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*Published in:*  
P D C

*DOI:*  
[10.1145/2662155.2662189](https://doi.org/10.1145/2662155.2662189)

*Publication date:*  
2014

*Document Version*  
Early version, also known as pre-print

*Citation for published version (APA):*  
Berger, J. B. (2014). Ethical dilemmas and PD as important steps towards critical e-government design. *P D C*, 2, 13-16. <https://doi.org/10.1145/2662155.2662189>

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# Ethical dilemmas and PD as important steps towards critical e-government design

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## ABSTRACT

The delivering of public services to citizens through the internet – also known as e-government - has gained serious momentum, driven by political ambitions of improved efficiency. E-government, however, is considered complex and e-government failures are well known from media. Research of how e-government is enacted inside government is sparse. Technology mediated public services in real world entail ethical dilemmas. By extracting ethical dilemmas from a qualitative e-government participatory design study, this paper shows how ethical dilemmas may inform future e-government design and design processes. The case, adoption of digital post in a local e-government setting, showed that design flaws, staff's concern for citizens and political fear of citizens' critique had an impact on e-government adoption.

## Author Keywords

Participatory design, design science research, e-government, action research, public sector

## ACM Classification Keywords

H5.3 Organizational design, H4.m Miscellaneous.

## INTRODUCTION

E-government, the delivery of public services to citizens through the internet, has been growing steadily around the world for at least the last decade. The public sector covers a range of various domains and actors and e-government is widely recognized as being multivariate and complex (Rose, Persson, Kræmmergaard, & Nielsen, 2012) and it is a major challenge to derive benefits from e-government (Goldfinch, 2007). There is a growing political pressure for achieving benefits from e-government initiatives. The Danish national e-government strategy (The Danish Government, Danish Counties, & Local Government Denmark, 2011) introduces more than forty mandated e-services from 2012 to 2015, whilst at the same time reducing state funding according to the anticipated cost reduction. Failure to reduce costs by the e-government initiative imposes cuts elsewhere in the public institution's activity or service.

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PDC '14 Companion, October 06 - 10 2014, Windhoek, Namibia  
Copyright 2014 ACM 978-1-4503-3214-9/14/10...\$15.00.  
<http://dx.doi.org/10.1145/2662155.2662189>

E-government research tend to focus primarily on the demand and supply side, i.e. the citizens' adoption of e-government services and the services that governments offer (Yildiz, 2007). Even though some researchers see organizational issues (e.g. Ndou, 2004) and the role of management (e.g. Braun, Ahlemann, & Mohan, 2010) as key to understanding e-government, scholars state that 'we still know little about the impacts and results associated with e-Government' (Luna-Reyes, Gil-Garcia, & Romero, 2012). The predominant e-government research tends to be overly optimistic about e-government impact but on limited empirical ground. A positivistic research approach and a tendency to not leave the office might explain the 'absence from some research of the human, social, and political elements that more easily become apparent during direct contact with data objects and settings (Heeks & Bailur, 2007, p. 257). These critical scholars imply that major e-government questions may remain hidden (e.g. what are the impacts of e-government) and they strongly recommended to investigate internal e-government processes in an inductive inside-out approach using qualitative methods (Yildiz, 2007) and applying a more critical approach (Heeks & Bailur, 2007).

Participatory Design (PD) and Action Research (AR) constitute suitable research approaches for generating in-depth knowledge about how and why in technology use. This paper reports from an analysis of ethical dilemmas in such an AR study with integrated PD activities on achieving benefits from a national e-government initiative (digital post) in a local government setting. The question is, whether applying the lens of ethical dilemmas can reveal knowledge to inform future e-government. My stance on the Danish e-government strategy is given after this introduction. Section three touches upon ethical dilemmas in e-government. Research methodology and case setting are given in section four and the ethical dilemmas, derived from the qualitative study in section five. Finally, implications and conclusions are stated.

## DANISH E-GOVERNMENT AND MY STANCE

The Danish Ministry of Finance launched the 'digital post' system (DP) in 2010 with the aim of reducing public sector postal costs. DP is basically an e-mail system, where public institutions can communicate encrypted and authenticated with citizens. Citizens access their DP with their social security number. The social security number also acts as the 'e-mail address'.

2010 Inauguration of DP, it was mandated for public institutions to receive digital post from citizens

2012 Only 1 of 5 citizens had registered so Parliament made it mandatory for citizens to receive digital post from public institutions from 2014

2013 The Ministry of Finance reduced funding of public institutions, according to anticipated reduced postal costs

The Ministry of Finance provides the DP system and leaves it to the public institution and the market to establish the systems, with which public institutions connect to DP. Studies have proven that public institutions have difficulties receiving and sending digital post and the Minister of Finance have made an official apology to Parliament.

As a researcher, I enter the research setting with my experience, knowledge, skills and personal background. I hold a twenty-five year industrial career within alignment of IT, organization and business processes in public sector operations from academic staff and management positions. I had the responsibility of Digital Post implementation and operations in my former industry position. I am convinced that e-government can increase public sector efficiency and go hand-in-hand with improved work life quality. I am critical of the current e-government strategy for being too optimistic and aggressive and for the design and implementation not being based on work practices and user involvement. I want to contribute to e-government research by showing how e-government initiatives can and must be informed by knowledge of work practice and engagement of civil servants.

#### **ETHICAL DILEMMAS, PD AND AR**

Assumptions about how a technology will be used are embedded in the technology design. These assumptions become active as design is completed in use and ethical dilemmas arise when confronted with design decisions in use (Robertson, 2006). Mullen and Horner (2004) assert that new ethical issues arise as government becomes bound up with virtual behavior, becoming e-government. They state the importance of finding out, whether ethical dilemmas are new in the government of society and if they express a 'political vacuum'. According to Mullen and Horner (2004), ethical dilemmas relate to trust and equity. Trust is connected to expectations that the trustee will act in one's well-being and the feeling of security that these expectations will be met. Trust in e-government refers to trust in the information, the system and the public institution. Equity constitutes the unequal access to digital services related to technical means, knowledge or skills. Mullen and Horner (2004) proposed a framework to be able to better address and understand ethical dilemmas as: related to; dependent on; determinant of and specific of e-government. The authors take the citizen view even though it isn't stated explicitly. Ethical dilemmas may arise from different values and perspectives of different stakeholders.

The underlying philosophy of PD is that the knowledge of the users of a technology must inform technology design and that users have a right to be heeded in decisions that affect their work situation (Simonsen & Robertson, 2012). Technology must be designed in

genuine collaboration with users; users learn from designers about design options and designers learn from users about work practices (mutual learning). A sociotechnical approach is pivotal in PD, focusing on actual work practices of the technology, embedded in the situated environment. PD is concerned with technology design and design processes and insists that the design process may be completed only in use (design-in-use) (Blomberg & Karasti, 2012). AR constitutes a genuine collaboration between practitioner and researcher to perform interventional action that solves practitioners' problem and at the same time yield research knowledge (Baskerville & Wood-Harper, 1996).

#### **METHODOLOGY**

The AR study was conducted as canonical AR (Davison, Martinsons, & Kock, 2004) and followed the AR phases of diagnosis, action planning, action, evaluation and specifying learning. The problem was lack of postal costs reduction, thus the aim was to increase use of Digital Post. The project setting constituted two departments at the Copenhagen Citizen Service (CCS) with a total of 80+ clerical staff, four team leaders and two heads of departments. The CIO, project manager and researcher constituted the AR project group. A technological deterministic, New Public Management (NPM) approach from CIO, managers and top-managers dominated the Digital Post project. Ethical dilemmas were able to be revealed by giving the weak stakeholder, with a more technology skeptical viewpoint – clerical staff - a voice, thus, a PD approach was chosen.

The study included various quantitative and qualitative data collection methods. The researcher was situated in the organization two days a week through one year. Participant observations were conducted and documented.

A Delphi-study was conducted in one team (four groups) to gather initial domain knowledge. Each group was presented with five themes (technology, staff, citizen, interaction and ownership) with a positive and negative question (e.g. staff: 'What does it easy/troublesome for staff to use Digital Post?'). The Delphi-study was chosen to elicit the predominant challenges. Breakdowns in Digital Post work processes were elicited from two teams one week every month, during five months. The two teams (34+14 employees) with most work-task variety and the most engaged teamleaders were chosen. Staff would report on every breakdown (involved work processes, systems, actors, perceived barriers and solutions). Teamleaders were accountable of utilizing the data in dialogue with staff to recurrently improve the Digital Post design-in-use. The manager was accountable of following-up on teamleaders. PD activities constituted the involvement of staff and managers in iterative design-in-use processes focusing on measurements and changes in work practices. The analysis is based on three ethical dilemmas of managers and three of staff, interpreted from the qualitative data.

#### **THE ETHICAL DILEMMAS**

##### **Management**

Access to a test environment and visibility have positive impact on individual adoption of new innovations (Rogers, 2003). The work process of printing and packing

a physical letter supports both trailability and visibility. DP was designed without test functionality, moreover, digital communication is invisible. Introducing digital post, managers were left with limited means to train staff in the digital post process, in order to create the necessary self-efficacy, leading to further adoption. Staff, however, can simulate test by sending digital post to another employee as citizen. This makes it possible to test the system and 'visualize' the final digital letter. Moreover, staff would be able to understand and support inquiries from citizens using digital post. Managers were left with the ethical choice of making staff use their personal and private social security number and register as a citizen in the DP; thereby mediating thorough training or respect privacy and sustain alienation from the digital post system. The Data Protection Agency stated that municipalities could not order staff to use their own social security numbers, which reinforced the managerial dilemma.

E-government is about citizens and an ethical dilemma arises where managers need to balance between political and design concerns. Design-in-use in e-government may ultimately include citizens as the 'end users'. In this case, the municipality and the researcher initially agreed to measure citizens' view of digital post in the design process with the aim of ensuring that citizen's satisfaction did not drop. Robertson and Wagner (2012) note that having to include critical views from citizens may be politically sensible. A survey was elaborated in a very cumbersome and lengthy process by the researcher and the communications department. It was only finalized when the researcher suggested sending the survey in the name of the university, i.e. the municipality was not accountable. Managerial decision to send all payment reminders physically was another design example influenced by fear of citizens. At national level there had been political concern in media about citizens forgetting to collect their digital post. Some citizens had not seen their housing tax bill or the following reminder, also sent by digital etc. Reminder fees accumulated and many citizens refused to pay the fees. During the media coverage, the Digitization Agency recommended public institutions to send reminders by physical post, which was followed by the manager.

As part of project closure, the researcher presented the findings in a newspaper article draft to the CEO; both the positive increase in digital post, but also the learnings that could inform future design processes. Moreover, the project revealed many barriers beyond the control of the municipality, also included in the article. The CEO was very unhappy with the article; he wanted the article to focus more on the positive effects from digital post and how well CCS had managed the implementation process. The researcher was summoned to an emergency meeting with CEO and CIO. The article was never published and the municipality missed the opportunity to question the anticipated effects from digital post. The overly optimistic expectations connected to e-government initiatives and the predominant technology determinism will prevent bad news from emerging (Goldfinch, 2007). The ethical dilemma of the CEO of displaying one's own

organization as not being capable of delivering the anticipated results (at the same time attracting focus on insufficient management) and questioning prerequisites of the national business case and the reduction in state funding is salient.

#### **Staff**

Clerical staff is very concerned about privacy of citizens. The Danish act of processing personal data states that personal data (e.g. the social security number) must only be used if it's necessary for case handling; subsequently the citizen must be informed. Staff uses the national register of persons in various work processes. Logging into the system, a warning is displayed, stating that 'transactions are being logged and unauthorized use of the system are punishable, may have legal consequences and will be reported to the police and the employer'. Both staff and managers were convinced that it was illegal to draw the social security number from the system only to use it as the 'address' in the DP. If, in a specific case, the social security number was not available from correspondence, staff had to enact – what they perceived as an illegal act – draw the social security number from the national register to send digital post or send a physical letter, not following the decision of digital communication. This dilemma arose from a workshop in the beginning of 2012 and was put forward to the Digitization Agency. Two years later, the Data Protection Agency resolved the problem.

Concern for the citizen is pivotal to clerical staff of CCS. This was a predominant theme in all workshops and focus groups and constituted a major mental barrier to adoption of digital post. Concern is about citizens without computers, the elderly that don't know how to use the internet, the immigrants that cannot understand Danish, the disabled etc.; exactly the segments of citizens, whom are mostly in contact with the municipality. In general, digital post, towards these groups, is perceived as poor service by staff. Many work processes include sending a form to the citizen, which the citizen fills out, signs and returns to the municipality. With digital post, staff sends a PDF form to the citizen. Many employees regard this as poor service and unfair, because the municipality burdens the citizen with having to print the form while the municipality saves the postal costs. Also, content, which is perceived by staff as vital for the citizen, e.g. refusal or granting of welfare payment was perceived as inappropriate to send digitally. In these and many other similar cases, staff is faced with the ethical dilemma of offering poor service or following orders of sending post digitally. Value conflicts are state by Rogers (2003) as having a major negative impact on adoption.

A recognized dilemma relates to the inability of technology to support the entire work process. The time, invested in solving the technological challenges, is taken from the time employees have to solve work tasks. (Mullen & Horner, 2004). Staff is faced with many situations, where the digital channel is not the natural choice. Legacy systems that can only make physical prints are one major barrier. The funeral aid system was an example. To be able send the grant letter to the citizen digitally, staff needed to scan the print from the system.

The municipality had centralized scanning, so staff should send the print by internal mail (collection was reduced to twice a week) to the scanning center (being in another physical location), await the file and the return of the grant letter for archiving, before the case could be closed. The one and a half case handler had more than hundred cases a week. It was a challenge to keep track on returned files (file names had no citizen identification) and of grant letters that disappeared in the mail. Other examples are physical letters to be forwarded to citizens and forms that needed stamp and signature. These types of barriers enforced the ethical dilemma of balancing effort onto staff.

### IMPLICATIONS

The presented ethical dilemmas are all strongly connected to e-government. Some are deterrent of the e-government initiative, e.g. lack of trialability and visibility, attained from a poor design and existence. Others are dependent on e-government, e.g. the various physical barriers. Some relate to the nature of public sector, e.g. managers' fear of critical views from citizens, workers perception of service quality and the right to equal access to public service, but these become prevalent when government is electronic. Hence, all these unintentional ethical dilemmas affect the e-government adoption process negatively. Moreover, by reducing e-government practice, the ability of shaping future e-government by design-in-use is reduced. Failure to involve citizens' service perception from fear of critical voices reduces the ability of staff to actually learn about how citizens actually feel about e-government services instead of relying on one's own (imagined) perception.

Three assertions may follow from the ethical dilemmas. Firstly, a need for more practice driven processes in local government. Secondly, a need for more attention to application design, alignment with user values, privacy issues and the necessity of design-in-use activities at the national e-government level. Finally, an open questioning of the assumptions on which, the national e-government strategy lies upon, (overly optimistic and technology deterministic) would serve to mature national e-government processes to further be aligned with practice.

### CONCLUSIONS

Reporting from a qualitative study, this paper has shown how specific ethical dilemmas have arisen in the wake of a national e-government initiative. Negative impact on adoption and work life quality may constitute the consequences from these. Recognition of these ethical dilemmas in e-government help gain insights that may inform the design of the e-government adoption process at local and national level.

Technology and thus, the provision of e-government is perceived by the dominant stakeholders - politicians, managers, consultants, unions - as something 'good' by nature; the more technology the better. The consequences of electronic government on individuals and the public sector ethos may not have unfolded yet. The focus on ethical dilemmas may comprise an important step in the

endeavour of a more critical view on the current evolvement of e-government, formulating alternatives and to pose questions like when not to digitize. PD – as in the 1970'ies – may provide the necessary tools to give voice to and empower those that can fuel this endeavour.

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