PUBLIC E-SERVICES RESEARCH
–A CRITICAL ANALYSIS OF CURRENT RESEARCH IN SWEDEN

ULRICA LÖFSTEDT
Department of Information Technology and Media
Mid Sweden University
Sweden
ulrica.lofstedt@miun.se

Abstract

In Sweden, there is an emerging research on public e-Services and research is conducted at several universities and research institutes. Swedish research on e-Services focuses on citizens, communication, the development of e-Services, the design of e-Services, the maintenance of e-Services, e-Participation, the quality of services, evaluation, organisational changes, interactions between different e-Services, usability, co-operation, inter-organisational co-operation, accessibility, e-Health, the development of methods, and process orientation. Current research projects in Sweden have a predominance of national governments and governmental focus, but there are nevertheless several research projects that focus on local governments and on citizens. In analysing current research, it can be seen that Swedish research on e-Services in several cases corresponds to international research, and visions and trends for the future development of e-Services. However, the challenge facing future research on e-Services is to include more of theory generating and theory testing.

Keywords: Public e-Services, e-Government, Public Information Systems, e-Health

1. Introduction

Electronic Government, or e-Government, with its many synonyms, is a growing field of practice and research all over the world [Grönlund and Horan, 2005; Grönlund, 2004; Scholl, 2004; Bruecher et. al, 2004; Bhatnagar, 2004]. E-Government in this context encompasses a wide range of branches and sub-areas, for example the dissemination of information, services to individual citizens and businesses and participatory democracy. According to Wimmer [2006], e-Government is multidisciplinary and consists of several domains of research and implementations as for example e-Democracy, eParticipation, e-Administration, e-Health, and e-Justice.

In the field of e-Government it has been emphasised that an important goal of e-Government is the delivery of faster and cheaper services and information to citizens, business partners, employees, other agencies, and government agencies [Layne and Lee, 2001] and therefore, this article mainly focuses on public e-Services. There are currently many research efforts and development projects on e-Services in progress [Grönlund and Andersson, 2006; Lindblad-Gidlund and Löfstedt, 2006; Löfstedt, 2005], and there are several different types of actors in the development of e-Services, e.g. researchers from different disciplines, practitioners, and businesses. However, the problem of today seems to be insufficient awareness of the research that is under way, and who the actors are, and accordingly the research efforts are not efficiently coordinated and needs and requirements are not being observed. There has not been a

good outline of current research in the area and there are several actors who claim that to encourage the research process and development of fully functional e-Government services, there must be cooperation between different actors in the area [Ekelin, 2003a; 2003b; Dittrich et al., 2004, Vinnova, 2006a; Vinnova 2006b; Lindblad-Gidlund and Löfstedt, 2006].

Hence, the purpose of this article is to increase the understanding of current research and to identify areas of co-operation and interest for further research. Starting from an earlier survey [Lindblad-Gidlund and Löfstedt, 2006], the following research questions are of interest. (1) What does current research concerning e-Government services focusing on?; (2) What are the trends and visions for the area?; and (3) In what way does current Swedish research comply with international research, and trends and visions expressed for the future development and usage of public e-Services?

2. Method

The launching platform for this research is a survey study on Swedish universities and higher education institutions that are entitled to offer postgraduate programmes (Swedish National Agency for Higher Education, 2006) and also to research institutes in Sweden. The study was conducted during the spring and summer of 2006. The results of the survey study are descriptively reported in Lindblad-Gidlund and Löfstedt [2006].

Thus, in the report by Lindblad-Gidlund and Löfstedt [2006] the results of the survey study are only presented and described. To further increase the understanding of current research and to identify areas of co-operation and interest for further research, and also to provide a summarized picture of current research in the field, the results of the survey study were further analyzed, assessed, and categorized.

The analysis was based on the conception of e-Services. For this study, services in the context of contact between citizens or other stakeholders and government agencies or municipalities by means of information and communication technology (ICT) were examined. The contacts concern services from the government agencies to stakeholders as well as stakeholder potential to conduct a dialogue with a government agency.

The research found was first categorized based on the classification of the EU (2006a). According to the EU, e-Services can be divided into e-Services for e-Government and e-Services for e-Health, and accordingly the research projects found were grouped according to this classification. Second, the research projects identified were grouped according to research focus and direction, i.e if the research was at national or local governmental level. Third, the researchers were analyzed according to number of current projects, established collaboration, and number of publications.

To see to what degree the research corresponds to international research in terms of focus, research type, collaboration, and references, a comparison was made of a recent study conducted by Grönlund and Andersson [2006]. Furthermore, to be able to analyze the direction of the research and to see to what degree current research corresponds to needs, i.e. if it is governed by requirements, and to analyze important directions, focus, and type, the research identified was compared to trends and visions expressed by different actors [Albinsson et al., 2006; Nordfors et al., 2006; Skarin, 2006, The Ministry of Finance 2006a; 2006b; Tivoli, 2002].

3. Current Research Concerning Public E-Services in Sweden

Research on e-Services is conducted at several universities and research institutes in Sweden. The EU [2006a] classifies e-services into two overarching groups, i.e. e-Services concerning e-Government and e-Services concerning e-Health. There were 112 research projects identified in the study, of which 21 were research on e-Health. However, 33 research projects were considered not applicable to the analysis because of their direction or because information on them was too brief[1]. Consequently, the following presentation and analysis includes 79 research projects concerning public e-Services in Sweden.

The classification of the EU [2006a] forms the basis for the classification and presentation of the research projects presented below. However, the result of the survey study indicates that current Swedish research on e-Services focuses on citizens, communication, the development of e-Services, the design of e-Services, the maintenance of e-Services, e-participation, the quality of services, evaluation, organisational changes, interactions between different e-Services, usability, co-operation, inter-organisational co-operation, accessibility, e-Health, the development of methods, and process orientation.

3.1. Focus

Research on e-Services focuses on different levels of governments. The research also focuses on, e.g. governments, citizens or enterprises. Table 1 below presents the focus of current research in Sweden.

Research Focus	Number	In percentages
E-Government		
Focus on national governments	21	27 %
Focus on local governments	10	12%
Focus on both national and local	7	9 %
Focus unspecified	20	25 %
Governmental focus	24	30 %
Focus on citizens	5	6 %
Focus on enterprises	2	3 %
Focus on both governments and citizens	11	14 %
Focus on both governments and enterprises	3	4 %
Focus unspecified	13	16 %
E-Health		
Focus on e-Health	21	27 %

Table 1. Research focus.

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[1] For further information about the research projects identified see [Lindblad-Gidlund and Löfstedt, 2006].

As seen in Table 1, the focus of projects on e-Services vary. To provide a more detailed picture of current research projects in Sweden, Table 2 below presents the focus and direction for both categories, i.e. the level of government agencies and the direction for each research projects on e-Government according to the definition by the EU [2006a].

Research Focus in research projects concerning e-Services				
	Nat.	Loc.	Nat. + Loc.	Unspec.
Governments	10	5	3	6
Citizens	3	-	1	1
Enterprises	-	-	1	1
Governments + Citizens	5	4	2	-
Governments + Enterprises	3	-	-	-
Unspecified	-	1	-	12

Table 2. Focus of research projects concerning e-Services.

3.2. Active Researchers

There were 191 researchers active in research on e-Services and e-Health. The researchers identified in the study work at 19 universities, state university colleges, independent higher education institutions, or independent programme providers that are entitled to offer undergraduate programmes, and research institutes (see Figure 1).
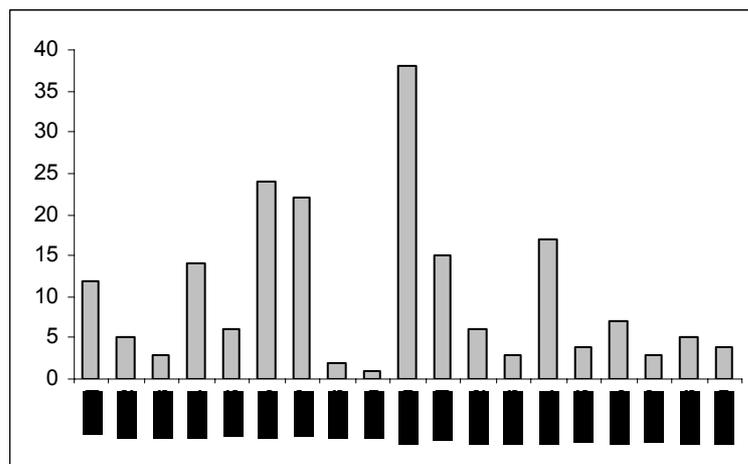

Figure 2. Active researchers in the subject area at Swedish seats of learning or research institutes.

Almost every one of the universities and research institutes collaborated with other actors in the subject area in their research projects concerning e-Services. Some universities or research institutes collaborated with both national and international actors, whereas others cooperated with some or a few other Swedish universities or research institutes. Table 3 below presents all forms of collaboration separately, which means that one university or research institute can be found in multiple collaboration categories.

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Collaboration	Number	In percentages
University – University		
National and International	9	41 %
National	7	32 %
International	1	5 %
University – Governments	8	36 %
University – Business		
National and International	3	17 %
National	7	32 %
International	1	5 %
Not specified	3	17 %

Table 3. Collaboration.

3.3. Publications

Researchers in the area of e-Services in Sweden have produced numerous papers, reports, theses and other contributions in the field. Table 4, below, gives a rough picture of references.

References	Number	In percentages
Conference papers	188	52 %
Research reports	25	7 %
Journal papers	41	11 %
Theses	24	4 %
Books or book chapters	16	10%
White papers or working papers	33	7 %
Other reports or papers	37	9 %

Table 4. Publications of different types of research papers.

4. Swedish Research Compared to International Research

There are several tentative definitions of the concept of e-Government (see., e.g., [Bekkers and Homburg, 2007; Grönlund, 2004; Bathnagar, 2004; Curtin et al., 2004; COM 2003/567; Scholl, 2003; Marche and McNiven, 2003; Zweers and Planqué, 2001; Silcock, 2001; Hirst and Norton, 1998]) and in several definitions e-Services is a part of the definition. The interpretation of the concept by those participating in the study reveals that there is a prevailing varied understanding of the notion. In Sweden, research on e-Services is conducted at departments of different affiliations and this also substantiates the interdisciplinary of the research area. Furthermore, the conception of e-Services is closely connected to other conceptions in the area of e-Government, and the different parts border on each other. The structure of research organisations at the different seats of learning in Sweden also confirms the interdisciplinary of the research area. The research is conducted at departments of different subject affiliations and moreover, some of the universities and research institutes have a research organisation structure with researchers from different disciplines. The research identified in the survey substantiates the opinion of Scholl

[2004]. According to him, the complex relationship between information technology and government has become a major focus of academic research in several fields such as public administration, organisational behaviour, information science, and technology innovation. Thus, researchers who have chosen e-Government as a problem domain might have their starting point in several other disciplines, e.g. organisation theory, social science, informatics, computer science, public administration, business administration, economy, political science, law, government professionals, library science, etc.

According to the study by Grönlund and Andersson [2006] the most frequent type of research presented at international conferences is descriptive. Unfortunately, the Swedish research projects were impossible to fully categorize according to research type. However, there were both descriptive research and research projects with the purpose of developing methods and models for e-Service development. There were also large projects where the aim was to first describe and create an understanding of the current situation and then, e.g. develop some e-Services or methods for developing e-Services, or there was only a general description of a research program, which embraced several research projects with different directions. However, the division of the directions of the research varies and there is no obvious representation of any direction. According to Grönlund and Andersson [2006] research on e-Services should *focus on the role of ICT in contexts of society, government organisation, method and individuals/citizens, and it should increasingly analyze rather than describe, hence creating and testing theories.* According to the study there are no current research testing theories in Sweden, however, there are a number of research projects developing, e.g. models and methods. The research identified is consequently contrary to the field of e-Government in general, where there is a predominance of descriptive research, according to Grönlund and Andersson [2006].

There are a number of research projects conducted in co-operation between some of the universities. In some cases, there are even instances of international co-operations. Furthermore, there are several research projects conducted in co-operation between universities, research institutes, and other partners, e.g. enterprises, municipalities, county councils, and other organisations. The survey conducted by Grönlund and Andersson [2006] shows a pre-dominance of non-collaboration in the research presented at international conferences. Of the collaboration that actually exists, most are between universities.

In the beginning of the development of the area of e-Government, and also in the development of e-Services, most research was dominated by supply-side factors and there where none or a few efforts that focused on the demand side, i.e. the citizens, businesses, other governmental agencies, and other stakeholders [Löfstedt, 2005; Löfstedt, 2007]. Current interest, however, is increasingly on the demand-side, i.e. citizens. Several researchers point out that a shift in focus towards a citizen and costumer-centred service provision is one key to success in e-Government (e.g. [Makolm, 2006; Brown and Schelin, 2006]). However, research concerning user-related issues is more frequent today. Interest in the field has started to shift from government at the national level to more citizen-related issues, such as usability and user-willingness. Currently, the "citizen-centric approach" comprises the dominant discourse in e-Government [Accenture, 2002] and the need for greater user participation and involvement in the design and development process has been emphasized in recent years [Ekelin, 2007; EU, 2006b; EU, 2006c; Makolm, 2006; Brown and Schelin, 2005; Ekelin, 2003a]. Swedish research on e-Services also

reflects this progress. However, current research projects in Sweden have a predominance of governmental focus, but there are nevertheless several research projects that focus on citizens.

Furthermore, until recently the main focus of the research generally in the area of e-Government was on the national level [Löfstedt, 2005]. In current Swedish research on e-Services, research on e-Services at the local government level stands for approximately half as many as the projects on the national government level. There are also projects concerning both national and local levels of government. According to Löfstedt [2007], municipalities express a desire to increase the participation of citizens in order to enrich the development process and the public e-Services developed, and there are a few research projects concerning local governments with a focus on citizens. According to the Swedish Association of Local Authorities and Regions (SALAR) [2006], several municipalities consider co-operation within their own organisations and with governmental agencies as a strategy to further develop their own organisation.

5. Visions and Trends Concerning E-Services in Sweden

In the spring 2002 Mid Sweden University, the MidSweden Information Centre, and different government agencies discussed potential, problems and trends concerning future development of public systems [Tivoli, 2002]. During the discussions important areas were crystallized. Current Swedish research on e-Services includes most of these areas. According to the discussions [Tivoli, 2002], the Ministry of Finance [2006a], and the strategy group at the Ministry of Industry, Employment and Communications in Sweden [Skarin, 2006] research on the integration of services and user-oriented integration is important. Research with an emphasis on the integration of services is being conducted in some of the current research projects as well as research on web portals for different businesses. However, the vision of a "one stop Internet portal" is not fulfilled yet, even though there are efforts striving towards that vision. On the contrary, a trend concerning integrity has been identified [Tivoli, 2002]. Integrity is present in some of the research projects in progress. Moreover, there are some research projects under way which deal with this issue, e.g., decision support and research on the flow and quality of information.

The Swedish government assumed a strategy in June 2006 for further development of e-Government in Sweden. One essential part of this strategy is an increase in automated task management [The Ministry of Finance, 2006b], which was also discussed by Mid Sweden University, the MidSweden Information Centre and different government agencies [Tivoli, 2002]. According to the Swedish Ministry of Finance in Sweden [2006a], the task management usually proceeds from a governmental perspective and not from a citizen or enterprise perspective. However, there is current research in Sweden focusing on citizens in the issue management. Furthermore, there has already been some development of a general system for issues management at the local government level and this system has been implemented into some Swedish municipalities.

In current Swedish research there are projects concerning methodologies, and methods and principles for the design and development of e-Services. In the discussions between Mid Sweden University, the MidSweden Information Centre and different government agencies [Tivoli 2002], the need for new models for system

development which are adapted to the specific characteristics of large public systems was emphasized.

Issues concerning organisations and management are central to the discussions by Tivoli [2002], and Albinsson et al. [2006] are pointing out process re-engineering as one trend in the development of public e-Services. Questions concerning organisation, management, and process re-engineering have been raised in current research. There are several projects under way concerning organisational change and internal processes. There is also research on co-operation between different municipalities concerning the development and dissemination of e-Services.

The digital divide was also discussed as an important area for research and there are projects which are about issues concerning citizens without potential to use e-Services for different reasons. The research projects under way in Sweden mostly concern the digital divide in developing countries, but the Ministry of Industry, Employment and Communications [Skarin, 2006] point out that there is a need for efforts to support older citizens, and citizens with special needs ("Design for all").

The area of e-Services is rather new, and the focus has, according to the study, mostly been on the development of e-Services. However, there is some current research on the valuation of e-Services conducted. In the discussions between Mid Sweden University, the MidSweden Information Centre and different government agencies [Tivoli, 2002] different types of valuation, adjusted to the specific circumstances of public systems and governmental organisations was pointed out as essential to the successful development of public e-Services.

Other important and interesting topics and trends identified by Mid Sweden University, the MidSweden Information Centre and different government agencies [Tivoli, 2002] were system maintenance and management in the development of public systems, legitimacy, and authenticity however, in the study there are no projects found concerning this in current Swedish research.

According to Nordfors et al. [2006], two principal issues recur in analysing scenario and future studies. The first concerns the level of computer usage amongst citizens. The question is, according to them, whether or not future users will be more advanced, and thereby more demanding concerning e-Services, or if such development will be hindered. The question concerns, e.g. economic development and the development of the digital divide. According to the study, Swedish research on e-Services includes no research about future demands concerning e-Services from the user's point of view. However, it was found that current research has instead a focus on user-centred e-Service design, i.e. user participation in the design process and usability of e-Services. There was no current research on computer usage and future demands from citizens found in the study. However, some research concerning the digital divide has been conducted, and the focus on user-centred development of e-Services is in line with one of the trends identified by Albinsson et. al [2006]. They claim that there must be a stronger citizen/client/user perspective on the development of public e-Services.

The second principal issue raised according to Nordfors et al. [2006] is whether or not we will see integrated or fragmented governments in the future. This issue concerns to what extent different parts of public administration will work together in the future. The Ministry of Finance in Sweden [2006a] mentions the need for integrated government agencies, and according to them this will improve services provided by governmental agencies.

Albinsson et al. [2006] states that there are trends in Internet development that go beyond the traditional site-html-browser structure (WEB 2.0). Some of these trends

are assessed by them as relevant to the discussion of trends in the further development of public e-Services. According to the present survey study, current Swedish research on e-Services does not include these aspects.

For further research Albinsson et al. [2006] claim that some new areas need to be highlighted and supported in future e-Service development. These areas are: (1) A strong community with IT-support: (2) New types of marketplaces; (3) The citizen perspective as a driving force; and (4) Improved methods and approaches. In current Swedish research, efforts are being made to share experiences, systems and solutions in Sambruk [2007] which is a platform for co-operation between Swedish municipalities, and research is also being conducted to further develop this platform. There is also increasing interest in the citizen perspective, although there is a need for more research on development where design has users of e-Services as the point of departure. There is also some research under way concerning methods for the development of e-Services in Sweden. However, Albinsson et al. [2006] claim that there is a need for the development of improved methods and approaches that secure citizen participation in the design of, and influence on public e-Services.

6. Concluding Remarks

There is currently research being conducted on e-Services at several universities, state university colleges, independent higher education institutions, independent programme providers that are entitled to offer undergraduate programmes, research institutes, and research institutes in Sweden. There is also co-operation between several universities and institutes and some of them are also involved in international co-operation in research projects. The research is theoretically as well as practically oriented, e.g. there are research projects on creating the prerequisites for development in the area as well as research projects on the practical development of e-services. The focus of the research projects identified varied and there where different directions at the research. Hence, current research focuses on citizens, communication, the design and development of e-Services, the maintenance of e-Services, e-participation, the quality of services, evaluation, organisational change, interaction between different e-Services, usability, co-operation, inter-organisational co-operation, accessibility, e-Health, the development of methods, and process orientation. The present survey study provides a picture of a research area undergoing expansion and change. The reasons for this vary, but one might be the rapid changes in information and communication technology (ICT), and the new application areas and combinations of usage that are being created. This can mean that new and rather unexpected subject areas arise and complement the area. However, this may also cause confusion concerning conceptions, theoretical foundations, and boundaries between and within fields.

Current research corresponds well with international research and also with trends and visions concerning e-Services in Sweden. The research strives towards future applications of e-Services, and there are several research projects that create opportunities for the further development of e-Services. Ivanov [2006] says that, *"One makes research today on yesterday's visible effects of the use of externally given technology which was adopted the day before yesterday. When the results happen to be published tomorrow they will be obsolete and used to justify new research to start the day after tomorrow about the consequences of today's technology which is already becoming obsolete"*. However, the present survey of Swedish research shows that current research in Sweden obviously conducts research aimed for the information systems of tomorrow. Grönlund and Andersson [2006] state that a mature

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research field should include more of theory generating and theory testing, and this is probably the challenge for future research on e-Services.

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