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# Stakeholder Salience Changes in an e-Government Implementation Project

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**Abstract.** In this article we discuss in what ways an e-government project can give both expected and unexpected effects for agency employees and their working tasks. The purpose of this article is to illustrate the fact that, besides the aim to increase agency efficiency and citizen benefit, e-government implementation might also change the salience of involved stakeholders. We do this by focusing on one stakeholder group which was reluctant and hesitating in the beginning of the studied project; marginalized, passive, easily convinced, and old-fashioned. After the e-government implementation, this group had turned to satisfied, proud, influential, active, powerful, and modern IT users. The case shows how stakeholder salience might change over time in an e-government project. Stakeholder influence aspects and IT driven change aspects are intertwined. This makes it necessary for any e-government project to address the notion of stakeholder involvement in decision-making during the development and implementation phases, but also to acknowledge e-services force to change how things and people are perceived during these phases.

**Keywords:** e-government project, e-government implementation, stakeholder salience, IT driven change.

## 1 Introduction

Many studies of information technology (IT) implementation projects have focused on users' reluctance to use new systems and their resistance towards changes in working routines and processes [10; 11]. There have been numerous attempts to explain reasons behind such change inertia in IT projects [8] both in private and public sector. The argumentation has often been that reluctant groups are afraid of new things [14] or negative because they risk losing power, freedom of action or influence [2; 16]. These explanations of failure and success are applicable to e-government projects as well [5]. In this article we discuss a case which started out as yet another example of a group of agency employees being rather negative to the introduction of a public e-service and doubting their abilities to change work practices. However, during the process this group got a changed position. They went from being a marginalized group, in their own as well as in others' eyes, to becoming influential and modern IT users. We use this empirical example to discuss in what ways IT can give both ex-

pected and unexpected effects. By analyzing our case we show that an implemented public e-service, besides aiming to give benefits to different stakeholders, also changes the role of a professional group, this group's self-image, and the way other persons apprehend them as a professional group. This understanding renders implications for other e-government development and implementation projects, as it illustrates that technology can transform marginalized groups into powerful ones.

When discussing different stakeholders in e-government projects, we often distinguish between stakeholders with visibility and power to influence the result and stakeholders without such opportunities. Building on Mitchell et al.'s [18] argumentation, stakeholder salience depends on the stakeholders' degree of power, urgency and legitimacy towards a certain issue. In relation to e-service design and implementation, a truly salient stakeholder possesses power to influence the process, experiences it to be an urgent matter and has legitimate claims to get involved in the process. A stakeholder that has none of these three attributes is, on the other hand, not salient at all. Previous studies show that stakeholder salience differs over time in a project [7], but also that some stakeholders might remain invisible throughout the project and also afterwards [1]. Kamal et al.'s [7] study intends to describe four case organizations' perspectives so that other researchers can relate their experiences to this. Our study has similarities with Kamal et al.'s as both focus on detailed stakeholder analysis. However, we do not consider stakeholder influence to be the only affecting aspect in the studied case. Instead, we contribute with the notion of the interaction between stakeholders' possibilities to influence the project outcome and IT's force to change the state of things when introduced in a government setting.

E-government implementation projects often trigger changes in work practices and organization of work. When reviewing research in the information systems (IS) field, we identify many examples of changes that occur in work practices when IT systems are introduced or changed. Acknowledging that IT has the possibility to change how people perform their work tasks, how processes are (re)structured, and how work practices are organized has been central in IS research for decades. Despite being a well-researched area, Vaast and Walsham [25] point out that there are still few studies explicitly illustrating and discussing how IT use changes work practices. More detailed studies of stakeholders' IT adoption in e-government settings are also requested by Kamal, et al. [7].

The purpose of this article is to illustrate the fact that, besides e-government projects' aim to increase agency efficiency and citizen benefit, implementing public e-services might also change the involved stakeholders' salience. The article addresses this issue by studying how a marginalized, reluctant stakeholder group is involved in an e-government project in a way that actively influences the design of the implemented e-service. Together with these stakeholder influence aspects that turn the stakeholder from a reluctant user into an empowered and strengthened user, we find IT driven change aspects, which imply that the use of the implemented e-service also triggers changes in this stakeholder group's salience in the organization.

The article is organized in the following way: In Section Two we discuss a selection of views from previous research on stakeholders' roles in IT projects and IT's impact on social and organizational change. The research approach and case study

design are reported in Section Three. The empirical findings are presented in Section Four and in Section Five the findings are discussed. The article is concluded in Section Six.

## **2 The Roles and Influence of Stakeholders and IT**

User reluctance and resistance towards new IT systems are often proposed to be reasons for IT projects' failure [8]. Signs of user resistance are likely to occur early in IT projects, expressed as fear and negative opinions towards the future IT system. Such user resistance and negative rumors prior to IT implementation are especially threatening to the project's success [15] as negative users might oppose and hinder the project to proceed. Leonardi [11] claims that users shape their views of new technology in various ways. Users discuss technology with colleagues and this influences their perceptions of it, but they also use the technology. The experience they get from using technology might change the perception they got from social interaction with others. These misalignments between the information generated in users' interactions with others and with the technologies' material features can lead to the failure of planned organizational change (*ibid.*). This is in line with Markus' [16] early claims that user resistance can be explained as the interaction between system characteristics and the social context of its use.

Besides the aim to define and explain reasons for user reluctance and resistance there are also many attempts to find ways of avoiding or decreasing it. The main theme in these studies has been to involve users, since the reluctance has been seen as a result of lack of information and users' deficient possibilities to influence the process and the outcome. If users are allowed to participate in the project, less user resistance are expected to occur [3]. Identifying and involving users and other stakeholder groups in IT projects is a key issue that relates to stakeholder salience [1; 18; 22]. Stakeholders might possess more or less power, urgency and legitimacy, as mentioned in the introduction, but participation in development and implementation projects might also change stakeholder salience. By inviting stakeholders to participate and by taking an active part in such work, a stakeholder group might increase their power in the organization and also perceive the project as more urgent.

User participation in IT projects has, thus, been proposed as a solution to the user resistance problem, but there is no definite causality between user participation and user satisfaction. Many studies question the effects of user participation regarding system success [4; 13] and discuss the paradoxes of participatory practices [e.g. 6]. System developers and managers might also have differing motives for promoting participation [9]. This implies that participation in itself does not necessary give all participants the possibility to influence the result. Sefyrin and Mörtberg [23] have studied a marginalized user group that participated in an e-government project, but still had no power to influence the outcome. In their case a group of administrative officers in a public agency possessed crucial knowledge for the IT project to succeed and was therefore asked to participate in the project. Nevertheless, they were not in any sense rewarded or recognized in the project. Instead, they risked being reor-

ganized, dismissed or offered an early retirement after the project had ended (ibid.). This is an explicit example of a participating stakeholder group that is not gaining any stakeholder salience due to their participation. The case, thus, shows that marginalized stakeholder groups might remain without salience even though they participate in the project; implying that there is no given causality between participation and salience.

This leads us from stakeholder influence aspects to IT driven change aspects. IT has the power to change what we do and how we perceive things [20]. As discussed in the introduction, many studies have focused on what happens when IT systems are introduced in organizations. IT implementation is done with some intentions to support users' work tasks which might include changes in work practices and organization. But not all changes are planned and expected. When IT is introduced, unplanned and unexpected changes of both positive and negative nature occur.

Among other challenges, Leonardi and Barley [12] outline that researchers need to study the relationship between IT development and use in order to understand how the practices of designers effect users and vice versa. When differentiating between development and use in order to focus on, for example, IT driven change aspects we risk to miss out important findings. Even though the IT system (or e-service) is primarily developed during the development project, continued development might occur when it is implemented and in use. This could be conducted either by the system developers who adjust the IT system according to the users' needs or it could be the users who modify the IT system during use (ibid.). This implies that user experiences can affect re-design, meaning that development activities continue after implementation. Likewise, studies of IT use that start after implementation often treat the IT system as a black box in the sense that the understanding of the development process is limited or comes from secondary sources. We use this as a motive for our study that ranges from development through implementation to use of an e-service.

Vaast and Walsham [25] explain how users might experience dissonance between their representations, practices, and IT use when they use IT systems in a context that is perceived as changing. In such cases, the users will transform their use of IT so that consonance is re-established. This is another explanation to the fact that changes occur both during implementation and use of IT systems. As shown in their (ibid.) study, the dissonance can occur due to perceived changes in the users' context (e.g., the work practice), but it can also be caused by changes in users' own actions or in other users' actions. A third explanation put forth, is that dissonance can arise from unintended consequences of actions (ibid.). By discussing this in terms of consonance and dissonance, Vaast and Walsham illustrate that we have to study users' understanding of their work tasks and IT system in order to understand how, and to what extent, IT use can initiate practice change.

### **3 Research Approach and Case Introduction**

In this article we analyze findings from a case study performed at a Swedish university. We have conducted a qualitative, interpretive [26] study of a process where a pub-

lic e-service for handling student anonymity during written exams has been developed, implemented, and used. The project was called 'Anonymous Exams' by the university management. At the studied university, 100.000 written exams are administered each year which makes this an extensive process. The e-service that was developed to handle student anonymity electronically consists of several components; 1) one part handling the information transfer from a student administrative IT system to a mobile IT device (a Personal Digital Assistant – PDA) that is used on site during the examination events, 2) a web-based interface where students sign up for the exam and 3) another web-based interface that the teachers and administrators use when reporting the results. The case study covers several stakeholder groups which were involved in the development project and affected by the different components in e-service, but in this article we focus on one of these stakeholder groups; the examination supervisors. Thus, we also focus on the IT solution that was developed for this user group; the PDAs.

A single case study leaves us with no possibilities to draw statistically validated conclusions, but this is not our intention. Instead, we use the case in order to illustrate and discuss how stakeholder influence aspects and IT driven change aspects can interact and result in changes in stakeholder salience. Furthermore, an advantage with case study research is that a well-written case study has 'face validity' [19], implying that it represents a real story that people can identify with.

The origin of the initiative to develop this e-service was student demands for a higher legal certainty in the marking process of written exams. Students argued that the teachers cannot be totally fair in their marks as long as they know who the student is. 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. Thus, the student demand for anonymity is in line with 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. The student 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. A project group was formed consisting of a project owner, project leader, systems developer, administrative personnel, representative of the examination supervisors and central examination administrator. A reference group was also organized consisting of representatives of the teachers, the students' union, and examination supervisors from all faculties. This implies that the following stakeholders were represented in these two groups; students, teachers, course administrators, examination supervisors, and the university (represented by the project leader, systems developers, and technical personnel).

The examination supervisors' task during the examination event is to monitor the students in order to control the process and prevent cheating. In short, the development, implementation and use processes that we have studied resulted in the following e-service and work process for the examination supervisors: The PDA is a mobile device that the examination supervisors use on spot during the examination event. At

first, the examination supervisors load and sync the PDAs against a database with information about which students that have signed up for the examination. The PDAs are equipped with card readers with which the Student Identity Cards can be read. When the students arrive, the examination supervisors can control that each student is in the right place by scanning these cards with their PDAs. The PDAs are designed to signal that the students have arrived to the right venue by producing an audio signal (a 'beep' sound). If a student arrives at the wrong venue, the PDA responds with a different audio signal. When the students are seated and handed their exams, the examination supervisors supply the students with their anonymous ID (AID) by scanning their Student Identity Cards once more. The students, and the examination supervisors, write the students' AIDs on the cover of their exams. When the students are done writing their exams, they hand in their exams to the examination supervisors. The examination supervisors scan the Student Identity Card with the PDA once more in order to register that the student has handed in the exam. After all students have handed in their exams, the examination supervisors synchronize the PDAs against the database once more. The rest of the process, in which teachers mark the anonymous exams and course administrators register the results before the anonymity is revealed, is not further discussed here. As will be discussed later in the article, this re-designed work procedure differs a lot from how the examination supervisors used to work before this project.

The case study was conducted from 2008 until 2010. During the pre-implementation phase, the authors followed the development project (the project group and the reference group) in their project activities. During the post-implementation phase the authors returned to the case in order to study the stakeholders' implementation and use experiences. Data was generated in several different ways. Six project meetings were observed and notes from these observations were taken. During the last project meeting, respondent validation [23] of the findings was accomplished. Data was also collected by observations of three information meetings open for university employees, one systems training activity for examination supervisors, and two evaluation meetings. 24 interviews have been conducted during the case study. The interviews lasted for 30-60 minutes and were recorded. In addition, project documentation as well as e-mails sent from university employees to the project group were analyzed. Responses to a qualitative, open-ended, questionnaire sent to all examination supervisors a year after the implementation were also analyzed. Altogether this case study design has resulted in rich empirical material focusing on the development project from several perspectives. The empirical data is of a qualitative nature and has been analyzed with an interpretive approach [e.g., 26].

## **4 Empirical Findings**

The examination supervisors are contracted by the university and temporarily hired for each examination event. This group mainly consists of senior citizens (mostly retired women now working at a temporary basis) who want to earn some extra money. Their responsibility is to supervise the students during the examination event in



order to control the process and prevent cheating or the use of prohibited aid. Prior to the development of the PDAs, their work was totally paper-based. It was therefore obvious that this group faced the largest changes in their work tasks due to the e-service and the re-designed process. However, very few outside the project group were concerned with this fact, implying that the examination supervisors indeed belonged to a marginalized group prior to the project. In the pre-implementation phase this group expressed fears that they would not be able to learn the new process and how to use the new technology. The degree of IT maturity differed between individuals in this group, but was over-all low. The examination supervisors were afraid that the re-designed process would lead to increased time pressure during the examination, as the registration of each student in the PDA would take some time. Their greatest fear concerned how they were supposed to solve technical problems that might occur when they were alone in the classroom with a lot of students eager to start working with their written examination. They were not sure what kind of help they could get, and from whom.

Besides these fears regarding the transition from manual to IT based work, the examination supervisors also expressed positive expectations as they hoped to be able to influence the examination process when the e-service was implemented. For example, they hoped that the re-designed process would make it easier for them to refuse students, who have not registered for the exam in advance, to take part in the examination. These students are not allowed to do the examination, but the paper lists often contained invalid information and students' could claim that they were registered even though their names were not on the attendance list. In the new process the AID is generated when the student registers for the exam, and later retrieved when the Student Identity Card is scanned by the PDA, which means that no students could be permitted to participate if they lack this card and the prior registration. In spite of these positive expectations, the dominating feeling towards the e-service was fear. The examination supervisors were worried that the initial problems when introducing the new technology would last too long and that this could make some of them quit working.

Despite being characterized as a marginalized group in the organization, the members of the project group took the examination supervisors' expectations and fears seriously. They were worried that several of them would quit their job if the design of the work process and the e-service was not intuitive and easy to learn. Hence, the examination supervisors were seen as a user group whose needs and wishes had to be met to the extent possible. During training sessions organized for the examination supervisors close to the end of the development project, the participants were discontent with the design of the interface of the PDAs and protested against using the PDAs in their current design. Based on the examination supervisors' feedback on the PDAs, the interface was re-designed considerably late in the project. The examination supervisor representative in the project group was a strong driving force in this re-design of the PDAs and worked closely together with the system developer on this task. This representative turned out to be very important for promoting the examination supervisors' interests. She was selected as representative in the project group based on her

formal position as an examination supervisor, but she turned out to be a real project champion with a lot of former experience in development projects.

In a questionnaire sent out to the examination supervisors when the re-designed working process and the e-service had been in use for a year, a majority responded that the PDA was an invaluable tool in their work and that they could not imagine going back to the old ways of working. Some individuals reported that they had been skeptical towards the changes initially, but that they now only had positive connotations to the e-service. The examination supervisors were very content with the training they had received on how to use the PDA and considered it to be easy to learn and use. They emphasized that the PDA was a useful tool for them and mentioned adjectives such as *“fast, smooth, supportive, easy to work with, professional, modern, and good”* in order to describe the e-service. Several respondents also reported that their work had become less stressful, safer and more trustworthy. Interestingly, the respondents also reported that their work required more precision and carefulness after the implementation of the PDA.

The main advantage with the new ways of working was that the entrance procedure had become less troublesome when using the PDAs. The examination supervisor could now see information about each student when scanning their Student Identity Cards by the PDA. Based on this information, the entrance procedure was now faster and easier than before; paper lists of the expected participants was no longer needed, and the audio signal from the PDA told the supervisor if the student was expected to participate and if she/he was in the correct room. Some respondents also experienced that the students' behaviour had improved as a result of changes; e.g., one respondent reported that *“Previously, unregistered students tried to sneak into the room or obstinately tried to maintain that they had registered for the exam even though they were not on the registration list. This behaviour has ceased.”*

The overall view of the examination supervisors' perception of the PDA and the changed process is that they were very content with the ways in which it had all turned out. One questionnaire respondent wrote that *“It's fun; you feel more engaged, a few more tasks, also good for the students”*. Another respondent wrote that *“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”* and *“Now when I know the routines I believe that the work is easy, I feel 'modern', somehow”*.

## **5 Discussion**

Based on the empirical findings reported above it is obvious that the examination supervisors' attitudes towards the project and its outcome changed between the pre-implementation and post-implementation phases. In the beginning of the project, this actor group displayed a more or less reluctant and hesitating attitude towards the changes. It is easy to trace their doubts about their future work to fears of the new e-service and the re-designed process, which is a usual reason for people's reluctance towards change [14]. The feelings of fear were mostly connected to uncertainty of having sufficient skills and competence to learn how to use the technology. We do not

see any signs of fear regarding, for example, risk of losing power, freedom of action or influence, which are other common explanations to change inertia [2; 16]. A possible explanation to this could be that the examination supervisors did not possess any power or influence in the organization prior to the project.

The situation that a stakeholder group, prior to an implementation project, is uncertain and afraid of not being able to cope with new demands, and then, after the implementation, experiences that this fear did not come true, is probably not unusual. Nevertheless, an IT project in general or an e-government project in particular might fail if such negative expectations take over and threaten the acceptance of the outcome [8; 15]. In the studied case the risk for this to happen was quite low since the examination supervisors as a group has few connections to other stakeholders. Their formal status in the organization prior to the project was low as they are temporarily hired on contract and rather easy to replace. Regardless of their position not being a potential threat to the success of the project, it would have been a huge drawback if many of the examination supervisors had resigned all at once. Thus, the fact that the project group recognized the examination supervisors as the stakeholder that faced the most severe changes in their work, and also being the group with least IT experience, was crucial. After the e-service implementation the examination supervisors express that they are satisfied with the changes. No one wants to return to the old working process and they claim that they are proud and enjoy their work even more than before. They changed their view of the project and the e-service developed and used, which resembles stakeholders' dynamic role as discussed by Kamal et al. [7].

When analyzing the examination supervisors' stakeholder salience, it is evident that at they did not possess the salience attributes [18] in the very beginning of the project. The IT project was not initiated as a response to any needs or requirements that this group initially had. On the contrary, the examination supervisors did not express any need for the new working process or e-service before the project started. Neither did they have any formal power to initiate such a project, nor would their claims have been regarded as legitimate. As mentioned above, this stakeholder group could instead be seen as a marginalized group in the organization in many aspects. However, early in the project, the examination supervisors were discovered as a group that would face much change and therefore they were focused and partly prioritized during the e-service development. In retrospect this might have several explanations; 1) the other user groups (course administrators, teachers, and students) were all difficult to engage in the project, 2) the system developer was particularly interested in developing the technical PDA solution, and 3) the examination supervisor representative was a strong force during the development phase. All these aspects interplayed in the same direction, making the examination supervisors become more influential on the design of the PDA than anyone would have expected from the beginning. This is a good example of the fact that stakeholder salience might change over time [1; 7]. During the project stakeholder salience of the examination supervisors increased radically from being a marginalized to an influential group. This can be explained by the interaction of their involvement in the development project and changes imposed by the implemented IT solution.

As a result of the re-designed process the examination supervisors' work content was completely changed. There are several new IT based operations that they now have to conduct, where the process before mainly was about ticking off a list and watch for cheating students. The examination supervisors now apprehend their work situation to require much more precision and carefulness, which could be seen as a sign of increased complexity of the work content. Their part in the administrative process of written examinations has become much more active and transparent thanks to the e-service. This has changed the examination supervisors from being a passive guard of the examination event to possessing an active and important role in the university's educational processes. These changes have nothing to do with the influence the supervisors had on the PDA design, which was focused on interface and interaction issues. Instead, this is a consequence of the changed working process in combination with the new e-service. This is an illustrative example of how technology-driven organizational change activities might occur and be viewed from different perspectives [15]. It is noticeable that none of the changes in the working process were implemented in order to reach these benefits for the examination supervisors. Nevertheless, they did occur and are appreciated as positive aspects of the changed work content. This is also an example of a beforehand unintended, but realized benefit [17; 20]

One aspect of the above mentioned changes in the examination supervisors' working process is that these changes not only influenced their notion of work satisfaction. The changes also made the students look at the supervisors with new eyes. Prior to the project, some students had tried to convince the supervisors to let them participate in the examination even though they had not registered their attendance prior to the examination. They begged, yelled, and even lied in order to be able to write the exam. This was a true problem for the supervisors, who before the implementation mentioned that a possible benefit from the project would be to gain more authority towards students. Thanks to the PDA and the changed administrative process this expectation came true. The supervisors now experience that the students obey them much better and that they apprehend them as more legitimate and powerful. Hence, the examination supervisors' role towards students has changed.

Changes in how others, in this case the students, view us also influence how we perceive ourselves. What started out as the examination supervisors' main source of concern – being able to handle the PDA or not – turned out to be the key element in their positive judgment of the outcome. After the implementation phase it was the use of the PDA that was emphasized as most positive, both regarding its usability and its implications for the process being safer, more trustworthy, and efficient [cf. 21]. They explained this as a transformation they had gone through from being a technology hostile 'exam lady' to a modern IT user. They commented upon the fact that this had also influenced their relation to technology outside their work. This could be seen as an example of dissonance [25] between the re-designed process and the e-service, on one hand, and the old image of the supervisors on the other hand. Maybe it was this dissonance that made the supervisors start viewing themselves differently and, consequently, also acting with more authority. The result was, regardless, a changed self-image.

## 6 Conclusions

In this article we have shown how a marginalized stakeholder, who in the beginning of an e-government implementation project lacks power, urgency, and legitimacy, still can turn into a salient actor during the process. We have identified several types of change related to the studied stakeholder group. They changed the way they viewed the project, going from a reluctant and hesitant attitude to a sense of satisfaction and pride with their PDA and working process. The examination supervisors started this journey as a somewhat marginalized group that did not have a prominent role in the planned project, but was prioritized by the system developer who at a late stage of the project involved them in the design of the PDA. This made their stakeholder salience increase during the project. In the old process, the examination supervisors mainly served as a passive guard making sure that the process and the rules were followed. After the e-service implementation the supervisors were empowered with distinct assignments as an important and legitimate actor in the examination process, thus, the work content had shifted [cf. 15]. As results of these IT and process related changes, both the role of the supervisors as apprehended by others (the students) and their self-image changed. They went from being a marginalized and reluctant stakeholder to an influential and modern IT user.

The purpose of this article has been to illustrate the fact that, besides e-government projects' aim to increase agency efficiency and citizen benefit, implementing e-services might also change the salience of involved stakeholders. We have done this by focusing on one stakeholder group's transformation during an e-government project. The main conclusion from this case is that in e-government projects we need to acknowledge both stakeholder influence aspects and IT driven change aspects in order to understand the effects and consequences.

Finding ways to involve stakeholders and making them influencing the design and development of e-services and working processes is an important but complex task, since there are many stakeholders with differing needs and possibilities to participate in e-government settings. This study shows that stakeholder involvement in itself is not enough since both intended and unintended IT driven changes will occur during and after the project. Stakeholder influence aspects and IT driven change aspects are intertwined. This makes it necessary for any e-government project to address the notion of stakeholder involvement in decision-making during the development and implementation phases, but also to acknowledge IT's and e-services' force to change how things and people are perceived during these phases. The view of a planned and rational change project is here challenged by an emergent, dynamic, and intertwined process [cf. 17].

We have illustrated these matters by a "successful" case, in which a marginalized group turned out to be a winner in the end. Next step would be to study less successful cases in order to find out if the intertwined relation between stakeholders and IT works in both directions, turning marginalized actors into powerful ones but also decreasing authority and prominence among others.

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