IADIS International Journal on Computer Science and Information Systems
Vol. 8, No. 1, pp. 142-158
ISSN: 1646-3692

USER PARTICIPATION PRACTICE: TO OVERCOME THE OBJECTIVE-SUBJECTIVE DICHOTOMY

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ABSTRACT

This paper describes the Structure-Agency Model of User Participation Practice, which incorporates objective and subjective elements of user participation and is inspired by Orlikowski's Structurational Model of Technology. The research question concerns how the objective-subjective dichotomy can be overcome in user participation research. To test the model, nine in-depth open interviews were conducted with the project manager, key-users and developers. All respondents were employed by a large Dutch administrative organisation that had customised and implemented a new and integrative BPM system. The results show that the use of the Structure-Agency Model of User Participation Practice makes it possible to give an objective representation of the practice of user participation, and also how this representation was experienced and adjusted by the different stakeholders. The paper concludes with recommendations for a more comprehensive research approach; new research perspectives and genres to overcome the objective-subjective dichotomy.

KEYWORDS

User participation, Objective-subjective dichotomy, Implementation, Business Process Management, Qualitative research.

1. INTRODUCTION

The aim of this paper is to contribute to the knowledge on how user participation can be applied during the introduction of information systems (IS) and information technology (IT). Research on user participation in IS/IT projects has been done for many years (Barki and Hartwick, 1994; Cavaye, 1995; Hartwick and Barki, 1994; He and King, 2008; Ives and Olson, 1984; Markus and Mao, 2004; McKeen et al., 1994; Mumford, 1983). In some of these studies, the main focus is to determine objectively the effect of the observable behaviour of system users on IS/IT project outcomes (cf. Barki and Hartwick, 1994). Other studies

recognise also the role of managers and end-users as two important stakeholders (cf. He and King, 2008; Liang et al., 2007; Mumford, 1983; Osei-Bryson, Dong and Ngwenyama, 2008). For example, managers are assumed to promote the system and to influence the end-users. End-users 'evaluate' the system and its impact on work before they make a decision to accept and use it. For these reasons, we believe user participation research needs a more comprehensive approach in which objective (observable activities) and subjective (opinions, intentions) elements are incorporated. Therefore, we propose a new approach to user participation research in which both elements are incorporated. In this paper, we will present this new approach and the application in a case study of a BPM implementation.

2. THEORETICAL FOUNDATION

To clarify the new approach to user participation research, we use Orlikowski's Structurational Model of Technology (1992). This model is based on Giddens' Structuration theory, one of the most influential social theories used in IS research (Jones and Karsten, 2008; Rose and Hackney, 2003; Thompson, 2012). Orlikowski (1992) derived her model from the research on the role of technology in organisations. First, she discusses the 'technological imperative' model, in which technology is treated as an independent influence on organisational properties and human behaviour. This approach, however, ignored "… *the action of humans in developing, appropriating, and changing technology*" (Orlikowski, 1992: 400). Secondly, she reviews the 'strategic choice' model. From this perspective, technology is seen as a result of continuous human action, design and appropriation, and three research streams can be distinguished. One stream is the socio-technical approach (De Sitter et al., 1997; Mumford, 1983). This approach aims to achieve positive outcomes, such as quality of work and productivity of workers by jointly optimize the social and technical factors of jobs. The second stream approaches technology from a social constructionist view. Here, the focus is on how shared interpretations of a technology arise and how this affect the development and use of that technology (Klein and Hirschheim, 1983). The final research stream approaches technology from a social-critical perspective. In this realm, technology is considered as tool of powerful actors, used to increase the level of control over employees (Braverman, 1974; Kern and Schumann, 1984).

The last model, discussed by Orlikowski (1992), is the 'technology as trigger' model, in which technology is considered as an intervention into the relationship between human agents and organisational structure. Over time, this technological intervention has a potential effect on this relationship. The central idea is that "… *technology is understood as a social object whose meaning is defined by the context of use, while its physical form and function remain fixed across time and contexts of use*" (Orlikowski, 1992: 402).

Evaluating these different models, Orlikowski concludes that there is a dichotomy between approaches in which technology, on the one hand, is considered as an 'objective external force', and, on the other hand, as a 'socially constructed artifact'. She positions this dichotomy in a classic debate within the social sciences, i.e. between the objective and subjective dimensions of social reality. Similar debates can be recognised in the field of organisation science. Scott (2003), for instance, distinguishes between organisations as rational systems and organisations as natural or open systems. As rational systems, organisations are studied with an emphasis on goal specificity and formalisation. As natural or open systems, the focus

is on the existence of multiple goals in organisations, which emphasises the importance of informal social structures. In his (Dutch) handbook on organization studies, Lammers (1997) likewise observes, after an extensive historical analysis of the variety in organizational theories, a distinction between a 'social-cultural system' perspective on organizations, and a 'political party (actor)' perspective. In a social-cultural perspective organizations are considered as an integrated, 'indivisible' system, while in a political party perspective organizations are considered as a network of parties, each following their goals and interests. To overcome the objective-subjective (i.e. rational/open, system/political) dichotomy of technology, Orlikowski proposes the Structurational Model of Technology, in which both dimensions are incorporated.

In the following sections, the theoretical foundation and conceptual model of this paper are presented.

2.1 The Structurational Model of Technology

The Structurational Model of Technology consists of three broadly defined components (Orlikowski, 1992): Human Agents (designers, users and decision makers), Technology (material artifacts, IS/IT, mediating task execution in the workplace) and Institutional Properties (structure, strategy, culture, control mechanism, procedures and division of labour, as well as environmental pressure). These components and their interrelations are shown in Figure 1.

Orlikowski states that Technology is the product of human action, through two modes of interaction: the *design* mode and the *use* mode. During these two modes of interaction user participation is important. In the design mode Human Agents (designers) build their understanding of the work being automated (as arrow "design" in Figure 1) into the Technology. In the use mode, Human agents (users) assign meaning to this Technology, influencing their task execution (arrow "use"). This influence can be restricted or enabled. Which one dominates depends on many factors, such as "… *actions and motives of designers and implementers, the institutional context in which the technology is embedded, and the autonomy and capability of particular users*" (Orlikowski, 1992: 411).

Another interrelation is between Institutional properties, Human agents and Technology. In her model, Orlikowski builds upon a contingency and institutional theory, proposing that human action is shaped by organisational context (arrow "shape"), while the deployed Technology will affect Institutional properties as well (arrow "effect"). Likewise, Technology and Human agents, Technology and Institutional properties are mutually shaped, i.e. through the acting of Human agents.

The key point in the Structurational Model of Technology is 'the duality of technology'. By this is meant that "… *(information) technology is physically constructed by actors working in a given social context, and technology is socially constructed by actors through the different meanings they attach to it and the various features they emphasize and use*" (Orlikowski, 1992: 406). Technology is from this perspective "interpretively flexible", although not always recognised due the "time-space discontinuity" of design and use (Jones & Karsten, 2008). Another consideration in the theory of the Structurational Model of Technology is that "… *technology structures emerged in practice, rather than embodied structures fixed in technologies*" (Orlikowski, 2000: 408). Therefore, research on technology in organisations must be conducted through a "practice lens" and formulated as practice theory

(Feldman and Orlikowski, 2011). This theory is based on three principles. The first principle is that "… *everyday actions are consequential in producing the structural contours of social life*" (p. 1241). This applies to humans, but also to natural objects and technological artifacts. The second principal is the "… *rejection of dualisms and recognition of the inherent relationship between elements that have often been treated dichotomously*" (p. 1242). In this way, practice theory makes it possible to investigate the constitution of dualities. The third principle is the "… *relationality of mutual constitution*" (p. 1242). By this is meant that phenomena are produced in a process of mutual constitution and always exist in relation to each other. For these reasons, this paper addresses the following research question: *How can the objective-subjective dichotomy be overcome in user participation research?*

In the next section, we will describe our model. Thereafter, the research methodology of the study will be examined, followed by the description and analysis of a case study. In the final section, the conclusions and a discussion of the implications will be presented.

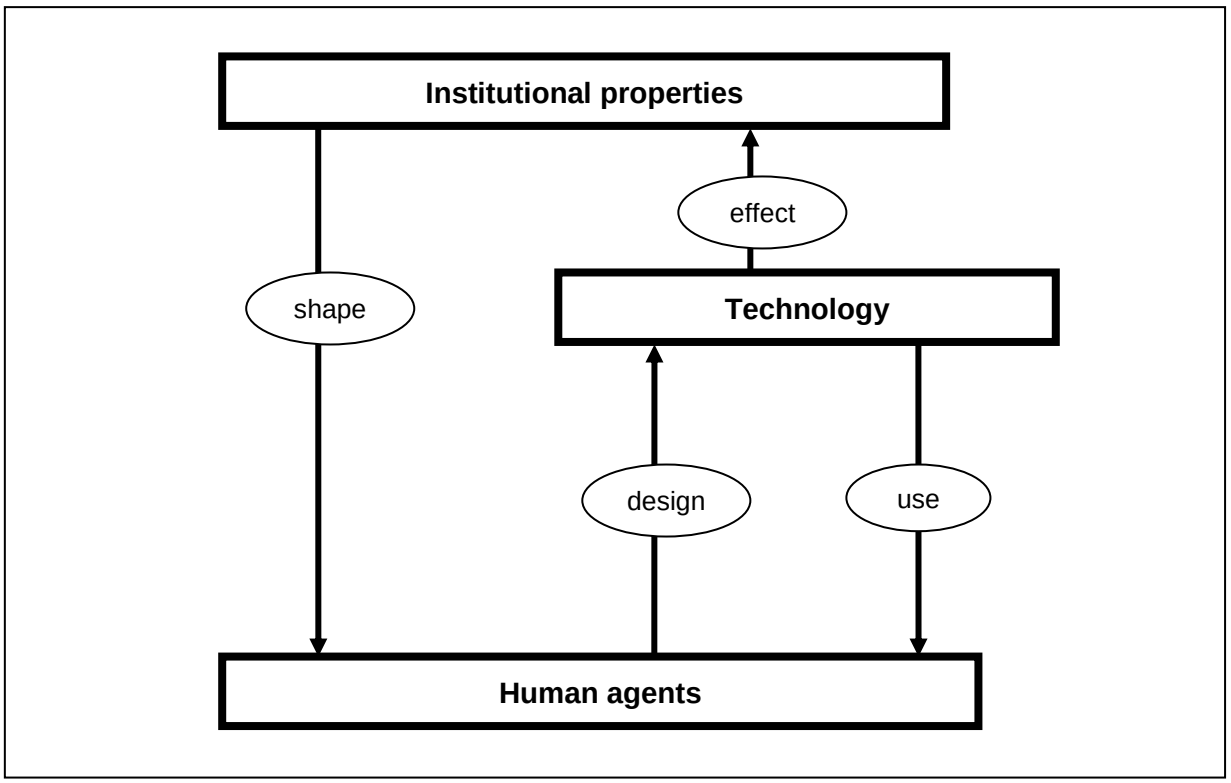

Figure 1. Structurational Model of Technology (adapted from Orlikowski, 1992)

2.2 The Structure-Agency Model of User Participation Practice

To overcome the time-space discontinuity of design and use, and the focus on practice research, *the role of user participation* in the implementation of IS/IT is of great importance. Investigating user participation, we are able to discover how 'the duality of technology' in practice occurs and how the IS/IT will be appreciated in the daily work setting.

The research on user participation has received a great deal of attention (Barki and Hartwick, 1989, 1994; Cavaye, 1995; Hartwick and Barki, 1994, 2001; He and King, 2008; Ives and Olson, 1984; Ljung and Allwood, 1999; Markus and Mao, 2004; McKeen et al., 1994; Mumford, 1983). In this research area, user participation is mostly defined as "... *the observable behavior of system users in the IS development process*" (Barki and Hartwick, 1989: 59).

According to these studies, the promise of user participation is threefold:

1. participation creates a psychological experience of buy-in among users;
2. participation improves system quality by explicating system requirements;
3. participation improves the relationship between developers and users emerges during participation and shapes IS/IT project outcomes.

But is every promise equally feasible? To what extend are they generic or situational? And how do these promises of user participation emerge in practice? To address these issues, Marcus and Mao (2004) recognized that the concepts in user participation theory, and the relationships between them, needed to be reconceptualised. They introduced a new foundation for user participation theory, proposing that observable user participation activities has a direct relationship with IS/IT project outcomes, but at the same time, different aspects are of influence, i.e.: the different stakeholders and amount of (non-)participants, the role of change agents, the selection process of participants, the representation of the participants in the project, the type of participation, and the methods and techniques used to involve participants. In this dissertation we rely on this broader concept of user participation theory of Markus and Mao (2004). Although a substantial amount of studies has been done, we believe it is worthwhile investigating the specific appearance and role of user participation for IS/IT innovations in greater depth.

Next from the research of the role of user participation, we also need to know how the IS/IT is used and appropriate. Different perspectives, theories and models have been developed to investigate the *success and user acceptance* of IS/IT in organisations. One such perspective is based on models of the adoption and diffusion of IS/IT by individuals. Examples include Diffusion of Innovations (DoI; Rogers, 1962), the Theory of Reasoned Action (TRA; Ajzen and Fishbein, 1980), the Technology Acceptance Model (TAM; Davis, 1989), Social Exchange Theory (Homans, 1958), the Theory of Planned Behavior (TPB; Ajzen, 1991), Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003) and Task Technology Fit (TTF; Goodhue and Thompson, 1995). The basic concepts underlying these models are based on the individual's attitude and reaction to using IS/IT, which can lead to the intended or actual use of IS/IT. In these models, (intended or actual) use is the dependent variable, along with constructs such as perceived usefulness, perceived ease of use, attitude towards the system and the subjective norm, which is the independent variable. In terms of the Structurational Model of Technology, these models focus only on the "use" relationship between IS/IT and the user. In our model, the attention is also on the "design" relationship between IS/IT and the different human agents who design and use IS/IT (see

Figure 1). The missing link in the adoption and diffusion models is the inclusion of the direct determinants and measurements of the success (or failure) of IS/IT in terms of creating and using IS/IT, and the effects of this (Kim, Chan and Chan, 1997). A leading study which incorporates these elements is DeLone and McLean's (D&M) model of IS success (DeLone and McLean, 2003). Their model represents IS/IT success through six interdependent constructs: (1) quality of information (e.g. completeness, ease of understanding, relevance); (2) system quality (e.g. usability, availability, reliability); (3) service quality (e.g. the empathy and responsiveness of the IT department); (4) use (intended or actual); (5) user satisfaction; and (6) net benefits (e.g. such as quality of work, job performance, organizational performance). In this model there is an association between these constructs in terms of process. In other words, quality constructs will directly affect IS/IT use and user satisfaction. Delone and McLean (2003) assume that use and satisfaction are directly related, and hence that if users have a positive experience of IS/IT, this will lead to increased user satisfaction. Similarly, increased user satisfaction will lead to increased use of IS/IT. As a result of this, the individual benefits of IS/IT use may accumulate, improving productivity, and finally providing organizational benefits (Petter and McLean, 2009). Because the D&M model consists of constructs to measure IS/IT success in both system characteristics as in terms of appreciation for the system, the D&M model will be used. In our model, we combine the research on user participation and IS/IT success, specifically with regard to BPM systems. The model we propose is shown in Figure 2 and is called the Structure-Agency model of User Participation Practice. In our model a relationship is assumed between user participation practice and IS/IT implementation success. *User participation practice* is defined as the activities performed during the implementation of an IS/IT and the conditional factors of user participation, i.e. the different stakeholders and amount of (non-)participants, the role of change agents, the selection process of participants, the representation of the participants in the project, the type of participation and the methods and techniques used to involve participants. *IS/IT Implementation success* is defined as the desired outcomes from the perspective of the users (e.g. user satisfaction, quality of work). It is part of the broader concept of 'IS/IT project outcomes' (He and King, 2008; Markus and Mao, 2004). In this concept, a distinction is made between IS/IT development success and IS/IT implementation success. IS/IT development success is defined as the functional outcomes of an IS/IT project (e.g. system quality, progress against schedules and budgets).

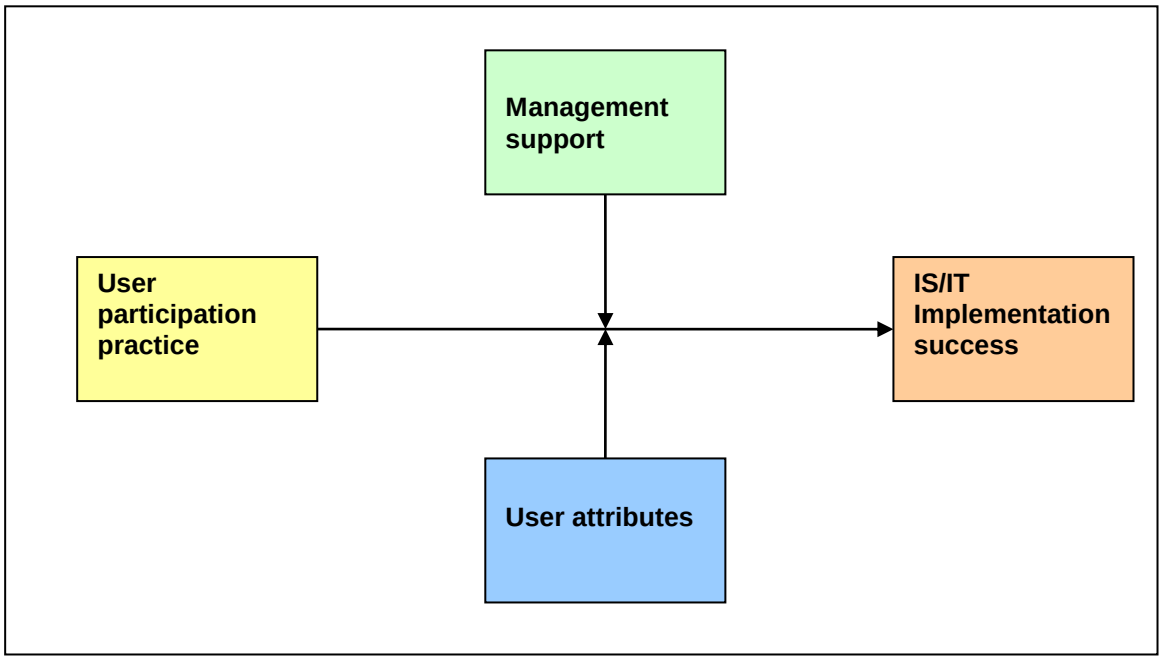

Figure 2. The Structure-Agency model of User Participation Practice

From a theoretical viewpoint, we build on the Structurational Model of Technology (Orlikowski, 1992), i.e. the two different roles of what is called the role of Human Agents in IS/IT projects. First, from the perspective of the employee, the influence of variations in individual attributes of users are taken into account. Second, the influence of decision makers in shaping a BPM system will be considered. Therefore the role of management as decision maker will also be included in this study. By this we aim to contribute to the scientific knowledge of the practice of user participation, its effectiveness of the desired outcomes and the context in which it occurred. Our conceptual model also assumes that the relationship between user participation and BPM implementation success is influenced by management support (Dong, Neufeld, and Higgens, 2009; Jensen, Kjaergaard, and Svejvig, 2009; Sharma and Yetton, 2003) and user attributes (Agarwal and Prasad, 1999; Ward, Brown and Massey, 2005). *Management support* is defined by the activities performed and the policy decisions made by management with regard to user participation. *User attributes* concerns individual characteristics, such as gender, age, education, system experience, computer skills and user attitudes towards IS/IT. Therefore, the conceptual model of this research consists of two elements: the structure of user participation practice and the influence and experience of human agency during user participation. In the next session we will illustrate how this model is applied in a case study of a BPM implementation.

3. CONTEXT: SOCIAL ADMINISTRATIVE ORGANISATION

A case study of a large Dutch governmental social administrative organisation was performed in 2010 to investigate our research question and apply our conceptual model with regard to BPM systems. BPM systems provide an appealing IS/IT domain as its application in practice comprehends a wide variation in both participation and success (Luftman, 2011, Ravesteijn, 2011). In this organisation, during the last phase of the BPM implementation, a case study was performed. To gain a better understanding of the implementation context of the case study, desk research on project documents was undertaken and interviews were held with the project manager, two system designers and six key-users. The interviews were carried out at the post-implementation stage.

The organisation in question has the national responsibility of registering and administrating the use of national care services. Since the health care reform in 2006, the organisation has occupied a central position within the healthcare system with regard to managing the financial and administrative processes between providers and consumers of non-curative care (Schäfer et al., 2010). The organisation is an independent policy agency that reports to the Dutch Ministry of Social Affairs. During the study, in 2010, the organisation had almost 500 employees (467 fte) under contract. Of the total number of employees, 33% were male and 67% female; 45% had a contract of 0–2 years; and 19% had spent more than 10 years working for the company. The number of employees younger than 35 years was 32%. We will explain below how the data from the interviews were gathered and analysed.

4. RESEARCH METHODOLOGY

4.1 Data Collection

During the case study period, multiple interviews were conducted by the researchers at the organisation's office location. The interviews with the key-users focused on how user participation was organised during the development and implementation of the BPM system, and actual use and satisfaction with the system. The interviews with the project manager and designers were complemented by questions about project management, design approach and decisions. An interview guide was designed and applied, but deviations could occur depending on the theme and the answers. The interviews were tape-recorded and fully transcribed (Patton, 2002). The textual data were analysed using the software program Atlas.ti (version 6.0.15).

4.2 Analysis of the Interview Data

The interviews were analysed using a cumulative editing approach, as summarised in Table 1 (Runeson and Höst, 2009). Each interview report was read carefully by the researchers in order to determine the meaningful fragments of text. These fragments were coded using open coding. Text fragments from the interviews were compared in order to determine whether or not these had the same code. If necessary, it was decided to merge codes or to change a fragment to another code following an axial coding procedure. This procedure was repeated

for all interview reports. Thereafter, the fragments and codes of all interview reports were compared. In addition, when necessary, changes were made to codes and fragments were replaced. The last step was to structure the codes at the level of main- and sub-variables/dimensions using selective coding. This resulted in an identification of statements related to the different elements of post-implementation practice and IS/IT project outcomes (Boeije, 2002; Miles and Huberman, 1994).

Table 1. Summary of interview data analysis methods

Step	Activity	Nature	Method
1	Code interview report	Within-interview analysis	Open and axial coding
2	Conduct between-interview report comparison	Between-interview analysis	Selective coding
3	Compare findings with previous studies	Between-interview inductive analysis	Pattern analysis

For the interview data in this case study four aspects of validity are applicable: construct validity, internal validity, external validity and reliability (Yin, 2009). Construct validity was performed by using multiple sources of evidence and defining measurements by a protocol that was applied for the analysis of the data. The internal validity was guaranteed by conducting interviews with project members in different roles in order to cross-check documentation and to check statements of different interviews. To govern external validity, the research questions were embedded in a theoretical framework of user post-participation and IS/IT post-implementation success. Finally, to improve reliability, interviews were transcribed and reports were reviewed by the key informant. In order to take care of the validity in general, the case study protocol and a case study database were created (Maimbo and Pervan, 2005)

5. RESULTS

5.1 User Participation Practice

The project to replace the existing IT/IS systems with a new BPM system started in 2006. The existing systems were no longer adequate to meet new legislation, efficiency and quality requirements. The new BPM system consisted of BPM software and several business applications and databases. The BPM software was purchased and configured to the needs of the organisations. The BPM system supports the front and back office in completing various administrative processes and in response to questions and requests from clients. The new system implied new ways of working for all employees. Work processes were automated and, most fundamentally, all information exchange was processed on screen, where it had previously been carried out primarily through paperwork (e.g. a form/memo). The BPM implementation followed three stages (Figure 3).

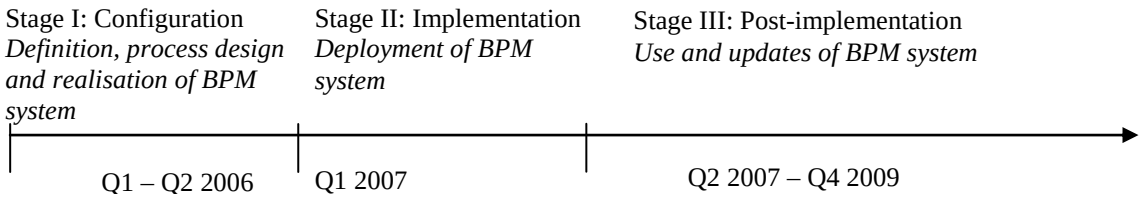

Figure 3. Timeframe of BPM project

Stage I: Early in 2006, the selection of a standard BPM package took place. Building on existing documentation (handbooks, work instructions) in the organisation and user sessions with representatives from various departments, processes were mapped. Based on this, a process architecture was established and the processes were defined. These requirements were submitted to various suppliers, five of whom were invited to present their proposals. After the supplier was selected, the BPM project was defined. The BPM project consisted of a steering group and a working group. The steering group was composed of business managers from the user organisation, the manager of the IT department, the project manager and a manager from the supplier. The working group consisted (alternately) of one or two key-users of each department, developers from the user organisation and the supplier, the business information manager and end-users. The project started with the configuration of a prototype. Again, employees from various departments were represented. The prototype was shown to the user organisation in beamer demonstrations.

The next step – the in-depth exploration of the processes – took place in August, September and October of 2006. In this step, the processes were designed in detail and realised in the new BPM system by a team of developers from the supplier. This configuration took place at the organisation's location. The internal IT department was not involved at this stage. Modelling of the processes and the design of the BPM system proceeded through user sessions. During the entire project, the user organisation was actively involved. At the beginning, mostly the key-users, and at the end also the end-users, were involved. It was not always the same employee who participated, because there was a rotation schedule for the employees in order to create awareness about the BPM system. Awareness creation by management was also encouraged by putting the progress of the project on the agenda of staff meetings or by sending out newsletters.

The key-users were the link to the end-users. They gathered all the needs of the end-users in order to translate them to the developers. To stimulate user participation the following methods and techniques were applied: reviews of prototypes, feedback on demonstrations, schema techniques, team sessions, discussions and functional forums. The frequency of consultation between members of the steering group and between designers and key-users was usually every two weeks, but depending on the stage of the project, this could be increased or decreased. Before the BPM system was deployed, an acceptance test was carried out.

Stage II: A first version of the BPM system was implemented in two departments. Before the introduction, end-users received between one and a half and two hours of training by the key-users. The training consisted of a short classroom presentation about the BPM system and some case-based exercises. Thereafter, the end-users learned to use the BPM system in practice. When necessary, they received support from the key-users and could rely on an instruction manual. The first results of the implementation were visible improvements: insight into working stocks and lead times, combined with electronic document registration, routing

and control. However, this version could not fulfil all the wishes that were expressed during the first stage.

Stage III: In this stage, the first processes were improved and new processes were configured and implemented for other departments. The IT department became more involved and developers from the supplier gradually left the project. Every two months new releases were deployed. Issues and unposted changes were collected and processed as a release. The end-user could pass issues to the key-users. Together with the business information manager, each fortnight decisions were made as to which issues had priority and which would be included in the next release. The end users were informed about the status of their issues and whether these were included in the release. The release was proposed as a recommendation for management to approve. Once approved, the package was realised and tested by end-users. After the release was accepted, it was included in the BPM system for regular activities. During this process, there was close cooperation between the user organisation and the business information management department.

5.2 Perception of (Post-)Implementation and (Post-)Participation

From the additional interviews conducted, it becomes clear that during the whole project, key- and end-users were involved in a wide range of activities. The interviewees mentioned the following activities: process descriptions, creating user guide, screen design, layout of forms, testing, determining forms by task and determining the workflow. End-users were mostly involved through testing. According to a key-user, the users were properly engaged and informed that something new was being deployed. Upgrades were not discussed in a separate meeting, but were addressed during the regular work meetings. One developer stated that it was not easy for users to specify process requirements. It was quite new to them to think in a 'process-orientated' way.

The deployment of the new system was executed from one day to the other as in a 'big bang approach'. In the beginning, the old information system was still in operation, but was stopped after a short time. According to the key-users, the implementation went well. To promote system use, emails including 'tips of the day' were sent throughout the organisation. According to most of the interviewees, however, training could have been more intensive. In the first days after the implementation, there were many questions about how to act in specific situations. During the (post-)implementation there were, however, some incidents or issues which hampered the system's introduction, such as new regulations, technical problems, organisational changes, training of new employees and a lack of system capacity.

During the post-implementation phase, the releases did not proceed in the right way, as the release procedure was not followed at this time. After a time, this situation improved and the recommendations of the key-users were usually accepted. The interviewees reported that this resulted in improvements of the BPM system.

5.3 Perception of System Quality and User Attitudes

According to the developers interviewed, there were many negative reactions from the end-users in the beginning, and at this time this BPM system had a bad image. The end-users had the feeling that the system was being imposed by management. The key-users were more positive and saw the system as an asset.

With regard to (perceived) system quality, it was noted that the system performance was sometimes slow, especially when other systems were also in use or when many users were connected. At the start, there were also some technical problems. However, the usefulness of the new system was better judged than the old systems. As for system handling, reactions were both positive and negative. In relation to the system interface, interviewees reported some minor modifications.

With regard to the process alignment, one developer noted that management did not actually realise the impact of the system on the employees. According to the project manager, the process design had been based on the current process as much as possible. Where necessary, activities were removed because these were too intensive. Despite this principle, a developer stated during the interviews that the work floor processes and those incorporated within the system were not well coordinated. After the deployment, it turned out that the end-users actually wanted to work in a different way. Hence, this created a mismatch between the BPM system and what happened in reality.

The key-users also indicated that the work process, as modelled in the system, did not always fit with their actual workflow. Even things that should be automatically generated, for example, reminders that someone was deceased, were not implemented. The ability to take a step backward in the work process was not possible. A key-user indicated that the first processes were designed in accordance with the requirements, but the processes for regulations that came at a later time were very generic. Therefore, work was not efficiently performed.

5.4 Perception of Implementation Success

According to the developers, the system is used in many departments, mostly for recording and registering. It is not used to plan work activities. Some parts of the work, however, are still kept outside the system or are done twice. In the beginning, end-users tried to work around the system. They followed their own way of formatting, and entering and exchanging text blocks.

The key users indicated that the system was frequently used and stressed its many advantages, such as a digital overview of the documents belonging to a case, and easy data searching and opening of files and management reports to make a work schedule for the workplace to eliminate an inventory of old cases. According to a key-user, the end-users complete cases more quickly when using the BPM system.

According to the key-users and the developers, the system has been accepted by the end-users. In the beginning, some end-users were somewhat reserved and there was some misunderstanding, but that was mainly because the system was not delivered on time and the whole process took longer. The project manager noted that this was also the cause of end-users' irritation. There was a high workload already, and when a system goes down, the workload only increases. There was, however, no real resistance: most end-users were enthusiastic. This is also illustrated by the large number of improvements that they suggested, which shows that the end-users were involved in the project. Also, the key-users stated that the performance of the new system was better.

6. DISCUSSION, CONCLUSION AND IMPLICATIONS

In this paper, we have applied the Structure-Agency Model of User Participation Practice in analysing the implementation of a BPM system. Our results demonstrate "the duality of technology" (Orlikowski, 1992), by showing that a BPM system is physically constructed by designers, and socially constructed by end-users.

Furthermore, our research complies with the different principles of practice theory (Feldman and Orlikowski, 2011). In the qualitative analysis of the case study, we have demonstrated what the consequences were of actions taken by managers, designers, key- and end-users for the implementation of a BPM system. The study showed that a BPM system evolves in a process of mutual constitution and always in relation to different stakeholders. By applying the principles of practice theory, we have obtained relevant information about the constitution and appreciation of a BPM system in an organisational setting. This research further demonstrates that management support affects the relationship between the practice of user participation and implementation success. We have found that the contribution of management to awareness creation, training capabilities, procedure to pass issues and the opportunity of end-users to participate, influences implementation success. In addition, the analysis makes clear how the reactions of key- and end-users contribute to the configuration and use of the BPM system. In this case study, key- and end-users were from the beginning in many ways involved with the configuration and implementation. The key- and end-users were represented in the project and different methods and techniques were used to inform and to contribute to the configuration and implementation of the BPM system. However, in this user participation practice, the BPM system proved not to meet the expectations when using the system for the first time. End-users found it difficult to formulate the requirements of the process and to imagine how the BPM system can improve and support their work activities. By appropriate interventions and procedures, the system became part of the daily routines and accepted by the end-users. Using the Structure-Agency Model of User Participation Practice, we were able to give an objective representation of the practice of user participation, and, at the same time, how this representation was experienced and adjusted by the different stakeholders. However, to fully express the practice of user participation and to overcome the objective-subjective dichotomy, we argue for a more comprehensive research approach.

The first step is to follow the framework proposed by Berthon et al. (2002), which starts from the notion that most research is focused on generation rather than on replication. They argued that more attention should be given to replication in research. A pure replication study is defined as *"... a duplication of the original study, in which all the key research parameters held constant between the original and new studies*" (p.419). A pure generation study is defined as "*... a new study in which all key parameters are altered relative to the original study*" (p.420). In between, they positioning extension studies, which are defined as "*... a duplication of a target study in which one or more key parameters are altered and certain held constant*" (p.419). According to this classification, every research study can be positioned between the boundaries of replication and generation. Research, in the words of Berthon et al., occupies a conceptual space of four dimensions or parameters, which they call 'research space' (p.421). These four dimensions are: problem or phenomenon, theory, method, and context. In this paper we have followed a 'two degrees of freedom' research strategy on the dimensions theory and method. In this strategy existing theories are integrated in a new theory and applied with a different research method to an existing context (Berthon et al., 2002). In

this paper this is reflected in combining a variety of theories, i.e. user participation theory, implementation theory, management support theory, and IS success theory, and by making use of a qualitative method research approach.

A second step could be the framework of Edmondson and McManus (2007), which launches the concept 'methodological fit' between the prior knowledge about a particular phenomenon (theory) and the method of data collection (quantitative or qualitative). Methodological fit is defined as "*... internal consistency among elements of a research project*" (p. 1155). These elements are: research question, prior work, research design and contribution to theory. The framework states that theory can be positioned on a continuum from mature to nascent. A mature theory *"... presents well-developed constructs and models that have been studies over time with increasing precision by a variety of scholars*" (p. 1158). A nascent theory, on the other hand, "*... proposes tentative answers to novel questions of how and why, often merely suggesting new connections among phenomena*" (p. 1158). Between mature and nascent an intermediate theory is positioned, which "*... presents provisional explanations of phenomena, often introducing a new construct and proposing relationships between it and established constructs*" (p. 1158). In this stage of development, a new study can test hypothesis with quantitative data and also offers opportunities to investigate new phenomena from qualitative data (Isaias and Nunes, 2013). In this paper the main focus is on the theory of user participation. Although, the user participation domain has a long research tradition, new elements and questions are added to elevate the theoretical foundation (Markus and Mao, 2004). Moreover, the connection of user participation to various other theories, brings the theory of user participation in an intermediate stage of development. In this stage of development a new study offers opportunities to investigate new phenomena from qualitative data (Edmondson and McManus, 2007).

In this paper, we were able to describe a qualitative analysis of the objective-subjective dichotomy at BPM implementation. Of course, more research is needed to explore fully the objective-subjective dichotomy from new research perspectives and genres (Orlikowski, 2007; Rowe, 2012).

ACKNOWLEDGEMENT

I thank the case study organization for making it possible to investigate the practice of user participation. Without their corporation it would not have been possible to collect the data for this research.

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