Public e-service development: Understanding citizens' conditions for participation

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ABSTRACT

For decades, user participation has brought value to various systems development projects. Today, there are expectations that public e-service development will experience the same benefits. However, existing research has shown that introducing user participation into public e-service development can be challenging. In this study, we interviewed citizens in order to explore their willingness and ability to participate in public e-service development according to three user participation schools: User-Centred Design, Participatory Design and User Innovation. Our findings show that citizens in general are willing to participate, but their ability to do so is limited. Based on our findings, we developed nine propositions to explain citizens' willingness and ability to participate in public e-service development. The propositions contribute to practice by acting as a tentative guide for systems developers when they use user participation schools as inspiration in public e-service projects. They also act as a starting point for future research into conditions for user participation in public e-service development.

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1. Introduction

Information systems are important tools in public administration. Such systems automate manual routines. They also offer citizens and government authorities the opportunity to interact via new channels that are complementary to, or instead of, more traditional interaction channels, such as phone or mail (Lenk, 2002). Lindgren (2013) stated that e-government has three objectives: 1) to improve citizens' opportunities to interact with government authorities, 2) to increase government authorities' efficiency by reducing the number of manual routines, and 3) to increase democracy through greater governmental transparency. However, there is an imbalance between policy and practice regarding these objectives. So far, e-government has primarily been used to automate internal, often manual, routines.

Having said that, e-government is now advancing, moving its focus from internal routines to scenarios in which citizens use public e-services to perform complex transactions with government authorities (Asgarkhani, 2005; Layne & Lee, 2001), i.e., governmental services that are mediated through the use of information technology (IT) (Lindgren & Jansson, 2013). Despite this shift in focus, however, government authorities still tend to use IT to reduce costs and the time needed to offer services to citizens and organisations

(Anthopoulos, Siozos, & Tsoukalas, 2007). As a result, public e-services have mainly been developed with a government perspective in mind; other stakeholders' considerations have been given less attention.

Existing e-government research clearly states the importance of acknowledging both internal and external stakeholders during the development of public e-services (Flak & Rose, 2005; Tan, Pan, & Lin, 2005). The latter include other government authorities, businesses (Holgersson & Karlsson, 2012) and, last but not least, citizens (Lindgren, 2013). Citizens pose a challenge, because they constitute a heterogeneous stakeholder group. They may use some public e-services infrequently, such as the tax declarations they make once a year, and have little knowledge of these public e-services. At the same time, they may also be frequent users of other public e-services.

There is increased interest in how to incorporate citizens' views into the development process of public e-services, an interest that is shared by researchers (e.g., Axelsson, Melin, & Lindgren, 2010; Jones, Hackney, & Irani, 2007) and practitioners (OECD, 2009). The OECD (2009) has recognised that putting citizen participation into practice is indeed a challenging task. Despite this fact, they strongly encourage citizen participation on the basis that to do otherwise would almost certainly increase the risk of flawed results or project failure. In research, knowledge of citizens' needs and skills is seen as essential for successful public e-service development (e.g., Melin, Axelsson, & Lundsten, 2008; Verdegem & Verleye, 2009). Such arguments are not surprising considering earlier experiences of user participation in systems development (Cavaye, 1995; Markus & Mao, 2004) and long-established recognition of user participation schools

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such as Participatory Design (PD) (e.g., Kensing & Blomberg, 1998; Mumford, 1981; Schuler & Namioka, 1993), User-Centred Design (UCD) (e.g., Gulliksen et al., 2003; Iivari & Iivari, 2011; Norman, 1986) and User Innovation (UI) (e.g., Kujala & Kauppinen, 2004; Lawrence & Low, 1993; von Hippel, 1986).

Given these experiences, it is somewhat surprising that user participation and systems development research appears to have had little influence on the e-government field (Karlsson, Holgersson, Söderström, & Hedström, 2012). Almost all e-government research on user participation has focused on e-participation (e.g., Lourenço & Costa, 2007; Macintosh, 2006; Sæbø, Rose, & Skiftenes Flak, 2008). However, exceptions can be found where existing systems development knowledge has been incorporated into public e-service research (Axelsson et al., 2010; Holgersson, Söderström, Karlsson, & Hedström, 2010; Karlsson et al., 2012). Karlsson et al. (2012) gave a partial response to Jansen's (2006) call to evaluate the applicability of existing user participation schools in e-government projects, such as the development of public e-services. They analysed how the three user participation schools—PD, UCD and UI—fit into the public e-service development context. Their analysis was made from a goal perspective, i.e., what systems developers can expect to achieve by using each of these schools. They identified three challenges related to public e-service development: '1) unclear user target segments can impede the fulfillment of usability and relevance goals; 2) the nature of participation can impede the fulfillment of democracy goals, and 3) lack of adequate skills can impede the fulfillment of efficiency goals'.

The first challenge relates to how target users are identified, whereas the latter two challenges focus on citizens' willingness and ability to participate in the development of public e-services. The first challenge is indeed a complex task, and should not be underestimated. However, methods for user identification do exist (Kujala & Kauppinen, 2004). The second and third challenges, on the other hand, have not been sufficiently addressed. The study by Karlsson et al. (2012) offered a valuable contribution to e-government research. However, this study is based on a literature review, which means we do not know the extent to which these challenges exist in practice. In order to argue for the use of any of the abovementioned user participation schools, citizens' willingness and ability to participate in public e-service development must be analysed using 'real world' data.

Against this backdrop, the aim of this paper is to explore the extent to which citizens are willing and able to fulfill the user-related goals of the three user participation schools—PD, UCD and UI—in the context of public e-service development. Based on 99 semi-structured interviews, we developed a theoretical model. This model puts forward nine propositions to explain citizens' willingness and ability to participate in the development of public e-services according to the prescribed workings of these schools. We chose to address the same user participation schools as Karlsson et al. (2012), even though their goal analysis of user participation research is not without its problems. Contemporary research on user participation (e.g., Marti & Bannon, 2009) shows that the three schools overlap to some degree. However, by using these three user participation schools, it was possible for us to: (a) base our study on earlier identified goals with user participation, and (b) advance the body of existing research about user participation schools and public e-service development. Our results provide valuable insights into when it is more feasible to apply one form of user participation rather than another. In addition, our theoretical model provides a good starting point for further validation in future research.

The rest of the paper is structured as follows. In the next section we take a closer look at existing user participation schools, and how user participation has been addressed in public e-service research. In the third section we outline the research design. In the fourth section we analyse our empirical data. Following this, in the fifth section, we develop our theoretical model. In the sixth section we discuss implications for research and practice. In addition, we reflect on the limitations of our

study and on future research. Finally, the paper ends with a short conclusion.

2. User participation research and public e-service development

User participation has long been recognised as an important topic in systems development (e.g., Baroudi, Olson, & Ives, 1986; Bødker, 1996; Floyd, Mehl, Reisin, Schmidt, & Wolf, 1989; Hirschheim, 1985; Mumford, 1981). A large number of methods have been promoted which target different conditions (Muller, Hallewell Haslwanter, & Dayton, 1997). Moreover, as both Mumford (1983) and Heller (1991) have discussed, there are many different arguments for participation, including moral reasons, increased satisfaction, leveraging of power and improved solutions, which can be associated with existing methods. Below, we discuss existing methods, as classified by Karlsson et al. (2012), and show their main arguments.

2.1. Participatory design, user-centred design and user innovation

PD has its roots in Scandinavia in the 1970s; in particular, from academia and trade union movements (Marti & Bannon, 2009). Indeed, much of the early work was carried out in Scandinavia and was explicitly commited to workplace democracy and the politics of design (Bjorn-Andersen & Hedberg, 1977). The idea was that people affected by an information system should play a critical role in the systems development process. Thus, in projects such as Utopia (Bødker, Ehn, Kammersgaard, Kyng, & Sundblad, 1987) and Florence (Bjerknes & Bratteteig, 1988), users and systems developers were viewed as equal partners in the development process. Outside Scandinvia, a different emphasis has been placed on workplace democracy, mostly based on the socio-economic climate (Kensing & Blomberg, 1998). For example, US researchers pursued PD agendas for other reasons; for example, because of flawed design results (see e.g., Clement, 1994). It was argued that user participation improved 'the knowledge upon which systems are built; enabling people to develop realistic expectations; and reduce resistance to change' (Gregory, 2003). Moreover, during the 1980s, the bargaining power of trade unions decreased throughout Europe and Scandinavia (Kensing & Blomberg, 1998). Today, PD still entails collaborative partnerships between developers and users, but not for political reasons, as used to be the case. Mumford (1981) described three levels of particpation in PD projects: advisory, representative and consensus. When translated to Arnstein's (1969) ladder of citizen participation, these levels mean that user participation ranges from placation, where citizens' advice is taken into account, to delegated powers where citizens negotiate decisions with the system developers.

UCD emerged in the late 1970s and early 1980s, and is often associated with Norman (1982). Today, UCD principles can be found in the industrial standard Human-centred design processes for interactive systems (ISO 9241-210, 2010). The UCD school implies 'an up-front commitment to taking the needs of the user as the central point for design' (Marti & Bannon, 2009) and an understanding that information systems are to serve the user (Norman, 1986). The starting point is to understand users' requirements with regard to the user interface; these parts drive other requirements of the information system. Compared with PD, this school places no emphasis on the politics of design; here, systems developers and users are not viewed as equal partners. Indeed, early UCD research (e.g., Kling, 1977) stated that systems developers need to learn about the users' environment in order to understand their needs. Nowadays, however, UCD overlaps PD to a certain extent, because it is possible for users to be seen as 'active agents' (Marti & Bannon, 2009). This means that, whilst systems developers are the drivers of the development process, users are by no means passive actors. According to Arnstein's (1969) ladder, any user participation in UCD mostly focuses on taking users' advices into consideration (i.e., placation).