



E-government Implementation: Visions Determine Outcome

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ABSTRACT

E-government implementation is on the agenda in many public institutions. One issue which is less explored is what the visions for e-government implementation are among the adopting units. Based on a classification scheme which identifies external focus and internal focus with respect to objective with e-government implementation a case study of a Danish municipality is presented. The study suggests that e-government is utilized to improve the services offered to citizens and businesses rather than on creating new and better channels for participation from citizens and businesses or changes in internal working procedures. The study illustrates that the citizen centric approach to e-government is still going strong whereas opportunities to internal changes in government or involvement of citizens in new ways are disregarded in the visions of end users, managers and project management involved in the implementation of e-government initiatives.

Keywords: e-government implementation, visions for e-government, case study

1. Introduction

Within the past years the idea of implementing more ICT to support processes in the public administration has become popular among stakeholders in government. Basically, e-government encompasses four domains of governance and public administration; the state's economic and social programs, its relationships with the citizen and the rule of law, its internal operation, and its relationship with the international environment (Brown, 2005). Each domain has its own requirement for policy attention and supporting ICTs. Numerous activities have taken place under the label of e-government, some activities have been more successful than others and it is still too early to decide if the activities have been successes or failures. However, it is commonly agreed that the first step on the road to successful e-government implementation is to have an articulated vision for e-government (Grant & Chau, 2005). This requires that an adopting unit has knowledge about the possibilities of ICT for thereafter setting the visions and goals at a level that fits the organization (Andersen, Belardo, & Dawes, 1994). Andersen et al. (1994) emphasize the importance of having a strong mission orientation and outward focus in order to attain the benefits of ICT in the public sector. By looking at e-government from this perspective implementation implicitly involves the achievement of tangible results and transformation of the public sector.

Though there has been done some research on the results of e-government and how it affects employees (Holden, Norris, & Fletcher, 2003) it has so far been observed that most implementation projects focus on concerns of service delivery (Scholl, 2005) and efficiency (Andersen & Henriksen, 2005) and there is still little emphasis on real transformation on the services themselves or the processes associated with the

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service delivery (Andersen, 2004). The objective of this paper is to present a case study of e-government implementation in a Danish municipality. The focus of the analysis is the perception of e-government at large among stakeholders in the municipality which recently has adopted an electronic document handling system (EDH-system), which broadly has been seen as the first step towards e-government in the municipality. The study is guided by Homburg and Bekkers' four trajectories of e-government implementation which represent four different perspectives on how e-government implementation can be perceived (Homburg & Bekkers, 2005). The insights from the case study fuels the discussion on what visions yields what gains from e-government implementation in local government.

The remainder of the paper is organized as follows: First the content of the four trajectories are presented. Thereafter follows a description of the research method. This leads to a description of our case study. Finally, a discussion and some concluding remarks are provided.

2. Four trajectories for e-government implementation

Homburg and Bekkers (Homburg & Bekkers, 2005) provide a classification scheme for e-government reform. The classification scheme comprises an external and an internal perspective which combined provides four possible trajectories of impact of e-government implementation. The classification scheme and its four trajectories are applied in the study of e-government implementation of x-municipality presented in this paper. The following section presents the four trajectories and their sub-trajectories from the classification scheme.

2.1 The external perspective

The external perspective of government i.e. government to citizens and government to businesses focuses on the relationship between government and its external contacts. It builds upon e-government's notion of the relational competencies of ICT, namely the ability of ICT to reconsider the relationships with external actors of government. The first sub-trajectory is referred to as *service orientation*. It emphasizes service delivery to businesses and citizens in their role as consumers of public services. A key claim in this aspect is that ICT will allow for a more accurately targeted communication regarding requests from citizens, business and societal organisations, as well as faster responses.

The second sub-trajectory of the external perspective the *consultation* concerns mediating the interaction between citizens, business and government. It slightly borrows the notion of participatory government which is embedded in NPM (Hood, 1991). Additionally it leans on specific participation services like e-voting and electronic town meetings.

2.2. The internal perspective

The internal perspective, i.e. government to government, government to employee concerns the changes in governments' internal operations by the use of ICT for automation, cooperation and integration amongst government agencies, as well as by using ICT as a tool for assisting the decision making process. The first sub-trajectory of the internal perspective, *bureaucratization*, builds on the emphasis on joined-up government and tight cost control, and on e-government's characteristics of more efficient and cooperative interaction in and amongst governmental agencies through the use of inter-organisational information services.

The second internal sub-trajectory, *virtualisation*, is based on blurred boundaries between agencies and departments and on ubiquitous e-government technologies. It builds on the notion of lean and highly decentralised structures, which empowers street-level bureaucrats and breaks down unitary bureaucracies. It is also referred to as leading to virtual organisations and hence, the name virtualisation. The trajectory questions the necessity of having a hierarchical structure as a control mechanism for storing documentary

material and argues for the possibility of maintaining it with no real structure, but that it can be assembled and disassembled according to organisational and personal requirements. It indicates that ICT in itself is an alternative way of control which allows for the management to store data in governments in a less crude and labour intensive way.

If a municipality perceive itself to be positioned in the upper left hand trajectory the *electronic mediation for service delivery* it typically results in a service network of public, non-governmental and private organisations that produces public goods. The information architecture that is required for making entry and exit of the participating organisations in the network possible only has to facilitate a minimal degree of lock-in and thus, the participating organisations can retain their information autonomy. Fountain (Fountain, 1999) refers to this situation as virtual integration and as a coordination mechanism that functions without changing the structure, jurisdiction or the budgetary autonomy of the participating organisations. It is the political principals that determine how the service network is configured. However, accountability is not focused on fairness or process but on product, and accountability information, with respect to product quality, is reported to political principals.

In an *electronic hierarchy for service delivery* on the other hand there are different perspectives on both information architecture and accountability. Data standardisation is carried out through a centralised database and seen as a forerunner of structural changes in government bureaucracy in the sense that it builds a platform for integration efforts. As such the information architecture enforces bureaucratic control and the control of information is used to standardise underlying (inter) organisational procedures. The accountability mechanism that is at work is basically accountability for fairness and finances, which is emphasised in an information architecture that ties organisations together in a bureaucratic structure.

In the third trajectory, *electronic consultation for choice*, the focus is on enabling some freedom for citizens with regard to the way public services are produced and delivered. In contrast to the first trajectory, electronic mediation, the accountability mechanism is not directed towards the political principals, but at citizens directly, i.e. public accountability. It is the performance indicators to the general public, provided by competing service providers, that generates legitimacy. The supporting information architecture is basically a data warehouse application, possibly supplemented by procedures guaranteeing access and safeguards for the validity of the information provided. As such it may resemble the one of electronic mediation, but the accountability mechanism differs.

The final trajectory, *electronic consultation for voice*, has an information architecture that resembles the one of electronic hierarchy. However, the accountability mechanism differs in that information is targeted citizens and refers primarily to finance and fairness. The trajectory is based on an assumption that a relatively unitary, public service which proactively is producing bureaucracy is generating accountability information and that targeting and distributing it amongst citizens allows them to cast their opinion.

3. Research Method

To identify how x-municipality positions itself within the Homburg and Bekkers (Homburg & Bekkers, 2005) classification scheme a case study was carried out where informants provided data via personal interviews. In order to achieve various opinions on the ICT implementation and its impact on e-government in the municipality people at different levels and from different administrative units were interviewed. In total nine persons were interviewed. The distribution of informants was as follows: 1) Three end users from three different administrations; social services and health administration, citizen services and environmental administration, 2) Two sub-project managers, one from an administration where the implementation process has been easier (leisure administration) and one from an administration where the implementation process has been more difficult (technical administration), 3) One administrator from social

services and one from health administration, 4) One manager from environmental administration, who also has been involved in the manager group, 5) The current internal project manager (hereafter project manager), and 6) The former project co-ordinator. Each interview lasted for approximately 60 minutes. All interviews were recorded in digital format and relevant passages were transcribed verbatim.

		Internal perspective	
		Virtualisation	Bureaucratisation
External perspective	Service Orientation	<i>Electronic mediation for service delivery</i>	<i>Electronic hierarchy for service delivery</i>
	Consultation	<i>Electronic consultation enabling choice</i>	<i>Electronic consultation enabling voice options</i>

Figure 1: Four trajectories of reform. Source: Homburg and Bekkers (Homburg & Bekkers, 2005)

In order to get a more comprehensive picture of x-municipality and its e-government implementation secondary data was also studied. The internal documents from the decision- and development process of the EDH-system were studied closely in order to identify what and who had driven the process and set the agenda for e-government implementation.

4. The case

X-municipality is a suburb of Copenhagen, the Danish capital. Like many other Danish municipalities the average age of the employees is rather high and a large part has worked in the municipality for many years. However, there is a fairly high replacement ratio as well as a high percentage of employees with an academic background.

The first big step towards e-government in the municipality was the adoption of an EDH-system (electronic document handling system) which by the management is defined as the core of x-municipality’s project “Digital municipality”. It is, so far, the only initiative which the municipality has taken a pro-active approach to and chosen to be one of the national frontrunners in. As stated by the project coordinator “... in general the municipality has decided not to be in the front regarding e-government initiatives but instead await and learn from the experiences of other municipalities and hence, avoid the “teething troubles” of being the front runner.”

Along with the EDH-system project, the two eDays², and an e-billing system has been put into practise. Of other e-government related solutions the municipality has is a website with some self-service offers, which

² The mentioned initiatives have been implemented in Denmark as part of an overall e-government strategy. eDay1 marking the point in time (September 1st, 2003) where an administrative unit could require to receive documents in

receives positive feedback from its users, but as the project coordinator expressed it "... much is yet to be done in order to making the website completely citizen and business oriented".

In the vision statement for the EDH-system the system is regarded as the core expression of making x-municipality a digital municipality and the first step towards enabling better services towards citizens and businesses. The vision for the system is to create an optimal setting for a more continuous case handling where more than one person can follow and handle the same case under the same conditions. Additionally, the EDH-system will entail better conditions for making knowledge sharing more effective and systematic as well as identical in the different administrations.

The EDH-system project started in the summer of 2003 when an EDH-system project group was formed and an internal project manager assigned. A contract with an external supplier was signed in the summer of 2004. And after the usual technical problems and delays the system was taken into use in March 2005. Against this background interviews on the e-government perception in x-municipality were conducted in November-December 2005.

5. Classifying x-municipality in the four trajectories.

5.1 The external perspective

Recapitulating that the content of the external perspective in Homburg and Bekkers' model relates to the relationships with external actors of government, like citizens, businesses and societal organizations the following elements were observed during the interviews:

Generally, the end users of the EDH-system, focused on the possibilities e-government brings about in providing better services for the citizens and increasing the access to information. They did not focus on the specific purpose of increasing the possibilities of participation for the citizens as is the case with the consultation sub-trajectory, but rather that citizens and businesses can access information when ever they want and need to. Thus end users take mainly a service orientation position with regard to the external perspective of e-government.

The managers, take a similar position to that of end users but adds on a more clear position of increased democratisation which is seen as being embedded in e-government. This was expressed in terms like "... giving the citizen the possibility to follow the process of a case". However, though there is more focus on the aspect of making the citizen an equal part none of the respondents explicitly mentions any aspects of participatory government, which is the focus of the consultation sub-trajectory. In general their expressions regarding actual benefits are more related to a quicker case management, better service, and aspects of self-service. Thus, managers are positioned in the service orientation sub-trajectory with a slight incline towards the consultation sub-trajectory.

The project coordinator is not as focused on the possibilities that e-government brings about for citizens as the other respondents. Expressions that regard this matter were "... e-government will entail that information will be digitally available to everyone and that the quality of the case management can be improved". This type of expression also points in the direction of the service orientation sub-trajectory. The project co-ordination specifically mentions the democratisation aspect by saying that "...e-government can result in a higher quality in the process of law and regarding democracy". Based on these statements it is our interpretation that the project co-ordinator sees the case management, and thereby the service orientation as the core of the external perspective of e-government.

electronic format from another administrative unit and eDay2 representing the point in time (February 1st, 2005) when secure digital communication should be implemented in public sector in Denmark (source: <http://www.e.gov.dk>).

5.2. The internal perspective

Recalling that the internal perspective in Homburg and Bekkers' model relates to the changes in governments' internal operations by the use of ICT for automation, cooperation and integration amongst government agencies, as well as by using ICT as a tool assisting the decision making process we classify data in the following manner:

The end users appeared to be a bit unsure of what e-government actually entails internally in government and as one of the end users expressed it "it depends on what they find out that they can digitalise". They all have an understanding of that things will be digital rather than paper based and amongst the possibilities that are mentioned are reduced number of inquires, congruence amongst the things that should be public and the things that actually are public. Their understandings are more in line with the more efficient and cooperative interaction in and among governmental agencies, which the bureaucratisation paradigm builds on. It is also observed that the end users do not talk in favour of the virtualisation sub-trajectory which entails blurred boundaries and more cross-administrational teamwork. Thus, the end users are hence seen as positioning themselves in the bureaucratisation sub-trajectory with respect to attitude towards e-government implementation.

By arguing that "... one of the main possibilities is that data can be accessible where ever it is needed", managers take a slight step towards the virtualisation sub- trajectory. As expressed earlier managers perceive that the main potential is providing a better service for the citizens and the internal aspect is seen as having to work before this can be done. This is in line with the bureaucratisation sub-trajectory which focuses on developing a governmental wide ICT architecture that enables vertical integration as well as horizontal integration. Additionally, regarding control the respondents' expressions are more related to getting more control over current operations and in automatic collection, aggregation and presentation of vital information which can be used by the managers. This is more in line with the control aspect of bureaucratisation. Thus, managers are also interpreted to position themselves mainly in the bureaucratisation sub-trajectory, but with a slight tendency towards the virtualisation sub-trajectory.

The project co-ordinator sees the electronic support of the case management as the core of e-government. As mentioned above this is in line with the bureaucratisation sub-trajectory and though the person in question does not believe that e-government results in rationalisation gains, the improved management of information that e-government entails can, if chosen so, make some rationalisations possible. Additionally, e-government is seen as bringing about increased knowledge sharing and this is equally in line with the holistic, cooperative approach embedded in bureaucratisation. There is nothing specific in the expressions of the project co-ordinator that points in direction of virtualisation and hence based on the above discussion the co-ordinator is seen as taking a bureaucratisation position.

The different understandings of the informants are plotted in Homburg and Bekkers' four trajectory model in Figure 2. As can be seen from the model the respondents all take a rather similar position regarding their understanding of the role of e-government in x-municipality. With small variations the informants place the municipality in the electronic hierarchy for service delivery trajectory.

In line with the bureaucratisation sub-trajectory the project co-ordinator and the end users expressed that the internal digitalisation is seen as the core and the enabler to realising better services and case handling. ICT is seen as an enabler of service improvements and as a tool of reengineering of work flows in the municipality, e.g. by introducing a common methodology to registration. The new working tools introduced via the implementation of the EDH-system have required and still requires an enormous organisational learning process and adaptation amongst all of the employees of the municipality. An aspect of this matter is that the traditional ways of doing things are altered. One obvious example lies in that x-municipality now

has to present itself not only physically but also digitally. For example with self-service that is an integral part of the service orientation sub-trajectory. As a consequence many of the tasks can now be performed by the citizens or businesses themselves which again leads to new routines. As the employee from the citizen services department expressed it "...we have to get used to asking the citizens if they have looked on the website of the municipality". She also expressed that "...though I and my colleagues aren't worried about their future some are a bit worried about what they need to know in order to guide the citizens regarding the self-services".

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	Respondent group 1
	Respondent group 2
	Project co-ordinator

Figure 2: Perception of e-government in x-municipality

Related to the matter of new ways of doing things is the increased digital communication both with other municipalities and other governmental agencies as well as with citizens and businesses. This challenges the notion of formality regarding how the employees are used to communicating. The following statement, mentioned by the manager in environmental planning department, illustrates this "...it takes some time before the employees at the municipality 'trusts' e-government. Though the national initiatives eDay1 and eDay2 have established that even sensitive information is to be sent digitally, employees still print sensitive personal data and send it in physical form to other authorities, even though the authorities request it in a digital format".

The aspect of the increased possibility of control through the use of governmental wide information architecture also changes the everyday working life of the employees in x-municipality, or at least their mindset. As the expression of the manager in the municipality shows "... it is possible to get a better overview of what is going on and carry out some control if that is what one wants". Not all employees are content with the openness it brings about and as the sub-project manager in technical administration said "...you have to convince them that it is a clever thing that others can access and get an insight in what they do". The employees also have to get used to that their managers can see what they are doing and e.g. the number of unanswered e-mails they have in their inbox and this increased control possibility can be experienced as a threat by the employees and entail that more focus is taken to covering your back by making sure you carry out your tasks thoroughly enough that it can take inspection.

Though the actual effects of a more holistic approach has not been apparent as of yet due to the newness of

the EDH-system, other than in the form of shared information, it can be expected to result in more cross administrative collaboration later on and as a consequence that the boundaries of the different administrations are being blurred. This would most likely lead to that employees would have to adapt to the sub-trajectory of virtualisation regardless that they indicate that they view the core of the e-government implementation as being located in the bureaucratization sub-trajectory rather than in the virtualisation sub-trajectory. From the interviews it was clear that especially the employees were reluctant to accept this effect of e-government implementation. Basically, because this could create a threat to their region of operation if that was taken over by others. The worst case scenario would be if ICT could handle the tasks.

6. Discussion and Concluding Remarks

The study is based on a single case and results should be interpreted with care. However, the placement of x-municipality in the classification scheme does not represent a big surprise considering the body of literature in the field of e-government which reach the conclusion that e-government is primarily targeted towards citizens and improved citizens contact (see for example (Darrell, 2004; Peter, Julie, & Linda, 2004; Thomas & Streib, 2003)). Based on the interviews it is concluded that x-municipality positions itself in the electronic hierarchy for service delivery trajectory. The main consequence of this focus is first of all that the employees of x-municipality utilize ICT so that it meets the needs and requirements of the citizens and businesses instead of focusing on how ICT could affect the internal structures of the municipality (Andersen, 2004) or support e-participation (Andersen & Henriksen, 2006). The case-study therefore supports the aforementioned citizen-centric approach to e-government. From a strategic point of view it is alarming that management representatives and the project manager share this vision with the end users. Literature is rich on examples on the significance of top management support with respect to implementation (Larsen, Henriksen, & Bjørn-Andersen, 2002). Burn and Robins (2003) observe this trend too with respect to e-government implementation. It could therefore be argued that the e-government vision of top management might have constrained the ultimate utilization of the e-government initiatives in x-municipality. By all means the electronic hierarchy for service delivery trajectory is the least radical mode of change caused by e-government implementation.

Once again there seems to be evidence that IT in public sector is used to cementing structures (Danziger, Dutton, Kling, & Kraemer, 1982) and that it is a tool for improving efficiency and control (Andersen & Henriksen, 2005). Instead of having a more radical approach to the utilization of ICT the end users, the managers, and those defining the aim and scope of the e-government initiative focus on using the e-government initiative as an alternative channel to doing business more or less as usual. The most evident change being that it is possible to follow cases in the system and monitoring working processes.

Though the informants from the end user group mention that the implementation of e-government has led to changes in procedures with respect to directing citizens and businesses to the Internet to look up information themselves instead of having civil servants doing it they are sticking to bureaucracy rather than virtualisation. As a consequence the traditional mode of case handling and other operations is maintained. One way of legitimising this choice is that virtualisation might threaten the public administration maxims of accountability, predictability and security.

The study demonstrates that stakeholders in x-municipality primarily see the initiative as a means for establishing a new linkage between local government and its citizens. However, as observed by Thomas and Streib (2005) the most likely outcome is that the linkage serves as a tool for information acquisition and routine transactions giving government web-sites the function of a big library or a shopping mall. So the provocative question is: Who benefits from the implementation of e-government in x-municipality if the only outcome is that another channel is established, which requires maintenance, organizational learning and adaptation? As expressed by the end users they experienced new challenges given that they had to

develop new skills in supervising citizens and businesses in looking at the Internet for possible help. The new channel might ultimately be another source of stress for employees given that there is no reason to believe, at that the new on-line channel will outmaneuver the traditional channels in near future (Jeffrey, 2003; Thomas & Streib, 2005) regardless of the robustness and comprehensiveness of ICT-systems.

This opens the fundamental discussion on the practical value of e-government implementation and perhaps further what it takes before a governmental unit can state that it has implemented e-government. In the case of x-municipality it was perceived that e-government was established by implementing the EDH-system, the development of a web-site with a number of electronic services, and finally by applying the regulatory initiatives that Danish government has initiated during the past years. The legislature initiatives involve the law on eInvoices, where any purchase in the public sector has to be invoiced electronically, and the recommendations from the two eDays (see note 2 for the content of the two initiatives). By revisiting early definitions of e-government (Layne & Lee, 2001) where e-government is defined as "...government's use of technology, particularly web-based Internet applications to enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and government entities." or the contribution from Lenk and Traunmüller at the first DEXA eGov conference (Traunmüller, 2002), where they stated that "... e-Government is just a new name for the informatisation of the public sector". All the e-government initiatives in x-municipality have been sources to further informatisation and have served as tools to meet the e-government definition provided by Layne and Lee (2001) but it has not brought it much closer to a radical change in the relationships between its customers or other units in the public sector. Perhaps it is still too early to hope for that e-government implementation will result in revitalization of citizen involvement (Darrell, 2004)

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