



**Aalborg Universitet**

**AALBORG  
UNIVERSITY**

## **Organizing to achieve e-Government maturity**

*A case study in a Danish local Government*

Reinwald, Anja Kaldahl; Kræmmergaard, Pernille

*Published in:*  
16th Americas Conference on Information Systems

*Publication date:*  
2010

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

[Link to publication from Aalborg University](#)

### *Citation for published version (APA):*

Reinwald, A. K., & Kræmmergaard, P. (2010). Organizing to achieve e-Government maturity: A case study in a Danish local Government. In *16th Americas Conference on Information Systems* Association for Information Systems (AIS).

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

### **Take down policy**

If you believe that this document breaches copyright please contact us at [vbn@aub.aau.dk](mailto:vbn@aub.aau.dk) providing details, and we will remove access to the work immediately and investigate your claim.

**Organizing to achieve e-Government maturity  
– A case study in a Danish local Government**

Journal:	<i>16th Americas Conference on Information Systems</i>
Manuscript ID:	AMCIS-0606-2010.R1
Submission Type:	Paper
Mini-Track:	E-Government Transformation and Public Sector Evaluation < E-Government (SIGe-Gov)



# Organizing to achieve e-Government maturity

## – A case study in a Danish local Government

**Anja Reinwald**

Center for IT Management, Aalborg University,  
Denmark  
reinwald@socsci.aau.dk

**Pernille Kraemmergaard**

Center for IT Management, Aalborg University,  
Denmark  
pkj@epa.aau.dk

### ABSTRACT

According to the e-government maturity literature public organizations will move through different stages of maturity implying that the more mature e-Government the better. For many public organizations the next stage to enter is the stage of transformational e-Government (Dhillon, Weerakkody & Dwivedi, 2008). This paper contributes to this literature by reporting the findings from a case-study in a Danish local government who has reached the transformational stage of e-Government. Using a grounded theory approach, information about the municipality was initially collected and further analysed within a stakeholder perspective. The paper reports how the local government organized oneself to reach the transformational stage and how they succeeded in involving the most important stakeholders in this process. Finally the paper makes six propositions, based on the learning from the case-study, about how to reach the transformational stage of e-Government.

### Keywords

Maturity, Transformational e-Government, Organizing, Stakeholders, Propositions, Case study

### INTRODUCTION

Concurrently with the growth in technical possibilities (Moon & Norris, 2005) and in the general Internet usage (Rensel, Abbas & Rao, 2006), e-Government initiatives have become fare more widespread at all government levels (Moon & Norris, 2005; Rensel et al., 2006; Huang, 2007). Given that one of the primary aims of e-Government is to enhance service delivery (e.g. Aichholzer & Schmutzler, 2000; Huang, 2007; Irani, Love & Montazemi, 2007), this paper will focus on the local government level since this is where the main contact to citizens is situated. The spreading of e-Government to various levels of public sector activities has resulted in a similar increase in research on the subject (Grønlund & Horan, 2004). Among others attention has been given to the question of maturity and the different stages public organizations pass through during their maturity journey (e.g. Siau & Long, 2005; Layne & Lee, 2001; Hiller & Bélanger 2001; Baum & Di Maio, 2000; UN 2001). Siau & Long (2005) propose, based on a synthesis of five existing models, a maturity model, consisting of five stages: Web presence, Interaction, Transaction, Transformation and E-Democracy.

According to Siau and Long (2005), public organizations need to make different jumps moving from one stage to the next. The jump from stage one to two and from two to three are technological by nature, and the goal is to automate existing procedures, whereas the move between stage three and four is cultural by nature, and the jump between stage four and five is political by nature and they are both considered to be a leap rather than a jump. Whereas the purpose of stage one, two, and three is to automate existing processes, the purpose of stage four and five is to transform governmental services, which calls for a higher degree of changes both within the governmental organization itself and towards the citizens in the way that they interact with governmental institutions. Due to increased difficulties overcoming the cultural leap and transforming governmental services, compared to overcoming the technological jump and automating existing processes, knowledge about how to successfully move to the *Transformation stage* is of particular interest. The Transformation stage is characterized by seamless service delivery and back office integration (Siau & Long, 2005).

Nevertheless there exists a knowledge gap in general of how to reach the transformation stage and a knowledge gap in particular about how different stakeholders needs to be involved to be able to reach the transformation stage, t-Government (Dhillon et al., 2008). The research on maturity in e-Government has provided us with useful knowledge about the content of the services in the various stages and about how public organizations may implement new technology to enhance their efficiency, effectiveness and service towards its citizens. Despite the substantial knowledge that has been generated on the maturity subject, knowledge about how to organize the internal governmental organization and how to interact with various stakeholders in the more sophisticated stages is scarcely covered. To make up for some of these shortcomings the purpose of

this paper is to gain insight and contribute with knowledge about how to organize the internal governmental organization and how to involve different stakeholders in the efforts to realize the characteristics of the transformation stage. In this paper we present the findings from a case study in a Danish municipality, Gentofte, whom we argue has successfully reached the transformation stage, based on their European e-Government awarded web portal. Gentofte has for instance constructed a customized self-service web portal, where the citizens have access to all municipal services as well as access to relevant information about themselves, their families and their homes.

The purpose of the findings presented in this paper, about how Gentofte has organized themselves with regard to the different stakeholders in the transformation stage, is to contribute to the e-Government literature, and to the e-Government maturity literature in particular making propositions on how local government organizations may organize themselves in order to reach the transformation stage (Siau & Long, 2005). The paper answers the following research questions: How does Gentofte organize the internal governmental organization and how are various stakeholders involved in the transformation stage, and what may we learn from that.

In the next section of the paper the theoretical background is presented with the aim of further motivating the research question and the purpose of this paper. In section 3 the methodology of the study and the case of Gentofte is outlined. In section 4 and 5 the findings about how Gentofte organizes their governmental organizations internally and how the various stakeholders are involved will be presented, followed by a presentation of six propositions about how to reach the transformation stage of e-Government in section 6. Finally in the conclusion, section 7, the findings will be presented, limitations to the study and the findings will be discussed, and our contribution to both research and practice will be pointed out.

## THEORETICAL BACKGROUND

Different maturity models for e-Government exist in the academic literature (Layne & Lee, 2001; Baum & Di Maio, 2000; Hiller & Bélanger, 2001; Moon, 2002; Ronaghan, 2001; Wescott, 2001; Deloitte & Touche, 2001). Siau and Long (2005) made a synthesis analysis on five different maturity models and present an integrated five-stage e-government model: web presence, interaction, transaction, transformation and e-democracy. These maturity models all predict a linear, stepwise, and progressive development of e-government. Normatively, these models also tell us that “the more e-Government the better” but more e-Government also requires more experience and moving from one stage to another requires changes in which the organizations are met with different challenges. Within the e-Government maturity literature we have identified two different streams. .

The first stream of literature has provided us with knowledge about the content of e-Government services in the various stages. In the preliminary stage governments only provide static information on their web site, later a certain interaction between citizens and government are facilitated e.g. via e-mail, then actual transactions between citizens and government are made possible e.g. consisting of license payment (Layne & Lee, 2001) As part of the more sophisticated stages e-Government is taken one step further, meaning that it is no longer just a matter of making existing services digital, but that new services are offered or that services are offered in a new way. This would be the case where government institutions at different governmental levels work together thereby ensuring that citizens only have to submit the same information once (Layne & Lee, 2001).

The other stream of literature has provided us with insight into the challenges faced by organizations when moving from one stage to another more mature stage. Morelli, Carugati and Kræmmergaard (2009) reviewed the literature regarding the challenges related to the individual stages. One of the findings from their review shows that governments in the early stages face challenges such as: creating user friendly web site navigation patterns and handling data security and validation as well as consensus building and educating the employees on the matter of IT (Morelli et al., 2009; Layne & Lee, 2001; Koh, Ryan & Prybutok, 2005; Deloitte & Touche 2001; Lee & Kim, 2007). In the more sophisticated stages the literature is focusing on e.g. challenges regarding: designing cross-level processes that minimize the risk of failure and integrating heterogeneous databases as well as transforming the tasks of the employees and introducing new structures of decision making (Morelli et al., 2009; Layne & Lee, 2001; Janssen & Joha, 2006). Other studies in the area of maturity have focused on diagnosing the maturity of various empirical cases (e.g. Abdullah & Kaliannan, 2006; Anttiroiko, 2009; Chatfield & Alhujran, 2009; Kubo & Shimada, 2006).

This literature provides us with rich information about the challenges organizations meet when moving from one stage to the next, and insight into the contents of the e-Government services in the various stages but little insight into how to actually reach the next stage, how to organize the local governmental organization or how to involve different stakeholders in the various stages of e-Government maturity. Involvement of stakeholders is particularly important in complex governmental

organizations, making it reasonable to expect that changes from one stage of e-Government maturity to another require addressing the different stakeholders involved and/or affected by the change. This paper sets out to provide insight into how to organize and how to involve different stakeholders in the transformation stage of e-Government.

By applying the descriptions of the stages as presented by Siau & Long (2005) combined with the knowledge from the two streams of literature presented above, we have derived at the following three characteristics about the transformations stage which is of particular interest to the paper:

- a) One-stop Shopping
- b) Personalization of web site
- c) Transforming the Organization.

The concept of One-stop Shopping is crucial to the transformation stage. The general idea is that citizens and businesses shall be able to access all government services through one entrance. This further means that public databases need to be integrated and able to communicate with one another, to ensure that citizens will not have to submit data which another government agency already possesses. Alongside this development the silo structure and way of thinking must be broken down and replaced by an integrated view upon the public sector. (Layne & Lee, 2001; Deloitte & Touche, 2001; Hiller & Bélanger, 2001; UN, 2001; Siau & Long, 2005)

The second characteristic concerns the personalization of the government web site. Following the ideas of the transformation stage the services should be as easy to use as possible, consequently a standardized web site will not be as desirable as a customized one, where the citizen is only exposed to the information that matches his or hers needs and preferences (Deloitte & Touche, 2001).

The last characteristic concerning the transformation stage pertains to the way the governmental structures will be changed and how the governmental organization deliver services (Siau & Long, 2005), it might even transform the very concept of the government itself. The point being that it is no longer enough to make existing services digital, the transformation stage requires a completely new way of thinking and understanding public government and service delivery (Siau & Long, 2005; Deloitte & Touche, 2001; Layne & Lee, 2001).

The above mentioned literature brings us insight into the characteristics of the transformation stage. However it does not provide us with guidelines as to how to organize the internal organization and involve different stakeholders. In our search for literature and studies addressing the issues of internal organization in the transformation stage we have only been able to find a limited number of papers. For instance Dhillon et al. (2008) seek to explore which process-related challenges local authorities in the UK have to overcome to successfully reach the transformation stage. A central point in the paper is that it would provide the public authorities with a great advantage if they became acquainted with the challenges identified in Business Process Reengineering (BPR) processes in the private sector, for example lack of senior management commitment, negative employee attitude and resistance to change as well as cultural and political constraints. On the basis of their own case study they further find aspects such as harmonization of processes, deployment of new technologies and a fundamental change of culture among local authorities to be crucial. (Dhillon et al., 2008) Their focus is however on a single service instead of the entire governmental organization.

Another example is Gonzalez, Gasco and Llopis (2007) who try to deduce basic principals for success with e-Government based on a case study of a Spanish tax administration unit. Lessons learned from this study are to focus equally on and ensuring balance between technology, organization and human resources, and principles for when to apply a new technology. Those principles are the technology ability to save-time, be efficient, increase multitask levels work tasks, enhance taxpayer comfort and convey an image of modernity (Gonzalez et al. 2007). The article does however focus on a public authority which delivers a single service contrary to a municipality that handles a comprehensive service portfolio.

The focus in Lee, Oh and Kwon (2008) is on critical success factors at the e-Procurement area. Through a focus group session with delegates from nine developing countries nine factors were determined, for instance: reengineering the processes before introducing a new system, take a step-by-step approach, ensuring that the use of a system is supported from all agencies involved and building awareness campaigns to increase adoption. (Lee et al., 2008) The short comings of this article is that it focuses on only one service, which is quite similar to the study made by Gonzalez et al. (2007), at the same time the supposed critical success factors are not scientifically tested but only emphasized by the delegates.

Altogether, the three papers bring us information about the challenges associated with reaching the transformation stage, but still leave us with limited knowledge on how to organize the governmental organization and how to involve different

stakeholders. Consequently the purpose of this paper is to contribute to the literature on e-Government in general and literature on e-Government maturity in particular by presenting the lessons learned from the case study of a local government which has succeeded in its effort to reach the Transformation stage. We do so by combining the e-Government maturity perspective with stakeholder analysis, which to our knowledge has not previously been done.

## RESEARCH METHOD

### Methodology

Our preliminary approach to studying the maturity in Gentofte was a grounded theory approach, since we were interested in exploring what was going on and questions of this kind are suitably addressed with a grounded theory approach (Strauss & Corbin, 1990). The employment of grounded theory meant that our research was kept open to empirical evidence and that it was on the backdrop of our initial findings that concepts and meaning were identified.

### Data Collection

The data were collected in two different phases. In the first round of data collection three open-ended interviews (Yin, 1994) were carried out with influential people in Gentofte with regard to e-Government. The aim of these interviews was to gain insight into the challenges that Gentofte was facing in terms of e-government in general. This open-ended approach to the data collection was chosen as a result of our initial grounded theory approach; the objective was to uncover the e-Government efforts and the challenges they were facing in achieving a high maturity degree. At the same time different documentary material were collected and analysed (see table 1), with the aim of gaining insight into; 1. How Gentofte had organized themselves with regards to their e-Government efforts 2. What the goals and content of the e-Government strategy were, and finally 3. How the digitalization were supported by the overall business strategy in Gentofte.

First round of data collection			
Interviews	Respondent	Time	Period
	Chief of Development & IT	1 ½ hour	Spring 2009
	City Manager	1 hour	Spring 2009
	Group interview consisted of: Director of Financials, Manager of Digitalization and Manager of Citizen Service Office	1 hour 15 min.	Spring 2009
Documentary material	Type	Period	
	Web site of Gentofte	Spring 2009	
	Gentofte's Digitalization strategy 2006-2010	Spring 2009	
	Internal annual strategy in Gentofte 2009	Spring 2009	
Second round of data collection			
Interviews	Respondent	Time	Period
	Manager of Digitalisation	½ hour	Autumn 2009
	Chief of Development & IT	½ hour	Autumn 2009
Documentary material	Type	Period	
	Video presentation of Genvej – the web portal	Autumn 2009	
	Description of Genvej in connection with European e-Government Awards 2009	Autumn 2009	
	Strategy for digitalization of the public sector 2007-2010	Autumn 2009	
	Publication about the reform of the local government level in 2007	Autumn 2009	
	The key figures of the Danish municipalities, provided by the Danish Ministry of Domestic and Social Affairs	Autumn 2009	
	Web site of the European e-Government Awards 2009	Autumn 2009	

Table 1: Collected data

During the analysis of the interviews and the documentary material it became evident that Gentofte had a one-stop-shopping service concept, a personalized web site and were in the middle of transforming the organization. Gentofte was at the transformation stage, leaving us with an opportunity to gain insight into how a governmental organization organized oneself within this stage of maturity and how different stakeholders were involved in this transformation. The data from the first round of data collection were analysed using open-coding with the purpose of identifying the most influential stakeholders. During this analysis it became obvious to us, that we needed to do a second round of data collection. Therefore two further individual interviews were carried out and documentation data from the municipality was collected (see table 1). The purpose of this second data collection was to clarify some uncertainties that occurred and to supplement the data from the first round of analysis. All interviews were audio recorded and prior to every interview the respondents were informed of our area of research, but not given further information that could affect their opinions or the like during the interview.

### **Data Analysis**

The data analysis has been carried out in two phases. In the first phase data collected in the first round of open interviews were analysed. We did an open coding analysis by which data were broken down and conceptualized (Strauss & Corbin, 1990) with the aim of identifying the most important stakeholders in reaching transformational maturity. The coding process led to the identification of five important stakeholders, top-management, the politicians, the mid-managers, the employees, and the citizens, who all possess the power and interest to significantly influence the e-Government process and therefore should be involved in reaching the stage of transformational e-Government. It was evident that the concepts emerging were quite similar to the various stakeholders often identified in stakeholder theory and analysis. For instance Bryson (2004) points to the *Power versus interest grids* as described by Eden & Ackermann (1998) as a basic method to identify pivotal stakeholders (Bryson, 2004: 30-31).

Based on the results of the first phase of our analysis, where we derived five important stakeholders to be involved in the efforts of reaching the transformation stage, we analysed the data again according to descriptive version of stakeholder theory which translates well to the e-Government field (Flak & Rose, 2005). To be able to do this and find out how the different stakeholders were involved, we had to collect more data; we did supplementing interviews and collected more written material about Gentofte (see above).

After the first and second round of analysis, we synthesize the findings and suggest six specific propositions for practical application of how to organize for transformational e-Government and how to involve the different stakeholder in the efforts of reaching the transformational stage of e-Government maturity.

### **Case Presentation**

Gentofte is a part of the Danish e-government context, and the government has in cooperation with organizations representing the local governments devised a national strategy for e-Government: *Strategy for digitalization of the public sector 2007-2010*<sup>1</sup>. The overall intention being to further deploy the potential of e-Government and the concrete initiatives focus on enabling better service for citizens, securing efficiency and making a stronger cooperation between the various levels possible. Local governments in Denmark are the primary providers of public services to the citizens and are according to the Danish Constitution self-determinate. As a Danish municipality Gentofte is one among 98 municipalities. Gentofte is located within a short distance from the capital (Copenhagen) and is the eighteenth largest municipality with its approx 70,000 inhabitants. The income per inhabitant is among the highest in Denmark.

During the last ten years Gentofte has made an intensive effort to merge all citizens' related services into a "one-stop-shopping structure" and has during the last years worked intensively to make the single point of access electronic by making an internet based portal, *Genvej (in Danish – short cut in English)*, providing the citizens with an electronic single point of access. Gentofte is both in a Danish and European context regarded as one of the e-Government first movers, and has among other things been awarded the European e-Government Awards 2009 in the category of: *e-Government empowering citizens* due to their portal *Genvej (Short cut)*. The intention with the portal is to provide the citizens with a digital, personalized and secure access to services and information from the municipality and other public agencies. Meaning that the portal is individualised and brings you information about your self, your children and your home (cf. table 2). Further you can access information about e.g. health and culture from other public websites or portals (cf. table 2). An overview of some of the many functions on the web portal is presented in table 2 below.

---

<sup>1</sup> The strategy is the third of its kind, the first being devised in 2001.

<b>Personal data (from the national civil registration system)</b>	Name Social security number Address Registration of e-mail address and/or phone number (Making it possible for e.g. a child's day care centre to reach you)
<b>Children</b>	Communication between parents and day care facilities School enrolment Information about school activities (timetables, messages from teachers) Integration to the schools official website School information (also provided by sms services to both parent and child) Participation in school board elections Order health security card for children Library information
<b>Health</b>	Information about GP Changes of GP Order a new health security card Integrated with the on-call GP's website (where information about phone number is available and it is possible to research an encyclopaedia of illness and symptoms) Access to ones medical profile (where it is possible to see which medication one takes, see information on the medicine and report experiences of side affects) View own hospital treatments since 1977 (require new login) Renew prescription (requires new login) Set up living will (requires new login) Make an appointment with GP (requires new login)
<b>Housing (information from national BBR-record)</b>	Title number Picture of the house taken by the city architect and the municipality District plans for the local area Filings of water consumption Overview of water consumption Write directly to the municipality regarding the home Contact the renovation organization through a standard form if garbage is not collected Order extra garbage bag Notify about rats or water holes Access to building project applications and ongoing building project case
<b>Finances</b>	Personalized tax information (through a single sign on) Personalized pension and retirement information (require new login)
<b>Communication with the public sector</b>	Integrated with an IS-application which enables one to send and receive secure e-mail from varies governments Other forms of direct communication mentioned elsewhere
<b>Personalization</b>	Possibilities to deselect the information one is not interested in The tabs shows the names of the family members
<b>Culture</b>	Integrated with the municipality's library Loan Reservations Submission deadline Search the library's online database for books, music etc. Overview of and search function regarding the cultural events in the municipality
<b>Other</b>	Renewal of passport and driver's licence Local weather forecast

Table 2 Functions in "Genvej"

#### ORGANIZING FOR TRANSFORMATIONAL E-GOVERNMENT

The web portal presented above is the primary argument for placing Gentofte in the transformation stage for the three reasons mentioned in the beginning of the paper. Firstly, the portal represents a One-stop shop, which requires integration among the governmental silos, and is pointed out by a number of authors as crucial to the transformation stage (Layne & Lee, 2001; Deloitte & Touche, 2001; Hiller & Bélanger, 2001; UN, 2001; Siau & Long, 2005). Secondly, the portal is highly

personalized as Deloitte & Touche (2001) point out as a central characteristic of the phase. Thirdly and lastly, the portal was made possible through a large number of organizational transformations and a number of new services were made available, which also is closely tied to the stage (Siau & Long, 2005; Deloitte & Touche, 2001; Layne & Lee, 2001).

The efforts of creating an electronic single-point-of-access portal, are to be seen as a part of both the e-Government and the overall vision of the municipality. The latter is for instance articulated in the board of directors' 2009 internal strategy which is addressed to the leaders and employees in the administration and outlines some shared goals for the coming year. The Digitalization Strategy is regarded as a part of this vision, and the first was made as early as in 1999. The current strategy applies to the period of 2006-2010 and outlines the vision as well as the goals and means. Additionally it pays extensive attention to the organization and structure of the e-Government efforts. For instance by demanding business cases of every project planned and detailed descriptions of steering committees, by establishing a e-Government project secretariat and descriptions of how the board of directors should be involved and govern the e-Government efforts.

In Gentofte several persons are involved in the e-government efforts. One of those is the Chief of Development & IT (hereafter the CIO); he is Head of the Development & IT division hierarchically situated below the Assisting City Manager. The division possesses the general responsibilities regarding IT and development. The board of directors which consists of seven directors has the superior responsibility mainly at the strategic level, for instance they have the responsibility of creating and realizing the digitalization strategy. The City Manager has the overall responsibility of this area as well as any other as he is the head of the board and the administration in general. The Assisting City Manager has, as mentioned above, the hierarchically responsibilities of the Development & IT division, further she is the project owner of a Business Intelligence effort. The Director of Social Affairs is responsible for realizing the expected efficiency gains and the Director of Financials (hereafter CFO) is responsible for the citizen oriented e-Government efforts. Additionally Gentofte has a Manager of Digitalization who is responsible for a cross organizational e-Government team, and the daily efforts regarding citizen oriented digitalization, and is the project manager of *Genvej*. Besides that Gentofte has a Manager of Citizen Service Office; who is only indirectly related to the e-Government efforts due to her responsibility of fulfilling citizen service goals, and since an increasing number of those services are digitalised her involvement in e-Government is increasing. See figure 1.

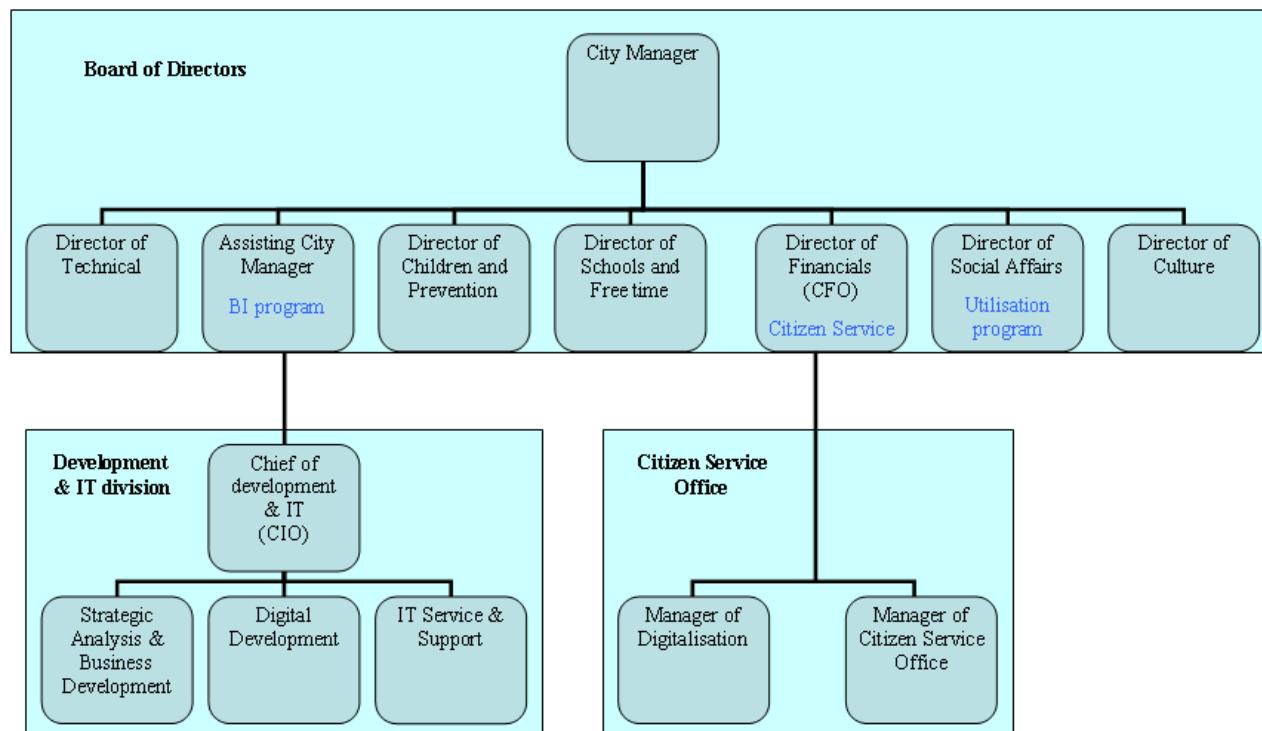


Figure 1: E-Government related organization chart

The involvement of this rather high number of people requires clear structures and lines of responsibility with regard to the e-Governmental efforts. As a consequence the decision-making process regarding IT is highly centralized in Gentofte<sup>2</sup>. According to the City Manager this conflicts with the general principle of the municipality to value room for individuality and decentralised responsibilities. However, when it comes to IT the decision is to prioritize the advantages of a centralized structure rather than the preferred form of organization. The City Manager points out that this was an early and important decision:

*“Early in our efforts to increase our use of IT, it became obvious to us that it was necessary to centralize a lot of the decisions made with regard to IT and IT development, especially when it comes to decisions made about technological platforms and data security”*

Particularly concerning IT infrastructure the centralization is intensive. The primary mean to ensure the centralization is financial; by placing the power of disposal within the IT department the authority is located there as well. The implication of the centralization is not that the IT department exclusively initiates new efforts, decentralised departments and agencies have this possibility as well. These are however constrained by the IT department's authority, which means that all initiatives have to be approved by the IT department or, as the CIO puts it:

*“As we have implemented a centralized decision making structure in regards to IT, we are almost always involved, due to the fact that we are the ones knowing the technologies and it-systems, and how new initiatives can be integrated into for example the existing IT-architecture”*

The chosen structure ensures the ability of the municipality to enjoy a consistent infrastructure and avoid resources being wasted, but at the same time ensure the involvement of a larger group of people.

On the basis of the above it becomes clear that in the process of reaching the transformation stage in e-Government, Gentofte has paid explicit attention to the organization of the internal government organization. The result has been a structuring of shared competencies yet with clear lines of responsibility open to the involvement of many stakeholders.

### **INVOLVEMENT OF DIFFERENT STAKEHOLDERS**

Following the grounded theory analysis of our data, we ended up with five different important stakeholders in regards to reaching the transformation stage of e-Government maturity. This was very appropriate since stakeholder theory applies well to the e-Government field (Flak & Rose, 2005). The reason for that being the complex nature of the public sector and that successful reforms in such an environment require addressing the often conflicting interests of stakeholders (Flake & Nordheim, 2006). Our further analysis of the case brought us knowledge about how to involve these various stakeholders to succeed in reaching transformational e-Government.

#### **Top-Management Engagement**

In Gentofte the top-management is actively engaged with the e-Government efforts of the municipality. Their engagement is primarily on the strategic level, for instance it is the board of directors who completes and owns the Digitalization Strategy. The CIO plans and facilitates the process but the final responsibility lies within the board. The strategic ownership is emphasized by the CFO:

*“I think the City Manager actually values the ownership of the Digitalization Strategy.”*

In addition to the strategic responsibility, the board furthermore plays a significant role in the ongoing e-Government efforts. E-Government issues are regularly discussed at board meetings providing the board with the possibility of following and influencing the efforts made. Three of the directors are even further involved, as mentioned earlier, as each of them owns one of the three programs vital to the e-Government efforts in Gentofte. This arrangement results in knowledgeable and engaged directors and consequently an engaged board of directors. The significance of this is pointed out by the CIO and the City Manager as being two-sided. Firstly, the fact that the top-management takes time to engage in the e-Government efforts sends a strong signal to the employees about the significance of the issue. The CIO emphasises it this way:

---

<sup>2</sup> The exceptions being: the IT of the libraries and the IT used directly in the teaching at the schools.

*"it transmits of course to the rest of the organization as well, because it sends a massive message that they are taking an interest and getting involved."*

Secondly, the top-management engagement ensures an integrated approach to e-government instead of a silo orientation or as pointed out by the City Manager:

*"Now we have a board of directors who actually worked together, regardless of our differences, and thus are prepared for the fact that the struggles between the silos will have to be broken down"*

### Political Support

The administration in Gentofte has been able to achieve the interest and support of the politicians, as an example presented by the CFO clarifies:

*"They gave me a couple of hours to come and describe my version (...). After two hours it ended with them saying: how much money do you need?"*

Success in this area might be related to the self-understanding of the municipality as being an innovative and modern municipality, but other factors have influenced the outcome as well. One decisive factor is the approach of the administration. Our interviews with key persons in the administration provided us with two examples; Firstly, when approaching the city council, it was done on the basis of the Digitalization Strategy decided on by the board of directors. By doing so the administration indicated they had a vision as well as concrete intentions. Subsequently when presenting new initiatives these included an account of the expected cost savings due to increased efficiency. And as the City Manager points out the savings are always found one way or another:

*"Every time we present an IT project, we at the same time have to point out the efficiency improvements."*

This approach gives the IT department credibility and goodwill in the eyes of the politicians and furthermore the City Manager stresses that the department's focus on efficiency has resulted in the politicians almost prioritizing IT investments to the same level as they prioritize investments in schools and other public buildings.

Another factor worth mentioning is the existence of IT knowledge among a few of the politicians. The interest and positive attitude amongst these politicians resulted in a general increase of interest and support towards IT in the city council.

### Middle Manager Inclusion

The middle managers are regarded as key figures in the attempt of rooting e-Government efforts widely in the municipality, due to their daily contact with the employees and their possibility to oppose to what they regard as undesirable initiatives through the management of their unit. The CIO emphasizes the role of middle managers as local change agents:

*"We perceive the middle managers to be very important stakeholders that we have to involve in the process. It is the middle managers who are carriers of change, and we are after all doing this because we want to implement some changes"*

The mean to include the middle managers is firstly dialog. The aim is to ensure their engagement by allowing them to influence the process instead of simply forcing them to implement decisions taken elsewhere in the organization.

The development of a new part of the web portal, *Genvej*, concerning children is a concrete example of middle management inclusion. A lot of the municipal day care centres are supposed to apply the web solution in their communication with parents. To ensure that they will use the web solution, managers from the day care centres were involved in planning and development during the implementation of it. According to the CIO this resulted in a fundamental different and superior solution.

*"Well, it was really an innovative process where the results in many ways were different from what we expected to begin with. And I think that was a crucial reason for the success"*

The easiness of involving the middle managers varies between the units, some times an extensive effort and dialog is required, on other occasions the CIO experiences the following:

*“In some cases it is simply natural for the middle manager to have a focus on IT and in these cases it is the middle manager who is the offensive one”*

### **Employee Buy-in**

There has been substantial focus on the employees in Gentofte and on the significance of getting them to support and participate in the e-Government efforts, which becomes clear in the digitalization strategy as well as in the following statement from the Manager of Digitalization:

*“I have focused on the involvement of the employees as well, since I strongly believe that this is important if our initiatives directed towards the citizens are to be successful. Those who work with IT in the back office have to be pleased with it as well.”*

In the process of accomplishing this management worked to motivate and convince the employees that e-Government was a mutual project and thereby as much their project as it was any others. Furthermore, the processes regarding e-Government and innovation is kept open and including to the employees as well as the middle managers, thereby securing a higher degree of support and understanding. This is for instance evident in the Digitalization Strategy:

*“The affected groups are directly involved in the work, so that they have influence on the process, requirement specifications and utilization”*

Another approach was to adjust the way they were selling the concept of e-Government to the employees’ “sense-making”. Keeping in mind the professional self-respect of the employees, e-Government was articulated as a means to perform in a satisfactory manner despite of decreasing resources.

### **Citizen Buy-in**

In Gentofte there has been extensive and for them natural focus upon the citizens and the significance of getting them to use the self-service applications. For instance the CFO points out that:

*“A part of this is also some kind of citizen vision of making the citizens digital too”*

The manner in which this is done is by educating the citizens through campaigns and communication as well as by using the employees as ambassadors.

Regarding the educational initiatives the Manager of the Citizen Service Office explains that this is a regular activity, and according to her the intent is to:

*“give them an idea of how many possibilities one has when one is digital.”*

One way of doing this is by providing the citizens with mobile digital signature and to teach them how to use it on spot.

Another approach to engaging citizens is through campaigns and other means of active communication efforts. The primary channels of communication are the website of the municipality and a monthly newsletter distributed to every household in the municipality. The communication content is often information about new functionalities at the web portal or stories about citizens’ experiences.

An example of a campaign or event is the distribution of water bottles and information at a metro station in the morning rush hour. The Manager of Digitalization describes the outcome of that specific event this way:

*“Well, I would say, the day we tried the happening of handing water bottles out to people at the metro station in the morning, it was noticed, so it’s certainly something that makes a difference. Probably partly because it’s a bit unorthodox, that a municipality is doing something like that.”*

Educating and motivating the employees in the Citizen Service Office are also regarded as ways of getting the citizens on board. This point of view entails that the digitalization team uses a fair amount of time educating their colleagues individually and in a personalised manner. The motivation behind this is according to the head of digitalisation as follows:

*“In reality our employees are the best ambassadors for the digital solution available for the citizens.”*

An additional and very central point according to the Manager of Digitalization is that their organization is of great significance. The responsibility is explicitly placed with her and the tasks are carried out by her and the rest of the digitalization team she is head of; or put in her own words:

*“We are fortunately organized as one person, in this case me, being in charge for a digitalization team with some, what can I say, particularly IT and service minded people (...) It is nice to manage such an organizational unit who has focused on things like IT and service, and they can push others into new ways of thinking once in a while.”*

## PROPOSITIONS

In Gentofte the board of directors drafted the Digitalization Strategy in 2005. Besides presenting an overall vision and the general means to reach it, the primary focus was upon how to organize the efforts and on specifying the responsibilities. Meaning that several particular persons were assigned to significant tasks and responsibilities and forums were created to handle the clarification and implementation of the strategy. Although the number of people involved requires a considerable amount of cross functional collaboration, it simultaneously causes a wider ownership of the initiatives. According to e.g. Aichholzer & Schmutzler (2000) and Sanchez, Koh, Kappelman and Prybutok (2003) the lack of sufficient structures and plans can account for a large amount of the predicament linked to e-Government projects. This knowledge leads us to the following proposition:

When drafting an e-Government strategy specific attention should be paid to the organizational structures, which should be very clear, as a vast number of people should be involved and be delegated individual responsibility.

IT-governance in Gentofte is characterized by a federal structure, where central as well as decentralised units possess responsibility and influence. For instance strategic and other decisions taken by the board of directors are taken in cooperation with the CIO and through him other levels in the organization. Other decisions are taken by the Manager of Digitalization. In this way ensuring that the authority and impact of the central level are combined with knowledge and legitimacy from decentralised levels. The significance of the central level is for instance emphasised by Moon & Norris (2005) where the relevance of involving the decentralised level is emphasised by e.g. Anthopoulos, Siozos, Nanopoulos and Tsoukalas (2006). Together it leads us to the following proposition:

Ensure that both the central and the decentralised levels are integrated in the decision making process to utilise the advantages of each level.

The board of directors in Gentofte plays a highly proactive part in the e-Government process, since they are the initiators on the strategic level. The directors accept their part by appointing three among them as program owners, who play a greater part in the ongoing e-Government efforts in specific areas. The board's active part entrusts them with not only responsibility but a space for action as well. Top-management support is by many authors pointed out as a crucial part of attaining e-Government success (e.g. Irani, Love, Elliman, Jones & Themistocleous, 2005; Srivastava & Leo, 2005; Lee & Kim 2007). Our claim is however that it takes more than basic support, leading us to the following proposition:

Make top management initiators instead of allowing them to be passive by just trying to engage them.

In Gentofte there has been a distinct focus on getting the attention and support of the politicians, which in the literature has been pointed out as relevant by e.g. Barca & Cordella (2006), Irani et al. (2005) and McNeal, Tolbert, Mossberger & Dotterweich (2003). This has been accomplished by an ongoing focus on efficiency. Meaning that when applying for funding it is standard procedure to present a business case to the politicians and to pinpoint the resulting efficiency gains. This leads to the following proposition:

When dealing with the political level in the organization you should be particularly explicit about the possible efficiency gains and make sure that these are realized.

In Gentofte it has been acknowledged that though top-management plays a large part, there are other significant players too. Firstly, to succeed it is crucial to obtain the support of the entire organization which in Gentofte is achieved by allowing middle managers as well as employees to influence the e-government efforts which have direct affect on their working conditions, thereby creating ownership amongst them. The significance of communicating the value of the e-government

initiatives to the entire organization and to the employees especially is for instance emphasised by Koh, Prybutok, Ryan & Ibragimova (2006) and Heeks & Stanforth (2007) as well as Sanchez et al. (2003) who likewise emphasise the value of the support of the local implementers. This lead to the following proposition:

All employees should be allowed influence on e-government initiatives that have a direct affect on their working conditions since e-government is a mutual project.

The citizens are likewise acknowledged as a significant group in Gentofte. Therefore campaigns toward citizens are initiated to ensure the application of the self-services. The experience in Gentofte is that relevant and user-friendly services are essential but not decisive. It is necessary to address the citizens through campaigns about the content and possibilities of the services. Simultaneously the citizens are address indirectly through the employees who have daily citizen contact and they are thus functioning as ambassadors for the services. Reddick (2005) as well as Gil-Garcia & Martinez-Moyano (2007) pinpoints the importance of campaigns directed at enhancing citizens' use of e-government services. This leads to the following proposition:

It is of great significance to carry out campaigns aimed at getting citizens to apply the e-government services.

## CONCLUSION AND IMPLICATIONS

The paper set out to fill a gap in the e-Government maturity literature, a gap between the aim to reach the transformation stage and our knowledge of how to reach it and of the necessarily of stakeholder involvement. More specifically the internal organization of a municipality that has reached the transformations stage has been explored.

The characteristics of the municipality were a sophisticated web portal, which provided a single, very personalized entrance for the citizens. Further the municipality had gone far in the process of transforming their internal organization to fit the challenges following the new thinking in relation to citizen services represented by the web portal.

The initial data collection consisted of open-ended interviews in the municipality administration which has provided us with rich information about the organization regarding e-Government as well as the case in general. This however means that our propositions are based solely on observations in a single municipality. Future research is therefore needed to validate these propositions and complement our knowledge of the internal organization and the stakeholders tied to reaching transformational stage e-Government.

The preliminary approach to the data analysis was a grounded theory approach, but following the open coding data was linked to the insight of stakeholder theory. Tying the results to stakeholder theory in the descriptive sense brings us knowledge about the significance of a municipality's internal stakeholders in overcoming the cultural leap in e-Government maturity. Thus the paper contributes to the e-Government maturity literature by linking the overcoming of the cultural leap to the insights of stakeholder theory, and thereby the paper contributes to the general e-Government literature by shedding further light on how to attain sophisticated e-Government and thereby realizing the benefits usually associated with e-Government.

From a practitioners perspective the six propositions presented in the paper can be of assistance in their e-Government development efforts either as actual guidance or as a backdrop for discussion of how to overcome the cultural leap in their specific context. The propositions make suggestions about which stakeholders to involve and how they should be involved, but an additional and more general implication for practitioners is that overcoming the leap requires paying attention to their stakeholders and identifying the ones with substantial interests and/or power in relation to the overall e-Government development in the municipality. I that regard stakeholder theory consists many usable and very concrete tools and methods to identifying relevant stakeholders and ways of addressing them (see e.g. Bryson (2004) for an overview).

Regarding the implication for research our investigations of the internal organization related to overcoming the cultural leap of course calls for further research. There is a need to investigate more cases as well as cases within different contexts. Further it would strengthen the results and the e-Government maturity literature in general if the results were challenged with other potentially influential factors.

## ACKNOWLEDGEMENTS

The paper is part of the DISIMIT (Digital Service Integration through effective Management of IT in Danish Municipalities) research project sponsored by the Danish Council for Strategic Research (09-065738) whom we would therefore like to thank. We also wish to thank Gentofte local government for their participation and patience with our many questions.

## REFERENCES

1. Abdullah, H. S. & Kaliannan, M. (2006) Development of E-government in Malaysia: The Role of Leadership and Organisational Efficacy, in Mitra, R. K. (ed.): E-government: Macro Issues, GIFT Publishing, Global Institute of Flexible Systems Management New Delhi
2. Aichholzer, G. & Schmutzler, R. (2000) Organizational, Technological and Regulatory Challenges for Realizing Electronic Government, *European Conference on Information Systems (ECIS) ECIS 2000 Proceedings*, Association for Information Systems: <http://aisel.aisnet.org/ecis2000/171>
3. Anthopoulos, L., Siozos, P., Nanopoulos, A. & Tsoukalas, I. A. (2006) The Bottom-up Design of e-Government: A Development Methodology based on a Collaboration Environment, *e-Service Journal* (2006) 4, 3, 3-24
4. Anttiroiko, A. (2009) Introduction to the Website of the City of Helsinki, *I-Ways Journal of E-Government Policy and Regulation*, 32, 29-38
5. Barca, C. & Cordella, A. (2006) Seconds out, round two: Contextualising Egovernment projects within their institutional milieu – a London local authority case study, *Scandinavian Journal of Information Systems*, 18, 1, 37-60.
6. Baum, C. & Di Maio, A. (2000) Gartner's Four Stages of E-Government Model, Gartner Group, Research Note
7. Bryson, J. M. (2004) What to do when Stakeholders matter – Stakeholder Identification and Analysis Techniques, *Public Management Review*, 6, 1, 21-53
8. Chatfield, A.T. & Alhujran, O. (2009) A cross-country comparative analysis of e-government service delivery among Arab countries, *Information Technology for Development*, 15, 3, 151-170
9. Deloitte & Touche (2001) The citizen as customer, *CMA Management*, 74, 10, 58.
10. Dhillon, G. S., Weerakkody, V. & Dwivedi, Y. K. (2008) Realising transformational stage e-government: a UK local authority perspective, *Electronic Government, An International Journal*, 5, 2, 162-180
11. Eden, C. & Ackermann, F. (1998) Making Strategy: The Journey of Strategic Management, London: Sage Publications
12. Flak, L. S. & Nordheim, S. (2006) Stakeholders, Contradictions and Salience: An Empirical Study of a Norwegian G2G effort, *Proceedings of the 39th Hawaii International Conference on System Sciences – 2006*
13. Flak, L. S. & Rose, J. (2005) Stakeholder Governance: Adapting Stakeholder Theory to E-Government, *Communications of the Association for Information Systems*, 16, 642-664
14. Gil-Garcia, J. R. & Martinez-Moyano, I. J. (2007) Understanding the evolution of e-government: The influence of systems of rules on public sector dynamics, *Government Information Quarterly*, 24, 266-290
15. Gonzalez, R., Gasco, J. & Llopis, J. (2007) E-government success: some principles from a Spanish case study, *Industrial Management & Data Systems*, 107, 6, 845-861
16. Grønlund, Å. & Horan, T. A. (2004) Introducing e-Gov: History, Definitions and Issues, *Communications of the Association for Information Systems*, 15, 713-729
17. Heeks, R. & Stanforth, C. (2007) Understanding e-Government project trajectories from an actor-network perspective, *European Journal of Information Systems*, 16, 165-177
18. Hiller, J. and Bélanger, F. (2001) Privacy Strategies for Electronic Government, in Abramson, M. A. & Means, G. E. (ed.) E-government 2001, Rowman & Littlefield Publishers INC.
19. Huang, Z (2007) A comprehensive analysis of U.S. counties' e-Government portals: development status and functionalities, *European Journal of Information Systems*, 16, 149-164
20. Irani, Z., Love, P., Elliman, T., Jones, S. & Themistocleous, M. (2005) Evaluating e-government: learning from the experiences of two UK local authorities, *Information Systems Journal*, 15, 61-82
21. Irani, Z., Love, P. & Montazemi, A. (2007) Guest editorial - e-Government: past, present and future, *European Journal of Information Systems*, 16, 103-105
22. Janssen, M & Joha; A (2006): *Motives for establishing shared service centers in public administrations*, International Journal of Information Management, vol. 26 no. 2, pp. 102-116
23. Koh, C. E.; Ryan, S. & Prybutok, V. R. (2005) Creating Value Through Managing Knowledge in an E-Government to constituency (G2C) environment, *Journal of Computer Information Systems*, summer 2005, 32-41
24. Koh, C.E., Prybutok, V.R., Ryan, S. & Ibragimova, B. (2006) The importance of strategic readiness in an emerging e-government environment, *Business Process Management Journal*, 12, 1, 22-33
25. Kubo, S. & Shimada, T. (2006) Local E-Governments in Japan: IT Utilization Status and Directions, in Al-Hakim, L. (2006) Global E-government: Theory, Applications and Benchmarking, Idea Group Publishing
26. Layne, K. and Lee, J. (2001) Developing fully functional e-government: a four stage model, *Government Information Quarterly*, 18, 2, 122-36
27. Lee, J. & Kim, J. (2007) Grounded theory analysis of e-government initiatives: Exploring perceptions of government authorities, *Government Information Quarterly*, 24, 135-147

28. Lee, J., Oh, K. & Kwon, H.Y. (2008) *Striving for Transparency and Efficiency in e-Government: Procurement Reform through e-Procurement*, ACM International Conference Proceeding Series; 351, 183-190
29. McNeal, R.S., Tolbert, C. J., Mossberger, K. & Dotterweich, L.J. (2003) Innovation in Digital Government in the American States, *Social Science Quarterly*, 84, 1, 52-70
30. Moon, M.J. (2002) The evolution of e-government among municipalities: rhetoric or reality?, *Public Administration Review*, 62, 4, 424-33
31. Moon, M.J. & Norris, D.F. (2005) Does managerial orientation matter? The adoption of reinventing government and e-government at the municipal level, *Information Systems Journal*, 15, 1, 43-60
32. Morelli, C., Carugati, A. & Kræmmergaard, P. (2009) Technological and Organizational Challenges in e-Government Maturity: a Literature Review, *Proceeding of the 10th Workshop di Organizzazione Aziendale*, Cagliari, 29.-30. April 2009
33. Reddick, C. G. (2005) Citizen interaction with e-government: From the streets to servers?, *Government Information Quarterly*, 22, 38-57
34. Rensel, A. D., Abbas, J. M. & Rao, H. R. (2006) Private Transactions in Public Places: An Exploration of the Impact of the Computer Environment on Public Transactional Web Site Use, *Journal of the Association for Information Systems*, 7, 1, 19-51
35. Ronaghan, S. A. (2001) Benchmarking E-Government: A Global Perspective – Assessing the Progress of UN Member States, United Nations Division for Public Economics and Public Administration, New York
36. Sanchez, A. D.; Koh, E. C., Kappelman, L. A. & Prybutok, V. R. (2003) The relationship between IT for communication and e-Government barriers, *Proceeding of the Ninth Americas Conference on Information Systems*, Tampa, Florida, August 4-6
37. Siau, K. & Long, Y. (2005) Synthesizing e-government stage models – a meta-synthesis based on meta-ethnography approach, *Industrial Management & Data Systems*, 105, 4, 443-458
38. Srivastava, S. C. & Leo, T. S. H. (2005) Citizen Trust Development for E-Government Adoption: Case of Singapore, *Proceedings of the Pacific Asia Conference on Information Systems (PACIS)*, pp. 721-734, Paper 59
39. Strauss, A. & Corbin, J. (1990) Basics of Qualitative Research – Grounded Theory Procedures and Techniques, Sage Publications,
40. UN (United Nations and American Society for Public Administration) (2001), Benchmarking E-Government: A Global Perspective: <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN021547.pdf>
41. Wescott, C. G. (2001) E-Government in the Asia-pacific region, *Asian Journal of Political Science*, 9, 2, 1-24
42. Yin, R. K. (1994) Case study research – Design and Methods, Sage Publications, 2. Edition

#### Case related documents

43. Description of Genvej in connection with European e-Government Awards 2009: <http://www.epractice.eu/en/cases/genvej>
44. Gentofte's Digitalisation strategy 2006-2010: (internal document)
45. Internal yearly strategy in Gentofte 2009: (internal document)
46. Publication about the reform of the local government level in 2007: [http://www.ism.dk/data/Lists/Publikationer/Attachments/271/kommunalreformen\\_kort\\_fortalt.pdf](http://www.ism.dk/data/Lists/Publikationer/Attachments/271/kommunalreformen_kort_fortalt.pdf)
47. Strategy for digitalisation of the public sector 2007-2010: [http://modernisering.dk/fileadmin/user\\_upload/documents/Vision\\_og\\_Strategi/Strategi\\_for\\_digital\\_forvaltning/Strategi\\_for\\_digital\\_forvaltning\\_2007-2010\\_endelig.pdf](http://modernisering.dk/fileadmin/user_upload/documents/Vision_og_Strategi/Strategi_for_digital_forvaltning/Strategi_for_digital_forvaltning_2007-2010_endelig.pdf)
48. The key figure of the Danish municipalities, provided by the Ministry of domestic and Social Affairs: <http://www.noegletal.dk/>
49. Video presentation of Genvej: [http://www.gentofte.dk/upload/multimedie/film/genvej\\_gennemgang\\_dansk.swf](http://www.gentofte.dk/upload/multimedie/film/genvej_gennemgang_dansk.swf)
50. Website of Gentofte: [www.Gentofte.dk](http://www.Gentofte.dk)
51. Website of the European e-Government Awards 2009: <http://www.epractice.eu/en/awards/finalists#category2a>