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Digital Government Transformation

A case illustrating public e-service development as part of public sector transformation

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ABSTRACT

Digital government is often seen as an enabler or even driver of transformation of public administration, with the objective of creating public value. Such transformations are complex, requiring a long process of change; often, digitalization of public services is seen as the main means to this end. We investigate how digitalization of public services can be related to public sector transformation, and how this development can be linked to public value. In order to do so, this paper first conceptualizes digital government enabled transformation based on literature. Thereafter, we present an empirical example of public e-service development in Sweden. This case illustrates how e-service development can highlight shifts in societal values, and challenges that follow when trying to sustain changing societal values. Our findings suggest that in order to sustain transformation and (changing) public value, multiple processes of change and redesign need to be in place, not only of the organizational processes involved, but also of regulatory and institutional aspects, such as changes to the law and in the discretion and work practice of public officials.

CCS CONCEPTS

• **Applied computing** → **Computers in other domains**; • **E-government**; • **Social and professional topics** → *Systems analysis and design*; *Systems development*;

KEYWORDS

Digital government, Transformation, E-services, Public Value

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1 INTRODUCTION

Across the world, governments aim for transformation of public administration, in order to adapt to a changing environment and address societal challenges. Transformational objectives include realising organizational change beyond improved service delivery to citizens, facilitated by the use of information technology to create public value [38] and increase governments' responsiveness and openness [3, 14, 27, 29]. Central to the notion of public value creation is reflecting ongoing shifts in societal values within a collaboration of different stakeholders [31, 38]. It can thus be seen to fit the context of the wider shift from the bureaucratic form of government to a pluriform, networked form of governance [22, 23]; aiming at enabling greater accountability of public administration [38]. Digital government is considered to be a facilitator or even a driver of this transformation [3, 7, 10, 32].

Digital government concerns the use of information technology to improve government operations and serving their citizens. In practice, this is often realized through digitalization of public services, here referred to as public e-services [24], and related changes to the organization [40]. In spite of the high set ambitions driving digital government initiatives, such as public e-service development, it is often difficult to see what transformation digital government implementation actually enables [3, 7, 8, 15]. Furthermore, in the discourse on transformation, digitalisation is seen as the driver of change; but is the relationship between public e-service development and transformation of public sector necessarily that deterministic? How can this transformation be manifested and what role can public e-service development play in this transformation?

The aim of this paper is to illustrate and problematize the relation between public e-service development and public sector transformation in the light of a particular case study. In order to do this, this paper first conceptualizes the notion of digital government enabled transformation. Subsequently, an empirical example based on a small case study is used to illustrate how initiatives to accommodate changes in societal values through digitalisation can be hindered by legal frameworks and other organisational factors; factors highlighted by the technology. This paper aims to contribute to the fields of digital government and public management in three ways. Firstly, it conceptualizes the relation between digital government in practice (e-services development) and public-sector transformation. Secondly, it aims to further investigate these concepts by relating them to an empirical example illustrating how the limitations set by current law and changing societal values is highlighted by digitalisation. Based on a discussion of the empirical example, seen through the theoretical lens of a tentative conceptual framework,

the third contribution is to get further insight into how digital government and e-services development (as tools for creating public value) can be seen as drivers of governmental transformation.

The next section presents the theoretical background of the paper is presented, focusing on public sector transformation and public e-services development, in order to conceptualize their relation. Next, the case study design and empirical example are presented. Section five discusses the empirical example through the lens of the conceptualization previously presented. The last section presents conclusions and recommendations for further research.

2 DIGITAL GOVERNMENT ENABLED TRANSFORMATION

In the general discourse on digitalization in the public sector, digital government is considered to be a facilitator or even a driver of transformation [3, 7, 10, 32]. In order to discuss what this might mean in practice, we must conceptualize digital government enabled transformation. In this paper, we look at transformation through the lens of public value creation; i.e. if additional/different public value is created as a result of digital government initiatives, then some kind of transformation has taken place. This is an obvious simplification, done in order to narrow the scope and discussion made in the paper. Considering that digital government, in turn, can refer to a range of different activities, we use public e-service development as an example. Hence, the paper rests on the assumption that digitalization of public services enable public sector transformation through the creation of public value. By investigating public value creation and public e-service development further below, we extract six dimensions that pinpoint important aspects of digital government enabled transformation.

2.1 Public Value Creation

Public sector transformation can be seen within the wider context of public sector reform [35]. Objectives of public sector reform "include making savings (economies) in public expenditure, improving the quality of public services, making the operation of government more efficient, and increasing the chances that the policies which are chosen and implemented will be effective" ([35], p. 6). These objectives, thus, encompasses all governments' activities and purposes; ranging from increased efficiency to and outcomes of public policy. It fits the shift that is taking place from 'government to governance' [23]. The latter notion refers to a change of public administrations to a networked and open form of government [5, 29, 31], allowing governments to become platforms of open governance allowing different stakeholders to collaborate [22], and making optimal use of digital technologies to create public value and address societal challenges [10, 29]. Governments are no longer able to develop and implement solutions to the wicked problems of today, such as changing demographics, and reducing waste and pollution, on their own [5, 29]. Instead, they need to collaborate with different stakeholders and in networked constellations [22]. Furthermore, the use of new digital technologies in public e-services is considered essential in order to contribute to solutions to today's societal challenges [29].

Public value creation can be conceptualized based on three central aspects. The first is the determining what constitutes public

value. It entails a process of ongoing assessment of what constitutes value and for whom [31], which can be based on a myriad of public values [20]. Public value can be seen as created either directly serving citizens, or by improving the workings of public administration [9, 31, 38]. It, thus, needs to take into account multiple as well as continuously shifting societal values. Secondly, public organizations are expected to create this value in a joined-up manner, coordinating their actions across departmental or even organisational boundaries [1, 6], allowing for collaboration in networks [33, 38] involving public, private and civil stakeholders [22]. Thirdly, governments are expected to become more responsive and publicly accountable [3]. As decisions and actions are no longer the sole responsibility of one agency - or of government alone, it also becomes increasingly complex to achieve accountability. Government agencies, thus, are no longer able to enforce decisions, but rather they steer and empower decision making within different networks.

2.2 Digitalization of Public Services

Digital government is often concerned with the digitalization of services and the development of public e-services [18], although also initiatives such as e-participation and open data have gained prominence. Public e-services can be understood as electronically mediated services, provided by public organizations, through which users (citizens and businesses) and the supplying organization co-create value through the users' consumption of the service [24]. Public e-services are heavily influenced by and embedded in a specific organizational context and should therefore not be understood as mere webpages. In short, digitalizing public services goes beyond developing information technology; it is an instantiation of organizational development. As such, endeavors to digitalize public services typically affect a multitude of stakeholders, often within different parts of government and society [2, 37]. Thus, in order to achieve the fundamental overhaul of government that is necessary, public e-services development is enabled by organisational change [40]. Public e-service development is further associated with a multitude of challenges, such as understanding the users' needs and expectations [29, 41], engaging stakeholders in various phases of the development [16], and maneuvering in an often contradictory and ambiguous organizational context in which both economic and democratic values need to be taken into account [24].

When looking at digitalization of public services as a means to create public value, several aspects are of importance. Firstly, an ongoing assessment of what constitutes value requires a decision-making process involving different stakeholders, especially the prospective users (co-creation) from the public, private and civil sector [23, 31, 41]. Co-creation and stakeholder and user involvement should not be limited to the mere implementation of services but be incorporated in the very design of public e-services [34]. Secondly, in order to capture user needs and accommodate shifting public values, agile development rather than a traditional waterfall method for e-service development needs to be adopted [28, 36]. Rather than deploying a traditional development model for e-services development, governments should embrace new - lean - ways to develop services [19]. Thirdly, as the pluriformity of interests increases, the

notion of transparency, for example through realizing openness of government, requires special attention [17, 27].

2.3 Summary - a tentative conceptual framework

While promises and objectives abound, few have been able to define digital government enabled transformation, or its results [3, 12]. Based on the discussion above, we have extracted a number of concepts that can be used to illustrate transformation enabled by digital government. By *transformational objectives* we refer to objectives ensuring public value creation. The *enabling mechanisms* refer to the mechanisms that are likely to induce this transformation. These concepts are used to investigate digital government enabled transformation in practice in the next section.

Transformational objectives:

- *Sustain multiple or even shifting public values*
- *Collaboration in networks*
- *Public accountability*

Enabling mechanisms:

- *Involving different stakeholders, especially users (co-creation)*
- *Agile development*
- *Transparency and openness*

3 RESEARCH APPROACH

This paper presents a small case study illustrating how digital government enabled transformation can be manifested in practice, and showing how the concepts presented above can be understood in relation to a real-life situation. The empirical example covers a pre-study in which representatives from the Swedish Tax Agency and the Swedish Association of Local Authorities and Regions (SKL) investigated whether the existing process for registering paternity could be supported using an e-service. For various reasons discussed below, the project did not result in an e-service as planned. For this reason, it can be understood as a deviant case; this type of case can be highly useful for extracting information about a given problem or phenomenon [11]. As the results were different from those expected, this allowed us to investigate the reasons for these unexpected outcomes. As Flyvbjerg (2006, 229) puts it, "[a]typical or extreme cases often reveal more information because they activate more actors and more basic mechanisms in the situation studied". As such, there are no claims for exhaustiveness or general generalization from this particular empirical example; this empirical example is used to pinpoint peculiarities that can arise in this type of digital government initiatives. The case is interesting and something we can learn from as it illustrates how ongoing changes in public values can become salient through e-service development.

The primary empirical source is an in-depth interview with the public official responsible for the pre-study. The in-depth interview was conducted in June 2013 and lasted for approximately three hours. During the interview, the respondent described the pre-study process; its motivation and background, its design, and outcomes. The interview was semi-structured, meaning that it was conducted as a conversation between the interviewer and interviewee, focusing on a number of pre-defined themes [4]; themes

that were distilled from previous informal conversations and the project documentation. Other sources for the description below are (a) seven written reports relevant to the pre-study, and (b) complementary informal conversations held with the respondent and one of his colleagues (these conversations took place between 2013 and the fall of 2015). The narrative describing the case is a result of a hermeneutic and interpretive analysis [21].

4 THE EMPIRICAL EXAMPLE - ESTABLISHING LEGAL PARENTHOOD

The legal relationship between parents and children is regulated by the Children and Parents Code (Föräldrabalken; 1949:381). The Code was introduced in 1949; a time when most parents were married (and were thereby automatically assumed to be the parents of the child), and there was a perceived need to introduce a procedure for the sake of children born outside of marriage. The core purpose of the process put in place is to make sure that each newborn has two registered parents. In the typical case, there are two adults (a man and a woman) who are expecting a child. In this case, the motherhood is reported already during the pregnancy through a form that is sent to the Swedish Social Insurance Agency (SIA; Försäkringskassan). The form is witnessed by a midwife, confirming that the woman is pregnant, and is meant to prepare the government for the birth of a new citizen. If the parents are not married, the parents can prepare the acknowledgement of legal fatherhood before the child is born by contacting the Family Office, which is a municipal function in the city of residence. After the child is born, the (unmarried) couple has to bring their child to a visit at their Family Office in order to sign an acknowledgement form in which they certify that the man is the father of the child. During the visit at the Family Office, the parents are asked if they had intercourse during a particular time period. A question is asked directly to the mother ensuring if she is sure that there can be no other father of the child. A protocol is signed by the father, the mother, the public official, and by two additional witnesses present in the room. When all parties have signed the protocol, the case is closed and a decision is sent to the Tax Agency and other related governmental agencies confirming the birth of a new citizen (and registering its parents). As a result of this process, the child has (1) two parents (legal guardians); (2) the right to the father's family name; and (3) the right to inherit from both parents. If the circumstances surrounding a child's birth are not as presented above, the process of acknowledging fatherhood soon becomes complicated and there are various types of protocols for deviant cases (e.g. for adoption, or for when the paternity is unclear for some reason).

In 2013 representatives from the Swedish Tax Agency and the Swedish Association of Local Authorities and Regions (SKL) initiated a pre-study to investigate if the process of acknowledging paternity could be supported using a digitalized service. The reasons for looking at this process were related to three important aspects. First, the process of acknowledging fatherhood was considered time consuming and costly. Most cases are classified as 'regular' and easy cases, and these require unnecessary bureaucracy. Second, for these 'regular' cases, the procedure of acknowledging the fatherhood is perceived as intrusive by many parents. Even the public officials find it embarrassing to ask parents when the child

was conceived, and to question the woman's account regarding the fatherhood, especially in cases where it is obvious that there is no dispute between the parents. Thirdly, several steps in the process were manual, meaning that physical papers were signed and posted between government organizations. The public officials saw digital information transfer between the involved organizations as a means to speed up the service process. In order to get a better understanding of the service process and investigate the feasibility of developing an e-service, the pre-study manager put together a reference group of people from different governmental organizations involved. Thereafter, he visited Family Offices around the country, interviewing public officials and parents. He soon found that several of the family constellations approved by the Family Offices are not covered for in the Children and Parents Code. Since the introduction of the Children and Parents Code, family life in Sweden has changed remarkably, and a majority of the approximately 110 000 children born in Sweden each year have parents who are unmarried. The procedure aimed at a few children has become a costly and time-consuming standard practice, for both the parents and the administrations involved. Normally, it takes an average of 30 days to investigate/handle the full process of acknowledging the legal fatherhood of a newborn; this has to be regarded as a lengthy process for such a frequent type of case. In addition, the society in Sweden today also means that a child can be born into a variety of family constellations. For example, a child can have a single parent from the start (a single mother conceived by IVF); two mothers, no father (a birth mother, and an additional female parent); two fathers (by adoption); or, two biological parents and additional parents by adoption. These family constellations are not covered by the Code; but compensated for in various protocols for 'deviant cases'. The protocols approving e.g. same sex parents, are the result of changes in society and the handling of these cases are often based on judgement and discretion on the public official's behalf.

Interestingly, as a result of the pre-study, the pre-study manager realized that turning these protocols into an e-service would not be possible without breaking the Children and Parents Code. The discrepancies concerned both the nature of being a parent, but also administrative features concerning the function of witnesses involved and the way the acknowledgement is currently signed (on paper, with a particular kind of ink). In order to build the e-service, the Code first needed an update. Changing the Children and Parents Code, however, is a very complicated process. In order for the Code to be altered, there must first be a public discussion on what it means to be a parent and what kind/how many parents a child is entitled to by law. This is a discussion at the very core of public values. The pre-study did therefore not result in the development of an e-service. A year after the pre-study was finished, the respondent and his colleague from SKL presented suggestions on (1) how to create an e-service that aligns with the current Code, and (2) changes that should be made to the Children and Parents Code in order to enable a public service for legal acknowledgement of parenthood. In 2015, the idea of an e-service was abandoned; instead, a system for digital transmission of information between the municipal Family Offices and the Tax Agency was constructed. At the same time, a process of homogenising different agencies' interpretations of the Children and Parents Code was initiated. In 2018, the initial goal to

implement an e-service for acknowledging fatherhood is still not met and the Code is still not changed.

5 ANALYSIS AND DISCUSSION

In the case described above, the original goal of the pre-study was to lay the foundation of a new e-service that would make the legal acknowledgment of fatherhood easier to administer and less intrusive for the parents. These goals thus correspond to an aspiration to improve the workings of the public administration and as a way to improve service to citizens (cf. [9, 31, 38]). An interesting aspect of digitizing public service delivery, as part of digitalization [39], is that it involves turning legal frameworks and work processes into programmable code, turn information into data, and other activities associated with IT-development. As such, public e-services development requires rule-based decision making and clear-cut processes. The case described above illustrates how processes underlying public services do not necessarily need to be clear-cut. As is illustrated above, the persons responsible for the pre-study were faced with somewhat of a dilemma; if an e-service for acknowledging legal fatherhood was developed based on current practice, the process delivered by the e-service would break current law. If the e-service was based on current law, it would not sustain current societal values concerning the nature of parenthood in Sweden. As it turned out, current law concerning father- and parenthood was less inclusive and flexible than current practice; practice based on interpretations of the Code that have slowly evolved since 1949 in coherence with changes in societal values. These changes involve who is allowed to be a parent (beyond the biological parent(s)), and what family constellations are approved by the government; changes sustained by various protocols and case worker discretion (cf. Lipsky [25]).

When looking at the case from the angle of the first transformational objective, *sustaining multiple and shifting societal values*, we observe that societal values on what constitutes parenthood have clearly shifted, underlining the need for the redesign of the public service; a process that has become a *regular* practice in society (children being born outside of marriage) is still considered an *irregular* process from the viewpoint of the law. The outcome of the pre-study was that first a change in the Children and Parents Code was necessary, before other major changes in the service delivery process could take place. However, a change of the law is cumbersome, and must pass through (both houses of) parliament. Therefore, it was expected that public value creation would involve capturing the views of all involved stakeholders before a change to the Children and Parents Code can be realised. This process has been initiated but is likely to be lengthy, as it highlights complex ethical questions on what constitutes parenthood per se. However, if a new law is created, resulting in a new 'regular' process, it remains to be seen whether this will be able to accommodate further changes to societal values.

Turning to the next transformational objective, *collaboration in networks*, this is also visible in the empirical example. The process of establishing the legal relationship between parents and children is a long-established one, in which several different organizations are involved. In the pre-study, the pre-study manager clearly tried

to prepare the ground for the e-service in a collaborative manner (cf. [1, 6]), involving public and civil stakeholders (cf. [22]). According to the manager of the pre-study, all organizations saw collaboration on this topic as important; and collaboration on e.g. information sharing was also one of the drivers behind the pre-study. While some changes to the service delivery process are dependent on changes made to the law, the coordination between the activities of different agencies was found to be a secondary change process that could be set into motion following the pre-study. This secondary change process was found to include a harmonisation of the interpretation of the Code, and digitization of manual and paper processes for government internal efficiency.

The final transformational aspect, *public accountability* is currently established by all relevant stakeholders (parents, witnesses and public officials) being present during the establishment of parenthood, in which the parents are asked to give testimonials that establish parenthood. The process was described as intrusive by parents and unnecessarily complicated by public officials. Still, the process is not put in place for their sake, but for the child's. Bearing the child's interest in mind, it is important that the process is seen as legitimate and that the organizations involved can be held accountable for the decision made. It is yet unclear how this public accountability can be turned into an online form or another digital process, as it largely depends on the discretion of the public official that needs to determine the veracity of the statements made by the parents. Similarly, the role of transparency and openness is currently played by the physical presence of all stakeholders during the signing of the document establishing the relationship. This may become less transparent if the process is digitalized and it is not yet clear how openness will be created in an e-service.

As seen in the discussion above, we see also examples of several of the *enabling mechanisms* presented previously in this particular case. Even though the intended transformation did not take place, several secondary transformations are visible in the example. These were made possible by a successful involvement of different *stakeholders* in the service delivery process. In the pre-study, the manager interviewed and visited all stakeholders involved in the service process and tried to capture their various views on current practice. In order to realize the initial intent, and to make changes to the Children and Parents Code, additional stakeholders needed to be involved. As described above, changes were made in an iterative manner through the actions of the people involved in the pre-study. By gathering the stakeholders involved and distilling what changes could be made in current IT-systems and work procedures, the people involved tried to make a redesign of the parts of the service process anyway and streamlined some of the administrative tasks involved. This can be seen as an example of *agile development*. Concerning the last enabling mechanism, *transparency and openness*, this is achieved by the presence of the parents and witnesses at the very moment when the relation is established. It is not clear yet how this would be realised in an e-service. For example, establishing the legal relationship through the use of an e-service would require some kind of identification service. At this moment, there is no public-sector service in place for this type of identification in Sweden; the identification service provided by the banking sector is still the dominant solution. Furthermore, concerning transparency and openness, it must be discussed from whose perspective the

process must be transparent (relating back to the need of involving stakeholders in the process).

In sum, even though the pre-study did not meet the initial goals, it set off other processes of transformation in order to accommodate changes in societal values. It led to digitalization of current internal paper-based processes, to minor changes in the interaction with the citizen during service delivery, to processes of harmonisation across government organisations, and to a discussion about what constitutes parenthood and child-parent relationships to be suggested as a re-formulation of the law. It is fair to state that the initial intent to develop an e-service helped make these changes in societal values salient and highlighted the need for more fundamental changes needed in the current law and processes. Thus, the results from the pre-study in itself were not as transformative as initially intended; but in a longer time-perspective, the changes set of by the pre-study may result in a more substantial transformation.

6 CONCLUSIONS AND FURTHER RESEARCH

In this paper, we discuss digital government enabled transformation based on six concepts distilled from the literature. Based on an empirical example from the Swedish context, we illustrate and discuss how these concepts may be manifested in practice. One of the main conclusions of the discussion above is that public e-service development indeed can drive transformation, but also that ongoing transformations in societal values can drive digitalization. In our case, a change in societal values spurred the initiative to make changes in the service process, and the attempt to realize these changes highlighted the need for additional organizational and institutional changes in turn. As illustrated, transformation can be considered a multi-dimensional process, taking place on multiple (cross-)organisation levels. This corresponds to findings on e-government projects in general, such as described by Gil-Garcia and Pardo [13].

Furthermore, our empirical example show that public e-service development need not only be leveraged by changing and redesigning the information technology, process and organisation layers, but that also the institutional layer may require redesign. Institutional change and redesign was found to take place most notably as an identified need to make changes in the law, and in the way public accountability is realised, which is based on the discretion of public officials, facilitated by transparency and openness. However, both changes are complex endeavours. A change to the law is not only challenging, as many different stakeholders need to be involved, but it is also difficult to sustain ongoing change rather than effectively creating new stovepipes. As laws are likely to enshrine public value rather than accommodate ongoing change, they are unlikely to become flexible for accommodating shifts in societal value. This may mean that the flexibility for accommodating these changes needs to take place on other levels. Further research should investigate how the different dimensions of transformation interact and influence each other and how changes on different (organizational) levels likely influence each other.

Last, the process of realising public accountability is challenging. Firstly, because accommodating the discretion of public officials in an e-service delivery process is found to be difficult. Secondly, as establishing transparency and openness is also hard, it remains

to be seen how equity in public decision making and service delivery can be realised (such as pointed out by [6, 26]). Therefore, further research should look into how public officials can follow pluriform interests such the law, societal values, political norms, professional standards and citizens' interests, but at the same time realizing equity. One potential direction for further research is to extend the work of Mintzberg [30] to see whether the coordination mechanisms described still cover the discretion of public officials, or that new coordination mechanisms, for example based on ethical training regarding equal treatment, should be developed. Further research should also focus on additional dimensions for digital government enabled transformation and investigate how different transformational dimensions interact and how changes to the discretion and thus the work practice of public officials can be sustained by enhancing existing or introducing new coordination mechanisms.

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