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Swedish Business School

CFP Project

Supervisor: Andreas Ask

Examiner: Anders Avdic

Course Coordinator: Karin Hedström

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Prioritization of e-services in the decision-making process

Authors:

Hassan Rajaeian & Ngadhnjim Hyseni

Abstract

Today many central and local governments have as aim to improve services for their citizens by making them more convenient and effective, in offering them electronically. Often these services offered by government fail. There are many reasons why an e-service fails. One of these reasons has to do with decision making process in an organization. Decision making process has a strong impact in development of an e-service, from the very beginning of the idea to the implementation of the e-service. The research question discussed in this study is: How are e-services prioritized in decisions-making process in Kumla municipality?

The aim of the study is to understand prioritization of e-services in decision making process in a small Swedish municipality. To find out who is involved in this process and what requirements and needs are taken into consideration when these decisions are taken?

This paper is based on a case study where researchers have studied the decision making process in developing e-services in a small Swedish municipality.

This paper shows that prioritization of e-services is determinant factor in e-service development, since decisions taken regarding these e-services affect the whole process from the very beginning idea to the launch of an e-service.

Keywords: *Decision-making process, prioritization, e-services, e-government.*

1. Introduction

Today many central and local governments have as aim to improve services for their citizens by making them more convenient and effective. To make these services more convenient for citizens they are being offered electronically. Information and Communication Technology (ICT) is being used more and more by governments to provide services for their citizens (Georgescu, 2007). Being aware of the benefits that e-government brings to modern societies a coherent strategy is vital for a successful implementation of e-government projects. (Reffat, 2006)

Using the information and communication technology to provide services for citizens means reformation of public sector, and this reformation is not always easy. ‘‘In order to implement a successful e-Government program, policymakers need to develop specific and reasonably attainable goals and understand what resources are available to achieve those goals. Only then will they be able to formulate a plan that can be implemented in full, rather than being cut short before any gains are realized due to lack of resources.’’ (Reffat, 2006, p. 9).

According to Georgescu (2007) it requires also a well-developed strategy and complete and clear vision for e-government projects. In order to develop a successful e-government a number of conditions are necessary: **Leadership**, who has a strategic planning and clear vision on how to develop these services for the citizens and also to take right decisions about

these e-services which are citizen-oriented and citizens would benefit most from it; **Technology readiness**, to have appropriate technology which would make possible to adopt services; **Trust and security**, to provide secure systems where citizens are safe to use services without being afraid of any fraud or misuse. Many researches show an increasing confidence in electronic services and maturity and growing numbers of internet users facilitate the adoption of electronic government. This also makes it imperative to add another layer of data security to ensure safety of data.; **Privacy**, to secure that citizens privacy would be safe and their data are going to be use in appropriate way, all these issues must be regulated by law; **Business environment**, institutional and business infrastructure must be ready in order to have interactions between institutions businesses and citizens; **Human capital**, citizens must be aware and ready for the services their government provides, they must have the knowledge and have the appropriate technology to use these services; **Cost and Time**, are very important factors in any project in e-government. If costs are very high and period of time to implement a project is inappropriate than there is high risk that implementation of the project can fail.

As mentioned above there are some conditions one government should have in order to develop successful e-government such as leadership, technology, security, legal infrastructure, although in this paper we focus on decision-making process while developing new e-services in Kumla municipality. Decision-making process plays a very important role in adopting successful e-government, because there are many factors in this very early stage which determines if a project is going to succeed or fail. Leadership is one of the factors that has direct effect on decision-making process since here is where everything starts and how decision-making process will be. Leadership is the one who take important decisions about the projects from the beginning idea up to the final process. In this category are included: politicians, heads of department's managers and all persons who have competences to take decisions about e-services. Second is Organizational Structure, this category determines how the flow of the process will go during the development of an e-service, how competences and duties are regulated in an organization in order to avoid conflicts of interests between departments, or between political and managerial interests. Third is process management where the most of the work is done. This is the process where pretty much determines success of the development of an e-service after taken decisions from politicians. In this process managerial and professional skills are required.

Identifying goals of the organization and requirements, for developing an e-service helps us understand the process, but according to Berander (2004), there are more candidate requirements that it is possible to be realized. So prioritization of the requirements is necessary to develop a project. Therefore the focus of our study will be in the prioritization of the selection of e-services in Kumla municipality.

To understand the prioritization of e-services in decision-making process in Municipality of Kumla we have interviewed some of the key persons which are in a position to decide what e-services are going to be developed, when, and whether or not are these services going to be developed. Therefore our research question follows: How are e-services prioritized in decision making process in Kumla municipality?

2. Theory

In this section we present a model to explain decision-making process in prioritizing e-services. We will present the model which we considered important in development of e-government projects. The Georgescu model explains the importance of three pillars in decision making process, in prioritizing of e-services and the necessity to go beyond identifying requirements for developing a project, and prioritization of these requirements in accordance with user needs and organizations goals helps in achieving expected results. We decided to use Georgescu's model since this model is more adequate to help us to study decision-making process in municipality of Kumla.

According to Georgescu (2007), effective E-Governance enables decision-making as well as decision follow-through across three primary components:

- 1. Leadership:** The roles and responsibilities of the organization's appointed officials and senior executive management that shape the organization's strategic vision, culture, decision-making processes, and plan for action.
- 2. Organizational Structure:** The structure and form of organizational relationships that support decision-making, foster appropriate culture, and build essential skills in order to marshal resources to make things happen.
- 3. Process Management:** The management of how organizations serve their customers and measure success or failure, including leadership and decision-making processes, as well as changes to operational processes required to support new E-Government capabilities.

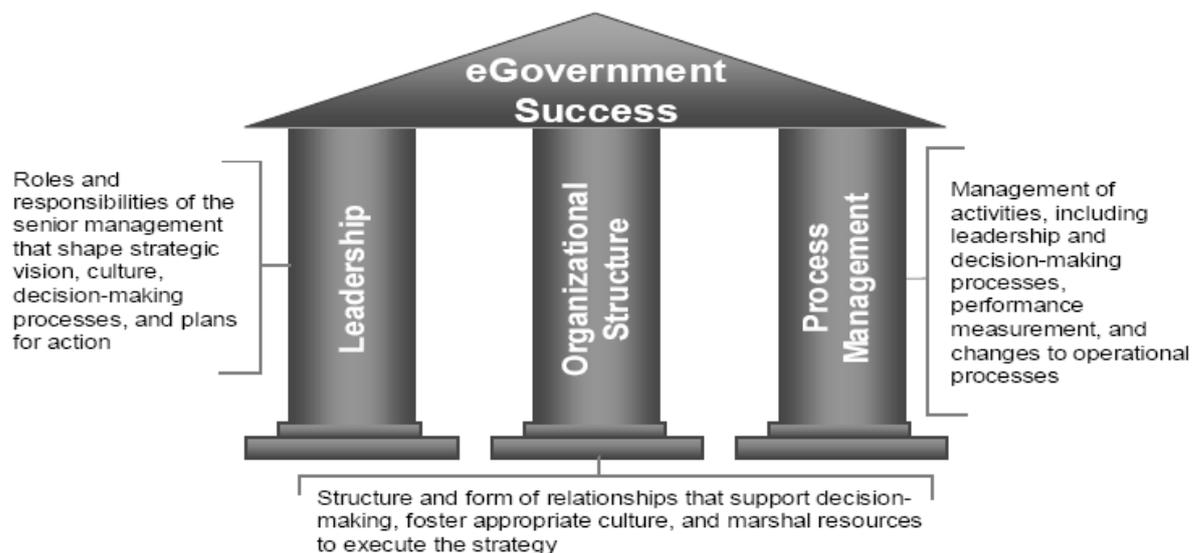


Figure 1 The Three Pillars of E-Government (Georgescu, 2007).

3. Method

We have carried out a case study with interviews as data collecting method. According to (Yin, 2003, p13) a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. (Oats, 2006) says: ‘‘A case study focuses on one instance of the ‘‘thing’’ that is to be investigated: an organization, a department, an information system, a discussion forum, a system developer, a development project, a decision, and so on’’. We use this qualitative research method to examine the real-life process of e-government and hope it provides the basis for the extension of methods and ideas.

The case is the decision making process in Kumla municipality in developing of e-services from the organizational perspective of E-government in Kumla. The reason we did this study was to understand decision-making process in Kumla municipality. The research question discussed in this study is: How are e-services prioritized in decision-making process in Kumla municipality?

In the beginning there was arranged a meeting with IT manager where he described the situation in the Kumla municipality and the problems they had. He also informed us about the people who are responsible for e-services in Kumla Municipality. Later than we decided whom to interview and we arranged interviews with those key persons that were responsible for these projects of the municipality, such as: executive officer, head of administration, IT manager and the head of the department of building permits. There were conducted semi structured interviews. In the time of interview we asked our 17 questions that we prepared according to our designed plan that could give us the best understanding of the decision making procedures. Interviews were recorded and short notes were taken at the same time in order to prevent from misunderstanding and get the best information possible. Later, interviews were transcribed and validated the data that we gathered with the interviewees by sending to them the exact transcribes in form of e-mail. Next, the data was analyzed by putting them into main identified categories according to Georgescu model and then we present the results and analysis in the next two sections of this paper. In the below analysis the interviews gave a rich picture of the process of decision making in Kumla municipality in the adoption to e-government.

Literature Review

During literature study we have found 21 papers from databases such Google scholar search engine and Elin@Örebro. Not all the papers were used in our study. Some of the papers were used only for the purpose to deepen the knowledge of decision-making process. These sources of information databases were chosen due to their reputation and usage. Then the data collection systematized by reading the abstract of each paper from different information sources that we found. The sampling frame we used are from different keywords to find the papers, those include: e-government, e-services, prioritization, adoption, public sector, decision making. We used these terms with combination like: "Decision making" + "e-government", "adoption" + "decision making".

4.Results

The results here presented are based on our study, where we investigate process of the prioritization in the selection of e-services Kumla Municipality. Kumla is a good example for this project since there are populated requests for the services from the citizens coming to the municipality and the people who request these services are usually among young people who their computer literacy is sufficient for use of e-services. Kumla is a growing city in which there is a high demand from the citizens to buy a plot of land and build a house on it. Kumla municipality's target groups for e-services are between the ages of 25-40 years old, which means that this category of people are most likely to have computer knowledge and skills in order to use internet as the head of Information Technology (IT) department Rene Strobl indicated. Therefore the e-services have become a very natural way for municipality to ensure that the residents can easily perform their services in Kumla municipality.

As mentioned by the executive officer of the municipality, they want to maintain a modern municipality that develops services like, Tax Agency and Traffic Department have. She states that they have resources and capabilities to develop them.

All of the four interviewees at Kumla municipality claim that it is essential for them to look at the different benefits that one specific e-service bring to the municipality when they decide to introduce a new e-service. Some of the benefits from both citizen and government stakeholder perspective are presented in table 1.

Table 1 *Benefits from E-government*

	Benefits
<i>Government Stakeholder Perspective</i>	Democracy Efficiency Environment Time and Cost
<i>Citizen Stakeholder Perspective</i>	Convenience Time and Cost

4.1 Decision hierarchy in Kumla municipality

There are different levels of decision making process about e-services at Kumla municipality. At the first or highest level are politicians who decide if there are going to be developed any service, about the budget for e-services and so on. They have some plans called e-plans which give the direction to different departments what e-services and in what quantity to provide. They also impose some requirements to be maintained. Then it is executive officer who is responsible for all departments in Kumla municipality, and at last are heads of departments who comes with ideas and requirements to develop new e-services.

4.2 Factors that affect prioritization of e-services in Kumla

Here we present all the factors that affect prioritization of e-services in Kumla municipality:

Political Plans

We decided to put as the first factor Political Decisions which comes from above as orders and as they call e-plans, because they shape the general structure of e-services from the very beginning stage and narrow freedom of departments to design e-services independently.

Efficiency and Effectiveness

Efficiency and Effectiveness are next factors that are very important in prioritization of e-services in Kumla municipality. According to executive officer and head of building permit department possibility to offer services at any time of the day anywhere is the most important reason for developing these services. But for head of administration and IT manager less work for Kumla staff and faster service are the most important factors.

Accessibility and Quality of Service

Accessibility and quality of service are also factors that affect prioritization of e-services. According to executive officer of Kumla municipality they are maintaining accessibility as one important factor for designing their e-services in order to be able to use e-services citizens with disabilities. The next issue which she described is that they maintain a good quality of the services that they design to be used by citizens. According to head of administration they have as aim to develop services with good design and good performance so the citizens would be satisfied when they use them.

Security and Privacy

For head of administration they consider security issue as a primary factor when they are designing e-services. The Privacy factor is very important for their citizens as they feedback it to the municipality, says executive officer.

Cost and Time

Cost and time are important factors for Kumla municipality since these two factors shape the design of an e-service. According to IT manager if a project for developing an e-service lasts more than two years than they probably are not going to develop that e-service. The cost factor is important for all, from the politicians to the last employee involved in the project. Allocation of the budget for a particular e-service limits the freedom to extend new ideas.

Volume of Usage

The head of administration states the municipality will monitor how a service often used by the citizens so they will realize the real demand for that particular service to be designed online.

4.3 Local decision on e-services:

There are different requirements for every specific electronic services and basically it comes down to each head of departments to decide to apply those requirements, so each department need to do preparations in order to make one e-service function within the scope of technology that the municipality have. The municipality is able to perform an efficient communication through the website. They have not normally any disagreement in the designing phase of one e-service but in the case of popping up any disagreement they discuss it in the group to get a consensus. They have discussions on the issues that make them concurrent on a particular decision so in that way they don't have any disagreement. They will use the requirements that are ready for one e-service and prioritize it for introducing new e-service as the head of administration stated.

4.4 The involvement of citizens in the decision making process:

The involvement of citizens in the process of prioritization of e-services is in form of:

- 1- Taking the comments and suggestions from the citizens after implementing the e-services made on the municipality's website.
- 2- Number of clicks about different issues presented in their website, are counted. And this is an assumption that citizens are more interested in one particular issue.

4.5 The types of services in Kumla municipality:

There are two e-services offered in Kumla municipality right now and some others in planning stage.

These are two services that are being offered through municipality's website:

- Building permit: When citizens need to build a house in Kumla they will apply electronically for building permit.
- Child care: There are many families with small children and those families can apply online for child care.

5. Analysis

One of the pillars of a successful e-government is the **Leadership** in which that enables the decision-making process through e-government. The chart and the role of the responsibilities in Kumla municipality organization and their strategic plans and decision making process are as follow:

First of all, there are different levels when in leadership in the aspect of decision making on e-services. On the first level there are political level that followed by Public administration level and executive officer then civil servants like IT manager and Director of administration in Kumla municipality. This is political level that they decide about having the generality of the services in Swedish called “kommunfullmäktige”. They will command to municipalities to implement some general requirements in the e-services like: the municipality will be available 7/24 for the citizens. Then there is the department that allocate budgets in the municipality for the decisional services called in Swedish “Kommunstyrelsen” and the next level is each department (“verksamhet” as they call it in swedish) in Kumla municipality where they take the details of the e-services that they need to design and provide services according to the given needs and local requirements. At this level is the task of civil servants that they will find various ways to do the demanded tasks, because we have different requirements for every specific e-service and basically it comes down to each head of department to decide to apply some specific requirements, so each department need to do a lot of work in order to prepare the e-service and make it able to function within the scope of technologies that the municipality have available. The Municipality has E-plans that will shape their management on implementing and managing the e-services so they will be able to make statistics on the result of decision and monitor it according to the plan. For example some of these plans are: The municipality will become a modern and online municipality, environmental friendly, reduce time and cost and to improve quality of services to citizens.

One of the problems is their decision-making. Sometimes these ready plans are in conflict with their objectives in Kumla so this is the time that they need to prioritize them. For example there was a goal from politicians to provide 10 e-services per year to citizens in Kumla and they provided six e-services last year which shows that they diverge from what it was planned to be.

Second problem in the decision making is that they don't have clear objective for every category of citizens so they perform the commands from above (politicians) and there is no negotiation about them and this will mislead to inappropriate type of services for every category of citizens.

The second pillar of a successful government is **Organizational Structure** that it defines the structure and form of organizational relationships and skills that support decision-making in Kumla municipality. The managers of different departments in Kumla municipality regularly have planned discussions about e-services in group and see where they have to add anything on implementation of these e-services. They work concurrently and talk about implemented e-

services and those who need to implement, based on technology the municipality possess, so in that way the cooperation is quite good. The IT department of Kumla municipality is provided with the technology needed, such as sonic software and an electronic documentation system, so that they are able to perform an efficient communication digitally and through the website and needed programs that made their communication easy. The staff mentioned that they don't have any disagreement on decision making about e-services but the possible disagreement may pop up when the actual work is running. In the case of popping up any disagreement they discuss it in the group to get a consensus.

The third pillar in a successful e-government is **Process Management**. The management of how Kumla municipality give services to citizens and how they measure success or failure on each e-service in the decision-making processes scope and the ways that changes to new operational processes.

All four interviewees claim that citizens are always in the center. Head of administration and IT manager say that they want to develop "real e-services" as they call them, which means automated services or Horizontal Integration from "Four Stage Model" of (Layne and Lee, 2001), where the citizen could perform one stop shopping. Can see if his/her case has started being handled? Who is handling in it? And if is it ready for the decision?

Executive officer says that there are three ways that Kumla municipality provides services to Kumla citizens. The first way of giving these services is traditional way where citizens have to be physically at municipality's building to get services. The second way is to provide e-services available for the citizens anytime and anywhere through a computer. And the third way is providing services available on the phone. They maintain always in their services the accessibility and a good quality of the service to citizens.

Involvement of citizens in process of development of an e-service is not direct but it is in form of the comments and suggestions after implementing the e-services. There has not been any survey, questionnaire or interview with citizens to ask them about requirements and needs they have, but they have taken into consideration suggestions and comments done from citizens on municipality's website and based on the number of clicks in different services.

There are different e-services that Kumla municipality provides to their citizens. One of them is building permit. This service is needed when citizens want to build a house in Kumla. Next one is e-service for child care. In Kumla there are many families with small children and those families are often in need for child care so they have a chance to apply online for it.

The reason they decide to develop any particular e-service depends on some factors like: 1.The e-service must be often used 2.The e-service must make the handling of service easier for Kumla staff. 3.The e-service makes the service more efficient for Kumla staff i.e. it reduces the staff's working hour and less cost. 4.If there are many citizens that want e-services then the municipality can win time and money in implementing them, they will develop that e-service. Kumla is a growing city and it is aimed to reach 25,000 inhabitants by 2020. Major group of age moving to Kumla municipality are young couples or families between 25-40, so according to executive officer and head of administration this is their target

group of people between 25 and 40 they want to develop e-services based on their requirements.

In the process of decision making, Kumla municipality is going to introduce a system where different categories of citizens have the possibility to suggest on implemented e-services to improve the quality of these service according to citizen's needs. According to head of administration if the demand for a particular e-service is very high from citizen side then it is possible that e-service is going to be developed even it was not on the plans of the municipality. So in some extreme cases involvement of citizens is direct.

The first problem is related to the technology that Kumla municipality has for implementing the e-services, as it makes the e-services delayed for a long time.

The second problem is that Kumla municipality doesn't take in consideration citizen's needs until it becomes a problem.

6. Discussion

The results from the study showed that when it comes to e-government projects decisions are taken from different positions in Kumla municipality. Even though ideas and plans comes from below, from different departments of the municipality and these ideas are pushed forward by discussion between heads of departments and executive officer, decisions from politicians may affect development of these services. It is politicians who decide about the budget for these services so sometimes interests of politicians are not consistent with the interests of specific departments. Our results show that decision-making process is very complicated process with different stakeholders involved with different goals and interests. What makes it complicated in the process of development of e-services is multiple set of decisions in different levels, from departments to politicians and sometimes we see the conflict of these goals and interests between these stakeholders, and at this point there are factors from organization perspective which are prioritized and others are left aside.

This study gives a rich picture of the decision-making process in a small municipality like Kumla. It also shows the main reasons behind these decisions. This research can be used as help in analyzing prioritization of e-services in decision-making process in other municipalities though it cannot be generalized since the structure of municipalities may differ from this in Kumla.

Since we didn't involve citizen opinions in this study it might lack of accurate picture of what we have come to conclusions about involvement of demand side in the decision-making process in Kumla municipality. An extensive study is needed to include citizens and businesses perspective in order to know requirements and demands from these sides.

There has been very little research in decision making process regarding prioritization of e-services. One of the studies that discuss prioritization of the requirements is a study done by (Lambrinos, 2008) done in Örebro municipality. Unlike his study where he studies the process

of prioritization of requirements of only one e-service and is done in a large municipality, our study deals with prioritization of e-services in general, in a small municipality such as Kumla.

7. Conclusion

To develop a successful e-services there are many factors that needs to have in consideration and one of them and very important is decision-making process. The results from the study showed that when it comes to e-government projects decisions are taken from different positions in Kumla municipality. Even though ideas and plans comes from below, from different departments of the municipality and these ideas are pushed forward by discussion between heads of departments and executive officer, decisions from politicians sometimes may affect development of these services. It is politicians who decide about the budget for these services so sometimes interests of politicians are not consistent with the interests of specific departments. It might look at the first sight that administration and departments have free hands to develop e-services independently since they are the one who comes with the ideas and plans what services to develop, but looking more deeply you can see that politicians decide about the budget for e-services, number of e-services to be developed and the time frame for e-services to be developed. We consider that influence in these issues from political side affect the development of e-services drastically which may lead to many e-service failure.

Results show here that some of the reasons for the decisions made in Kumla municipality are: convenience, efficiency, time and cost, and being modern, but all of these came not from the demand side but supply.

In this study we have also funded out that decision-making process determines if there are being developed right e-services in the right way and time with the right price. From this study we can conclude that factors like: convenience, efficiency, cost and time, are the main factors which determines the prioritization of an e-service.

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Appendix A:

Questions of interview for the prioritization of e-services in municipality of Kumla

1. How are decisions taken in your organization?
2. Who are the participants and stakeholders in the decision making process in Kumla Municipality?
3. How did you come to the decision to adopt these particular e-services?
4. Why are these services important for Kumla municipality?
5. What is the cooperation with other employees in Kumla municipality about e-services?
6. How was these e-services prioritized? What factors are most important before a decision made in the municipality and what factors are not?
7. How are citizen's needs and requirements provided in adoption of these e-services?
8. How the citizens are involved in the process? Are they?
9. On what aspect will citizens most benefit from these e-services?
10. How the cost does affected adoption of these e-services?
11. Information is a valuable organizational resource. What is the role of Information management in the decision making process? Have you find it effective to have a good information management in decision making process? For example: Skilled staff in library or database storages.
12. What is the role of the Infrastructure or technical facilities that required for e-services? How important you find it?

13. What is the role of Project management in the decision making process? Does it play an important role? The ability, to plan, organize, estimate and allocate resources, negotiate, track progress, measure results, troubleshoot and most importantly to communicate.

14. Are the decisions having a clear objective or there are multiple objectives?

15. Is the nature of the problem agreed? What will happen if the solution is difficult to find?

16. The planning and implementation of e-government, as it continues to develop around the World, learn the e-Gov. by its practices. What do you think the Future of decision making could

be for e-government?

17. Do you have anything to add or say?