria inconsistent with this basic criterion (e.g., selecting only users committed to the project). In this study we investigate the criteria employed when users are selected for participation in IT projects and, specifically, how the selection of a representative cross-section of users is balanced against other selection criteria.

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We do this based on interviews in four IT-development organizations and two of their customer organizations. To investigate the extent to which adopter categories and customer lifestyle segments are relevant to the selection of a representative cross-section of users we supplement the interviews with a questionnaire survey of users' personal traits and their experience of the usability of a new system. The survey enables a comparison of the selection criteria from the interviews with the personal traits that affect how users experience a system.

Previous studies disagree about the importance of selecting a representative cross-section of users (Kanstrup and Christiansen, 2006; Kujala and Kauppinen, 2004; Muller et al., 2001). We aim to clarify these disagreements in the next section on related work. We, then, describe the method of our empirical work and present the results. In the discussion, we argue that selecting a representative cross-section of users is often traded for selecting users capable of serving a combined role of advocate for the users and champion for the system. We discuss conflicts inherent in this role.

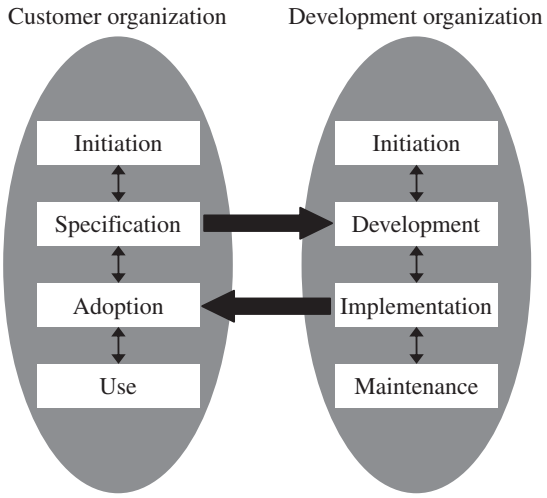

Fig. 1. IT project.

2. Related work

User participation is widespread in IT projects but even with user participation systems are sometimes resisted by users, incompatible with work practices, or otherwise unsuccessful (Cavaye, 1995; Gallivan and Keil, 2003; Heinbokel et al., 1996; Howcroft and Wilson, 2003; Kujala, 2003; Olson and Ives, 1981). While it is unsurprising that user participation provides no guarantee for success, it calls for an understanding of the difficulties of user participation, including the selection of participating users.

2.1. User participation

User participation as a concept describes direct contact between developers and users during IT projects (Kujala, 2003). Apart from this defining characteristic, user participation has, however, been interpreted and applied in many different ways (Muller et al., 1993). The reasons for this diversity include that user participation has been studied over a long period of time, for multiple types of project, and within many fields of research. In the context of IT projects, the Norwegian Iron and Metal project (Nygaard, 1979) and the ETHICS method (Mumford, 1983) are seminal efforts, but user participation has been widely researched within, among others, participatory design (e.g., Greenbaum and Kyng, 1991; Muller, 2008), information systems (e.g., Olson and Ives, 1981; Markus and Mao, 2004), and human–computer interaction (e.g., Gould, 1988; Whiteside et al., 1988). Approaches to user participation vary in type, degree, content, extent, formality, and user influence (Cavaye, 1995). Users may, for example, participate as informants (e.g., Beyer and Holtzblatt, 1998), co-designers (e.g., Olsson, 2004), or champions (e.g., Rogers, 2003).

IT projects involve a customer organization and a development organization, which engage in interrelated courses of activity (in the case of in-house development the development organization is an entity in the customer organization (Grudin, 1991)). This is illustrated in Fig. 1, where the activities in the customer organization are inspired by Rogers (2003) and those in the development organization by Alter (2001). User participation is essential to the interactions between the customer and development organizations. Importantly, the main direction of these interactions differs for specification/development and implementation/adoption. During specification/development user needs are specified as input to development and similarly other information is collected and analyzed to inform the development activities. During implementation/adoption information about the system and associated organizational changes is disseminated to the customer organization along with initiatives promoting the adoption of the system.

During specification/development user participation is generally believed to contribute to improved user influence, system quality, and user satisfaction (Saarinen and Sääksjärvi, 1990; Kujala, 2003; Cotton et al., 1988; Kirsch and Beath, 1996). In addition, some authors find that user participation leads to a smoother systems-development process (Kujala, 2008); others find the opposite (Heinbokel et al., 1996). Markus and Mao (2004) present three explanations for the positive effects of user participation:

- *Improvement of system quality*; that is, user participation in development activities provides developers with the information they need to produce a high-quality system.
- *Psychological buy-in*; that is, user participation leads to a psychological state of involvement whereby participating users feel part of the development process and become committed to the system.
- *Emergence of relationships among users and developers*; that is, participation activities sometimes lead to relationships conducive to users sharing their requirements and developers incorporating these requirements in the system.

All three of these explanations are, however, vulnerable to the normal division of the intended users into a small group of participating users and a large group of non-participating users. For example, the improvement-of-system-quality explanation seems to presuppose that participating users validly represent all users in the information they provide to developers, and psychological buy-in does not seem to explain why non-participating users should become committed to the system. This highlights the importance of how the participating users are selected. In addition, the explanations bypass that different groups of user may have conflicting needs and interests in relation to the system, precluding a consensus about user needs (Howcroft and Wilson, 2003). Beyer and Holtzblatt (1998, p. 34) hint at such conflicts when they write that "customer representatives only truly represent themselves". Conflicts are particularly plausible between operational users and managers. Because the sponsors of systems are typically managers, the participation of operational users may be reduced to a largely rhetorical device (Howcroft and Wilson, 2003).

User participation is also widely studied in relation to implementation/adoption. This is the case for projects where substantial IT development precedes implementation/adoption (e.g., Balka and Kahnamoui, 2004) as well as for projects that mainly consist of organizational change management and involve little IT development,