Exploring User Participation Practice in Public E-Service Development – Why, How and in Whose Interest?

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Abstract: User participation is seen as an important enabler for successful public e-service development. However, at the same time development of public e-services is still often characterised by an internal government perspective with little consideration for external users' perspectives. This paper challenges the overly positive attitude that is surrounding user participation in e-government research. The paper aims to illustrate and problematize various aspects that influence why, how, and in whose interest user participation is conducted in public e-service development. First, via a literature review, we identify a set of dimensions for critically exploring how, why, and in whose interest user participation is conducted in public e-service development projects. Second, we use these dimensions in order to characterise and analyse three empirical public e-service development cases in order to test the utility, usefulness, and feasibility of the identified dimensions. Our findings highlight the importance of questioning and elaborating on the motives behind user participation (the *why*) in public e-service development. We also identify two basic forms of *how* user participation is addressed in public e-service development projects: 1) veneered participation, and 2) ad-hoc participation. Furthermore, we argue that any decisions made regarding user participation in public e-service development should be based on conscious and informed choices concerning why user participation is needed and what it may bring for different stakeholders and their *interests*.

Keywords: E-government, User Participation, Public e-service development

1. Introduction

For the last decade, e-government research has been influenced by an increased attention towards an external user perspective in public e-service development. The underlying assumption is that increased attention towards e.g. citizens enhance the probability for successful development and deployment of public e-services (Holgersson and Karlsson, 2014, Sæbø et al., 2011). Still, despite these efforts towards increased centeredness in public e-service development, no substantial changes in how public administrations develop public e-services can be seen. As observed by Axelsson et al. (2013), many public e-services are still being developed from an inside-out perspective, from which external user considerations are given little attention. At best, it can be said that those responsible for developing information systems (IS) and e-services in public administration are guessing or assuming the needs and considerations of external users, rather than thoroughly analysing and understanding them (ibid.). It is apparent that there is a gap between e-government research and recommended best practices and how user participation is conducted in practice. The question is why this is the case; why do not public administrations adjust and expand their development processes to include the future end users of public e-services? It is evident that user participation in public e-service development is considered to be a critical success factor in research and in practice (see e.g. Gil-García and Pardo, 2005), yet there are very few reported projects in which users have been actively involved in the development process. In contrast, we also receive reports on public e-service development projects that are perceived as successful in terms of high usage frequencies and measurable internal winnings (e.g. Rexhepi et al., 2015), even though no significant involvement of external users took place in the development process. These success stories spur questions on the practice, validity and usefulness of user participation in public e-service development. Can it be so simple that there is just a general lack of resources that prevents user participation, as described in Holgersson et al. (2017) , or are there perhaps also other reasons to why external users are kept out of public e-service development processes? Is it possible that e-government researchers in general are too vague and imprecise when providing public administrations and decision makers with knowledge, guidelines and frameworks for how and when user participation should be put into practice in public e-service development? Maybe there are even cases when user participation in public e-service development could be perceived as counterproductive?

We argue that some answers to these questions can be found by looking at the general IS literature on systems development. The need for user participation in the development of technology in general is not a new line of argument in the IS field; here, active interaction with future users in the development of the technology has been promoted (under various labels) since the 1960s. Interestingly, the literature on user participation is prone to highlight the positive aspects of user participation, but the evidence for the benefits and effectiveness in practice, however, is both unclear and contradictory (Lynne-Markus and Mao, 2004, Subramanyam et al., 2010, Cavaye, 1995). There is considerable empirical evidence for its benefits, and there is near consensus on the importance of user participation among researchers, but much research has focused on different techniques rather than on questioning the value of participation in itself (Heeks, 1999). This situation can be illustrated practically in terms of that if user participation is organised, it is often conducted in an uncritical or even naïve way, not asking why and for what purposes it is conducted. For example, Heeks (1999) illustrates how user participation in IS development sometimes is used without any notion of its political and cultural context. He argues that contextual factors are important to address in any development project and, thus, user participation cannot be considered to be a universal approach that suits all projects. Some arguments for this standpoint are that participation processes can be 'veneered', inequitable, and skewed (ibid.). This means that participation might be enforced to a development project, but that participation per se does not take away injustice in organisations, and that the selection of participants might involve those who already have power (Heeks, 1999). Heeks (1999) argues that these problems call for certain awareness about three aspects when deciding if participation should be suggested; 1) what is the political and cultural context? 2) who wants to introduce participation, and why? and 3) who is participation sought from? Do these persons want to, and can they, participate? We take these questions as our point of departure in this paper searching for a better understanding of external user participation in public e-service development.

The aim of this paper is to illustrate and problematize various aspects that influence why, how, and in whose interest user participation is conducted in public e-service development projects. This is done by characterising and comparing a set of public e-service development case studies taken from various levels of government (local, regional and national). In order to perform the comparison, we review e-government and general IS literature to develop and present a set of dimensions representing different aspects of the public e-service development process. Based on these dimensions we characterise how user participation has been treated during the development process in each public e-service development project, as well as test the utility, usefulness, and feasibility of the dimensions.

The paper is structured in the following sections; in Section 2 we present and discuss previous studies of user participation in public e-service development. In Section 3 the research design is described, followed by our derived dimensions characterising user participation in public e-service development projects in Section 4. The cases are presented and discussed in Section 5 and the paper is concluded in Section 6.

2. User participation research in public e-service development

There is a vast amount of literature within the IS development research field discussing user participation as a concept, as well as whether user participation has a positive or negative influence on IS development. The initial idea with user participation was that the manufacturing industry should incorporate the same basic democratic principles in IS development as in the surrounding society. This was e.g. evident in the Scandinavian strand of IS literature (Bjerknes and Bratteteig, 1995). By doing so, individual engagement among employees was meant to increase, which in turn was meant to increase productivity and efficiency in systems development (Bjerknes and Bratteteig, 1995). Simply spoken, this means that users that somehow will be affected by, or have an interest in, the information system being developed should be actively present within the development process. As discussed by Karlsson et al. (2012), the degree and scope of participation may vary from time to time, but user presence should be seen as a natural component of the systems development team. In this paper, user participation represents a user centred development approach in which needs and demands from future end users play an important role. User participation is generally associated with a set of features that has a positive influence on the development process. Increased knowledge of e.g. users and domain which in turn enhance the possibilities for more concrete and accurate requirements are often put forth by scholars (see e.g. Kujala, 2008, McKeen et al., 1994). Another frequently mentioned argument favouring user participation is eased implementation and increased user acceptance, based on more realistic expectations from users (see e.g. Bjerknes and Bratteteig, 1995, Cavaye, 1995).

Unlike general IS development research, the number of studies of user participation within the more recently established e-government research area is limited, and even fewer have been focusing on the relationship between user participation and public e-service development. However, a number of research studies can be found that emphasise the need for and the value of user participation in public e-service development. An important contribution to an increased focus on external public e-service users is made by Carter and Bélanger (2005) who highlight the importance of analysing and understanding the factors that influence citizens' adoption of public e-services. Factors indicate that perceived ease of use, compatibility, and trustworthiness are significant predictors of citizens' intention to use public e-services. Melin et al. (2008) underline the importance of public administrations to understand the tasks and needs of users in public e-service development and present case study findings showing that such knowledge has positive effects for public e-service adoption among citizens. Jones et al. (2007) report on findings from a case study conducted in the UK, highlighting the importance of engaging citizens in public e-service development on subjects that matter to them. Similar findings can be found in Schedler and Summermatter (2007) and Goldkuhl (2007) who discuss which actors should be served by public administrations and what it means for public administrations to serve citizens via public e-services. It can be concluded that user participation in e-government research is seen as an important component in order for public administrations to provide public e-services that will be used by citizens once introduced.

However, research on user participation also reveals potential drawbacks. Even though the connotation around user participation often highlights the positive aspects of participation, these do not always outweigh the associated problems. Heeks (1999) illustrates the potential negative sides of user participation by discussing how it sometimes is used without any notion of its political and cultural context. He argues that contextual factors are important to address in any IS development project and, thus, user participation cannot be considered to be a universal approach that suits all projects. It should be noted that the findings presented by Heeks concern IS development in general terms. Howcroft and Wilson (2003) continue this line of thought by advising end-users to carefully consider the objectives of the project and the expected results' potential influence on their future situation, before accepting to participate. However, as highlighted by Lindgren and Jansson (2013), e-government and public e-service development exhibit differences if compared with traditional IS development concerning e.g. the need to acknowledge citizens' legal rights and obligations. In their literature review on user participation in IS research, Axelsson et al. (2010) build on the findings presented by Heeks (1999) and formulate a need to elaborate on the context of participation. The context is important in order to understand when user participation should be proposed in public e-service development, for what reasons participation is suggested, and by whom. However, in order to advance these findings further there is a need to explore how user participation is conducted in practice in public e-service development initiatives. It is clear that the current practice of user participation in public e-service development is not in line with research and recommended best practices; a gap exists. It is also clear that existing research on user participation in public e-service development provides little directions regarding why, how, and in whose interest user participation is applied in public e-service development projects. This represents a two-fold gap in the IS and e-government literature on participation; a gap this paper aims to highlight and mitigate.

3. Research Design

This paper combines theoretical insights from e-government and general IS research with empirical data from a set of case studies covering how user participation has been applied in public e-service development projects in Sweden. The theoretical insights have been obtained via a literature review that was designed as a hermeneutic process (Boell and Cecez-Kecmanovic, 2014). The hermeneutic process is iterative in its nature and is initiated with a search for publications (e.g. research papers, government steering and policy documents, and standards) on one or several central concepts. In its essence, the hermeneutic process aims to identify themes, contrasts and knowledge gaps (Boell and Cecez-Kecmanovic, 2014). The main incentive in this paper was to obtain a solid understanding and overall picture of user participation within the unique context of e-service development in the public sector and how user participation may come into play, either directly or indirectly. In this study, the basic concept(s) of user participation in public e-service development, and underlying insights from the IS research area, served as a starting point for our analysis. During the process, the initial search criteria were complemented; since central concepts often are coined differently, and starting the search on one specific concept often lead to finding related concepts. Continuously during this process, we searched for general themes or dimensions from the collective experience of research on user participation in

public e-service development. As will be presented in detail below, we identified a set of dimensions which can be used in order to characterise public e-service development projects per se, as well as characterising when, how, and in whose interest user participation may come into play in public e-service development projects.

As a second step, we used the identified dimensions in order to characterise and analyse three different public e-service development case studies as a means to test the utility, usefulness, and feasibility of the dimensions. Public e-service providers in Sweden is classified in three tiers: 1) National, 2) Regional, and 3) Local. All case studies analysed in the paper (see table 1), each representing one of the three tiers, can be characterised as interpretive (Klein and Myers, 1999, Braa and Vidgen, 1999). This means that they are based on qualitative empirical data collected via e.g. interviews, workshops, and focus group meetings which have been analysed with the main purpose of understanding and exploring how public e-services are developed and how user related aspects have been dealt with during the development process.

Table 1: the cases analysed.

Case	Methods used	Tier	Source
Sustains	Interpretive research via interview study, Action research	Regional	(Scandurra et al., 2013b)
Anonymous exams	Interpretive research via a mix of interviews, observations and focus group meetings	Local	(Axelsson et al., 2010, Axelsson et al., 2013, Lindgren, 2013)
Driving license	Interpretive research via focus group meetings, Action research	National	(Axelsson and Melin, 2012, Melin and Axelsson, 2009)

Within each of the case studies, the authors of this paper have been extensively involved as researchers, thus assuring in-depth insights. This gives us insights and contextual knowledge valuable for the analysis when revisiting the empirical data, but also presents a risk of a limiting preunderstanding of the participation processes in the cases. However, sharing, discussing and comparing the insights with what is found in the literature is a way of handling the negative sides of our previous involvement in the cases. For each of the selected case studies, we have used the previously identified dimensions as the base for our analysis. Our analysis of the cases can be characterised as hermeneutic (Klein and Myers, 1999) which in this case means that qualitative textual data from the cases has been interpreted by the research team. For example, we have analysed if and how user participation has been applied in the development process, as well as the reasons behind decisions being made by various stakeholders involved in the development process. This makes the cases valuable to revisit and explore further in this paper. Each of the case studies has been published previously in different research outlets, such as at research conferences as well as in scientific journals, in different constellations of researchers (including the authors of this paper). As such, we have chosen to only include information from the case study directly related to the aim of this paper. The remaining information about each of the case studies can be found in a selection of the already published research outlets.

4. The dimensions – characterising public e-service development and user participation

As a result of the literature review, a set of dimensions characterising public e-service development projects in general, and user participation in particular, has been derived. If considering a classic IS development life cycle representing the development process as a linear sequence of activities (see e.g. Avison and Fitzgerald, 1995), the dimensions can be divided into three stages. The first three dimensions (triggers, incentives, and development approach) are focusing on project specific decisions made before the development project starts, i.e. what preconditions and identified incentives that initiate the project and what, if any, development approach that is planned to be used. The following three dimensions (user influence, barriers hindering user participation, and level of informed decisions) represent decisions taken during the development process with respect to user participation. Such decisions indicate to what extent users are invited and allowed to influence the design process as well as if there are any implicit or explicit reasons motivating different choices being made with respect to user participation. The remaining dimensions (impact and user participation) deal with two things; (1) the impact of the user participation approach used on the public e-service being developed (here referred to as 'impact'), and (2) the impact of the project and the e-service developed on the organisation (here referred to as 'project impact'), thus concentrating on what happens after the development process.

4.1   Triggers and incentives

Triggers and incentives are focused primarily on conditions that initiate public e-service development projects from the very beginning. Obviously, the decision to launch a public e-service development project is initiated by someone, based on some prerequisite, e.g. in terms of a more or less distinct need. Here there are different triggers identified in the literature. Heeks (2006) for example, points out that every public e-service development project should be based on someone´s explicit need for a service in order to solve a problem, i.e. there must be a clear motivation for why a public e-service development project is initiated. Such initiatives may stem from political exhortations (Holgersson et al., 2017), which in turn may be based on needs that can be formulated from an institutional perspective and context (Scott, 2014, Gil-García and Pardo, 2005), or incentives linked to the willingness of being fashionable or modern (Wang, 2010). Furthermore, there are also reported examples of public e-services developed without a clear initial agenda, or as Heeks (2006, p. 162) puts it: "*[…] identification of an opportunity which could be seized*".

In addition to someone initiating a public e-service development project, there are most often one or several incentives for doing so. Agency internal incentives, e.g. increased efficiency, are often highlighted in e-government research as the main motivator for public administrations to initiate public e-service development projects (Asgarkhani, 2005, Anthopoulos et al., 2007). Furthermore, incentives may also be based on problems and needs experienced by external stakeholders, such as citizens (Lindblad-Gidlund, 2012) or business organisations (Holgersson and Karlsson, 2012). Most often, such needs may stem from what Heeks (2006) refers to as a problem that needs to be solved; either problems within existing public e-services or problems experienced because a public e-service is lacking. Moreover, incentives may also stem from more societal, systemic and democratic values, such as a wish to improve transparency of government decision processes (Almarabeh and AbuAli, 2010), or to increase democratisation (Flak et al., 2003).

4.2   Development approach

Any public e-service development project has elements of a development approach, e.g. in terms of methodology. Established methods, more local ("homemade") methods, or recurrent practice provided by external consultants or internal IT department etc. can be elements of a more or less deliberate and reflexive development approach. Different approaches can build on or acknowledge user participation to various extents. In IS development research, the importance of following a specific development method is emphasised (e.g. Alter, 2006, Avison and Fitzgerald, 2006, Brinkkemper, 1996, Fitzgerald et al., 2006) in order to provide guidance and support to information systems development (ISD) stakeholders during the development process (Cronholm and Ågerfalk, 1999). Although, as pointed out by (Karlsson and Ågerfalk, 2004), it is common that ISD methods are tailored to fit the unique situation for a specific ISD project and public e-service development projects are no different. As pointed out by Goldkuhl and Röstlinger (2010), it is common that public e-service development projects do not follow a unique or specific development method, mostly due to that traditional ISD methods are very extensive and detailed. Public e-service development projects are typically small and focused on specific web applications, and therefore fit poorly with the recommendations of the traditional ISD methods.

An important aspect of ISD is the division of labour between in-house and external resources; in practice, who develops, and who is invited to participate when e.g. testing prototypes, designing graphical user interfaces (GUIs) and the general quality of functions. These aspects are important also in public e-service development. As an example, Melin and Axelsson (2009) identified two different strategies when studying public e-service development; projects that dealt with a significant level of external (outsourced) resources, and projects with a significant use of in-house resources. This is also linked to the management of the development initiatives and their relative success (ibid.). They identified that extensive use of external resources, in combination with low in-house competence to procure and manage the project as such, caused major problems and challenges in the studied development project on a general level. In addition, the possibilities to involve users in the development project were affected in a negative way (ibid.). However, this does not have to be the case. Outsourced and external resources can be a driving force behind the development of public e-services, as well as a necessity for achieving useful and successful public e-services due to shortage of competent IT workers in the public sector (Moon, 2002, Chen and Gant, 2001). For these reasons, it is important to investigate the division of labour and the use of external and internal resources when analysing development approaches and user participation in this setting. For these reasons, it is important to investigate the division of labour and the

use of external and internal resources when analysing development approaches and user participation in this setting.

4.3   User influence

The user influence dimension is focusing on how users participating in public e-service development projects influence any decisions made. Depending on what perspective that underpins and dominates the development process, the degree of user influence may vary. As highlighted by (Cavaye, 1995), influence of participation refers to the degree to which participation really affects a development project, i.e., what effect user participation really has in the systems development process. As been underlined in sections 1 and 2, public e-service development projects by tradition have been heavily influenced by an internal perspective from which public e-services primarily have been seen as a means of enhancing administrative efficiency and effectivity (Asgarkhani, 2005, Millard, 2010). User considerations in such development efforts usually have been targeting in-house users, such as civil servants (Følstad et al., 2004) whereas external user considerations often have been missing (Axelsson et al., 2010). However, more recently, as been highlighted extensively in sections 1 and 2, the importance of addressing also an external perspective has been emphasized in e-government research, seeing this as an important enabler for successful public e-service development (Karlsson et al., 2012). As highlighted by e.g. Kotamraju and van der Geest (2011) and Holgersson (2014), there is a mutual dependency between internal and external perspectives, e.g. if citizens refuse to use a public e-service and instead will keep using other traditional ways of interacting with public administrations, there will be little internal winnings.

4.4   Barriers hindering user participation

There are several barriers that may hinder how user participation can be put into practice in public e-service development projects. Barriers can comprise several interrelated aspects, such as restrictions concerning available resources, the complexity of the development process, competence, the e-services being developed, and the underlying organisational processes that are affected by the public e-service under development. Such barriers may be categorised in three sub groups: 1) organisational barriers, 2) user barriers, and 3) legal barriers. However, these barriers are closely intertwined and should not be viewed in isolation.

Organisational barriers concern aspects related to the organisation that may prevent or hinder user participation in public e-service development projects. It is important to consider to what extent public administrations are willing to adapt to the needs and requirements from e.g. citizens. As highlighted by Keen (1981), changing perspectives and how things are done, e.g. how to adapt to a more user centred public e-service development process is not a trivial task since most organisational structures and behaviour exhibit varying degrees of social inertia, i.e. "[…] *a complicated way of saying that no matter how hard you try, nothing seems to happen*" (Keen, 1981, p. 24). As highlighted by Hedberg and Jönsson (1978), such believes are often based on assumptions (so called rationalized myths; cf. Meyer and Rowan (1977)). I.e. they are made without thorough investigations of their value and are as such a typical example of social inertia and resistance to challenge existing – institutionalized – ways of working and organisational "truths".

User barriers focus on different aspects that may hamper external users' possibilities to act as participants in a public e-service development process. A frequent example of such a barrier is how to motivate users to participate. As pointed out by Albinsson and Forsgren (2005), internal users, such as civil servants, can be somewhat forced to participate in development initiatives as a part of their job descriptions, whereas e.g. citizens cannot. Instead, they need personal incentives and motives for why they would participate (Axelsson et al., 2010), which may come in many forms, e.g. a general social commitment or expected personal winnings (Holgersson and Karlsson, 2014). Another frequently discussed user barrier is users' ability to participate in terms of individual properties making them suitable as participants. According to Karlsson et al. (2012), not all users may fit as participants depending on how user participation is applied. Some approaches to user participation require lead user capabilities (von Hippel, 1986) whereas other approaches are less demanding but still implicitly require user prerequisites such as basic IT skills as well as basic domain knowledge.

Legal barriers focus on whether the development project is affected by legal constraints. According to Gil-García and Pardo (2005), legal aspects make up one of the main challenges to e-government initiatives. They describe and highlight that laws and regulations restraining what can or cannot be done must be taken into account when developing e-government. Similarly, Axelsson and Melin (2009) emphasise that public e-services must be developed in a way that is coherent with the formulation of existing laws. In fact, in e-government

research, legal aspects are most often discussed as something that hampers public e-service development. According to Bekkers (2005), the extensive legal frameworks existing in the public sector challenge and constrain the very nature of public e-service, i.e. electronic information exchange between public administrations and citizens. On the one hand this conclusion is understandable from a change of perspective, but on the other hand the role of rules and regulations is to preserve and make processes stable, transparent and fair over time, as a part of a classic bureaucratic model (Rose et al., 2015).

4.5 Degree of informed decisions

The level of informed decisions dimension is focused on whether decisions related to user participation made during the development process have been informed or not, i.e. to what extent decision makers have been aware and informed of their choices related to organise user participation in the development process of public e-services. As can be seen in e-government research, the degree of awareness of such choices varies greatly. For example, Scandurra et al. (2013b) conclude that decision makers may perceive that decisions made are well informed. However, this does not necessarily mean that arguments for such choices are grounded in and aligned with current research, best practices, and development guidelines provided. Instead, as discussed by Lynne-Markus (1983), arguments may be influenced by power and politics which often preserve conservative values, as well as a general resistance towards change. As concluded by Holgersson et al. (2015), there is a clear relationship between awareness and resources available in public administrations; larger ones (e.g. public authorities) generally have more resources available and can therefore afford to spend more time and resources on issues related to users, which in turn results in higher awareness regarding user related aspects. Smaller public administrations, on the other hand, often have fewer resources available for interacting with users, which in turn is reflected as less awareness concerning user related aspects in public e-service development.

4.6 Impact

The impact dimensions take on a retrospective view of the development process, i.e. what happens once the public e-service is launched? The project dimensions pay attention to what extent the initial project dimensions were met, e.g. if the initial incentives were met or if there were any deviations or unexpected reactions. As highlighted in the discussion above, e-government research often reports on failure in public e-service development projects in terms of external users rejecting public e-services launched. Instead, the users have kept on favouring other traditional service channels, such as phone or mail, simply because they do not see the point in using a public e-service (European eGovernment Action Plan, 2011-2015, Verdegem and Verleye, 2009). However, when analysing the impact of user participation in the IS research field, it is clear that the relationship between successful development and user participation is questioned in many cases (Lynne-Markus and Mao, 2004, Ives and Olson, 1984). For example, there are reports arguing that user participation can be regarded as counterproductive (Lynne-Markus and Mao, 2004, McKeen and Guimaraes, 1997, Wilson et al., 1996, Heinbokel et al., 1996). On the other hand, there are also examples reporting the opposite (Lin and Shao, 2000, He and King, 2008). As concluded by (Kujala, 2003), user participation is not a panacea but rather one of several important components that altogether enhance the likelihood for successful public e-service deployment. Hence, we argue for the importance to analyse the actual impact of user participation and the finalised public e-service, i.e. 1) to what extent users were allowed to influence the development process if compared to initial goals and expectations set out before and during the development project, and 2) to what extent the public e-service launched can be considered as successful, i.e. whether the initial project incentives can be considered to be met or not.

5. Case study illustrations and analysis

Below we describe and analyse three case studies of public e-service development projects focusing user participation practice. As discussed in chapter 3, each case study has been published previously in several research outlets. We have chosen to keep the same naming format as in the previous papers. This mean that for one case (Sustains) the name of the target organisation is written out, whereas for the remaining cases the target organisations are kept anonymous. For each of the cases, the basic foundations are first described. Thereafter, each case is analysed with respect to the dimensions identified in section 4. The textual descriptions are followed by a table summarising the focused dimensions of the projects used for an analytical purpose.

5.1 The Sustains case

The SUSTAINS project is a European Union (EU) financed collaboration that aims to develop and deploy public e-services that makes it possible for citizens to access their own personal medical data (Sustains, 2016). The County Council of Uppsala (LUL) in Sweden is coordinating the project and the case studied is the development process of a public e-service making it possible for residents in LUL to retrieve their personal medical data from LULs electronic health records (EHRs). The development process as such, as well as how user participation have been addressed in the development process, has been described extensively in previous research (e.g. Scandurra et al., 2015, Scandurra et al., 2013b). The main *trigger* for initiating the development process in LUL was a response to political EU directives towards patients' rights to access their own medical data, i.e. the founding for the SUSTAINS research collaboration. As such, the main *incentive* for developing a public e-service used to access EHRs was based on an external perspective offering patients the possibility to be active agents in managing their own health by allowing them access to their medical records online, instead of having to request a paper copy of these records after a doctor's visit. However, there were also internal incentives based on the assumption that online access to EHRs would help all involved parties to be prepared and updated in advance of meetings; hence leading to a more effective and efficient health care process. The *development approach* chosen was SCRUM. A commercial software development firm with a certified SCRUM master was managing the development process as well as systems development. LUL was the initiator of the development process and owner of the public e-service developed. During the development process, LUL played the role of customer and project owner and was continuously involved at requirements elicitation sessions and sprint demos. The *user participation approach* applied in the project can be characterised as informal. User centred activities were limited to the use of three fictional personas representing different segments of citizens. These personas were created and used at a late stage of the development process and were used mainly for interaction design features. Moreover, a set of planned focus group test days with patient organisations were held. However, the outcome of these test days was poorly recorded and it is not clear whether or how these test days were analysed enough to improve the e-service. One major reason for not involving users to a larger extent in the development process was the combination of *organisational barriers and user barriers*: users were not invited to participate based on the LUL´s assumption that the users did not know what they wanted; it was assumed that most people can be considered to be healthy which in turn means that they have little knowledge and interest in their particular needs regarding online access to EHRs. Furthermore, *legal barriers* hindered participating users who were not expected to be familiar with complex rules and legislations surrounding distribution of medical data. The arguments for why not including future end users to a larger extent in the development process indicate a *medium level of informed decisions*. However, at the same time, the arguments and motives for doing so have been questioned by scholars analysing the development process, e.g. Scandurra et al. (2013a). The *impact* of user participation in the SUSTAINS case is low. The three fictional personas were used mainly for interface design at a late stage of the development process. In addition, it is not clear how the outcomes from the focus group test days were actually analysed and used in order to improve the service being developed. Moreover, the e-service was only tested by employees at LUL and the tests can be characterised as non-systematic. Each employee was free to use the e-service without any preconditions and there was no systematic way of collecting responses from the test users apart from the optional possibility to send an e-mail to the project owner. Once the e-service was launched publically, no changes had been made if compared to the test version. However, as illustrated in Scandurra et al. (2015), the impact of the project is considered as high in terms of usage frequencies and fulfilment of incentives. In total, approximately 100 000 citizens within Uppsala county council have used the e-service to access their EHRs at least one time. From an external perspective, it has been found that online access to medical records gives the opportunity for patients to learn and understand more regarding their medical conditions as well as preparing for meetings with health care professionals in advance, which in turn makes such meetings more efficient for both parties (Rexhepi et al., 2015, Scandurra et al., 2015).

5.2 The Anonymous exams case

The ANONYMOUS EXAMS case concerns the development process of an IT system for enabling students at a Swedish university to write exams anonymously. The development process has been described in several publications previously (Axelsson et al., 2010, Axelsson et al., 2013, Lindgren, 2013). The main *trigger* for initiating the development process was a call from the students' unions to improve the security and equity during the examination process by enabling students to be assessed anonymously. The university decided to answer the students unions' call by developing and implementing a cluster of interconnected IT systems that could ensure that the entire examination process was mediated by IT, making the process anonymous and

more equal for the students. The main *incentives* for the university to develop these systems*,* however, were not only to increase the security and equity of the written examinations. In addition to these incentives, the university used this development project as a way to create a shared process for administrating written exams within the university as a whole. At the time of the development project, different departments at the university had different work procedures concerning how written examination was carried out. By developing shared IT systems, and thereby forcing the organisation into a shared work process, the university management wanted to streamline the process and simplify the internal handling of examinations. The *development approach* was not based on any formalised logic or method. In fact, the project leader was inexperienced in leading projects and the project members reported that they "made up" the development process as they went along. The lack of formalised work procedures created a stressful situation for the team members. The project affected several distinct (but internally heterogeneous) user groups within the university structure; mainly students, teachers, study program administrators, and examination supervisors. The project team consisted of persons representing different competencies in the organisation, creating a project team that had a large network within the university, and this set-up facilitated a high degree of *user influence* in the project. For example, one group of users, the examination supervisors, was even represented in the project team. Other important users, such as teachers, were not involved to the extent necessary; a decision based on the assumption that the new system would not affect this user group as much as it later turned out to do. Despite a high degree of user awareness, there were some *barriers* for successful user participation. Mainly, there was a lack of time and resources to engage with all relevant user groups to the same degree, making the user influence rather unbalanced. Another barrier was the heterogeneity of the organisation; it was hard for the project team to get a complete picture of all the various ways of administrating the examination process existing in the organisation. This resulted in that the importance of some user groups was downplayed by the project group. This unbalance was also mirrored in the *level of informed decisions* regarding design; meaning that some design decisions were based on a high degree of understanding and awareness of the users' needs and work situation. Other design decisions, however, were not grounded in the same manner. It is therefore fair to say that the *impact* of the user participation varied. The group that had had the highest degree of participation, the examination supervisors, had a great influence on the final system design and was also very pleased with the result of the project. In contrast, other user groups (teachers and study program administrators) had hardly any influence on the system design, resulting in some user resistance (from these particular groups) when the new system was first introduced. As a whole, the project was perceived as a successful project in the organisation since the student unions' demands were met, internal work processes were streamlined, and what was considered as the main user group, i.e. the examination supervisors, experienced better effectivity and efficiency in their daily work life situation.

5.3 The Driving license case

The DRIVING LICENSE case study concerns the development process of an inter-organisational (IO) e-service for handling provisional driving license applications. The development project has been previously described in (Axelsson and Melin, 2012). Three Swedish agencies were involved in the project; Sweden's County Administrations (SCoA), which organises the 21 county administrative boards of Sweden, the County Administrative Board of Stockholm and the Swedish Road Administration (SRoA). In Sweden, anyone who wants to get a driving license first has to apply for a provisional driving license from his or her regional CoA. The provisional driving license is approved if the applicant is judged by the regional CoA to be able to drive a vehicle in a safe way. This decision is based on part of the applicant's health and crime records.

The main *trigger* for initiating the project was a possibility for SCoA to get funding for developing new public e-services from the Swedish government, which can be described as an opportunity that was interpreted as being possible to seize. The main *incentive* for choosing the provisional driving license application was that it seemed to be an easy process and service to digitalise. The development project aimed at implementing an e-service that made an automated decision in "green cases" (i.e., application cases that did not call for any extensive handling process before approval) in order to support case officers handling such cases. Instead, the agency would be able to reallocate these resources from handling "green cases" to more complex errands. By doing this, internal and external efficiency were on the agenda. The IO *development approach* followed a traditional and formal waterfall model. The project management can be characterised as rather weak and external consultants were extensively involved in several project phases; from requirements to design and implementation (and later on also as project manager). The *user influence* can be divided between internal users (case officers) and external users (citizens in the role of applicants). Internal users were represented in the project group and their previous way of working with applications was to a great extent used as a blueprint

for the e-service; i.e. IT's innovative potential was not caught. External users in the role of applicants were not involved in the project so the user influence and activity in the project were low. However, representatives from driving schools were approached once during the project in order to get the design discussed (Melin and Axelsson, 2009), but not as a part of a formal plan. The project experienced several *barriers* that delayed the result. The need to reformulate regulation text was a legal barrier that halted the project. Another barrier was problems with the identification technique used in the e-service. This decreased the usefulness and need for people less than 18 years old, which was an important target group for the e-service. The process also turned out to be more demanding to digitalise than expected which made the project complex in several different dimensions (e.g. scope, manning, competence, delivery, etc.). All these barriers had a negative effect on external user participation, as the delays in the project deliverables increased the already from the beginning strong internal agency perspective. The *level of informed decisions* can be assessed to be low as there was no informed decision of which e-service to develop, but more of a random choice based on a window of opportunity (described above) and an expected simplicity and easiness to digitalise the chosen process. Letting the internal user perspective be dominating indicates low awareness of how external user participation and involvement could have contributed to the project. Thus, the *impact* of the user participation in this case cannot be said to be high since the only users involved were internal case officers, even though the project outcome was an external e-service. When implemented, the citizens did not regard the e-service impact on decreased lead time for the application of provisional driving licenses to be that important. However, during the project the Swedish driving license regulation was changed so that education certificates for private driving supervisors became mandatory. The e-service handled these certificates also which made it successful regarding use frequency by persons (i.e. often parents) who applied to be a driving supervisor.

5.4 Summary of the case analysis

Table 1 below provides a summary of how the cases correspond to the dimensions identified. As can be seen, only one of the cases (the ANONYMOUS EXAMS case) is triggered by an explicitly expressed need for a service in order to solve an existing problem, whereas the other two cases are triggered due to political motives and available funding (opportunities). The incentives described in the cases all share a basic strive for improving internal routines and work processes (productivity), but at the same time all cases also take on an external perspective in terms of other user groups besides the ones directly affected in their daily work life, e.g. citizens and professionals in different working roles. The development approach varies between the cases and it is clear that project members' previous experience from management of IS development also affects to what extent a more formalised development approach is adopted.

The way user participation has been viewed and applied is rather similar in the different cases. There are incentives addressing external users; although any initiatives to include external users in the development process can be considered as unstructured without any clear goals regarding what to achieve. Also, barriers used as arguments for not paying more attention to external users share common characteristics. Legal constraints hindering user participation have been identified in two of the cases, and organisational, as well as user barriers, have been identified in all three cases. It is also clear that the awareness of decisions made with respect to organising user participation is quite limited, often affected by how barriers hindering user participation are perceived within the development team. Regarding the impact of user participation in the cases, it is evident that initiatives towards letting external users participate in the development process are very limited. In the end, the cases have been proven successful in terms of high usage frequencies, as well as documented winnings both internally and externally. At the same time, user participation did not play a central role in the different development processes in the initiatives.

Table 2: Summary of the case analysis

Project			User participation			Impact	
Case	**Trigger**	**Incentives**	**Development Approach**	**User influence**	**Barriers**	**Level of informed decisions**	**Project**	**User participation**
Sustains	Political, striving for democratic values	Mainly external, partially internal	Formalized development process (SCRUM)	Low. Informal focus group Planned focus group meetings with reference groups	User and organisational barriers. Partially legal	Medium	High impact internally and externally	Low, user considerations handled in an ad-hoc manner
Anonymous exams	Political, striving for equity expressed by student unions	Mainly internal, partially external	No formalized development process	Medium. Mix of formal and informal user representation in the project. User groups involved to different degree	User and organisational barriers	Medium	High impact internally Medium impact external	Uneven. Some user groups had a very high degree of influence; others had very little influence on the final system
Driving license	An opportunity which could be seized	Internal and external.	Formalized development process: Traditional waterfall	Low, No external user activities planned	Legal and organisational	Low	Low, No real need from external users for the service provided	Low, very few external users involved

6. Discussion and conclusion

The aim of this paper has been to illustrate and problematize aspects that influence why, how, and in whose interest user participation is conducted in public e-service development. In doing so, we have characterised and compared three public e-service development case studies. In order to perform the comparison, we have reviewed e-government and general IS literature to develop and present a set of dimensions representing different aspects of the public e-service development process. Based on these dimensions we have characterised how user participation has been treated during the development process in each public e-service development project.

By analysing empirical data from the case studies used to illustrate user participation in practice, two basic forms of how to address user participation are identified: 1) *veneered participation* and 2) *ad-hoc participation*. Veneered participation is a phenomenon introduced by Heeks (1999) and refers to cases when an organisation (e.g. a public administration) feels forced to include user participation even if they believe it to be non-viable. This means that policies and internal regulations stipulate that user participation should be applied without context specific considerations, which in turn means that user participation initiatives in the development process are nothing but a checkmark, without no real value added. As can be seen in and illustrated by the SUSTAINS case, user participation activities were performed, but the results from the activities did not have any significant impact on the development process. User participation in the remaining two case studies (the ANONYMOUS EXAMS and the DRIVING LICENSE case) can be described as ad-hoc participation. This means that different user participation activities have been performed, but without clear directions and goals.

It can be concluded that there is a general understanding and belief that user participation is a "good thing" that should be applied, but there is no plan and little knowledge and competence for how to do it. Guidelines from researchers (Holgersson, 2014) and government initiatives (The Swedish delegation for eGovernment, 2014) are two different responses aimed to aid public administrations to avoid such ad-hoc participation by providing concrete advice for how to work with user participation in public e-service development in a more formalised manner. However, such attempts to aid public administration target all levels of public administrations which in turn makes them too general, vague, and imprecise to provide any concrete advice for how and when user participation should be used. We challenge the overly positive attitude that is surrounding user participation in public e-service development. Instead, we want to provide e-government

researchers as well as practitioners with a more nuanced picture of the expected benefits of user participation. We argue that it is important for public administrations to question *why* user participation should be used and *what* should be achieved by user participation? Most likely user participation is not applicable in every single case; and there is a need to find the right users – not just any users. What is important is that decisions made regarding user participation in public e-service development should be based on conscious and informed choices regarding why user participation is needed and what it may bring. We also argue that it is important to question *how* user participation should be applied. A practical implication of this is that there is a need to treat user participation as a strategic question, moving beyond practical e-service development situations. As highlighted by Karlsson et al. (2012), user participation should not be considered as a static concept. Instead, user participation may come in many different forms and it is important to realise that compromises must be done with respect to available resources as well as available and suitable users that may act as participants. Finally, we argue that it is important to question in *whose interest* user participation is promoted. Is there an explicit willingness to take user considerations seriously in the development process, or is user participation something that is forced into the development process by policies and guidelines influenced by political agendas and levies imposed by higher instances? As long as public administrations can answer *why, how, and in whose* interest user participation should be applied in a public e-service development project, we argue that public administrations have a basic awareness of what user participation should be used for or not, as well as when in-house knowledge and expertise is enough in order to be able to develop public e-services that are used once implemented.

The findings presented in this paper should be seen as a complement to the theoretical findings presented by Heeks (1999) regarding why, how, and in whose interest user participation is conducted in IS development. By analysing empirical public e-service development case study data we illustrate that such questions is proven useful, not only for theory development in the IS field focusing on user participation as a part of digitalisation, but also for public e-service development practice. As such, our findings add to the e-government research field by highlighting the importance of critically questioning the need for user participation in public e-service development, and its following practice, as a general component that should always be included in every public e-service development project. We argue that most research on user participation in the e-government field (See e.g. Kotamraju and van der Geest, 2011, Millard, 2010, Axelsson et al., 2010, Holgersson and Karlsson, 2014) has an overly positive attitude towards user participation and we urge e-government researchers to provide complementary case study findings which confirm or contradict our findings presented here. As an example, we have found two basic forms of how user participation may be addressed in public e-service development. However, analysing more cases might reveal additional forms. Our findings show that user participation is not a silver bullet in public e-service development, thus, conforming the conclusions made by He and King (2008) who state that user participation indeed is one of several important components for successful IS development.

In addition, we also present a set of dimensions for the characterisation and analysis of public e-service development projects. We have also tested the utility, usefulness, and feasibility of the dimensions by analysing three different public e-service development case studies. As such, the dimensions contribute to the existing e-government research field and could be used as a basic analytic template when characterising and understanding empirical data from future e-government case studies. Such a template would provide researches and practitioners with a standardised platform which allows for increased transparency when comparing findings from case studies on public e-service development projects.

Furthermore, our findings also have practical implications for public e-service developers and providers; particularly those who are facing pressure to incorporate user participation as a mandatory component in public e-service development when, at the same time, suffering from limited resources. We want to urge public administrations to carefully analyse and question whether user participation should, or should not, be applied in a specific public e-service development project. As such, the pressure on public administrations to include user participation as a mandatory component in public e-service development may be eased in those cases where fair arguments for not doing so can be presented in terms of *why, how, and in whose* interest user participation should be applied.

The findings presented in this paper calls for further research on user participation in e-service development initiatives. This is motivated by a practical need to elaborate more on the practice of user participation linked to different public e-service contexts (e.g. in different countries with different governance systems, political

agendas, cultures, laws, and traditions) as well as linked to different artefacts building up the technical components of public e-services and their interplay. Such aspects might for sure affect the underlying motives and arguments for developing public e-services in the first place as well as the role of the future users of such services. The fact that this paper focuses on a few case studies is of course a limitation and we encourage the e-government research community to advance our findings further, not at least to also include case studies in other Scandinavian countries and beyond. Furthermore, we encourage researchers from other research contexts to elaborate further on the dimensions provided in order to, if possible, add further nuances to the perspectives presented. As highlighted by Karlsson et al. (2012); the main objective in public e-service development should always be to develop public e-services that are used once implemented. User participation may in many cases contribute to this goal, but it should not be used without questioning what it may bring into a particular development project.

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