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# Framework for expanding e-government: the eGov+ project

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**Abstract.** This paper presents the relevance of a research project, which through action research is going to find ways to change the classical 'municipality-as-service-provider' relation into an 'IT-based-municipality-and-citizen-collaboration', thereby strengthening the municipality administration.

*Key words:* e-government, efficiency, service, citizenship, implementation, organizational change, management, use, design

## 1 Introduction

E-government has been defined as the application of electronic commerce tools and techniques by government to provide services to citizens (Howard, 2001). The most frequently cited motive behind initiating e-government is the need for more efficiencies in public sectors (Sharma and Soliman, 2003). At the turn to the 21<sup>st</sup> century focus on use of IT in the public sector has, however, shifted from routine automation to transformation of public organizations – hence the now common acceptance of the term e-government (Andersen 1999), thereby opening new wider perspectives.

In this paper we present a research project, eGov+, targetting integration of horizontal *and* vertical integrated governmental services with the newest technological developments and adoptions in the public sphere of computing. eGov+ aims to bring Danish municipal government to the forefront as regards efficient, **and** democratic e-services. eGov+ will utilize and further develop Web 2.0 and social networking technology at the interface between citizens and public administration, and explore visualization of decision processes, workflows and management. The project will combine qualitative inquiry with methods of participatory design to actively engage citizens and civil servants in research-based, exploratory design. The empirical research will generalize and bridge between exploratory design cases and local design processes. eGov+ yields high quality research results within the areas of human-computer interaction, participatory design, web-technology, service-oriented architecture, implementation, organizational changes and IT management, as well as insights, models and methods to be utilized by municipalities and companies. Three different groups of researchers are participating in the project, adhering to Computer Science, Information System and Communication respectively.

In this paper we briefly present the maturity of e-government with the aim of positioning the eGov+ research. This is followed by a presentation of the research questions, which each of the participating research groups will be addressing. The paper ends with a presentation of the methodology of the eGov+

## 2 Maturity of E-government

Implementing e-government is of course a continuing process, and most often the development is conceptualized in stages. The widely known maturity model suggested by Layne and Lee (2001) sees e-government as an evolutionary phenomenon, from which e-government initiatives should be derived and implemented. They posits four stages of a growth model for e-government: (1) cataloguing, (2) transaction, (3) vertical integration, and (4) horizontal integration. In this research project we are interested in the

integration stages of e-government, where e-government unfolds from the integration of underlying processes both across different levels of government (national, regional and local) and across different functions of government. The integration takes place in two dimensions: at the vertical level local, regional and state government are connected for different functions or services, at the horizontal level (4) different functions and services are integrated. In the eGov+-research we focus on both the vertical and the horizontal level.

Andersen and Henriksen (2006) supplement the maturity model with strategic ambitions of governments' use of IT, and present what they call the PPR model. They argue that the Layne and Lee (2006) model build on the same rationale that have dominated the traditional motives for IT adoption; increase in information quality, efficiency and effectiveness and intra/interorganisational interaction (Zappan et al, 2006). According to Andersen and Henriksen (2006) these benefits are self-evident. Government should move beyond them focusing more on streamlining core processes and reaching customers in a more efficient manner. One should pay attention to issues as values, interaction, and orientation, when talking about e-government and maturity. The PPR model expand the e-government focus to include the front-end of government.

Andersen and Henriksen (2006) argue that following the stages model may not be necessary, although they claim certain pre-conditions for e-government such as a certain level of technical infrastructure and professional skills. The readiness for e-government is not restricted only to the governmental body (Al-omari and Al-omari, 2006), though. It is also important to assess society, government institutional frameworks, human resources, existing budgetary resources, interdepartment relationship, national infrastructure, economic health, education, information policies, private sector development and other issues when making strategy for implementation of e-government (ibid).

### **3 Framework / areas of interest**

What if there are no crux to the e-government design problems? What if no level of scope takes a foundational role? As suggested by Spinuzzi (2003) this means that not only is the 'designer-as-hero-rescuing-users-as-victims' not feasible, but also that the fieldwork-to-formalization-methods as suggested by Holtzblatt & Beyer (1993) and others are not sufficient. Integration of the horizontal and the vertical level dissolves to some extent the once-and-for-all identifiable boundaries between users and producers, between service providers and consumers of service, while at another level, and due to the legal ground of government, certain role characteristics prevail.

This leads the e-Gov+ project to suggest three different and interrelated perspectives that are crucial to both horizontal and vertical integration:

- Design of eGov software

- Management and organization of the government organizations
- Citizen & end user needs and practices

In the next sections of the paper we will elaborate on the three perspectives of interest and the research questions that we will address during the project will be presented.

### 3.1 From a design perspective

Web 2.0 is centered on governing principles such as “Build applications that harness network effects to get better the more people use them,” “ Don't treat software as an artifact, but as a process of engagement with your users,” and “Open your data and services for re-use by others, and re-use the data and services of others whenever possible .“ These are principles that fit well with the participatory design research tradition, its dialectical understanding of the relationship between design and use (Bødker 1999), while they pose interesting technological challenges. Web interfaces and architectures to e.g. existing electronic patient record systems have proven complicated, and in general it is essential that such solutions don't just become somewhat open add-ons to closed monolithic systems.

As regards Web 2.0 technology in use, eGov+ will focus on *transparency* of documents and cases to render activities of the administration visible and support cooperation; *adaptive and service-oriented* information architectures in *integration* with existing systems and services; *tailoring (re-use), structuring* and *remixing* of services e.g. according to citizens' life situations, instead of according to current organizational structures of government. Central leading-edge technological possibilities are these years being brought to use in practical use, but very much as singular examples. Furthermore, many current examples are focussed mainly on the individual citizen, less on cooperation between citizens and civil servants, or on places where groups of these collaborate regarding a particular set of problems. eGov+ will pursue these solutions further in terms of:

1. Advanced visualization techniques used in cases and decision processes.
2. Collaborative community Web-based technologies (with inspiration from e.g. del.icio.us, flickr.com, or myspace.com) integrated with existing IT.
3. Adaptive documents and services (inspired from e.g. Amazon.com) allowing integration with existing services and systems.

Through the focus on transparency, adaptability, integration with existing services and tailorability, *design* of governmental e-services needs a sustainable strategic perspective involving citizens as well as groups of civil servants, completing and transcending current accessibility and cost effectiveness goals. Evidently, services cannot be uniquely tailored to every

single citizen and service or government office, and it is the ambition of the service-oriented architecture to build reusable services to be tailored to and used in different contexts. In line with Dourish (REF), we design a strategic space that accommodates the tactics of citizens and civil servants in their everyday activity.

### **3.2 From a managerial/organisational perspective**

Approaching the integration challenge from a managerial/organisational perspective, eGov+ will explore how the demand for efficient, context dependent and flexible service delivery is reflected in the municipalities in terms of changes in existing work-processes and/or establishment of new business processes. Changes in business processes will take place both internally and externally, and both will be of interest. Internally, close collaboration with the rest of the departments in the municipalities will be needed both in terms of building the right services, infrastructure and IT architecture and in continuously redesigning the architecture (the horizontal integration). These changes and the need for interdepartment relationships are expected to challenge the mindset of governmental agencies (Layne and Lee, 2001) and their old “silo” thinking. Externally, close collaboration is needed with other parties and other public organizations to integrate services from external parties to offer smooth and seamless services to citizens and companies (the vertical integration), and the role of the employees can be expected to change from being task-oriented assembly-line workers to become an overseer of processes (Layne and Lee, 2001). The research question that we will address is how these processes are changed or created, implemented and managed? Since the services are highly related to IT the IT department will need to participate and take responsibilities (Chou, et al. 2005). Therefore the role the IT-department/function plays in fulfilling the demand for efficient, context dependent and flexible service delivery will be explored. E.g. will the IT department needs to be centralized, as suggested by Norris and Kraemer (1996), how will the IT-department interact with the users in the system development, what will there be overlap between the processes the IT department are responsible for and what other parts of the organisation naturally are responsible for (Sundberg and Sandberg, 2006)?. The overall research question being addressed is which role the IT department play in the development and implementation of the services.

### **3.3 From a user perspective**

Inclusiveness was defined by Christiansen (2007) as a parameter in design of online interaction with public authorities, characterized by common language, first person agency, personalization, disclosure of mutual dependencies and community awareness

As for now, the overall strategic paradigm of e-government is a service discourse, motivated in the need to save resources by moving activity from physical service centers and telephone to the web, thereby saving personal.

Because of the hard economic logic behind present e-gov initiatives, user experience, on the side of the office clerks as well as on the side of the citizens, is rarely tested for, while customer management approaches and other re-engineering approaches are promoted (for example Andersen and Henriksen (2006) and <http://www.pprgovernment.com/method.htm>). We are going to benchmark actual e-gov user experience with up against the sense of identity, belonging, and care experienced in interaction with social web 2.0 community sites.

In eGov+ we are going to adress the competencies going into accomplishing transactions between citizens and municipality, such as signing up for child day care, being referred to elder-care, filling out tax information, and aquiring real estate information. Through action research involving observation, interviews and workshops with service staff and citizens we will map out profiles of experience, goals, and competencies involved in accomplishing these transaction as for now by way of telephone, physical desk- interaction and web-communication. Our findings will be communicated into the design process in the form of scenarios and persona-descriptions.

## 4 Methods

Having outlined these ideas and research questions separately, we emphasize that it is not the areas apart, but the focus on *use*, *design*, and *management* together, that makes eGov+ unique. To practically handle the complexity of this interplay, we have separated out four research strands: A. Community technology and service infrastructure, B. Workflow interaction and adaptive documents; C. Design methods and tailorability; and D. Public IT service modelling and management. The strands are overlapping with the themes of four PhD-projects. Our research approach is grounded in the action-oriented research tradition that is well established among project members as well as internationally (Bødker & Christiansen, 1997, Bødker, 1999, Bødker, 2006). It consists of empirical, exploratory design cases that intervene into the current practices of use on the one hand, while being based on interpretive qualitative methods on the other. These case studies are based on hypotheses and will lead to new insight to be conceptualized in these strands. Accordingly, it is a major principle of structuring of the project to balance between general development of hypotheses, concepts and ideas in the four strands, and targeted, empirical exploration of these ideas in the time-limited design cases. The exploratory design cannot stand alone, and will be complemented with qualitative interviews and observational studies of procurement, design and management processes in the municipal use settings in general, and among selected companies providing technological

infrastructures and services. Through design we undertake a collaborative exploration of future use of and beyond Web 2.0 between researchers, designers and users. When viewing design and use as closely interlinked, in line with Web 2.0 and participatory design principles, it is necessary to make use-like situations and hands-on experience part of design, and design experiments part of research. This approach to understanding the practices of design and use of computer applications joins a wide and growing attempt uniting studies of human practice with activity theory and related theoretical approaches (Star and Ruhleder, 1994). According to (Latour, 1990) the development of scientific instruments, it is very important for the development of new insight as such. It is exactly in the field of tension of research-design-use that we place this project proposal.

## 5 Summing up and perspectives

In this paper we have presented the eGov+ project and its background in maturity of e-government, which indicates a need to further explore the readiness for e-government not only in the governmental body but also in society. The overall goal of eGov+ is to strengthen the administrative work at municipality level by turning it away from classical service providing towards it-based collaboration between administration and citizens.

Social technologies are far from innocent. As opposed to the doctrine of Wired editor Kevin Kelly, who maintains that 'the only side a network has is the outside' (Kelly 1998) we find that www-based social networks are quite faceted: 'Social' is not the same as 'good' in a moral sense, and definitely not 'common good' as what is supposed to be the crux of governance, and furthermore in the words of Elinor Mills from Cnet news.com, commenting on Microsoft acquiring a \$240 million stake: *'the amount of personal information that people spew out onto their Facebook profiles could create an advertiser's paradise'* (Mills 2007).

The issue here is not whether Facebook has the potential to become big business, but the fact that Facebook is determined by market logic. The logic for e-government is in the Danish context stated in the the government's strategy plan 2008- , following up on the Strategy II plan for modernizing the public sector, according to which resourcer will be freed to create public service 'close to the citizens' in municipalities and regions.

We would like to add to this strategy plan the goals of letting citizens as well as public service workers experience ease as well as new opportunities, feel responsible and in charge, and included in society. The eGov+ project aim to research potential and problems along these lines.

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## References

- Andersen, K. V. (1999) 'Reengineering public sector organisations using information technology', in *Reinventing Government in the Information Age*, ed. R. Heeks, Routledge, London, pp. 312–330.
- Bødker, S.(1999). Computer applications as mediators of design and use – a developmental perspective. Doctoral dissertation, Department of Computer Science, University of Aarhus, 1999, DAIMI PB-542.
- Bødker, S. (2006), When second wave HCI meets third wave challenges, NordiCHI keynote, *NordiCHI 2006*, ACM, pp.1-8.
- Bødker, S. & Christiansen, E. (1997). Scenarios as springboards in design. In Bowker, G., Gasser, L., Star, S.L. & Turner, W. (eds.), *Social science research, technical systems and cooperative work*. Erlbaum, pp. 217-234
- Chou, T., Chen, R. & Pu, C. (2005), "The Influence of Information Literacy on Cooperative Behaviors and Collective Actions: The Case of e-Government Development", the Ninth Pacific Asia Conference on Information Systems (PACIS 2005)
- Christiansen, E. (2007) Inclusiveness as a parameter in design of online interaction with public authorities in: Kanstrup, Nyvang & Sorensen (eds.) (2007): *Perspectives on e-governance*. eBook and BOD, Aalborg University Press, 2007
- Christiansen, E. & T. Nyvang (2005). On the importance of supporting self-motivation among end users of eGovernmental services. Paper presented at 2nd Scandinavian Workshop eGov, 14-15 February 2005, CBS, Copenhagen
- Dourish, P. (2001) *Where the action is*. Cambridge, MIT Press
- Dourish, P. 2006. Re-space-ing place: "place" and "space" ten years on. In Proceedings of the 2006 20th Anniversary Conference on Computer Supported Cooperative Work (Banff, Alberta, Canada, November 04 - 08, 2006). CSCW '06. ACM, New York, NY, 299-308.

- Kelly, K. (1998) <http://www.panarchy.org/kelly/newrules.1998.html>
- Latour, B. (1990). Drawing Things Together. In Lynch, M. & Woolgar, S. *Representations in Scientific Practice*, Cambridge, Mass: MIT Press, pp. 19-68.
- Mills, E. (2007). [http://www.news.com/8301-13577\\_3-9804688-36.html](http://www.news.com/8301-13577_3-9804688-36.html)
- Norris, Donald F., and Kenneth L. Kraemer. 1996. Mainframe and PC Computing in American Myths and Realities. *Public Administration Review* 56(6): 568–76.
- Reach (2001), *Launching Jordan's Software & IT Industry*, Reach, Amman.
- Malina, A. (1999) 'Perspectives on citizen democratisation and alienation in the virtual public sphere', in *Digital Democracy: Discourse and Decision Making in the Information Age*, eds B. Hague & B. Loader, Routledge, London
- Spinuzzi, C. (2003) *Tracing genres through organizations*. Cambridge, MIT Press
- Star, S.L. (1996). Working together: symbolic interactionism, activity theory, and information systems. In Engeström, Y. & Middleton D. (Eds.). *Cognition and Communication at Work*, Cambridge University Press, pp. 296-318.
- Sundberg, H.P. and Sandberg, K.W. (2006) Towards e-government: a survey of problems in organisational processes. *Business Process Management Journal* Vol. 12 No. 2.
- Wimmer, M. and Traunmuller, R. (2000) Trends in electronic government: managing distributed knowledge, Proceedings of the 11<sup>th</sup> International Workshop on Database and Expert Systems Applications, Greenwich, London, UK, September 6–8, pp. 340–345
- Woodcock, N. and Starkey, M. (2001) I wouldn't start from here: finding a way to CRM projects, *Journal of Database Marketing* 9 (1) 61– 74.