

12-31-2010

## The Project Multiple: Enactments of systems development

Brit R. Winthereik

*IT University of Copenhagen, brwi@itu.dk*

Follow this and additional works at: <http://aisel.aisnet.org/sjis>

---

### Recommended Citation

Winthereik, Brit R. (2010) "The Project Multiple: Enactments of systems development," *Scandinavian Journal of Information Systems*: Vol. 22 : Iss. 2 , Article 3.

Available at: <http://aisel.aisnet.org/sjis/vol22/iss2/3>

This material is brought to you by the Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in Scandinavian Journal of Information Systems by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# The Project Multiple

## Enactments of systems development

Brit Ross Winthereik  
IT University of Copenhagen, Denmark  
*brwi@itu.dk*

**Abstract.** This article analyzes how a pilot implementation of a maternity care record was approached very differently by potential users. It is argued that conceptualizing the ways in which the new IT system was approached as: (1) ritual, (2) controlled experiment, and (3) learning process, highlights differences in what it meant for participants to be part of the implementation. This is comparable to paradigms in systems development. Rather than aligning the different interests of user groups, the pilot project brought about differences within the project, and thus enacted what is referred to in the article as a *project multiple*. Based on a characterization of the different modes of participation/systems development paradigms, the contribution of the article is, first, a demonstration of the theoretical benefits of the notion of enactment in relation to the management of IT implementation projects. Second, it is to point to the benefits of considering the multiplicity of projects in the practical management of IT projects, where pre-set goals and expectations are transformed as they blend with everyday routines and activities in specific locations.

*Keywords:* pilot implementation, enactments of systems development, health care, project management, information systems research, science and technology studies.

Accepting editor: Keld Bødker

© Scandinavian Journal of Information Systems, 2010, 22(2), 49–64

# 1 Introduction

Within information systems (IS) research, user involvement has been on the agenda for several decades. It has been recognized that insights about user behaviour and about everyday practices in organizations are central aspects of successful systems development. Nevertheless, the specific ways in which users may or may not be aligned with IT systems continues to be an important locus of attention within the IS field. This has brought about a strand of research that has recently been referred to as socially-oriented computer-science (Pollock and Williams 2010).

Socially-oriented computer-science has investigated relations between human users and their expectations and motivations on the one hand and technological and organizational scripts and procedures on the other (Bødker 2000; Button & Harper 1993), relations between sites where programming is done and sites where implementation is happening (Dourish 2006), relations between planned action and situated sense-making (Suchman 1987; Ciborra 2000), and relations between different accountabilities in systems development (Suchman 2002; Henriksen 2002). Being attentive to the role played by social relations in systems development has moved IS research away from a rationalistic framework, since it includes an interactionist perspective and often focuses studies on dynamic and unintended effects of technology development and use. For example, by pointing to the relative instability of technology (Ciborra 1997), or to the translation processes involved in its use (Winthereik and Vikkelsø 2005).

In this paper, I analyse the dynamics and effects of a pilot implementation of an electronic health record for pregnant women in order to assess the role of the pilot implementation for the overall development of the system. Based on the analysis, I find that the notion of enactment might be useful in IS research as a way of taking the interest in the relational a step further. Enactment, I suggest, helps the analyst take the social into account in a way that moves the action away from the human or the technology and into the situation. The social, then, is no longer a 'factor', but a fundamental characteristic of the situation in which technology development happens.

A researcher, who has taken a long-standing interest in exploring human-technology relations is Wanda Orlikowski (see for example Orlikowski 2001). One of her interests is to better understand emergence and improvisation in technology use, in the realization that people modify technologies "long after design and development" (Orlikowski 2000, p. 406). In her work, she demonstrates how users and organizations appropriate technology both by subjecting themselves to technological scripts and by modifying these scripts in complex ways through use. Orlikowski argues that the situations in which humans relate to technology should be considered as situations where human actions reconfigure elements that were otherwise considered fixed technological parameters (Orlikowski 2000, p. 407, see also Scott and Orlikowski 2009 for a more recent study pointing in a similar direction). A focus on enactment, Orlikowski argues, enables a focus on the effect of the technology that does not take technological structures as a starting point, but rather as an outcome of the complex sociotechnical interplay between humans and technologies. Orlikowski's approach to the structuring effects of technology, she notes, is made possible by seeing technology through "a practice lens" (Orlikowski 2000, p. 407). Seeing through such a lens, i.e., attending to in situ interactions between technology and users, leads her to suggest that technology use is recursive:

“Users’ interaction with technology is recursive—in their recurrent practices, users shape the technology structure that shapes their use. Technology structures are thus not external or independent of human agency; they are not ‘out there’” (Orlikowski 2000, p. 407).

In the following, I take Orlikowski’s insight about the recursive nature of users’ interaction with technology as a starting point for a discussion of the recursive nature of users’ interaction with an IT implementation project. If we take recursivity to also characterize future users engagement with a project, what are the consequences of this for the project? And how might the notion of enactment be pertinent for projects managers of IT systems, who deal with the effects of the recursivity between users and project on a daily basis?

In the following I explore these questions through an analysis of a pilot implementation of an electronic record for maternity care. Ethnographic data generated between 2005 and 2007 form the point of departure for a discussion of the notion of enactment. Specifically, I present and discuss three enactments that emerged out of the ethnographic data material, and suggest that each enactment represents a normative proposition ‘formulated’ by the future users as to how the IT implementation might be structured in a project. Expanding the notion of enactment through work carried out within science and technology studies (STS) brings into the picture the possibility that acknowledging multiplicity of IT projects might bring about new potentials for IS research and for the management of IT implementation projects. The notion of the *project multiple* specifies the key empirical and theoretical contributions of the paper.

## 1.1 Background and empirical setting

The purpose of the pilot project in question was to bring an online record for maternity care into contact with future users through a pilot implementation. The purposes for introducing an online record were:

1. To test whether the online maternity care record would improve the continuity of care through access to online information for the health care professionals and the pregnant women.
2. To improve the quality of information in the maternity record.
3. To involve the pregnant women more actively in providing documentation about the pregnancy trajectory.
4. To inform further design of web-based IT support for chronically ill patient groups, e.g., diabetics.

On a daily basis the project was driven by Sundhed.dk (translated: health.dk), which was both the URL of the site hosting the online records and the name of the organization behind the initiative<sup>1</sup>. Employed in the maternity project were two project managers; one that was locally based, i.e., in the region, where the system was implemented, and one that was centrally based, i.e., at the Copenhagen main office.

In the maternity care project, user participation was high on the agenda. Sundhed.dk had made agreements with 5 general practice surgeries (family doctors), a large center for midwifery,

and a hospital department specialized in gynaecology and obstetrics. According to the project plan, clinicians would recruit 100 pregnant women at these sites and an online record would be made for each of the women. A project manager, referred to as 'the local project manager' because she was based in the region where the implementation took place, would monitor the sites and participate in meetings at the main office in Copenhagen. The pilot project was envisioned to run from 2005 and until all of the pregnant women had given birth. Thus, the idea was that during this period an online maternity record would replace a paper-based maternity record usually carried around by the pregnant women. The health care professionals were offered an introductory course in how to operate the record. The pregnant women were to be instructed by their general practitioners (GPs).

After 7 months the maternity care project was terminated. Several of the participating GPs had withdrawn and after a while the hospital department withdrew as well. The project could in principle have continued with only one participating general practice surgery, but without the hospital department it could not go on. Was the project a success or a failure? Looking back at the purposes that were formulated at the outset of the project, the answer is yes and no. It certainly did not improve the quality of the information that was shared among participants, but it did have the effect that the pregnant women would take responsibility for documenting the progress of the pregnancy in the electronic record. However, this happened in a totally different way from what had been imagined by Sundhed.dk (Winthereik & Langstrup 2010). Sundhed.dk representatives were themselves ambiguous about whether the project was a success or a failure. During a conference for health care researchers and industrial partners at the Copenhagen Business School in November 2008, the managing director of Sundhed.dk both compared to the project to an abortion (because it had been prematurely terminated), and referred to it as an important learning experience (because it had shown Sundhed.dk the difficulty of developing and implementing tools for shared care).

Rather than looking at the project as either a success or a failure (Berg 2001), we might choose to ask what differences the online record created (Vikkelsø 2005). The remaining part of the paper attends to specific differences created during in the project about the goal of the pilot implementation.

## 1.2 Methods

The empirical data informing the analysis was generated through ethnographic techniques and carried out in a team of four researchers. This team carried out semi-structured interviews with pregnant women, midwives, GPs and project workers, and did observations of obstetricians and nurses' work in a hospital department. We conducted two rounds of interviews with in total 38 general practitioners (GPs), hospital doctors, midwives, nurses, and project workers employed at the project. In addition to the interviews made in pairs with colleagues, I observed 14 consultations between pregnant women and midwives at the centre for midwifery, and followed three pregnant women during consultations with midwives and obstetricians. After each observation I talked to the women about their experiences with the online record, and a colleague and I participated in project group meetings at the Sundhed.dk main office and studied the documents produced by the project participants. After the project had been closed down, we were allowed

access to study anonymized printouts of the 75 online maternity records that were made during the project.

Our analysis of this data material was done on the basis of grounded theory (Strauss & Corbin 1990; Glaser 1992). We used open codes as a method for sorting the data material into themes and discussed the interrelation of themes during small workshops. During the workshops different team members were assigned the responsibility of writing small memos based on coded quotes from the material.<sup>2</sup> In subsequent analysis of the material I sought, in line with the newer approaches to grounded theory, to bring to the light the *full situation* of the inquiry (Clarke 2005, p. xxviii). This includes an approach to the human and the nonhuman actors that is more symmetrical than what is common in more traditional forms of grounded theory, where human actors and their sense-making processes are the main locus of attention. One of the fundamental insights in Clarke's approach is that an analysis configures the actors of an empirical situation in specific ways. The ethnographic field is thus co-constructed by the researchers' previous assumptions, theoretical inspirations, social and material actors in the field, their negotiations among each other and with the researchers, etc. This is in line with the understanding of what constitutes the field in much constructivist thinking, and points to how the researcher's position and the knowledge generated is enacted by the actors he/she engages with during field work and analysis.

## 2 Analysis

After having introduced some relevant background and my methodology, I now present the analysis of the material, which suggests that the maternity care project was enacted in three different ways by project participants: (1) as a ritual (2) a controlled experiment, and (3) a learning process.

### 2.1 The project as a ritual

In the interviews with hospital staff about their expectations to the pilot project and the online maternity record, the online record was described as part of an all-encompassing wave of digitalizing health care.

Hospital nurse 1: Because of the times we are living in... everything is accessible on computers, on the web, and our work gets more and more dependent on us running stuff on computers and databases. So I believe that this is the way things go, and that this is the way it should be.

Hospital nurse 2: Paper is disappearing...in society, I mean. So I guess that is a development one must join and follow.

Hospital nurse 3: It [the online maternity care record] could very easily be a bit complicated to work with, but it is probably a matter of getting used to that this is what the future will look like.

During our analysis of the interviews we increasingly realized how the hospital nurses, secretaries and midwives interviewed, saw themselves as peripheral to the project and to digitalization more generally. But despite their experience of being positioned at the margins of the project, nevertheless they needed to adjust their routines to be able to work the new system. For example, all the nurses needed to carry around a digital signature on a card (in case they needed to access one of the 100 online records). The nurses found the instalment tiresome; they often forgot to bring their cards and borrowed from each other instead. The careless use of identity card indicates a somewhat distanced attitude towards the project.

The interviews with the nurses enact the pilot implementation as a transition to a brighter future with technology. The transition is imagined as relatively structured and predictable, not unlike rituals as they were described in early anthropological ritual theory (Van Gennep 1960). Doing full justice to this work is not within the scope of this paper, but what I want to draw out is that these authors describe a *rite de passage* as a pre-structured transition period, that individuals go through in order to indicate and bring about a change in their social status within a community. According to this literature a change process, e.g., initiation, follows a predefined structure (separation from the community, a period of exclusion/betwixt and between, and reintegration into a new social status). I view the way in which the hospital nurses talked about a fully digitalized health care sector as an inevitable end goal as an example of ritualistic enactment of the project. The understanding of digitalization as “what the future will look like”, and the understanding of the online maternity record as one inevitable step on the road towards this future, gives the impression of a health care sector coming of age. IT projects like the maternity care project will bring the health care sector into the future, and there is not much one can (or should) do about this, the nurses seemed to say.

This does not suggest that these interviewees are worried or even particularly negative in their views the maternity care project in particular or of information technology in general; rather, they mainly seem to be laconic about it. According to ritual theory, members of the social group that carries out the ritual know the purposes and functions of it. Similarly, in the case of the maternity care project there is a shared vision about the direction of the project and its end point. According to the nurses the pilot project is expected to lead to the introduction of a nation-wide electronic patient record (EPR), in which all health care professionals will be able to access information on all patients. The online record for maternity care is considered part of an all-encompassing system, the online record being one of the branches.

Midwife 1: I see this [the maternity care record] as one branch of all the things we are about to implement.

Midwife 2 [interrupts]: The EPR?

Midwife 1: The EPR...well, that one we will also [have]...I see it as branches that in the end will be united, so that everything gets.. so that in the end all the information about the patient, hospitalizations and the rest of it will be on the computer.

Here, midwife 1 expresses her hope that “in the end” all IT-systems will be integrated. She hopes that all the effort and work that nurses and midwives carry out in order to make the maternity care record function now, will somehow make sense in a long-term perspective. This way, the nurses and midwives tell about the maternity care project and their present trouble as making sense in relation to a greater communal or social order. As in the descriptions of rituals referred to above, this will occur as a predefined set of steps and facilitate transition in a fairly deterministic manner. According to the interviewees, time passes and regardless of what they do or how they participate, eventually health care will become digitalized. This perspective resembles the waterfall model, where one development phase is succeeded by another by default.

## 2.2 The project as a controlled experiment

In this section we move away from the hospital and into the Sundhed.dk main office. During project group meetings at the main office a number of controversial issues came up and enacted the project differently. In the following I focus on three controversies as examples of the enactment of the project as a controlled experiment. The first controversy centered on whether the participating GPs should receive a fee from Sundhed.dk covering the additional time they spent on participating in the project. The second brought up the issue about the amount of technical support the health care professionals were to receive during the pilot implementation. And the third was about whose responsibility it was if/when things went wrong with the project.

As these issues were discussed, it became clear that Sundhed.dk hoped that the pilot project would primarily work as a test of an IT-system in a natural environment of clinicians, i.e. the clinical work place. A number of evaluations would determine the effects of the system and inform the final decision in Sundhed.dk about whether or not to aim for a full implementation of the online maternity record (in the region and nation-wide). The logic seemed to be that educating the clinicians, implementing the online record, enrolling the pregnant women, letting the project run its course and evaluating it in the end, would produce objective knowledge about the online record. The way the project was talked about in relation to the controversial issues that were brought up most of all resembled the controlled, clinical trial used in medical research.

The project as controlled experiment was most clearly enacted in discussions between the local project manager and Sundhed.dk representatives during project group meetings. At these meetings the local project manager often expressed frustration that Sundhed.dk was not more active in providing IT support and in solving the technical trouble encountered by the clinicians (as these trouble usually ended up being her responsibility). Evaluations of the project were considered very important by Sundhed.dk—no less than seven different evaluations were planned—and these evaluations were mentioned as a way of dealing with troubles encountered. It was emphasized that problems encountered should be carefully documented (not necessarily solved). Because of this focus on after-the-fact documentation and evaluation, the local project manager had a hard time keeping clinicians interested and not give up on the project. In order



to report flaws in the system, clinicians would have to first contact the Sundhed.dk main office. Sundhed.dk would then collect all the complaints (on a regular basis, it was said) and would then decide what to do about them. It was a slow process that took seriously the phases of set-up, training of clinicians, pilot implementation/testing of the system, evaluation of the system, and possibly full roll-out. To the clinicians, however, the procedure was experienced as bureaucratic and meant that they lost faith in the ability of the system to provide them with help in their daily work.

During each project group meeting the Sundhed.dk representatives that were responsible for the technical operations of the Sundhed.dk website and the maternity record gave a status report. This would last about 5 minutes and present information about how the next version would affect the functionality of the maternity record system. The following excerpt is from the minutes from a meeting held on March 23, 2006.

[Sundhed.dk representative] tells about the release of a new version that happened on March 13. The release had almost happened according to plan only 2 hours past schedule. Subsequently, there were some problems with 'the doctor's education book', which were solved. All in all, the event was a success and it is noted that this success should ease future releases (Excerpt from field note).

The rather cut and dry presentation of the technical conditions of the website and the online record stood in sharp contrast to the accounts presented by the local project manager. Where the status report focused on technical issues pertaining to specific Sundhed.dk services (seen in isolation from clinical work), the local project manager focused on the relations between the Sundhed.dk services and clinical work. She kept on emphasizing that the clinicians should be able to report flaws in the system directly to the vendor *when the errors occurred*. Insisting on the rule that all reporting should pass through Sundhed.dk, would pose a threat to the whole project, she argued.

The ongoing discussions of whose responsibility it was to make the online record work for the clinicians, made it clear that in addition to the ritual, the project was also enacted as a controlled trial, where the setup could and should not be adjusted, but kept stable throughout the project period in order to objectively register effects. This is concordant with the ideals of a controlled experiment and classical conceptions of scientific method. The central project manager kept stressing that Sundhed.dk could not take upon itself the responsibility for errors coursed by the system in the clinic; even if the local project manager kept emphasizing that the use of an online record made new errors occur. For example it had happened a couple of times that GPs had forgotten to refer a pregnant woman to a midwife. The local project manager argued that Sundhed.dk had to accept that the design of the record would make this error happen over and over, as it did not prompt the GP to refer the women to a midwife. The central project manager would argue that this error was the responsibility of the GP and that no changes in the system should be made, instead the GPs would have to pay more attention when using the system.

Another situation in which the project as a controlled experiment was enacted, was related to a controversy around whether the participating GPs would receive payment for their participation or not. In a letter from a GP representative of one of the large IT systems for health care to

the steering group of the maternity care project it was argued that as the online maternity record fosters an additional use of time, the GPs, who use it, receive remuneration.

In conclusion, if the issues of additional spending of time and resources are not solved, we will withdraw. I cannot see how the project will survive if Sundhed.dk and its partners enforce solutions that we [the GPs] don't agree with. After all, we are the pregnant women's gateway into the project. (Excerpt from letter sent by chairman of Medicom to the steering group of the maternity care project, received September 29, 2004).

The letter reflects that using the online record was experienced by the GPs as an additional burden adding tasks to an already full schedule. Since using the online record was not part of a regular routine, remuneration seemed a reasonable demand to the GPs. Whether this should be granted or not was discussed at Sundhed.dk. The request was accepted, but the discussions on the payment as well as the discussions on whether clinical errors was the responsibility of Sundhed.dk, made it clear that Sundhed.dk had expected that the maternity record would smoothly enter into the GPs' offices and merge with existing routines.

## 2.3 The project as a learning process

The clinicians, who had invested time and effort in the development of the maternity record, brought me on track of the third enactment. These participants had invested both time and effort. Initially, they were very engaged and they considered their engagement in the project an important contribution to the development and the potential success of the record. They had been appointed contact persons and felt that they had made an agreement with Sundhed.dk that established their input as users as important to the project's success. They strongly felt that Sundhed.dk should listen to them and improve the system on the basis of their input.

Midwife 1: I really expect that we will participate in making it [the online record] even smarter.

Just like the midwives were willing to help out in the project until the record was fully rolled-out, a GP interviewed indicated that he would contribute to the improvement of the system until IT had ruled out paper in maternity care. He expressed a firm belief that this would indeed happen.

GP 1: Indeed I expect that they are ready to meet our wishes. That the flaws that we point to will be corrected along the way, so that it [the online record] is working well when the year is over, so that we will not have to go back to paper, because that would annoy me a great deal.

The GP quoted here even expected that Sundhed.dk would release several versions of the online record during the implementation project, in spite of the fact that Sundhed.dk had never agreed to do so.

Interviewer: So you expect that there will come a new version of the online record, where it has been taken into account that....

GP 1: Definitely. Or several versions during the year. Because you could argue that the flaws are silly and should be corrected right now. It must be like that, right? So that we get better and better versions along the way, so that we will get a well-working system that we can give the others access to at some point in time.

In the interviews the participants quoted above were very specific about how they saw the project as an opportunity for Sundhed.dk and the vendor to learn from clinical practice, and to let what they learned inform the development process. They did not consider it much of a problem that none of the pregnant women had been involved. Accordingly, we must assume that they were either certain that clinicians would be able to represent the views of the pregnant women, or, as the quote below suggests, that the views of the pregnant women could always be taken into account later on.

Hospital physician 1: Well, they [the pregnant women] were not involved in the first [phases]. It is of course possible that they have input that will lead to serious changes.

When these participants—primarily the GPs, hospital doctors and midwives—realized that neither their own input nor the input of the pregnant women were taken into account, they got quite annoyed and several of them withdrew from the project. These people saw themselves as core participants in the project, and emphasized its learning potential. This enactment stood out primarily in conversation with GPs and midwives, who had the impression that they would play a central role in the project as spokespersons for their profession vis-a-vis Sundhed.dk and a vendor, whom, they assumed, did not know much about maternity care. They had hoped that they would be learning about IT and that Sundhed.dk would be learning about maternity care.

As the project moved on, it became obvious that the system was not being developed on the basis of input from the health care professionals. The clinicians, who had at first been ambassadors, grew increasingly frustrated with the project, and explained how they saw the project as primarily a failed attempt to involve health care professionals and do incremental systems development. A chief midwife, who done a great deal typing to cover up for flaws in the system, said she felt Sundhed.dk had made a fool out of her.

### 3 Discussion: Enacting the project multiple

Within IS research it has been a prominent endeavour to study how projects are organized and run. Graham Button and Wes Sharrock (1993), for example investigated how systems development is organized as projects to ensure collaboration. In their study they define a project as: “a formatted organisational arrangement within which engineers co-ordinate their day-to-day design and development work and is thus a form of social organization through which they make their work mutually and organizationally accountable” (Button and Sharrock 1993, p. 369).

To Button and Sharrock projects are forms of social organization that hold software engineers accountable to each other and to the organization overall. A project enables the engineers to orient themselves to a totality—the organization as a whole—and offers tools for measuring progression in relation to otherwise hidden collaborative processes. It is a tool for displaying

organizational knowledge that usually remains invisible, and as such necessary for local design and development work (Button and Sharrock 1993, p. 385). This view on the project as an enabling frame that creates specific affordances for the engineers and for the organization is useful when analyzing successful collaboration. When analyzing a phenomenon like the maternity care project, which was distributed in terms of geographical setting and the social groups involved it does not provide much guidance as to why collaboration and a mutual framing of the project failed to take place. One might argue that the framing was too weak and that the project manager should have formalized the project even more through use of project tools. Thinking back at the quite well-functioning communication between project participants, I am convinced that this would not have been sufficient to ensure communication and collaboration in the maternity care project. Taking seriously the incommensurability of the enactments of systems development might have been a step in the right direction. To make enactments useful in IS research and in the management of IT projects I now turn to work done within STS.

Like Button and Sharrock, STS-researchers John Law and Vicky Singleton (2000) have taken an interest in projects as a framing phenomenon worth of exploration. They introduce a constructivist approach to the project as form, in which they consider a project as a framework producing knowledges of various kinds. In their view, projects actively shape the participants' perception—both of the work they do and of what the project is and how it changes the lives of its participants. A project thus stimulates reflection about itself among its participants. What this means is that rather than functioning as a device for uncovering organizationally embedded knowledge and for communicating about it, projects fundamentally shape the participants' behavior and what it is possible for them to know. In relation to the maternity care project this means that participants would be drawing on the resources available (instructions from Sundhed.dk combined with the contingencies of their everyday work) and develop local contexts for the project.

Empirical philosopher Annemarie Mol would agree that the design of projects inscribe what it is possible for its participants to know (see also Oudshoorn 2003). But her take on what knowledge *is* differs. Mol sees knowledge as embedded in practices, and argues that researchers have no access to what their informants know other than through attending (ethnographically) to what they do; to their practices. Mol does not talk about projects as organizational frameworks for action; but her research is relevant here due to its insights about relations between parts and wholes. Her interest is with medical and other knowledge regimes and the body, or more precisely the diseased body (Mol 2002). I draw on Mol's work to get further analytical purchase on my analysis, which is not about a diseased body, but a diseased project. The invention made by Mol in her book *The Body Multiple*, is that she demonstrates that the body, usually considered as one entity, can instead be considered as different entities coordinated across the hospital, a multiplicity. She makes this argument by empirically following how atherosclerosis is enacted both as pain by walking, when encountered in the clinic, and as a thickness of the blood vessels when seen through a microscope in the pathology laboratory. Mol shows how the different atheroscleroses are enacted and coordinated at the hospital. In addition, she shows how her analytical focus on disease practices allows for acknowledging co-existence and multiplicity. In theory there is a clash—the body is not considered a multiplicity, but a unity—in practice, however, it is more than one, less than many. Similarly, the maternity care project can be seen as co-existing enactments, presenting different wholes. I have labelled the enactments as a ritual,

as a controlled experiment, and as a learning process in order to distinguish the new contexts or worlds that were brought into being through participants' interactions with the maternity care project. On the basis of the above, I propose the notion of the project multiple as a device for tuning in on the production of difference in IT implementation projects. The project multiple embeds a normative position, which is to try to find ways in which different worlds might gain recognition and be able to co-exist as a vague whole (more enactments are always possible) making up the project.

### 3.1 Potentials of the project multiple for IS research and project management

The main potentials of the notion of the project multiple for IS research is that it urges us to de-center the source of action away from humans. According to Orlikowski people enact technological structures, which in turn shape the user and the use situation. According to Mol technologies and humans are enacted together, and that which carries out the action is not a human actor on her own, but a situation, a set-up, an assemblage of humans and materiality interacting. Rather than understanding enactments as different perspectives on the same phenomenon, Mol thus focuses on the effects produced in particular *situations*. In these situations the researcher becomes part of the set-up; he or she does not have privileged access; her knowledge production is situated in action just as is the case for other actors. Where Orlikowski takes the human actor, the user, as her starting point for empirical study, analysis and design, Mol takes, *the situation* as hers (Mol 2011).

Methodologically, this has the consequence that the boundaries between data gathering and data analysis blur. When the researcher does not have privileged access much more work is needed to get the analysis right. Situations—like the three I constructed above around the enactments—are at one and the same time empirical and analytical. Theoretically, a focus on situations means that studying people's practices implies studying both what people do as well as how they are 'being done' by a particular (project) set-up. In this there is a certain recursivity, as pointed to by Orlikowski, as the approach is based on an idea of co-construction of human actors and surroundings.

Attending to situations also implies a different approach to coordination than the one focusing on how different practices are connected through mediation of some discrete actor (see Levina & Vaast 2005). Instead of attending to actors as mediators that makes a project 'hang together', the project multiple questions the assumptions that entities (bodies, projects) need coordinating actors in order to avoid fragmentation. Perhaps there are really some coordinating actors (see Winthereik & Langstrup 2010 for an analysis of the coordinating role of the paper-based record in the maternity care project). Perhaps all there is, is overlaps between the different enactments that ensure a certain coherence of views and practices. The notion of the project multiple proposes to examine empirically how projects hang together.

Acknowledging that different worlds or realities co-exist within the framework of a project has potentials for IT project managers as well. I consider the notion of the project multiple as a means to accept the multiple interests and expectations that compete in IT projects, rather than seek to gloss over difference among participants. Insisting on consensus as to what the purpose

of a project is, this case demonstrates, hinders the alignment of users and project goals. Instead, tensions and negotiations should be taken seriously as a potential for developing the aims of the project. The notion of the project multiple should thus be seen as a helpful device for project managers, who consider a project as a generative framework; the project is doing something, it is not just a way of organizing what already is.

Thus, I propose that project managers dedicate attention and other resources to *observe how the project is enacted while it develops*. How and to what extent does the project gain independent existence among participants? How do they incorporate it into their daily work lives? What issues about the relation between the project and their work are important to them? Are there situations that produce a common footing, and if yes, what characterizes the common ground that is established? Projects managers might also find it useful to attend to the sometimes partly invisible actors that travel across sites. The identified enactments should then be brought into some kind of comparison similar to how I have done in the enactment of the project presented in this article. Comparison explicates differences and similarities, but more importantly, it allows for the production of new scales on which to evaluate what is going on in the project. Comparing the different enactments in a project might help project managers overcome the gap that Ciborra points out between “business school models” and “phenomena concerning the existence of people at work” (Ciborra 2000, p. 70).

On a final note, the *project multiple* offers moments of self-reflection for project managers as it inspires to considering how they themselves participate in particular enactments of a project. In the case study analyzed here, the central project manager seemed not to be aware that the distanced position that was produced as he continuously fought for the paradigm of a controlled experiment would have a normative impact, in the sense that it distanced the central project organization from its local counterpart. If he had acknowledged the different enactments of systems development, it might have occurred to him that the differences between health care professionals and their practices that he sought to overcome through a digital tool, were very much alive in the project organization itself.

## 4 Conclusion

This paper has argued that in a pilot implementation of a maternity care record systems development was enacted in different ways. I described three enactments and labelled these analytical-empirical situations as: (1) ritual, (2) controlled experiment, and (3) learning process. I proposed the notion of the *project multiple* as a means to conceptually deal with the fragmentation that threatens to dissolve many IT projects in the public sector and elsewhere. The *project multiple* is a way of recognizing that differences are continuously produced within and through a project. By naming a well-known problem in IT project management, the *project multiple* is also a way in which problems stemming from fragmentation can possibly be dealt with; naming it carries with it a possibility for resolution. I have therefore argued in favour of acknowledging the implementation project as a site for alignment as well as for the production of difference. The *project multiple* is offered as an opportunity for IS researchers and project managers to engage with project dynamics in a way that deals with the danger of fragmentation in a constructive way.

## 5 Acknowledgment

The research was made possible through a post doc grant from the NordICT project at Denmark's Technical University. Local project manager, Rikke Viggers and staff at the Sundhed.dk main office were helpful in establishing contacts with participants in the maternity care project and were open for engaged conversation. Thanks to Jørgen Bansler, Erling Havn and Nis Johannsen for collaboration during data collection and analysis. Thanks to the three anonymous SJIS reviewers, whose comments improved the paper greatly.

## 6 Notes

1. The most well known instantiation of Sundhed.dk's activities, is the website [www.sundhed.dk](http://www.sundhed.dk), where Danish citizens can search for various kinds of information on health-related issues. The information is divided into a section for citizens and one for health care professionals. Some of the information, for example about waiting times and standard care packages at different hospitals, is directed at both citizens and health care professionals. In other words, Sundhed.dk is a public technology, which aims at involving patients in self-care through their use of online resources (Winthereik, Johannsen & Strand 2008).
2. Examples of codes we developed and used: "the pilot project" (theme), "the design process" (main code), "the IT-system/the online record" (main code), "experience of the system during the pilot project" (sub code), "the implementation process" (main code), "the experience of the implementation during the pilot project" (sub code), "the design of the pilot project" (main code).

## 7 References

- Berg, M., (2001). Implementing information systems in health care Organizations—Myths and challenges. *International Journal of Medical Informatics*, (64): 143-156.
- Button, G., and Harper, R. H. R., (1993). Taking the organisation into account. In: *Technology in Working Order—Studies of Work, Interaction and Technology*, G. Button, ed., Routledge, London, pp. 98-107.
- Button, G., and Sharrock, W., (1996). Project work—The organisation of collaborative design and development in software engineering. *CSCW*, (5): 369-386.
- Bødker, S., and Petersen, M. G., (2000). Design for learning in use. *Scandinavian Journal of Information Systems*, (12): 61-80.
- Ciborra, C. U., (1997). De profundis? Deconstructing the concept of strategic alignment. *Scandinavian Journal of Information Systems*, (9:1): 67-82.
- Ciborra, C. U., (2000). *From Control to Drift: The Dynamics of Corporate Information Infrastructures*, Oxford University Press, Oxford.

- Clarke, A., (2005). *Situational Analysis: Grounded Theory After the Postmodern Turn*, Sage Publications, Thousand Oaks.
- Dourish, P., (2006). Implications for Design. Proceedings of the SIGCHI conference on Human Factors in computer systems, CHI'06, R. Grinter et al., eds., Montreal, Canada, pp. 541-550.
- Glaser, B., (1992). *Basics of Grounded Theory Analysis*. Sociology Press, Mill Valley.
- Henriksen, D. L., (2002). Locating virtual field sites and a dispersed object of research. *Scandinavian Journal of Information Systems*, (14:2): 31-45.
- Levina, N. and Vaast, E., (2005). The emergence of boundary spanning competence in practice—Implications for implementation and use of information systems. *MIS Quarterly*, (29:2): 335-363.
- Law, J. and Singleton, V., (2000). Performing technology's stories. *Technology and Culture*, (41): 765-775.
- Mol, A., (2002). *The Body Multiple - Ontology in Medical Practice*, Duke University Press, Durham.
- Mol, A., (in press). One, two, three - Cutting, counting and eating. *Common Knowledge*.
- Orlikowski, W., (2000). Using technology and constituting structures—A practice lens for studying technology in organizations. *Organization Science*, (11:4): 404-428.
- Orlikowski, W., (2001). Technology and institutions—What can research on information technology and research on organizations learn from each other? *MIS Quarterly*, (25:2): 145-165.
- Oudshoorn, N., and Pinch, T., (2003). *How Users Matter—The Co-Construction of Users and Technology*. MIT Press, Cambridge and London.
- Pollock, N., and Williams, R., (2010). E-Infrastructures—How do we know and understand them? Strategic ethnography and the biography of artefacts. *CSCW*, (19:6): 521-556.
- Scott, S. and Orlikowski, W., (2009). 'Getting the truth'—Exploring the material grounds of institutional dynamics in social media. *Working Series no. 177*. Information systems group, London School of Economics, London, UK.
- Strauss, A. L. and Corbin, J., (1990). *Basics of Qualitative Research—Grounded Theory Procedures and Techniques*. Sage Publications, Newbury Park.
- Suchman, L., (1987). *Plans and Situated Action—The Problem of Human-Machine Interaction*. Cambridge University Press, Cambridge.
- Suchman, L., (2002). Located accountabilities in technology production. *Scandinavian Journal of Information Systems*, (14:2): 91-105.
- Van Gennep, A., (1960). *The Rites of Passage*. University of Chicago Press, Chicago.
- Vikkelsø, S., (2005). Subtle redistribution of work, attention and risks—Electronic patient records and organisational consequences. *Scandinavian Journal of Information Systems*, (17:1): 3-30.
- Winthereik, B. R., and Langstrup, H., (2010). When patients care (too much) for information. In: *Care Practices—On tinkering in Clinics, Homes and Farms*. A. Mol, I. Moser, and J. Pols, eds., Transscript, pp. 195-214.
- Winthereik, B. R., Johannsen, N., and Strand, D. L., (2008). Making technology public – Challenging the notion of script through an e-health demonstration video. *IT & People* (21): 116-132.



Winthereik, B. R., and Vikkelsø, S., (2005). ICT and integrated care—Some dilemmas of standardising inter-organisational communication. *CSCW*, (14:1): 43-67.