

E-services for Everyday Use: Is There a Need for Academic Multidisciplinary Research?

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Abstract: Research into the need for an academic unit for re-engineering public sector process coordination was carried out in 2007. Representatives from a total of twenty-nine different organisations in Finland took part in the interviews. The questions requested feedback about attitudes towards ICT strategies, public sector customers of public sector, the digital divide between employees and customers, future challenges and academic research themes of the knowledge society. The results confirmed that there is a need for a unit with a strong academic focus to coordinate the information society. The key element involves mutual research projects together with e-service developers (municipalities), service providers (non-profit sector and companies), both software and hardware companies and research organisations (universities and polytechnics).

Keywords: e-government, research, development, e-services, connected government, re-engineering process, knowledge society

1. Introduction

The Information Society or, in other words, the Knowledge Society is present in everyday life in Europe - it is ubiquitous. In the public sector, practical solutions, e-services, are connected to certain key moments in a person's life. The public sector gathers a lot of personal information, which is transferred and exploited as part of information society services. Therefore, data security must be at the highest level. Each inhabitant of a city will view the Information society as providing an opportunity to book a time for a health care appointment or search for a timetable on the Web. On the other hand, it may send a warning of traffic jams or an overdue book reminder from the library to a mobile phone. It is not just the various branches of the public sector that are responsible for e-services, but sometimes joint operation partners as well.

The terms eParticipation, eGovernance and eInclusion all refer to development, use and ability to implement public services online or through mobile devices as m-services (mobile services). Global information society development and development in Europe in particular have been rapid, also due to EU funding. Useful, experimental and new e-services have been introduced and obvious progress has been made both in terms of e-services and the amount that they are used. [1]

1.1. Motivation for research

The project culture of research and development activities within an organisation is an accepted way of building e-services and processes behind them. Although there are benefits such as specific resources for each project, there are some disadvantages.

Comments have been made about poor coordination of projects, strict time limits and the quality of ICT product testing, for example.

The lifecycle of any ICT product is also limited and the e-service offering should be guaranteed to customers. Customers are also becoming increasingly demanding and the public sector has been thought of as being the forerunner in many ways in terms of e-service development.

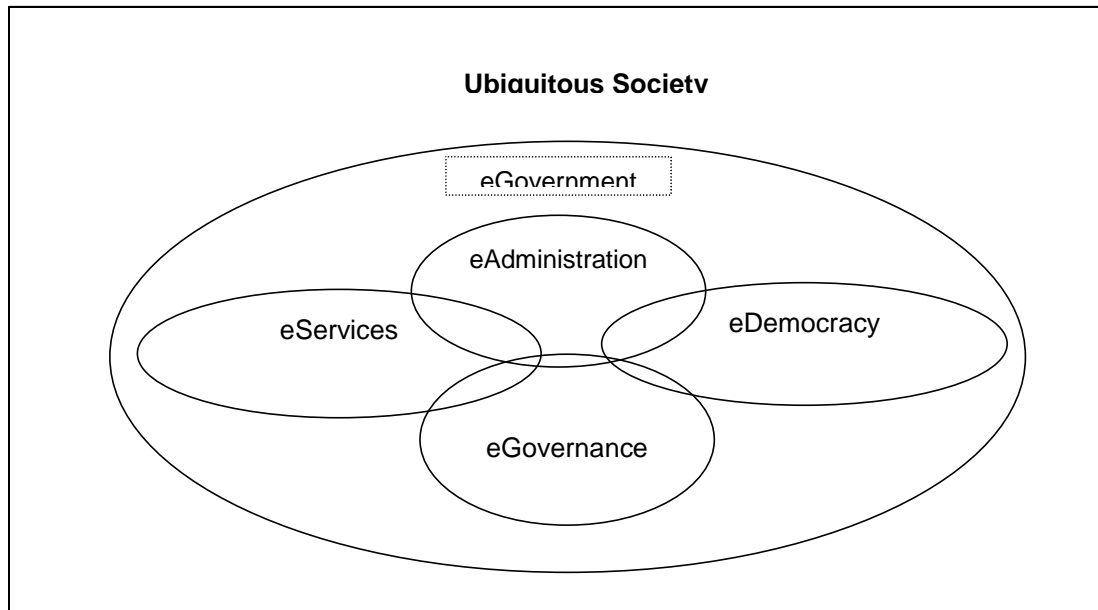


Figure 1. The terms and concepts of eGovernment according to Ari-Veikko Anttiroiko [2]

Projects need to fit into the processes of the organisation and the results of ICT projects will therefore not always appear to targeted and segmented customers as being an efficient e-service.

The public sector is also facing demographic changes internally. E-services are considered to be one way of solving the future supply of expertise and professional workforce in health care, education and other fields. At the same time, demand for public sector services will grow in parallel with the amount of senior citizens in Europe.

The nature of ICT projects, research and development activities and e-service processes is highly varied; expertise should be available for each area of activity, ICT hardware, ICT software, usability, security, project management, procurement etc.

The international research and comparisons show clearly the impact of economics of ICT sector [4] [5] [6] [7].

2. Objectives

The project aimed to establish the 'Unit for re-engineering public sector process coordination' and therefore had three main objectives:

1. To document what research has been already been carried out, why and with what results in terms of topics relating to the information or knowledge society in Finland and the main global trends;
2. To explain if there really is demand for coordination of information society research in Finland;
3. To create a model for re-engineering public sector process studies:
 - To assess the most appropriate and functional form for the 'Unit for re-engineering public sector process coordination';
 - To determine what form of organisation would be responsible for coordination;
 - To assess the impact of networking between academics, developers and business.

The aim is to summarise the most significant fragmented research. Although strategic work covers the nation as a whole, there has not been any coordination of research or education in this field. Implementation has also sometimes remained fragmented.

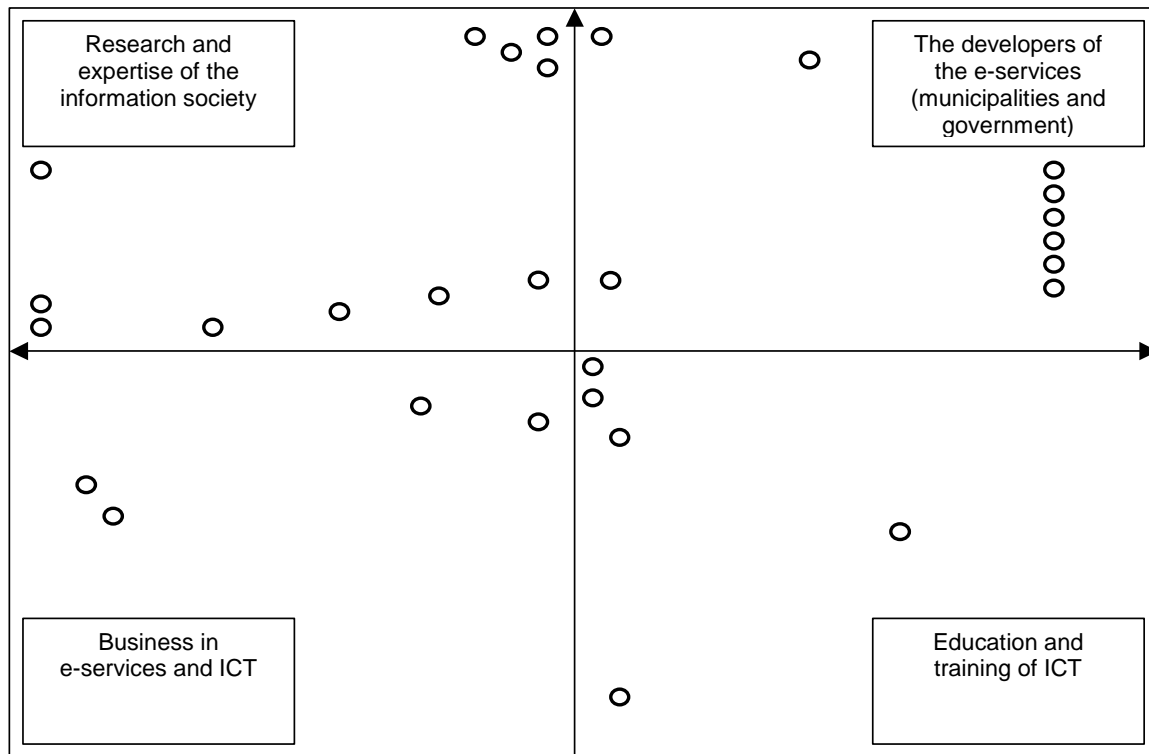


Figure 2. The interviewed organizations and their preferences (N=29)

3. Methodology

The study was a qualitative study, using a themed interview method with a questionnaire including eleven questions. A total of 29 organisations took part. Respondents were well aware of e-government or e-service matters within their organisations and also had a wider scope. Some interviews took the form of group interviews.

The organisations that took part were chosen to present different perspectives of the Knowledge Society. The organisations that were asked to participate included local universities and polytechnics, nationally important information society guidance organisations, such as the Finnish Communications Regulatory Authority which is also the administrator of the national domain, some companies representing the ICT business and, most importantly, the six biggest towns in Finland.

Topics discussed during the themed interview were:

1. to assess the impact of each organisation within the knowledge society;
2. to discuss the benefits of the organisation's ICT strategy or similar;
3. to analyse the background of ICT projects within the organisation;
4. to consider the role of customers of public sector e-services;
5. to assess opinions on the state of the knowledge society in Finland, such as academic and institutional research activities, development processes and education and training;
6. to analyse international statistics and comparisons of the e-government's state of readiness;
7. to describe the challenges and benefits of ICT and knowledge-based society within the organisation;
8. to advise on research topics or training that would be helpful in further ICT development activities.

The interviews lasted around 45 minutes to an hour on average and they were recorded. The transliterated interviews were analysed using the Atlas.ti program.

4. Results

The terminology used in the knowledge society and for its services is not quite clear. There are even cross-interpretations within similar types of organisations. The reason for this is the short history of ICT and the rapid development process. E-government consists of e-administration, e-services, e-democracy and e-governance [2]. There are concepts like connected government which discuss issues at an abstract level but do not cover the everyday concepts of e-service production [3].

4.1. Strategy

ICT Strategies have previously involved operational systems and have only recently been expanded to cover e-services. At the same time, the need for specific ICT strategies within organisations has decreased. E-services are sometimes included as objectives within the organisation's overall strategy but not with any specific definition of what to do, when and how. At the same time, the operational plan does not have the same notation and resources are easily lost. Interviewees mentioned nationwide governmental ICT strategies as being the main strategic pushers. It was clearly stated that a strategic perspective would be useful.

4.2. Customers

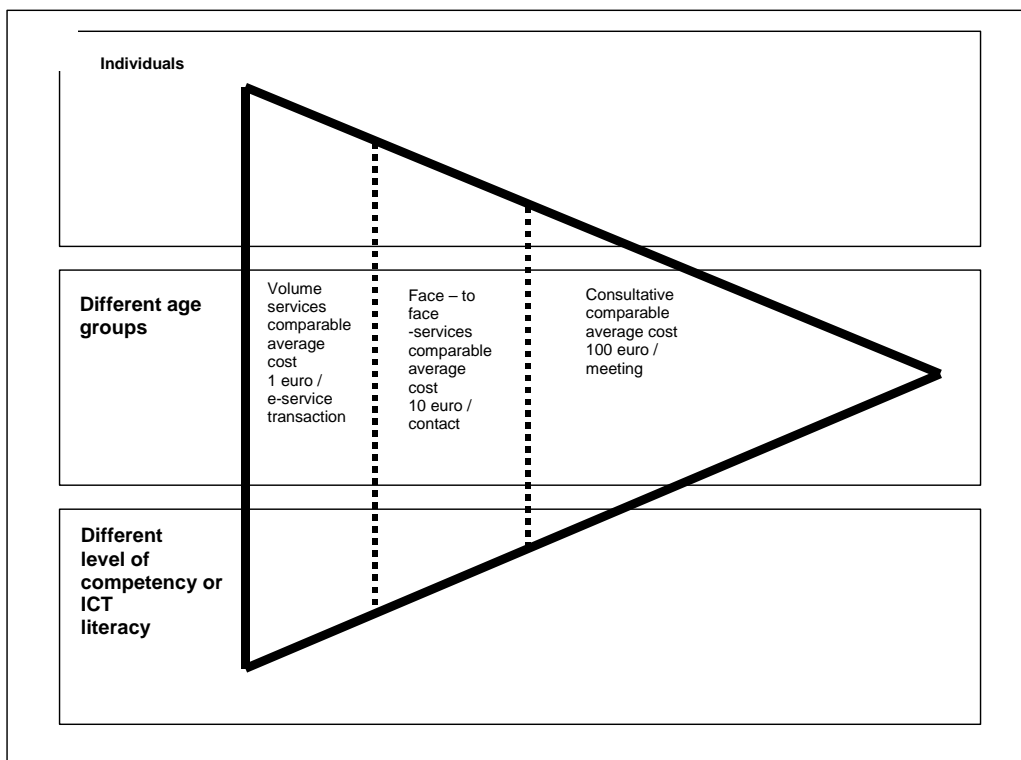


Figure 3. The customers of e-government according to the City of Espoo and the project KuntaIT

The public sector does not often have a customer relationship management (CRM) system to control the satisfaction of the target audience and the accuracy of the service system. This would not often be necessary, because the public sector can use official registers as part of their operations. Still, motivation for identification of customers would be:

- to offer more carefully segmented e-services;
- to pilot more advanced e-services, such as mobile and digital TV services to specific user groups;

- to identify the exact volume of users of each e-service;
- to define e-service processes.

Interviewees felt quite sure that the public sector and their customers meet in an e-service forum, but the accuracy of the meeting would be crucial from the connected government's point of view.

4.3. *Re-engineering process*

Knowledge and know-how in ICT and eGovernment and eServices were considered to be very good among officials in the organisations interviewed. Nearly all professions need some kind of ICT knowledge nowadays. One of the most significant and at the same time alarming results is that managers, directors and decision-makers who play a demanding role in the ICT sector are not considered capable of such decisions. The complex structure of cost effects and the benefits of e-services, ICT solutions and processes demand knowledge [8].

Research into ICT and knowledge-based society was not very well known and it was admitted that co-operation with the research organisation would be beneficial. That would facilitate the complicated decision-making within the public sector environment.

There is also clear need for the re-engineering process on the macro level. National and EU politics have encouraged co-operation between different types of organisations and a number of projects can be cited as examples. One result of the study was that interviewees mentioned the lack of long-term cooperation in projects.

5. Business Benefits

The unit for re-engineering public sector process coordination, which was the motivation for the research, would be a coordinator and the catalyst for the business motivation listed below. The main challenge is of course to reassure stakeholders of the benefits of co-operation.

The multi-organisational approach of the research results would ensure that all types of organisations are welcome to develop the public sector and e-government. It has been proved by both research and actual experience that the networked business model is the right one today. Municipalities try to find ways of serving their habitants efficiently and of monitoring quality and price. The business benefits to all stakeholders were included within the research objectives.

E-government and ICT solutions need knowledge of the substance, e.g. health sector and schools, in order to make their systems sustainable. Non-profit organisations produce a remarkable number of social, health care and school services for inhabitants of municipalities and have responsibility for information security. They often need to use information on individuals, which, at least in Finland, is exhaustive and up-to-date.

One example is pilot projects, which try a new concept with a pilot group to prove that ideas could work. Pilot projects are often too time-consuming to be run by local government, for example, but a network created from representatives from the public sector, the non-profit sector and companies would help get the pilot project up and running and, as well as providing the new e-service concept, would also offer business opportunities both for the non-profit organisation and those attending.

6. Conclusions

The strategic approach of organisations was often poor, although almost all of them had some kind of ICT strategy background. As a result of poor strategic guidance, knowledge-based re-engineering of public sector e-services is quite fragmented.

Marketing e-services to public sector customers, citizens and inhabitants of municipalities may be disregarded. Overall, customers are not targeted keenly and CRM systems would make e-services research and development in the public sector more efficient.

Research into the knowledge society is not very well known and is not used in municipalities. Most interviewees admitted that co-operation with research organisations would be profitable.

For demographic reasons, less staff will be able to provide public services in the near future, while at the same time there will be more and more elderly people using health services, for example. The future is challenging and the e-service infrastructure therefore needs to be developed very carefully.

Networking is important, at the business level and at inter-organisational level with enterprises and non-profit organisations. The new way of producing services through subcontracting requires flexibility from operations and produces customer trust. The study clearly showed that there is further work to be done following the results of the study. The research topics that were clearly identified included the full range of academic research from strictly ICT-oriented research to social science and humanities. The main finding was that multidisciplinary research is needed.

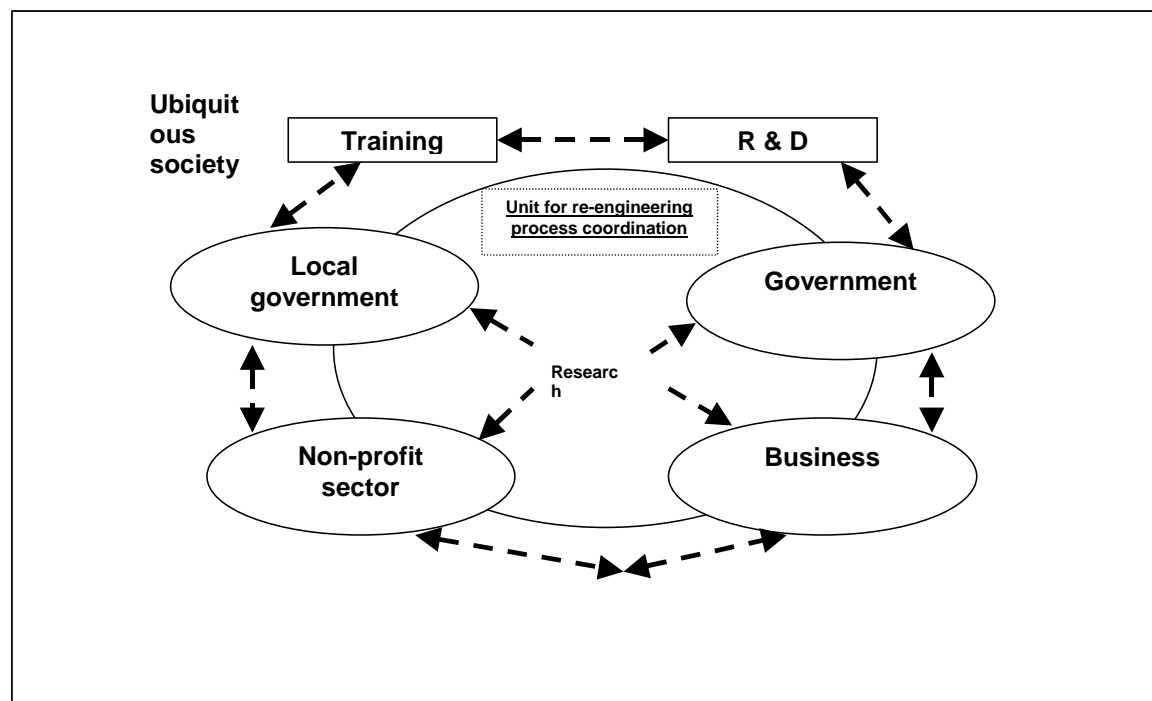


Figure 4. The impact of the re-engineering process research in the ubiquitous information society

The research themes for further research into the knowledge society are:

1. Developing universal scales and criteria for measuring the impact of ICT in society [9] [10] [11] [12];
2. Impact of research and development activities in the processes of e-government services;
3. Analysis of the processes of government and services;
4. Quality within e-government transactions;
5. Usability study within user segments;
6. Authentication of e-service users and processing of information;
7. Public Private Partnership;

8. Digital divide - demographic and social challenges of the knowledge-based society;
9. E-Democracy [13];
10. Social media in the knowledge society;
11. E-government mobile services.

Research into the knowledge society has mainly been comparative and academic research has been quite fragmented and spread according to the faculty's interests. The ICT industry and the public sector, which offers the e-services, in particular have also proved not to be keen to understand research results. This was a crucial finding from the state government project in Finland 'Information society – programme'. The academic paradigm of the information society is still developing and research topics are beginning to be recognised at the same time. The results follow the previous research of the similar objectives [14].

The recommendation of the study is to establish the 'Unit for re-engineering public sector process coordination' for e-government research and training combined with active networking activities between developers including local government and government projects.

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