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# Public e-services for agency efficiency and citizen benefit – Findings from a stakeholder centred analysis

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## Abstract

*The main goals of e-government are to increase agency efficiency and offer benefits to citizens. These goals have often been addressed as two interplaying outcomes of public e-service development, which are possible to achieve in parallel. This article shows that the two frequently applied stakeholders of e-government (agencies and citizens) are much too extensive and heterogeneous in order to be meaningfully addressed in public e-service conceptualization and development. We conduct a stakeholder centred analysis of a public e-service development and implementation process in order to identify stakeholder groups and discuss how they differ in their perceptions and, consequently, also in their feelings of relevance and need related to the e-service. By adopting a multi-faceted perspective on stakeholders, public e-service development can be analysed and understood in a way that takes several stakeholder groups into account. Our study contributes with deeper insights about a situation where stakeholder salience changes over time, while some stakeholder groups have low salience during the entire process. The result of conducting a stakeholder centred analysis is that we, by visualizing the stakeholder groups' differences, are better prepared to meet and combine different needs related to a planned e-service. Thus, we argue that a stakeholder centred analysis of expectations and opinions concerning the e-service help to develop e-services possible to succeed in offering both external service and internal efficiency.*

*Keywords: Public e-services, e-government, stakeholder groups, stakeholder salience*

# 1 INTRODUCTION

This article takes its point of departure in the view of public e-services being developed in order to increase agency efficiency and offer benefits to citizens in terms of easier access, more information or higher quality in their agency interactions. These main goals of e-government have often been addressed as two interplaying outcomes of public e-service development, which are possible to achieve in parallel. We question this view as being too simplified and to some extent naïve. Many e-government studies emphasize that the stakeholders present in e-government are defined as a government agency and a citizen interacting through, for example an Internet-based public e-service (e.g. Flak et al., 2007; Yildiz, 2007; Grönlund & Horan, 2005). These two stakeholders are often taken for granted in research and in practice; the agency offers a communication medium to citizens who act as private persons towards the agency.

In this article, we conduct a stakeholder centred analysis of empirical data and findings from a qualitative case study, in order to illustrate that this one-to-one relationship between government and citizen is too simplified in order to understand public e-services. Stakeholders can have different roles and belong to stakeholder groups; a certain profession for example. We agree with scholars, such as Tranmüller and Wimmer (2000) and Flak et al. (2007), who state that e-government involves many different stakeholder groups that need to be considered when developing e-services. Janssen and Cresswell (2005), Schneider (2002) and Kamal et al. (2011) also highlight that e-government initiatives involve many different stakeholders situated both inside and outside the organization in focus. Thus, we can distinguish between internal and external stakeholders as well as direct and indirect stakeholders (cf. also Gelders et al., 2008).

In the present case, further described below, we study the development of a public e-service for handling student anonymity during written exams at a Swedish university. The e-service is developed and offered by the university, which has the agency role in this case. The e-service has several distinct user groups, both internal users working at the agency (teachers, administrators, and exam supervisors) and external users acting in the role of citizens (students). This diversity in user roles implies that users of public e-services are a heterogeneous group. We therefore argue that stakeholder theory (e.g. Freeman, 1984), often used when describing and analysing private firms, can be fruitful to use in the e-government context as well. This is supported by several scholars who have applied stakeholder theory in e-government (e.g. Scholl, 2001; Pardo and Scholl, 2002; Chan et al., 2003; Carter and Bélanger, 2005; Flak and Rose, 2005; Flak and Nordheim, 2006; Sæbø et al., 2011).

Our analysis is based on two theoretical models. We use the typology by Mitchell et al. (1997), introduced in next section, which explains how stakeholders' salience depends on their differing degree of power, legitimacy and urgency. By using this typology we are able to analyse e-government stakeholders' salience with our case as a point of departure. Our second theoretical analysis model is a conceptualization of e-government entities by Sæbø et al. (2011), who further developed the entities from Flak et al. (2007). The e-government entities model, introduced in next section, is proposed as a way to contextualize stakeholders in e-government in a more detailed way than just distinguishing between government and citizens (Sæbø et al., 2011). Thus, by applying the e-government entities model we get a more fine-grained conceptualization of e-government stakeholders. Sæbø et al. (ibid.) have developed the entities from a national government agency perspective. In their article, Sæbø et al. (ibid.) unpack the concept of stakeholder salience, and we relate to this on-going discussion by elaborating on how this conceptualization informs our case when we apply the concepts on a local level of e-government. We discuss how identified stakeholders differ in opinions and expectations regarding a public e-service, as well as in what way their activities are affected by the e-service, and relate these findings to the notion of stakeholder salience. We argue that this conceptualisation can be useful in the future development of more comprehensive and successful e-services. Such e-services might succeed to balance the two main e-government objectives; reaching both agency efficiency and citizen benefits.

The research question we focus on in this article is what insights we can gain from identifying involved e-government stakeholders in more detail than just distinguishing between agencies and citizens. We use empirical illustrations from the studied e-service development and implementation process in order to identify stakeholder groups and to discuss how they differ in their perceptions and consequently also in their feelings of relevance and need related to the e-service. Following this line of argument, the purpose of the article is to show that the two most frequently used stakeholders of e-government (agencies and citizens) are much too extensive and heterogeneous to address, in order to reach the commonly anticipated win-win situation, with increased quality for citizens and increased efficiency for agencies. By presenting this diversity in opinions we add further understanding to the notion of e-services as being more or less beneficial for certain stakeholders. By adopting a multi-faceted perspective on stakeholders, public e-service development can be analysed and understood in a way that takes several stakeholder groups into account. Our approach is supported by studies of Flak and Nordheim (2006) and Sæbø et al. (2011) which indicate that few e-government studies so far have explicitly addressed the stakeholder complexity and its inherent challenges.

After this introduction, the article is organized in the following way: In Section Two we discuss the theoretical concept of stakeholders in e-government. The case is described in Section Three followed by the research design in Section Four. The empirical findings from our case study are presented in Section Five. In Section Six the findings are analysed and discussed. The article is concluded in Section Seven, in which we also make some statements about the need for further research efforts in this area.

# 2 APPLYING THE STAKEHOLDER CONCEPT ON E-GOVERNMENT

We use the stakeholder concept in order to discuss different user groups and other actor groups related to the studied public e-service. The stakeholder concept was used by Freeman (1984) in his seminal work with the definition of *"any group or individual who can affect or is affected by the achievement of the organization's objectives"* (ibid., p. 46). The stakeholder concept was originally introduced and used in the context of a private firm. There are, however, several scholars who have discussed how the stakeholder concept can be applied to public contexts as well (e.g. Scholl, 2001; Pardo and Scholl, 2002; Chan et al., 2003; Carter and Bélanger, 2005; Flak and Rose, 2005; Flak and Nordheim, 2006; Sæbø et al., 2011). Scholl (2001) presents a literature review on how the stakeholder concept has been transferred from the private to the public context and used in e-government settings. He distinguishes both benefits and limitations, but concludes that even though the stakeholder theory origins from the private sector the stakeholder concept can be beneficial to use in e-government settings as well (ibid.). Flak and Rose (2005) and Sæbø et al. (2011) argue that applying stakeholder theory in e-government research could increase a critical stance. By dividing the actor roles into several stakeholders the understanding of citizen and government relations can be deeper but also questioned. Flak and Rose (2005) also argue that stakeholder theory lacks theorization of the relationship between technology and stakeholders, which is important in order to understand e-government.

An important argument linked to the need to study stakeholders more thoroughly is provided by Sæbø et al. (2011, p. 42) who claim that, still, e-government development initiatives are often characterized by *"a techno-centric approach with minimal citizen involvement"*. Much effort is still spent on developing sophisticated systems and increasing the number of e-services provided to citizens. There is a need to pay attention to the reasons why the intended users would adopt such services and interact with the government (Carter and Bélanger, 2005; Sæbø et al., 2011). As stated in the introduction of this article we can distinguish between internal and external stakeholders as well as direct and indirect stakeholders (cf. also Gelders et al., 2008). All stakeholders possess knowledge and expertise that can provide valuable input when developing e-services (Kamal et al., 2011). Within government, for example, we have administrators and politicians that can influence e-government development. In order to get a more nuanced view of stakeholders and how they can influence and participate in e-government development we use the stakeholder typology by Mitchell et al. (1997) and the e-

government entities model by Sæbø et al. (2011) as analytical lenses. Both these theoretical models have stakeholder theory as a point of departure.

Mitchell et al. (1997) argue that a stakeholder possesses one or several of the attributes power, legitimacy and urgency. In their study, Mitchell et al. (ibid.) develop a typology of: 1) stakeholders who have power to influence the firm, 2) the legitimacy of the stakeholder's relationship with the firm, and 3) urgency of the stakeholder's claim on the firm. These three attributes are intertwined. Mitchell et al. (ibid., pp. 869-870) argue that *"power gains authority through legitimacy, and it gains exercise through urgency [...] legitimacy gains rights through power and voice through urgency"*. Mitchell et al. (ibid.) define the concept of power based on Salancik and Pfeffer (1974, p. 3) as *"… the ability of those who possess power to bring about the outcomes they desire"*. Their definition of legitimacy is traced back to Suchman (1995, p. 574) who claims that it is *"a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, beliefs and definitions"*. Urgency is defined as *"the degree to which stakeholder claims call for immediate attention"* (Mitchell et al., 1997, p. 867). Time sensitivity and criticality (how important the issue is for the stakeholder) are two major dimensions of urgency (ibid.).

Chan et al. (2003) discuss how stakeholder theory can be used in order to manage stakeholder relations in e-government projects. They identify a lack of literature within the e-government field concerning strategic management of stakeholder relations, even though several scholars highlight this as an important issue to handle in order to reach success in e-government projects. This is also in line with Flak et al. (2003) who call for more research on how stakeholder theory can be adapted to the e-government field. This is taken a step further by Flak and Rose (2005) who propose a research agenda on stakeholder theory in e-government research, where for example issues such as external and internal stakeholders' legitimacy as well as government agencies' ethical duty to respect different stakeholders' interests are put forth. These issues are further developed by Sæbø et al.'s (2011).

Sæbø et al.'s (2011) e-government entities model is based on Flak et al. (2007, p. 18 f.) and elements from Genre Theory (introduced by Yates and Orlikowski, 1992; refined by Yates and Orlikowski, 2002) and Stakeholder Theory (e.g. Freeman, 1984; and e-government applications such as Scholl, 2001; Flak and Nordheim, 2006). Stakeholder salience is an important aspect of the latter, discussed by Mitchell et al. (1997). In an e-government context the attributes of stakeholders' power, legitimacy, and urgency are also present and applied by, e.g. Scholl (2004), Flak et al. (2008) and Sæbø et al. (2011). The e-government entities model is summarized in Table 1, below.

**Table 1. Entities of e-government (a summary based on: Sæbø et al., 2011, p. 419)**

| Basic entity | Entity sub categories | Description | Interest |
|---|---|---|---|
| Government | Politician | Publicly elected decision and policy maker. | Develop and implement own policies. Ensure re-election. |
| | Administrator | Middle and higher level salaried career employees executing politicians' policies. | Ensure policy implementation effectively and efficiently. |
| | Service Provider | Lower level salaried career employees carrying out day to day government jobs directly[1] or indirectly interacting with citizens. | Ensure meaningful and secure work situation. Provide good service quality. |
| Citizen | Consumer | Uses services offered by the government. | Easy access to information and services. |
| | Activist | Citizens involved in efforts to execute specific government policies and decisions through civil action often individually or in groups. | Impact policy development and public decision making processes. |
| Business | Vendor | Companies mostly private who provide systems (software, hardware, infrastructure) and/or consulting services in e- government | A commercial interest and influence in different areas (e.g. standards and strategy). |

[1] We interpret this category as a typical "street-level bureaucrat" – a person (a role) that is employed to implement policies and exercise a large amount of influence over how public policy is carried out in practice near a citizen. (cf. Lipsky, 1980).

| | | | |
|---|---|---|---|
| | | projects. | |

In the analysis conducted below we map the identified e-government stakeholders in our case study to the e-government entities model.

# 3 CASE DESCRIPTION

At Swedish universities, like in many other countries, there is a general strive for equal opportunities in higher education; i.e. no one should be discriminated because of his or her sex, age, sexual orientation, ethnicity, religion or other faith, disability or social background. In line with this, students at the university in focus demanded that they should be allowed to be anonymous during the marking process of written exams. The students argued that teachers cannot be totally fair in their marks when knowing who the student is. The students were afraid that some of them could be "punished" with a lower grade if they had been critical towards the teacher or that some of them would receive a higher grade than appropriate because the teacher liked them. Hence, anonymity was expected to secure unbiased examination.

The students' demand for anonymity was articulated through the students' union and resulted in a strategic decision made by the university's vice-chancellor that an e-service should be developed to guarantee student anonymity during the marking process of all written exams. At this university, 100.000 written exams are administered each year which makes this an extensive process that cuts across various departments and professions. A project group was formed consisting of a project leader, systems developers, technical personnel, representatives of the exam supervisors, and central examination administrators. A reference group was also organized consisting of representatives of the teachers, the students' union, and exam supervisors from all faculties.

The e-service consists of four parts (cf. Figure 1, below), two of which were developed exclusively for this purpose:

- A mobile palm solution that is used by exam supervisors on site during the exam events (new component)
- A web-based interface that the teachers and administrators use when reporting the results (new component)
- A web-based interface where students sign up for the exam (minor changes in the existing Student Portal)

Besides these three components integration was necessary in order to realize the e-service:

- Connections between the above components, several back-office systems, and the national IT system for study administration within higher education in Sweden, handling information about students' study results (called the Ladok system) – visible for administrative personnel with Ladok authorization (minor changes in existing Ladok system)

The studied e-service comprises these parts and is, thus, used by several user groups throughout the examination process. The studied e-service differs from some public Internet e-services in the sense that it is closely integrated with the back-office IT systems. We study all parts of the e-service in this article.

An overview of the process of anonymous exams is illustrated in Figure 1, below. The process includes both the e-service and the administrative routines surrounding the e-service. The process is somewhat simplified in this presentation; the label 'back-office system' refers to several interlinked systems, and here we only differentiate those systems that are Internet-based and have an obvious interface towards a particular user/stakeholder group.

[Figure 1 about here]

**Figure 1: Overview of the process of Anonymous Exams**

1) A couple of times a year each course administrator registers all planned written exams within his/her responsibility for next term in a back-office IT system. 2) Prior to the examination the student signs up for the event in a special student web portal, which existed prior to the studied project. An anonymous ID (called AID) is then created. The AID is only valid for the specific student at this specific examination, and it is not accessible for the student at this time. 3) Based on the information in the back-office system, a special unit at the university called the Exam Service books rooms and hires exam supervisors for the planned examinations. 4) (a) Just before the examination starts, the exam supervisor downloads information about all students who have signed up for the present examination to his/her palm. (b) The student gets his or her student identity card scanned using the exam supervisor's palm and a list of all present students is created. (c) Then the exam supervisor gives the AID to each student. The student must write this AID instead of name and social security number on each page he or she completes during the exam. (d) When the student leaves the examination room he or she gets the student identity card scanned once again. (e) When the examination is finished the exam supervisor transfers the information in the palm to the back-office system. 5) Within 24 hours, an administrator can activate a link between the Anonymous Exams (AE) Portal and the Ladok system. 6) Next, the teacher can create a marking protocol in the Internet-based portal, the AE Portal, based on this information. When the teacher has completed the marking process he/she or a course administrator will register the grades for each AID in the protocol (which in turn transfers the data to the Ladok system). 7) Finally, the teacher can print a list of the results where the students' names are visible; i.e. once the written exam is marked and the results have been transferred to the Ladok system by the e-service, the identity of the student is revealed. When this process is ended the students get information about their results.

In this case study we have identified five stakeholder groups; students, teachers, exam supervisors, university management (consisting of top management and project management), and administrative personnel (consisting of course administrators and administrators at the students office). We will return to these stakeholder groups below.

# 4 RESEARCH DESIGN

In order to examine what insights we can gain from analysing involved e-government stakeholders in more detail than just distinguishing between agencies and citizens, we here analyse qualitative data from a study of the above mentioned case, conducted from spring 2008 to summer 2010. In this case study we gathered data about the development and implementation of the e-service designed to guarantee student anonymity when marking written exams. The focus of the case has been to analyse identified stakeholders' differing needs for the e-service, expectations before implementation of the e-service, and effects in their activities due to the implemented e-service.

The qualitative case study consists of two phases; one conducted during the development of the e-service, and the other conducted a year after the implementation of the e-service; the post-implementation phase. During the first part of the study, here called the pre-implementation phase, the authors followed the development project (the project group and the reference group) in their project activities. Empirical data was generated in several ways. One of the authors observed six project meetings and notes from these observations were taken. During the last project meeting respondent validation (Silverman, 2006) of the findings was accomplished. The researchers presented the collected data and analysis results for the project group and asked for their interpretation, reactions, clarifications, objections, etc. The result was accepted by the project group, in the sense that the conclusions were drawn based on inter-subjective understanding of the studied events. This approach serves as a way to reach high quality in the empirical material, the analysis and the results based on the case.

Data was also collected by observations of three information meetings open for university employees and in one systems training activity for exam supervisors. 14 representatives from all stakeholder groups have been interviewed during the case study; the project leader, two course administrators,

three teachers, three students, two exam supervisors, and three administrators at the students' office. The interviews lasted for 30-60 minutes and were audio recorded. A focus group was also performed together with parts of the reference group (seven persons). This focus group meeting lasted for two hours and focused on the role of the reference group in the development project. Besides these data generation methods, project documentation as well as e-mails sent from university employees to the project group were also analysed.

The second phase of the case study was conducted when the e-service had been implemented and used for one year, here called the post-implementation phase. During this year, more than 4.000 exam events had been administered using the e-service. Data was collected through interviews with persons in the former project group (i.e. the project manager, the project leader, two system maintainers, and the system developer), as well as with teachers and administrators. Observations were made during an informal project follow-up meeting and during two evaluation meetings. A questionnaire was sent to the exam supervisors, asking about their current work conditions and their view on the work procedures associated with the e-service. Project documentation was also analysed.

During both phases, the students' expectations, fears and perceptions were given by representatives of the students' union. These representatives are individuals who work full time as "the eyes, ears, and mouth of the students". In addition to the students' union, we were also allowed access to questionnaire data from a questionnaire sent to all students at the university (by Exam Service at the university) concerning examination in general (in which anonymous exams were touched upon). An overview of our data collection methods, activities and studied stakeholder groups is presented in Table 2, below.

**Table 2: Data collection methods, activities and studied stakeholder groups**

| | Data collection methods | Activities | Studied stakeholder groups |
|---|---|---|---|
| Phase I - Pre-implementation | Observations | Six project group meetings | University management |
| | | Information meetings for employees (2) | Administrative personnel and Teachers |
| | | Systems training activity (1) | Exam supervisors |
| | Interviews | The project leader (1) | University management |
| | | Course administrators (2) | Administrative personnel |
| | | Teachers (3) | Teachers |
| | | Students (from the students' union) (3) | Students |
| | | Exam supervisors (2) | Exam supervisors |
| | | Administrators at the students' office (3) | Administrative personnel |
| | Focus group | Representatives of the reference group (7 persons) | Teachers and Exam supervisors |
| | Textual data sources | Project documentation | --- |
| | | E-mail conversations between the project group and employees | University management, Teachers and Administrative personnel |
| Phase II - Post-implementation | Observations | Informal project group meeting (1) | University management |
| | | Evaluation meetings (2) | Teachers, Administrative personnel and University management |
| | Interviews | Project group members (5) | University management |
| | | Teachers (2) | Teachers |
| | | Students (from the students' union) (1) | Students |
| | Group interview | Course administrators | Administrative personnel |
| | Questionnaire | Distributed to exam supervisors (49 respondents, 89% response rate) | Exam supervisors |
| | Textual data sources | Project documentation | --- |

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|---|---|
| | A questionnaire distributed by Exam Service to students Students |

There are several motives for choosing the present case. First of all the development process was about to start when we got in contact with the university, which means that we were able to follow the process from the start. We were also allowed further access and were able to return to the case in a post-implementation phase, which ensured us a more complete picture of the process. The university also showed great interest and engagement in the research project, which gave us valuable access to the case and opportunities to make a critical analysis of the situation. There is also a novelty interest concerning this kind of e-service since this was the first one in Sweden with a direct link to the national IT system handling all information about students' passed courses and exams (the Ladok system). There is a recent trend in Sweden to develop solutions for guaranteeing student anonymity in written exams, so other universities are concurrently developing similar solutions or are expected to follow this attempt.

Altogether this case study design has resulted in rich empirical material focusing on the development project from several perspectives and over time. The empirical data is of a qualitative nature and has been analysed with an interpretive approach (e.g. Walsham, 2006). As mentioned above we have also used stakeholder theory and the e-government entities model as lenses (Walsham, 1995) when conducting the stakeholder centred analysis. As shown in table 2, we applied method and researcher triangulation (Miles and Huberman, 1994) and quality assurance activities (seminars mentioned above) in order to generate rich (multi-faceted) and valid data.

# 5 IDENTIFIED STAKEHOLDER GROUPS' DIFFERING VIEWS

As mentioned above, we have identified five distinct stakeholder groups related to the studied e-service. Four of them; i.e. administrative personnel, exam supervisors, students and teachers, are affected by the e-service during the examination process. The fifth stakeholder group, university management, refers to the management level at the university. In reference to a traditional view on e-government, the university as a stakeholder represents the government agency in the case description below, including both the university management and project management.

During the pre-implementation phase of the case study, each stakeholder group expressed both fears and expectations concerning the e-service. We also saw differences in perceived need for the e-service. When we returned to the case during the post-implementation phase we were able to study how the e-service had affected the stakeholder groups' work and to what extent the fears and expectations had been realized. Below, we present findings from each stakeholder group.

## 5.1 Students

The origin of this public e-service was students' fear of not being treated in a fair way by the teachers when written exams are marked. Students claimed that they sometimes felt they were punished (by being given lower grades) if they expressed a critical attitude towards the course or the teacher. The students said that they would find it easier to criticize a teacher during a course if they knew that there was no risk of being punished during the examination. The students also stressed fairness as an important feature. It was not just the risk of being marked lower than expected that was seen as a problem, but also to get a higher mark than deserved. The students also saw a risk of being discriminated based on ethnicity or sex. The students we interviewed stated that an e-service, which ensures anonymity during examination, would increase their feeling of being secure from that kind of discrimination. In the interviews the students emphasized the importance of perceived security. They made an important distinction between actual and perceived security by saying that maybe the marking process was actually done in a fair way prior to the launch of the e-service, but you must also perceive it as legally trustworthy. The e-service was seen as a means to perceive security in the

process. The only fear the students mentioned regarding the e-service was that the timetable of the project would not be met and doubts about whether the e-service would function as expected from the beginning. Altogether this stakeholder group was predominantly positive towards the e-service and the re-designed examination process.

The post-implementation study a year after implementation showed that the students were satisfied with the new procedures for written exams. This finding is chiefly based on secondary data; teachers, exam supervisors and administrative personnel reported that they often received positive comments from students regarding the anonymity. Questionnaire data supplied by Exam Service at the university also indicated that the students were very satisfied with both being anonymous and the new procedures during the exam event; a majority (67%) of the responding students stated that anonymity during the examination was considered as important or very important. An interview with the student union supported this claim as they were content with the e-service and had not yet received any negative reports from students regarding the anonymity.

### 5.2 Teachers

The teacher group was far from homogeneous in their views on the e-service. Some interviewed teachers did agree with the students' opinion that the studied e-service could result in unbiased examination – not only for the students, but also for themselves. The anonymity in itself, and the fact that the e-service makes the examination process traceable, was seen by some of the interviewed teachers as a protection against future discrimination charges.

On the other hand, some of the teachers who favoured anonymity feared that technology (i.e. the e-service) would be allowed to govern the examination process and consequently force them into a certain pedagogical frame (with a certain set of learning approaches, perspectives and values embedded). Some teachers were also afraid that a standardized process would result in decreased freedom of action for each individual teacher regarding their pedagogical design of courses. Another opinion was that this e-service could be seen as a sign of mistrust or even control by the university management. The teachers who stated this fear felt that their competence as fair examiners was questioned by introducing the e-service. One teacher went as far as stating that he would stop giving written exams in his courses due to the re-designed procedure that followed with the e-service implementation. He objected to the idea that student anonymity would be of any good. Instead, he argued that he could only do a fair examination if he knew who the student was, for example in order to observe improvements in cases when a student failed the examination several times. The interviewed teachers were also afraid that the re-designed process would increase their workload and result in technical errors that would lead to chaotic situations. This is shown in the statement below, where the teacher invents a new word ("technifying") for a situation in which "everything" will be done using technology:

*"We have been positive towards these* [anonymous] *exams, but then we see how they* [the university management] *start 'technifying' everything and then you wonder; is it really that difficult?! Isn't there an easier way of doing this? What it will do – what all technical systems of this kind that are supposed to make the organization more efficient do – it will simply give us more work* […] *more time will be taken from either the teaching or our spare time…"* (Teacher)

This statement shows a fear that the e-service will influence the division of labour in the sense that introducing technology to increase efficiency in processes might increase teachers' workload instead.

In contrast, we also interviewed teachers who did not see student anonymity as an important issue, but were positive towards the e-service as a tool for more efficient handling of the examination process (particularly for examinations with a large number of students). The web-based interface for result reports after examination enables teachers to do this part of their work from anywhere, which was seen as an increased freedom of action by some teachers. In addition, prior to the e-service, the teachers had to make sure that the names on the exams they marked corresponded to the names on paper-based

registration lists to ensure that the right exams were being marked. These registration lists often contained incorrect information:

*"For us, this will be an improvement since we will know right away who really attended and wrote* [the exam] *instead of having to look at a registration list in which 25% didn't show up and 5% attended without prior registration, so this will be much better."* (Teacher)

During the post-implementation study we revisited the teachers and found that for most teachers, not much had changed in their work related to exams. As one teacher put it; what they previously did on paper, they now do in the AE Portal. For teachers with large number of students, the e-service was an appreciated tool in the marking process; now all attending students were registered automatically in the marking protocol (in the AE Portal) which made it easier to register the results and less paperwork was needed. Some teachers even created their own protocols in the AE Portal in order to administer other forms of examination. Nonetheless, not all teachers were positive towards the e-service. One teacher expressed his view on the e-service as 'a solution to a non-existing problem'. Soon after the implementation, the system developer found out that a number of teachers had reported null-results in the AE Portal in order to reveal the students' identities before registering the actual result. Thereafter, the teacher 'appealed' his previous report to Ladok and registered new results for each student. This was perceived as a serious violation of the students' right to anonymity and caused the project management to track down these teachers in order to explain the correct procedures.

### 5.3 Administrative Personnel

The course administrators that we interviewed were the ones with least understanding of the reasons behind the decision to develop the e-service. They stated that there had not been any problems concerning the marking process of written exams, as shown in the following statement:

*"I think that the whole thing is a bit unnecessary really… I know that some have had anonymous exams before and they might think that this will be a better way to do it, if they've had a difficult system for it. But we've never had it and never seen a need for it either…"* (Course administrator)

They defended the integrity of "their" teachers (teachers within their subject area or division) as being fair examiners that did not discriminate any students. The interviewed administrators did not understand why the examination process could not continue as before. This group had not heard anything about the demands for student anonymity from the students' union. Depending on how the examination process was performed at the course administrator's department prior to the e-service implementation, they expected either an increased or a decreased workload due to the e-service. Administrators who thought that the teachers at their department would not learn how to use the web-based interface for result reporting expected their workload to increase, as they assumed that they would have to do this task instead.

On the contrary, at the departments with a huge amount of written exams (e.g. the Department of Mathematics), the administrators were afraid that the automated routine for reporting result would lead to redundancy among administrators. They feared that this, in worst case, could lead to unemployment. Administrators who work at the students' office, responsible for handing out the exams to the students after the marking process is completed, expected the process to become more stressful as the re-designed process implied another way of sorting the written exams at the students' office. Prior to the e-service, the sorting was based on names and at the time of the interviews it was not resolved how the sorting would work. This uncertainty made this group of administrators very negative towards the e-service and the changed routines.

The post-implementation phase of the study showed that the e-service resulted in few, but positive, changes for most administrative personnel. The course administrators reported that the stress surrounding exams had decreased as a result of teachers reporting the results directly in the AE Portal, which in turn meant fewer paper lists and reports for the administrative personnel to handle. The fear of becoming redundant and losing their jobs was however not realized. In contrast, and in line with

their fears, the introduction of the e-service meant more work than before for some administrators. The common denominator for these administrators was teachers who refused to use the AE Portal and hence handed this task over to the administrative personnel.

### 5.4 Exam Supervisors

The exam supervisors is a stakeholder group that is contracted by the university and temporarily hired for each examination or a set of examination events. This group mainly consists of retired women who want to earn some extra money by working a few hours each month. Their responsibility is to supervise the students during the examination event in order to prevent cheating or the use of prohibited aid. This stakeholder group faced the largest changes in their working process due to the e-service. Their work up until the introduction of the e-service had been totally paper-based and the re-designed process meant that they use a palm as their main working device. This group expressed fears that they would not be able to learn the new process and how to use the new technology. The general degree of IT maturity and knowledge was low in this group although it differed between individuals.

The exam supervisors were also afraid that the re-designed process would lead to increased time pressure during the examination, as the registration of each student in the palm takes some time. Their greatest fear concerned how they should solve technical problems that might occur when they are alone in the classroom with a lot of students eager to start their examination. They were not sure what kind of help they would get and from whom. The exam supervisors also mentioned a positive expectation as they hoped that the re-designed process would make it easier for them to refuse students who lack a valid student identity card to take part in the examination. These students are not allowed to do the examination, but they are often difficult to reject when they are begging to participate. Using the palm solution implies that the student identity card must be scanned in order to generate the AID, which means that no students can be permitted to participate if they lack this card.

Findings from the post-implementation phase show that the introduction of the palm solution caused some of the exam event procedures to take more time than before. The increase in time was however compensated by a more streamlined process and a decreased amount of paperwork for the exam supervisors. Furthermore, the exam supervisors expressed a feeling of being more professional and even "modern" when using the palm, as these two statements below show:

*"They* [the students] *probably didn't expect that an 'exam lady' would be able to handle a palm. We sort of have more authority now."* (Exam supervisor)

*"Now when I know the routines I believe that the work is easy, I feel 'modern', somehow."* (Exam supervisor)

In a questionnaire sent out to the exam supervisors at the university, a majority responded that the palm was an invaluable tool and that they could not imagine going back to the old way of working.

### 5.5 The University Management

The e-service development was initiated by a vice-chancellor decision made after severe pressure from the students' union. The main motive for developing the e-service, articulated by the university management, was to achieve unbiased examination for students and teachers. Students should not risk to be favoured or discriminated, and teachers should not risk to be accused of discrimination. Another expectation of the university management was that the implementation of the e-service would lead to a more standardized examination process. Prior to the e-service implementation, the administrative process regarding written exams differed significantly across different departments and subject areas (divisions), and even between individual teachers and administrators. There were for example many different "bonus systems" designed by teachers in order to allow students additional opportunities to pass the exam, by for example collecting bonus points. This means that the regulations surrounding examination were not totally comparable across the university. These differences were perceived negatively by the university management, and should be removed.

There was also some prestige in fulfilling this project, expressed by university management representatives, as this university was the first one in Sweden to develop a technical solution with automatic information transfer to the national Ladok system. Anonymity during examination as such was nothing new at this university; anonymity is widely used at Swedish universities. What was new with this particular solution was the connection to the Ladok system and the full integration of all systems related to examination. A result of this integration is that almost all manual handling of paper documents is removed; apart from the actual exams, very few paper documents need to be produced in this procedure. The fact that the university can assure student anonymity in written exams is seen as a strong argument in the marketing of this university's courses and education programs. Obviously, the university was eager to launch this e-service as quick as possible in order to achieve a so called first-mover advantage.

The e-service development project was conducted as an in-house project, where both project management and IT development were conducted by internal university personnel. From a university management perspective, the e-service became a success. As anticipated, the university managed to be the first university to create a fully integrated and Internet-based solution for anonymity that linked directly to the national Ladok system; first-mover advantage fulfilled. Hence, their solution is thought to be leading the way for other universities in the country. Since 2010, several universities have indeed been inspired by the solution developed at this particular university, but it is uncertain if the solution has been adopted in its full format by others. For the project group developing and implementing the e-service, the project was perceived as very straining and time-consuming, but rewarding. Short after the implementation, the success was threatened by teachers and students who tried to bypass the anonymity. In these cases, representatives of the project group contacted these persons and explained the severity in bypassing the anonymity. At the time of the post-implementation study, these behaviours had ceased.

# 6 ANALYSIS AND DISCUSSION

In this section we analyse and discuss our case from three aspects; first we conduct an inductive analysis of the identified stakeholder groups' differing perceptions of the e-service, then we map identified stakeholders to the e-government entities model (Sæbø et al., 2011), and finally we analyse and discuss stakeholder salience in this case using the typology of Mitchell et al. (1997). The section is concluded with a discussion of the study's implications for practitioners and decision makers.

## 6.1 Identified Stakeholder Groups' Perceptions of the E-service

When comparing the empirical findings in the identified stakeholder groups, presented in the previous section, we find many differences in how our respondents view the e-service and the changed examination process. In table 3, below, we summarise the main perceptions of each stakeholder group. Our findings obviously indicate differences regarding the stakeholder groups' general impression of the e-service. We also find differences regarding the stakeholder groups' need for the e-service; i.e. whether the e-service corresponds to any expressed need or not. The stakeholders have had differing influence on the development process and they are also object for more or less evident changes in their working routines related to the examination process. Finally, we identify differences concerning the expressed expectations between stakeholder groups.

The names we use for the identified stakeholder groups in this case are university specific. In order to be able to transfer findings from this study to other e-government settings we need to translate these case specific names to more general concepts. We can, for example, divide the stakeholder groups depending on their hierarchical position in the organization (management vs. co-workers), or whether they belong to the organization as internal stakeholders or are placed outside as external stakeholders (e.g. citizens). This characterisation of stakeholder groups is shown in Table 3, below.

**Table 3: Stakeholder groups' main perceptions in relation to the e-service**

| Stakeholder group | General impression | Need for the e-service | Influence on e-service development | The e-service affects performed activities | Opinions and reactions related to the e-service |
|---|---|---|---|---|---|
| Students (external) | Positive | Collective demand for student anonymity | Initiated the development, representatives in the reference group | To some extent, but no critical changes | Expect an improved situation, perceived security |
| The university management (internal, management) | Very positive | Prestige, marketing argument, standardization, responsive to students' demand | Managed the e-service development (in-house) | Positive standardization of processes, unbiased examination | Focus on rules, standardization and student recruitment – not on internal stakeholders |
| Teachers (internal, co-worker) | Negative, neutral or positive | No expressed need | Representatives in the reference group | Some changes, expected increased workload and technical problems | A sign of mistrust and questioned competence, decreased freedom of action<br>Improved efficiency and unbiased examination thanks to traceability |
| Administrative course personnel (internal, co-worker) | Very negative | No expressed need | Representatives in the project and reference groups | Changes that lead to either increased or decreased workload | Defend teachers' competence, unnecessary system and process change |
| Exam supervisors (internal, co-worker) | Negative or positive | No expressed need | Representatives in the project and reference groups | Severe changes due to introduction of IT | Expect increased need of technical competence, increased authority towards students |

The project manager and the IT developers expressed difficulties regarding how to inform teachers and course administrators about the project, the e-service and the process changes. They arranged several open meetings for all university employees in order to inform and discuss this during the development project, but very few people participated. At many departments there was a widespread reluctance and scepticism towards the project. Based on our empirical findings there are several conceivable reasons for this situation. First of all, the system for handling the anonymity was produced in-house and there had been prior attempts to develop an e-service for student anonymity in examination which had all failed due to technical problems. As a matter of fact, many of the administrative systems produced in-house at this university have a bad reputation amongst the employees, for example the system for course evaluation. There was, thus, a history of failure that diluted the present project and worked as a breeding ground for mistrust among employees.

The fact that three major stakeholder groups; i.e. teachers, administrative personnel and exam supervisors, in general did not experience any need for the e-service is another important factor. Changes that do not correspond to an experienced need seem to be harder to accept. In this case, the lack of problem understanding needed to be focused and discussed in order to gain acceptance among these stakeholder groups. This is especially important since these stakeholder groups were exposed to rather extensive changes in their working routines. Some of the expressed expectations were valid, but others were exaggerated by rumours and lack of information. Since the development project was performed in a rather large public organization (the university has 4.000 employees), the different stakeholder groups were, by practical and resource reasons, only represented by a few persons in the project group and the reference group. These representatives were to a varying degree successful in fulfilling their anchoring and informing responsibilities. Thus, most teachers, administrators and exam supervisors were not involved or informed about the project before the e-service was to be launched.

When focusing on the positive and negative expectations of the e-service and the re-designed process that our respondents expressed, we discover some interesting patterns. The students, who were demanding student anonymity from the very beginning, expressed mostly positive expectations. They stressed that the e-service increased their trust in a fair examination process. In their statements, they distinguished between actual and perceived security; i.e. the examination process might have been trustworthy even prior to the e-service implementation, but as long as they do not perceive it to be a

hundred percent reliable, they do not trust it. This division between the concepts of actual and perceived is discussed by Oscarson (2007) in relation to information systems security. His conclusion confirms our finding as he states that a high level of actual information systems security is not enough if an actor does not perceive it to be high as well (ibid.). It is also worth noticing that the students discussed increased trust in the process. On the other hand, the students we interviewed seemed to take rather little notice of possible technical problems that the implementation of the e-service could result in. Thus, they seem to have high trust in technology (Belánger and Carter, 2008) from the beginning.

On the other hand, the three stakeholder groups which were most negative towards the e-service and process changes (i.e. teachers, administrative personnel, and exam supervisors) all seemed to be mistrusting the technology and their own competence in relation to the usage of the technology (i.e. the e-service in the mobile device as well as the Internet-based part of the e-service). The exam supervisors expressed this feeling most distinctly, which of course is natural in relation to this group's characteristics (consisting of many retired, older, women with little prior IT experience). The administrators feared that the technology would change the conditions for their work in a dramatic way. Either it could result in a higher workload, since the teachers would delegate new tasks to their course administrator, or it would make some administrators superfluous since the process would be much more effective. Increased effectiveness is a result of the standardization that the university management intended to create through the e-service. Both these scenarios could come true, depending on how the departments handled the examination process, but in the post-implementation phase of the study both these scenarios seemed to have been exaggerated. Uncertainty about future effects of organizational changes is inevitable in many cases, but cause worry among employees. Facts and information are, thus, always better than rumours and guessing during change processes.

Within the teachers' stakeholder group we identified both negative, neutral and positive impressions of the e-service. This is not surprising as this is a large and heterogeneous group of persons with different backgrounds, academic profiles and knowledge in technology. It would be possible to argue that internal disagreements about expectations and opinions would imply that a stakeholder group should be divided into sub groups (new groups) when conducting a stakeholder centred analysis. We have, however, chosen to keep the stakeholder groups according to professional roles and instead commented on differences in expectations and opinions within the groups. A reason for this is that since the stakeholder analysis always will involve representatives for larger groups of stakeholders, we can never be sure that all disagreements have been identified. Dividing stakeholder groups based on such identified disagreements could then result in a biased division.

An interesting finding is the statement from some teachers that they regarded the e-service as a sign of mistrust in their competence as examiners. The administrators also defended the teachers' competence and reinforced this feeling of mistrust in competence. There seems to be a mix of general reluctance towards changes – 'we have always examined without student anonymity and I don't see the need for this to change now', fear to deteriorate pedagogical ideas in the courses leading to decreased quality – 'I don't want to get forced into any pedagogical frame that does not fit my course', and a feeling that the university management wants to decrease teachers' freedom of action – 'don't they have trust in me as a fair examiner anymore?'. We identified signs of changes in competence needs in different stakeholder groups. The exam supervisors had to learn how to handle the mobile device, and the teachers and the administrators had to learn to interact with the Internet-based interface. Some tasks are conducted by another stakeholder group than before (i.e. a new division of labour as a result of the implementation), some new tasks occurred and others disappeared.

When focusing on feelings expressed by representatives for the university management level, it is obvious that these experiences are mainly directed towards external issues. The main aim for developing the e-service was fulfilling the students' demand for anonymity. The process changes necessary in order to develop the e-service also served the purpose of reaching a more standardized examination process at the university level. Standardization was seen as a means to assure unbiased examination and high quality in the examination process. Another hope put forth was that the e-service and the re-designed examination process would lead to a good reputation among presumptive students,

which would be positive for future student recruitment. Altogether, it is obvious that the university focused on external issues related to the e-service development, but seemed to have underestimated some internal co-workers' experiences and fears.

We have identified several, sometimes conflicting, expectations concerning the studied e-service which seem to be possible to explain by (1) a history of previous e-service failures, (2) no correspondence between the e-service and experienced needs among several internal stakeholder groups, and (3) lack of information and involvement in the development process. A superior goal for this e-service development initiative, and the processes developed as a result from it, was to create a more secure and fair marking process; i.e. an unbiased examination. Obviously, the feeling of anonymity was apprehended by the students as an important factor – their trust in the administration (Belánger and Carter, 2008) increased when their exams were treated anonymously. Trust in technology (the e-service), on the other hand, was discussed by other stakeholder groups, but mainly in terms of mistrust. This implies that our findings provide an illustrative example of how an aim of increased standardization, accomplished through adjustment in processes as well as formalization of actions performed through an e-service, has effects on different stakeholder groups' perceptions and expectations. Students experienced increased confidence in a fair marking process and therefore trust for the administration (i.e. the university). Internal stakeholder groups (i.e. co-workers) experienced mistrust in technology, in their competence and in their employer's appreciation of their achievements. The university management experienced increased possibilities to secure unbiased examination and hoped for competition advantages.

There is a vital difference in this studied case compared to many other public e-services. Usually a user can decide not to use a certain e-service. Government agencies cannot exclude other communication channels as they must assure that all citizens are able to interact with the agency regardless of access to a certain medium or capability of using the medium due to other circumstances. This is not the fact in the present case. The identified internal stakeholder groups cannot choose whether to use the e-service or not – they have to adapt to this re-designed process and they have to use the developed palm and web-based interfaces. The only internal stakeholder group that might have any potential choice is the teachers who possibly could choose to refrain from having written exams in their courses and, for example, use other approaches, such as essays, project reports, in order to exam students.

## 6.2 Identified Stakeholders Mapped to the E-government Entities Model

We will now return to the e-government entities model by Sæbø et al. (2011) in order to map the stakeholders we have identified in the case to the model, see table 4 below. Our case's local focus differs from Sæbø et al.'s case and this leads to a need for adjustments when naming the sub categories. This is also emphasized by Sæbø et al. (ibid.) who state that adjustments to a certain empirical domain might be necessary.

**Table 4. Identified stakeholders mapped to the e-government entities model**

| Basic entity | Entity sub categories | Description | Interest |
|---|---|---|---|
| Government | Decision maker (originally "Politician") | The students' union and the university's vice-chancellor. | The students' union decided to raise the demand for anonymity and the university's vice-chancellor decided to meet this demand and initiate the project. |
| | Management (originally "Administrator") | The project group consisting of persons with competence needed in the project (i.e. IT and organizational development, project management). | Ensure policy implementation effectively and efficiently; i.e. to realize the vice-chancellor's decision. |
| | Service Provider | The project and reference groups consisting of teachers and administrators together with technical and administrative personnel. | Ensure e-service and process that would support the work tasks associated with examination. Provide good service quality. |
| Citizen | User (originally "Consumer") | Students, teachers, administrators and exam supervisors. | Easy access to information and services. |
| | Engaged user (originally | Students with urgent demands on unbiased | Impact policy development and decision making |

| | | | |
|---|---|---|---|
| | "Activist") | examination. Teachers with fear of undesirable changes and a strive to influence the outcome. | processes as well as the e-service development process. |
| Business | Consultant and vendor (originally "Vendor") | No hired resources were used in the project. | Not applicable in our case. |

When mapping our stakeholders to the model, we find that the basic entities are possible to use in, and inform the case study. The government entity corresponds to the university organization's different levels and all identified stakeholder groups can, thus, be placed within this entity during the development process. Obvious decision makers in our case are the students' union and the university vice-chancellor. Both these stakeholders made important decisions that were necessary in order for this project to start. The management level has been project champions who have both organized and realized most of the development tasks. This sub category has also worked a lot with trying to anchor the changes in the organization. The service provider sub category consists of both the project group and the reference group together with technical and administrative personnel, who possess knowledge about both IT and the examination process necessary to develop and implement the e-service.

The citizen entity corresponds to the individual user level; i.e. students, teachers and administrators using different parts of the e-service. The future users sub category consists of both students and teachers who made their voices heard regarding what they felt was wrong; i.e. the lack of anonymity in the marking process of written exams and possible disadvantages of the new examination process.

The business entity was not present in this case, but it could easily have been with another project assignment that did not propose in-house IT development. In this kind of projects, we suggest that the consultant role should be added to the vendor sub category, since consultants often are heavily involved in e-service development projects.

The mapping resulted in new suggested sub category names, compared to Sæbø et al.'s (ibid.) model. We also find that the government concept involves stakeholders acting in the roles of public representatives. Further, the user concept is not exclusively used for "citizens" in this case. Instead, the division between government and citizens can be distinguished as stakeholders acting as public representatives versus individuals. This somewhat different division, compared to the original model, can be explained by the fact that we have combined the stakeholders' roles during the development (pre-implementation) and use phases (post-implementation) in the model. During these two phases the stakeholders act in somewhat different roles; either they represent a collective during the development process (e.g. teachers in the reference group) or they act as a user (e.g. an individual teacher using the e-service in her marking process after an examination event). This is an important distinction between stakeholders' roles in a development and implementation process, which the model helped us to discover. An obvious objection could be that the basic entity of citizens could not be expanded to also consist of internal stakeholders. However, we argue that this is a result of our case's specificity. Thus, we do not suggest any new concept for this basic entity, but chose to widen the definition of users in our use of the model.

### 6.3 Stakeholder Salience

By dividing our respondents into several distinct stakeholder groups it becomes apparent that there are differences between these groups' apprehensions of the e-service, as discussed in section 6.1 above. In our case, the professional groups were used for the categorization of stakeholders. This categorization was based on convenience and common-sense and corresponds to these groups' own perceptions of their identities as professionals within the organization. When looking at the expectations and fears of these groups this categorization is somewhat inclusive, however, and implies that there are inevitable variations in opinions within these groups. We identified that the stakeholders can possess diverse characteristics in relation to each other and the studied e-service and, thus, can be mapped into different entity categories, as discussed in section 6.2 above. By adopting the concepts of urgency, power, and legitimacy, introduced in the typology by Mitchell et al. (1997), on our case we will now discuss stakeholder salience. A stakeholder who possesses high urgency, power, and legitimacy in

relation to the e-service is more salient than stakeholders who lack some of these attributes. Stakeholder salience might differ over time in a development, implementation and use process (Sæbø et al., 2011).

The students raised a demand for student anonymity – this demand was urgent and as it was supported by and canalized trough the students' union it was also powerful. The claim was in line with an on-going debate about students' equal opportunities in higher education on a national level, which also made it legitimate. Prior to the development process this stakeholder group had the highest salience. In the development project students were represented in the reference group, but their salience decreased in this phase. When the e-service was launched, the students became one of the user groups, but their use of it was rather limited. The e-service did not have much influence on their examination process, except that it ensured anonymity. This stakeholder did, thus, not remain salient after the initialization of the development project.

The university management is a composed stakeholder, consisting of both the university vice-chancellor (top management) and the project group (project manager and IT developers). The university vice-chancellor decided to meet the students' union's demand by initiating the e-service development project. The vice-chancellor obviously had the power and legitimacy to do this. Since other universities were about to start similar projects this was also seen as an urgent project to initiate. The stakeholder was salient during the initialization phase of the project. During the development and implementation phase the project group, instead of the vice-chancellor, was in focus. The three attributes power, urgency, and legitimacy continued to be high for the stakeholder as a result of the vice-chancellor decision. When the e-service was launched the project group was dissolved and their stakeholder salience obviously disappeared.

The teachers did not experience any urgency regarding this matter during the development process. Some teachers felt their power as examiners being somewhat weakened by student anonymity as this could be seen as their legitimacy as fair decision-makers was questioned. The teachers who were really worried about the future changes did not experience any power or legitimacy for their claim as this was in opposition to the vice-chancellor's decision. The stakeholder group was represented in the reference group, but for the teachers as a collective (on group level) the stakeholder salience was low. Some individual teachers approached the project in order to influence the outcome and they were included in the reference group. These individuals are called "engaged users" in the e-government entities model above. When the e-service was implemented this stakeholder group became an important user group whose work tasks were influenced in some aspects. Many teachers found that their negative expectations were not met, but others were concerned with usability aspects of the e-service. The stakeholder group was divided into two parts; teachers positive towards the changes and teachers negative or at least hesitant. As the salience was low both during development and after (except for the "engaged users"), the negative opinions were spread as rumours rather than as an open discussion.

The administrative personnel had similar characteristics as the teachers (low power, low urgency and low legitimacy), but they also feared more serious effects such as redundancy or heavily increased workload. This made the stakeholder group even more negative and unwilling to accept the changes during the development phase. The stakeholder salience was low even though administrative course personnel were represented both in the project group and the reference group, since only a few of this large professional group were involved. This situation was not seen as desirable from the project management's perspective, though, who perceived this group as a salient stakeholder. The stakeholder group was approached by the project group several times in order to communicate plans and ask for opinions. Few from the administrative personnel, however, attended these meetings, which implied a situation where they were regarded as an important stakeholder group, although they did not apprehend the project as being important. Thus, this stakeholder group became an important user group of the e-service, but their self-perceived salience remained low.

The exam supervisors did not express any notions of high urgency in the beginning of the e-service project, but some exam supervisors mentioned that the e-service and the process might strengthen their authority towards students. The e-service was expected to give them power to refuse students without valid student identity cards to take the exam. Their commission as exam supervisor includes a responsibility to make sure that the process follows rules and regulations. The e-service was a tool that could support the legitimacy of this process and, thus, this stakeholder group's legitimacy could be strengthened by the e-service. The exam supervisors were represented in both the project group and the reference group. One of the representatives was a very strong person who influenced the project and the outcome to a great extent. Altogether this made the stakeholder group salient during the development process. The exam supervisors belong to the user group which had to undergo the most extensive changes in work tasks when the e-service was implemented. These changes were despite this received rather positive, probably thanks to the high salience during the development process.

This analysis of stakeholder salience shows that the stakeholder groups' salience shifts during the process, as depicted above. Before initiating the development project the most salient stakeholder groups were the students and the university management. During the development process (pre-implementation process) the most salient stakeholder groups were the university management and the exam supervisors. In the post-implementation process there has been no obvious salient stakeholder present. Instead, the e-service has been taken into use by the teachers, the students, the administrative personnel, and the exam supervisors. Worth noting is that two of these stakeholder groups (the teachers and the administrative personnel) had low self-perceived stakeholder salience during the development process. This could explain why the e-service was considered a success by the university management despite resistance and negativity from seemingly significant stakeholders. This finding supports our initial argument that it is too naïve to view e-service development as a process mutually beneficial for two stakeholders; government and citizens.

### 6.4 Implications of Agency Efficiency and Citizen Benefit for Practitioners and Decision Makers

By conducting a stakeholder centred analysis of expectations and opinions concerning the e-service we got a more thorough view of the process and the outcome. If we had adopted the traditional, and in some sense simplified, view of a government agency and a citizen interacting through an e-service, we would have focused on the university (management level) and the students. Both these actors were positive towards the e-service and the changed examination process both before and after the e-service implementation. Focusing on them would, thus, not have given us a comprehensive understanding of the complexity of the situation. A more detailed, fine-grained, analysis divided on all identified stakeholder groups provides us with a broader and more critical picture of public e-service development and implementation. This finding is also supported by Scholl's (2001) study.

In table 5, below, we show what benefits the identified stakeholder groups got from the e-service. This gives us a more detailed picture of effects, which we often label agency efficiency and citizen benefit without noticing that this means different things for different actors.

**Table 5: Stakeholder groups' benefits from using the e-service**

| Stakeholder group | Agency efficiency and benefits | Citizen benefit |
|---|---|---|
| Students | Not applicable | Unbiased examination |
| The university management | Standardized examination process<br>Possibility to control rule obedience<br>Decreased risk for discrimination reports<br>First-mover advantage (being a pioneer) | Not applicable |
| Teachers | Web-generated protocol for marking<br>Web-based reporting of exam results facilitates distance work<br>Decreased risk for discrimination reports | Not applicable |

| | | |
|---|---|---|
| Administrative personnel | Web-generated schemes for marking and reporting results<br>Electronic records of all examination related information | Not applicable |
| Exam supervisors | Electronic records of all examination related information<br>Technology device increases the status of the work tasks<br>Increased possibility to exercise authority and feel modern | Not applicable |

As shown in table 5, many stakeholder benefits can be categorized as agency efficiency aspects. This might be unexpected since the main motive for developing the e-service was to secure unbiased examination for students which is a citizen benefit aspect. Looking back on the process, one might argue that if these agency benefits would have been identified and explained to the internal stakeholder groups, their fear and negative attitude prior to the implementation might have been avoided. On the other hand, this is not an easy task to accomplish, since some of these effects were unknown to everybody until the e-service was implemented. Nevertheless, by paying attention to all stakeholder groups before implementation – i.e. to emphasize stakeholder salience – we argue that some of these effects would have been possible to reveal.

# 7 CONCLUSIONS

This article's main contribution is to show that the two usually mentioned stakeholders of e-government (agencies and citizens) are too extensive and abstract to address in order to reach a situation with both increased service quality for citizens and increased efficiency for agencies. Our intention has been to illustrate what insights we can gain from identifying involved e-government stakeholders in more detail than just distinguishing between agencies and citizens. The result of conducting a stakeholder centred analysis of the development and implementation process of a public e-service is that we, by visualizing the stakeholder groups' differences (cf. Flak and Rose, 2005; Sæbø et al. 2011), are better prepared to meet and combine different needs related to a planned e-service. Thus, we argue that a stakeholder centred analysis of expectations and opinions concerning the e-service help to develop e-services possible to succeed in offering both external service and internal efficiency. Understanding of different stakeholders' expectations is also crucial in order to prepare and anchor changes in e-service development and implementation through information and training. The studied case also showed that some stakeholder groups are more affected by the e-service in their activities than others. This is important to consider when deciding how to involve different stakeholder groups, making best use of their knowledge and expertise within an efficient e-service development process.

A crucial conclusion that can be drawn from this study is, thus, that an appropriate understanding of an e-service's internal and external stakeholder groups is important in order to get an adequate view of the complexity related to the use of a public e-service. This conclusion is in line with, e.g. Kamal et al. (2011) viewing stakeholders both from inside (internal) and outside (external) an organization. However, the results in the present study show that the stakeholder group outside the organization – the students – are directly affected (i.e. "served") by the e-service. There is often a stakeholder group that is supposed to be served by the e-service (c.f. Goldkuhl, 2007; ISO9004-2:1991) – the students in our case – but this group cannot be the only one in focus. E-services are developed to generate public value (Grimsley and Meehan, 2007) to citizens, but given that several stakeholder groups are related to an e-service, the sometimes complex relations between these groups must also be understood.

Chan et al. (2003) show how some stakeholders are dependent on an e-service while other stakeholders are necessary for the e-service, which is also a situation present in the case we studied. This situation results in complicated stakeholder relations that need to be identified, understood and managed in a proper way (cf. also Sæbø et al., 2011). Stakeholders also differ in their power, legitimacy and urgency in relation to the e-service (Mitchell et al., 1997). The focus on internal stakeholders without any explicit need for the e-service (i.e. no outspoken need to be served) provided us with a more nuanced and critical understanding of the studied process. A more traditional focus on citizens (the students) and government agency (the university) would instead have indicated a more

simplified win-win situation. This is an important lesson to learn in order to understand the effects of e-government implementations.

Another implication found in this case is the multi-faceted view we can put on security and transparency when we highlight several stakeholders' relation to the e-service. A secure and transparent marking process was the argument driving the change process from both the students' and the university management's perspective. As stated earlier, the university management had a strong focus on external aspects during the development and implementation process. Still, the e-service made it possible to detect incorrect behaviour and trace the teachers who misused the system and, thus, violated the new standardized process. This is an example of how an e-service can be used to 'serve' some stakeholders' interests and simultaneously restrict others', both deliberately and more unconsciously. This differentiation becomes explicit when viewing an e-service's stakeholders in an integrated way. The notion of this is important for those responsible for implementing e-services, in order to succeed in offering both external service and internal efficiency.

Another important finding in this study is the illustration of the dynamic shifts of stakeholder salience across the groups during the pre-implementation and post-implementation phases, as depicted in the analysis above. The dynamics of stakeholder salience is frequently discussed (e.g. Mitchell et al. 1997; Sæbø, et al. 2011), but rarely illustrated; a few exceptions are Kamal et al. (2011) and Scholl (2004). Our study contributes with insights about a situation where stakeholder salience changes over time while some stakeholder groups have low salience during the entire process. The e-service was seen as a success without taking these stakeholder groups into consideration, which illustrates our statement that it is too naïve to view e-service development as a process mutually beneficial for two stakeholders; government and citizens.

We applied the e-government entities model (Sæbø et al. 2011) to our case which resulted in suggestions of some new sub category names, compared to the original model. The case's local focus is probably a reason for these conceptual changes. We also identified that the government concept in the model involves stakeholders acting in the roles of public representatives. Similarly, we argue that the user concept in the model should not exclusively be used for "citizens". Instead, the division between government and citizens can be distinguished as stakeholders acting as public representatives versus individuals. This somewhat different division, compared to the original model (ibid.), emerged when we mapped the entire process (pre- and post-implementation) to the model. Thus, this article contributes with an application of the e-government entities model in a local e-government setting.

This study provides us with some illustrations of how e-service development can create different expectations also within involved stakeholder groups. The intention has been to add further understanding to the discussion and notion of different stakeholders in e-government. Increased understanding of this complexity can help us develop public e-services that balance different stakeholder groups' needs in a successful way. Our intention has not been to give any statistically valid explanations of the studied phenomena. The characteristics we have found in this case (e.g. the notion of need for the e-service) have to be followed up and compared to other cases. Complementary studies could also focus more on external stakeholder groups (i.e. citizens). The manner in which we have conducted this study only provides us with snap-shots of the inner workings of the studied organization. Yet, these snap-shots illustrate the importance of widening our perception of who is a stakeholder and when, and to take these stakeholder views into account.

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