# Making Metastructuration Actions specific to Stakeholders interactions: A comparative Analysis of three IS/IT Implementations within a Public Health Organization


## Abstract

*Metastructuration actions (overarching activities from (top)-management that shape and align users' activities of IS/IT use) are often advocated to improve the success of IS/IT implementation. But is the potential of these actions situational to the interactions between different stakeholders; and if so, how can this context be taken into account? This key question is addressed in this paper. Building upon Orlikowski et al., we explore the situational effect of metastructuration interplay concerning four key stakeholders; (top) management, users, IT department, and external service providers or consultants. The empirical case context is a Dutch public health care organization that deployed three departmental information systems. Based on 26 qualitative stakeholder interviews, we found that three types of metastructuration actions were critical, which are particular related to two types of stakeholder context. We conclude that the stakeholder context is indeed conditional to metastructuration actions, and also to the success of IS/IT implementation in terms of perceived system quality and acceptance of the systems.*


## 1. Introduction

The issue of acceptance and use of IT in organizations has a long research tradition (cf. [2], [3], [5], [6], [8], [10], [11], [15], [17], [26], [27], [31], [34]). At the same time, many studies are dedicated to the role of (top) management support for IT/IS implementation success (([1], [13], [22], [23], [24], [30], [32], [33]). The relationship between user acceptance and top management support, as equivalent critical success factors for IS/IT success, are less studied however. A number of studies demonstrate that management support is also an important determinant of user acceptance and use of IS/IT. For example, Lewis et al. [13] argue that the individual beliefs about the use of information technologies stem from three sets of influences: individual, institutional and social. They examined these beliefs about usefulness and ease of use in the context of a contemporary technology targeted at autonomous knowledge workers. It was found that beliefs about technology use are strongly influenced by top management commitment to the new technology beside individual factors of personal innovativeness and self-efficacy. In a study on DSS project implementation, Nasirin et al. [22] studied four factors influencing user involvement. Of these four factors, senior executive awareness and support appeared to be of equal importance as user's perceived task complexity, user's resistance to change and user training. Nordheim et al. [24] investigated the role of a corporate user representative through the perspective of three organizational influence processes: downward, lateral and upward. It was found that a corporate user representative in a high formal position and with lateral and downward influence processes to a steering committee and a project group was very influential. They therefore claim that a corporate user representative should be a management function, with adequate formal position to avoid upward influence processes. Sharma et al. [32] found that high management support is a necessary and critical component of a successful implementation strategy when task interdependency is high, but a relatively weak and probably not critical component when task interdependence is low. The research was based on 22 empirical studies in journals, books, and unpublished thesis and dissertations.

In practice, (top) management support in relation to user acceptance, can mean many things. It is actually less investigated what particular actions lay behind top management support that influence IS/IT implementation success. One idea was suggested by Purvis et al. [30], who found evidence that senior management championship of a technological innovation is most effective when focused on so called 'metastructuration actions'; a concept first introduced by Orlikowski et al. [28]. These actions are described as "activities that shape other users' activities of use". New questions arise however, if we realize that during the phases of development and implementation of IS/IT, multiple stakeholders are involved to realize a

specific artifact. Hence, senior/top management is not the only actor at stake in metastructuration actions. New research questions that arise from this, concern how stakeholders in IS/IT implementation interact, and how their interaction impact the metastructuration actions that enhance the acceptance of IS/IT.

This paper takes these questions as starting point. We will present a comparative analysis of three IS/IT case studies using a grounded theory approach that includes the concept of metastructuration actions. Doing so, we explore the new insights that can be gained if the development and implementation of three departmental IS/IT systems is investigated from a combined metastructuration and multiple stakeholder perspective. In the next section the concept of metastructuration actions is described including the stakeholders interactions who will be investigated. Thereafter, the threefold case study setting is described that makes it possible to investigate the enhancement of metastructuration actions on IS/IT acceptance in a Dutch public health care organization. In section four, the collected and analyzed qualitative data will be described and explained. The paper concludes with a discussion of the findings and suggestions for further research.

## 2. A metastructuration and stakeholder perspective

According to Orlikowski et al. [28], there are two sets of actions that characterize the dynamics of technology deployment in organizations: individual structuring actions and metastructuring actions. The first set consists of actions taken by users to appropriate technology features and to adapt technology to accomplish work. The second set includes direct actions to make the technology more valuable to users and indirect actions to manipulate prevailing institutional structures, such as workflow patterns, work procedures, routines, reward systems, and control and coordination mechanisms. Research has shown that metastructuring actions are undertaken by and under the responsibility of senior management and so-called 'technology champions' ([1], [7], [9], [19], [30], [32]). This is the reason (top) management support is widely expected to have a direct influence on implementation success.

The effect of management support on implementation success is investigated by (among others) Sharma et al. [32]. In their study, Sharma et al depart from the proposition that the institutional context affects end-users' ability and motivation to successfully adopt and use IS/IT innovations and applications. Further, the institutional context can be shaped by ways that facilitate successful implementation, such as material and managerial resources, and symbolic actions of support of senior managers. One can think of a 'visible association' with the project, active championship, organizational communications, or personal use of technologies. Also, managers need to mandate, negotiate, persuade, motivate and support end users in adopting IS innovations. Management support is also needed for changing work processes and existing routines.

As argued earlier, metastructuration actions cannot be considered as general, unconditional success factors for IS/IT implementation as they typically interplay with different stakeholders ([4], [12], [14], [16]). Following Mitroff [20], stakeholders can be defined as "all those parties who either affect or who are affected by an organization's actions, behaviors and policies". For most IS/IT projects, four major stakeholders can be defined: (top) management, users, IT department and external parties (e.g. service providers and/or consultants). Hence metastructuration actions, as defined above, should be specified according to the context of the interactions between these four stakeholders. In addition, metastructuration actions should take the interaction between stakeholders into account, such that a 'level playing system' of IS/IT deployment within an organization can be drawn. In figure 1 this interplay between stakeholders and their relation to metastructuration actions is illustrated. All four actors are interacting with each other, while (top) management as an actor takes a central position within the figure; as this actor initiates the metastructuration actions. In principle, all metastructuration actions are applicable for each (set/type of) stakeholder interaction. Its remains an explorative empirical question however, which stakeholder interactions make which metastructuration action more or less effective in terms of management support and hence IS/IT implementation success. Therefore, we consider the conceptual model as a framework of all potential (and: conditional) effects of metastructuration actions in relation to stakeholder interactions. The three IS/IT implementation case studies that will be described in the next section, will inductively show which metastructuration actions actually mattered, in relation to the stakeholders and the stakeholder interactions. Next, the cases will also inductively show the conditional effect of the metastructuration actions on the success of the three IS/IT implementations. After these analyses, the empirical value of the framework can likewise be evaluated.

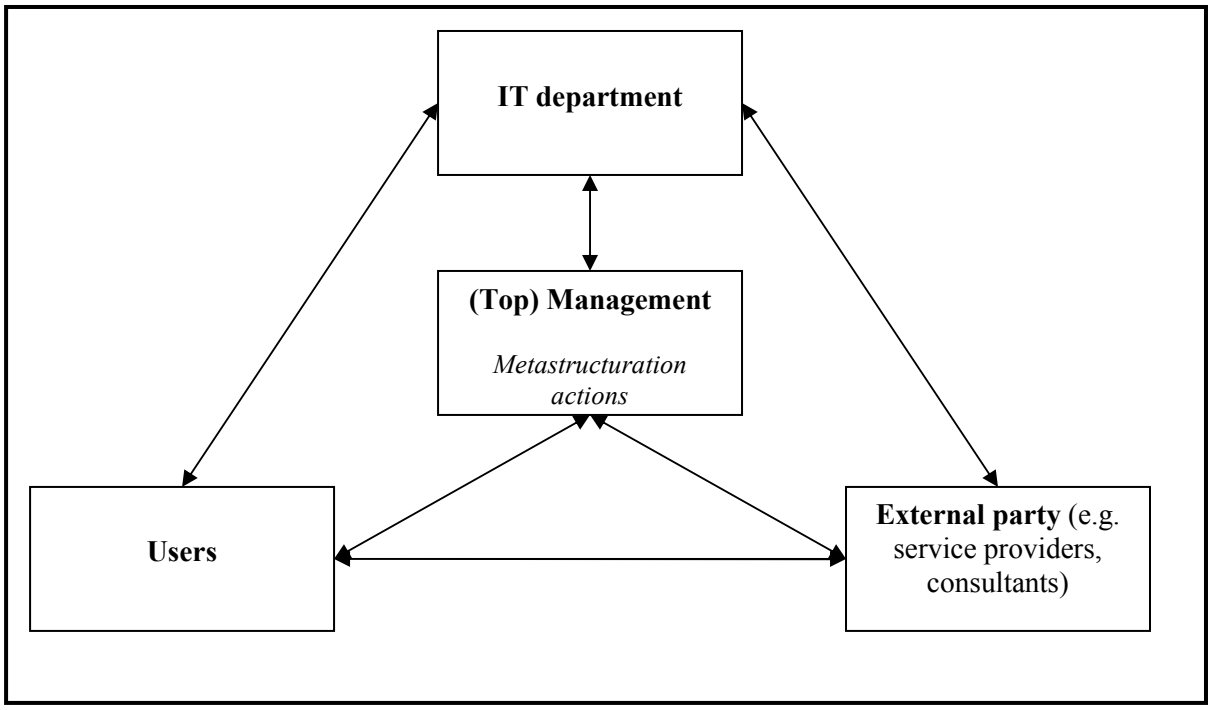


**Figure 1: Conceptual model to analyze top management metastructuration actions in the context of stakeholders interactions at IS/IT implementations.**

## 3. Three IS/IT projects at a Dutch public health organization

The case study organization that serves as the host of the three IS/IT implementation projects to be analyzed, is a large public health service in the Netherlands. It has about 1,250 employees and its primarily goal is to execute public health policies and regulations. The Board of the organization is the General Director and the Medical Director. Because of the large diversity of work, the organization is divided into nine so-called clusters, each with a fixed own set of tasks. The empirical research as presented in this paper has taken place within three of these nine departments ('clusters'), i.e. Social Mental Health (SMH), Youth Health Care (YHC) and Infectious Diseases (ID).

The *Social Mental Health (SMH) cluster* grants socio-medical care for people who, by their mental state neglect and behavior, are a problem or risk to the public order. This includes problematic drug addicts, homeless persons and people who stand out by criminals or inappropriate social action, probably partly on the basis of medical problems. Due the cooperation with various parties, there was the need for a client-tracking system. Also, there was an ever-increasing pressure from the society to move to digital imaging, and to make use of the exchange of information to improve the quality of care.

The time frame of the project at SMH is depicted in figure 2. In 1999 a new information system was required to support the work processes. The IT department was in this period just centralized. On the basis of this research, a European procurement process was started. Approximately 23 companies were interested to develop and to deploy the system. Five companies were invited to submit a quotation (shortlist). At the beginning of 2002, one of the companies was selected. The service provider started in conjunction with another company to build the client-tracking system. The other company was responsible for a system to registries the use of methadone. The project leader was someone from the service provider, accompanied by a project manager of the other company. The responsibility of the project within the organization was the head of SMH. In October 2003, the system went life. After the implementation of the system the role of the service provider changed of system developer to system administrator. In this period several changes in the system were made.

The *Youth Health Care (YHC) cluster* provides care for youth health care to all children from 0 to 19 years.

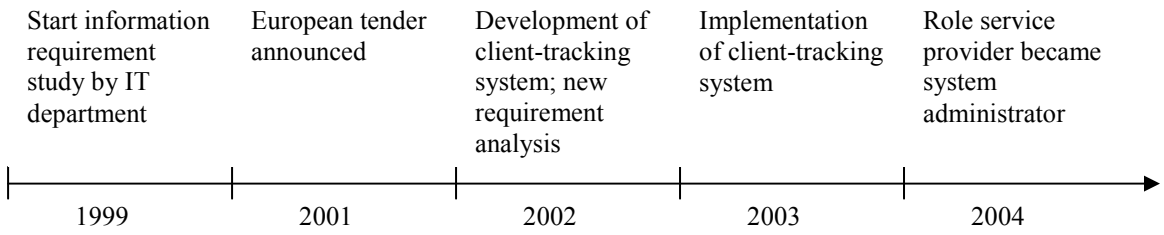


**Figure 2: Time frame for the SMH project.**

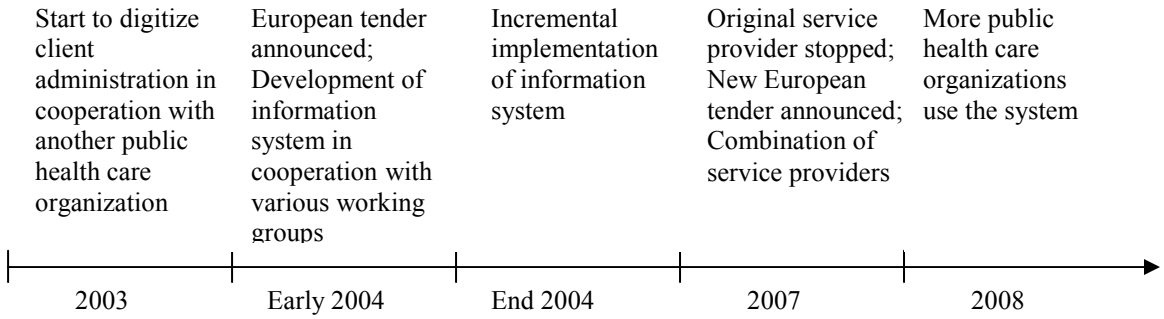


**Figure 3: Time frame for the YHC project.**

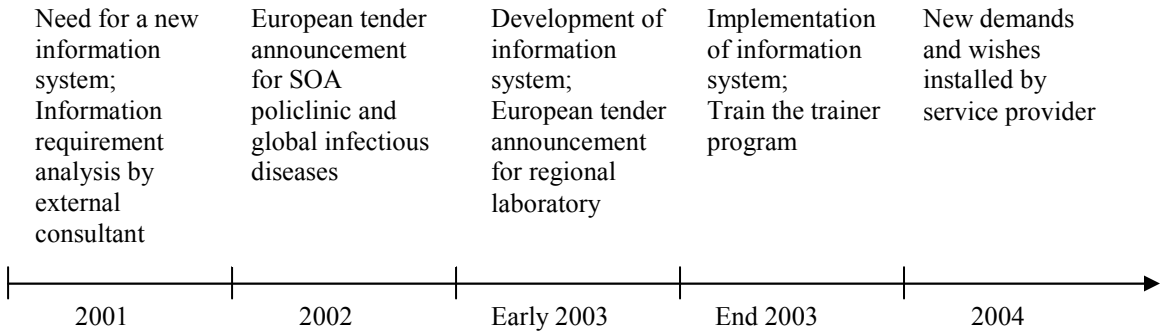


**Figure 4: Time frame for the ID project.**

The prevention and early detection of problems, as well as guidance to the proper care, is its primary goal. To address these issues doctors or nurses referring, in many cases to the family doctor, youth care or other institutions. In addition to care, the YHC has a proactive and/or participating role in a variety of programs and projects. YHC also provides services and products.

In figure 3 the time frame of the YHC project is presented. At the beginning of 2003, it was decided to cooperate with another public health care organization to digitize the client administration. In march 2004, after an European tendering, a service provider was chosen to deliver the system. The members of the Steering Committee were the managers of YHC of both organizations, an external project manager, the head of the IT department and the project manager of the service provider. The service provider developed the system in cooperation with various working groups. The system was incrementally implemented by several consultation offices. Around 2006 – 2007 a new combination of service providers support the system. The last few years, several other public health care organizations in the Netherlands also are going to use the system.

The *Infectious Diseases (ID) cluster* deals with combating infectious diseases in society. This is done by means of screening of risk groups, research and treatment. Part of the cluster is the regional laboratory,

where corporeal material will be investigated for the public health care organization and several other institutions. Another part of the cluster, the department global infectious diseases, provided travel advice and travel vaccination. Also it has an instructive role in outbreaks or threats of contagious diseases.

Figure 4 shows the time frame of the ID project. Around 2001-2002 three sections within the department – the SOA policlinic, global infectious diseases and regional laboratory – were in need of a new information system. As a first step, an information analysis was made. This research was handled by an external consultant. On the basis of this analysis, an European tendering was started to serve the SOA policlinic and global infectious diseases sections. The regional laboratory decided to start a separate project. After an European tendering the regional laboratory choose the same service provider as the other two departments. In October 2003, a train the trainer program was started. After the deployment, the service provider installed new requirements in the system.

For each of the three departmental cases project documentation was studied and an interview guide was developed to investigate the development and implementation of the various information systems. In total 26 interviews were conducted. Table 1 shows the distribution of the interviews for the three projects divided by stakeholder. The selection of the interviewees was partly done by the head of the IT department, and partly by the heads of the three clusters. Also, the head of the IT department guided contact with the external parties (service provider and the external consultants). The outline of the interview guide is given in appendix A. The interviews were focused to get answers on topics related on actions top management has undertaken to accept the system, and in which way these actions were influenced by other stakeholder's behavior. Mostly, the outline was followed, but depending on the answers recounted by the participants, deviation occurred. The interviews took place in May and June 2009. The interviews were tape-recorded and of each interview a report was made [29]. This report was sent to the interviewee for approval. Comments and corrections were incorporated in the interview report.

Each interview report was read carefully by the researchers, keeping the sensitizing concepts as defined in the literature on metastructuration actions of (top) management and stakeholder analysis in mind. Statements that were recognized were coded and compared. Next, it was decided to merge codes or to change a statement to another code. Hereafter codes were grouped in main codes – following an axial coding procedure ([21, [25]). This resulted in an identification of different concepts that will be presented in the next section.

**Table 1: Number of interviews by cluster and stakeholder of the project.**

| Stakeholder | SMH | YHC | ID |
|---|---|---|---|
| (Top) management | 4 | 2 | 3 |
| User | 2 | 3 | 3 |
| IT department | 2 | 2 | 2 |
| External party | 1 | 2 | - |

## 4. Results

For the metastructuration actions of (top) management, three concepts can be indentified (inductively) from the three cases studies. The first concept was 'awareness creation'. Multiple interviewees indicated comments about the way the system was introduced and the activities undertaken by (top) management. The second concept indentified was 'training'. Many statements were about the way the system was learned and the conditions under which it occurred. The last concept that was recognized as a metastructuration action was about 'user participation'. This concept includes the comments about the way the employees were involved and participated in the different projects.

The stakeholder context revealed two concepts. The first one was on 'alignment'. In this concept comments about the cooperation, interaction and coordination between the different stakeholders appeared. The second concept was 'vision sharing'. Here, statements about the core objectives and ideals for the new systems were grouped.

At least, two concepts on implementation outcomes were indentified. The first concept was 'system quality'. With regard to this concept, multiple interviewees judged the usefulness, usability and operability of the system. The second concept was 'acceptance'. This concept was chosen to cluster statements about the use, adoption and (non) resistance of the system. In table 2, a summery is given of the statements on the concepts for each stakeholder in the different projects. In the next sections the main findings of each project on these concepts will be described.

**Table 2: Case study categories, concepts and findings.**

| Categories | Concepts | Project SMH | Project YHC | Project ID |
|---|---|---|---|---|
| Implementation context | Characteristics of the system | • Client tracking system | • Business application to digitize client administration | • Business application to replace legacy system |
| | Project Management structure | • One project champion<br>• Steering committee, Project manager and Project leader, Working group, Super user group | • Two project co-champignons<br>• Steering committee, Project manager, Working groups | • One project champignon<br>• Steering committee, Project manager, Vendor working group |
| (Top) Management support | Awareness creation | T: Team leaders set no pressure to use the system and had no concern on work instructions<br>U: No clear direction and systematic control on what was decided<br>E: Management gives insufficient attention to the usage of the system | T: Insufficient guidance to the process of implementing and communicating<br>U: During implementation support was available and there was no time pressure<br>E: Commitment to the project was different per regional manager | U: Information bulletin to inform employees about the development of the system<br>U: Early training to prevent resistance |
| | Training | T: Employee training was not optimal<br>I: There was attention for training | T: Additional training to learn tricks to facilitate system use<br>U: Training was offered to all users, but not always used<br>E: By time pressure, no time was spent on good practice and testing of the system | T: Much training was needed to learn the system<br>U: Discussion about the amount of training |
| | User participation | T: Everybody was involved<br>U: Meetings with vendor stopped halfway the project<br>I: Users had little participation and an user group did not represent all stakeholders<br>E: Management put effort to create standard meetings | U: Participants in workgroup reflection of the users and selected on computer skills<br>E: Project staff recruited from various departments, composition made by management | T: Cooperation between service provider department<br>U: Employees cooperate with the service provider to develop and implement the system |
| Stakeholder context | Alignment | T: The interaction between the vendor and user organization is never good established<br>U: Communication between vendor and IT department was never good and the intermediary role to the user organization was not successfully<br>I: The role of the IT department was mainly coordinated and giving advice<br>E: During the project there was less alignment between development and practice | T: Intermediary role of IT department was not successful, problems were not recognized immediately and persisted<br>U: Service provider direct contact with the user organization, without assistance of IT department; No focus to control the project<br>I: Cooperation adjourned by new consortium of multiple service providers<br>E: No cooperation between different service providers | T: Cooperation was generally considered as good, but lack of IT manpower capacity<br>T: Language differences between users and IT professionals<br>U: Long time to implement a solution, but cooperation was good<br>I: Cooperation with department was good |
| | Vision sharing | T: No agreement about the purpose of the system<br>U: The departments have very different information needs<br>I: There was a lack of a clear vision<br>E: There were different priorities | T: Not clear that system was built to support business processes or management information<br>U: Expectations were high, digitize paper documents and planning, management information and research on epidemiological data<br>I: Building a digital system because of operating considerations, namely a more efficient way of working<br>E: No agreement about the goal of the system | T: System to register activities to monitor and follow patients<br>U: System more than registration, also decision support which research must be done<br>I: Disagreement to develop one or more systems |

| | | | | |
|---|---|---|---|---|
| Implementation outcomes | System quality | T: Users do not use the system in the right way<br>U: The quality of the system did not fulfill the expectations, and not satisfied about the usability | T: System operates reasonably well, only performance problems<br>U: More transparency and flexibility and better system performance<br>I: Workflow was not in line with the actual work processes, performance problem is solved<br>E: Work process did not fit with workflow of the system | T: Requirements were partly satisfied, management information and scientific analysis are hardly to get<br>U: Most requirements are realized, usability could better |
| | Acceptance | U: Resistance as a result of prematurely ending projects and insufficient releases<br>I: Limited use and understanding of the system by users<br>E: In the beginning, limited and avoided use of the system | T: System had negative impact on daily practice, acceptance decreased<br>U: Feeling be pushed by system<br>I: Many employees without computer experience, therefore significant level of resistance<br>E: There was little support by the users | U: Everyone worked with the system, although not 'in depth'<br>U: Resistance was increasingly removed |

## 4.1. The IS Project at the Social Mental Health Cluster

*(Top) Management support.* From table 2 it appears that awareness creation was not sufficient established. Different stakeholders indicated that there was not enough attention and leadership to use the system. Also, the training was not articulated in an active way. On user participation the views of the different stakeholders were very different. (Top) Management and the IT department had opposite views.

*Stakeholder context.* The stakeholders indicated that interaction and alignment during the project between the stakeholders was insufficient. Mutual expectations were not managed well. Also, there was no agreement about the goals of the system. All in all, the conditions for successful metastructuration actions were poor.

*Implementation outcomes.* On system quality, the stakeholders indicated that the quality did not fulfill the general expectations. The usefulness of the system was unclear and lacking. Also, there were remarks about the usability of the system because it was too complex, and too many actions were required to enter and retrieve information. The acceptance of the system was low. From the beginning, there was limited use of the system, even avoidance by workarounds.

## 4.2. The IS Project at the Youth Health Care Cluster

*(Top) Management support.* On awareness creation, the stakeholders revealed different statements. During the implementation office assistants provided help, while the number of production targets was reduced. On the other hand, the role of the regional manager appeared to be far from perfect. A reason for this was the reorganization of the cluster YHC during the project. Therefore the commitment to the project was different per regional manager. This also effected the training in relation to the system. Training was offered to all users, but only used to a limited extend. User participation was formerly established. The selected group was, however, not a reflection of the end users. The participants were selected from the same office and by their computer skills.

*Stakeholder context.* The alignment between the different stakeholders was variable. The service provider had direct contact with the user organization, without the assistance of the IT department. At a later stage, when the system was inherited by a consortium of multiple service providers, the cooperation was adjourned. From the beginning of the project, there was no agreement about the goal of the system. The two public health organizations did not agree on the functionalities of the system. During the project more and more objectives emerged. This resulted in 'much policy, and little direction'; a difficult condition for top management metastructuration actions to have an optimal effect.

*Implementation outcomes.* On system quality different comments were given. It was noted that the system operates reasonably well, apart from the many 'click moments' that were experienced as negative. Furthermore, it was mentioned that in the beginning the workflow of the system was not in line with the actual work processes. Acceptance was an issue as well. Many employees saw the system as a negative impact on their daily practices. Furthermore, many employees were not used to work with IS/IT. This was especially the case with older workers. All these factors caused a significant level of resistance.

**Table 3: Summery of (top) management support, stakeholder context and implementation outcomes.**

| Categories | Concepts | Project SMH | Project YHC | Project ID |
|---|---|---|---|---|
| (Top) Management support | • Awareness creation<br>• Training<br>• User participation | • Low<br>• Moderate<br>• Moderate | • Moderate<br>• Moderate<br>• Moderate | • High<br>• Moderate<br>• High |
| Stakeholder context | • Alignment<br>• Vision sharing | • Low<br>• Low | • Low<br>• Low | • High<br>• Moderate |
| Implementation outcomes | • System quality<br>• Acceptance | • Low<br>• Low | • Moderate<br>• Low | • Moderate<br>• High |

### 4.3. The IS Project at the Infectious Diseases Cluster

*(Top) Management support.* As shown in table 2, in the initial setup of the project, an information bulletin was introduced to inform employees about the development of the system. Furthermore, employees were early trained to work and interact with the system. Between the stakeholders there was no agreement about the amount of training. User participation was received positively. In all phases of the project employees were involved.

*Stakeholder context.* The interaction between the stakeholders was mainly considered as good. There was, however, no general agreement about the goals of the system. Compared to the other cases however, conditions were in favor of the potential effect of the management metastructuration actions

*Implementation outcomes.* Stakeholders agreed about system quality. Most requirements were satisfied. From the users point of view, the resistance against the system is reduced and everyone worked with the system, although not 'in depth'.

## 5. Conclusions and further research

This paper aimed to answer the question how (top) management support can enhance the acceptance and success of IS/IT by metastructuration actions, taking the context of different stakeholders into account. Within a large Dutch public health care organization, the development and implementation of three IS/IT project were analyzed. Data was collected by 26 interviews divided over the three projects. Analysis of the interviews shows that three concepts were identified for (top) management metastructuration actions, two concepts for the stakeholder context and two for implementation outcomes. A summary of the findings on these concepts is presented in table 3. In this table the researchers translated the findings, as presented in table 2, into a three point scale to enable a specific case comparison. To this end, the researches scored the realization (presence) of metastructuration actions of the top management, the favorable conditions of the stakeholder context, and the outcome of the IS/IT implementation, for the three cases, as (relatively) 'low', 'moderate' or 'high'.

In all three the projects, the implementation outcomes are different. In the SMH project the outcomes are 'low', in the YHC project 'low/moderate' and in the ID project 'moderate/high'. The identified metastructuration actions by (top) management in the three projects are low/moderate, moderate and moderate/high, respectively. In the context of these projects the conclusion can be drawn that the realization of metastructuration actions by (top) management is related to better implementation outcomes. Further, it seems that the alignment and vision sharing, as stakeholder contexts, are more favorable in the ID project than in the other two projects. Thus, the stakeholder context in the ID project is better as it is accompanied with better implementation outcomes and metastructuration actions. In the two other projects the opposite occurred. Alignment and vision sharing, as stakeholder conditions, are less in favor of metastructuration. Hence, metastructuration actions and implementation outcomes is not or only weakly related. From this, it can be concluded that the stakeholder context had impact on the realization of metastructuration actions, as well on the success of IS/IT implementation, in terms of perceived system quality and acceptance of the system.

This study has described the stakeholder context is important as a critical condition for metastructuration actions of (top) management to enhance IS/IT implementations outcomes. It is not only important to address this context with regard to metastructuration actions, but also to frame this context into an adequate structure. This structure is presented by the conceptual model presented in this paper. This model partly resembles the work of Markus and Mao [18]. In their IS

participation theory, a distinction is made between stakeholders and participants. The claim is that these can deviate significantly. Further, they elaborate on the role of a 'change agent'. It is important to investigate the opportunities and the conditions change agents have to decide who participates, how they will participate, and what participation techniques are most useful to realize IS/IT implementation success. Further research need to show how the stakeholder context must be initiated to realize metastructuration actions that has positive implementation outcomes.

## 6. References


[1] Akkermans, H. and Van Helden, K. (2002) Vicious and virtuous in ERP implementation: a case study of interrelations between critical success factors. European Journal of Information Systems, 11, 35-46.

[2] Barki, H. and Harwick, J. (1994) Measuring user participation, user involvement, and user attitude. MIS Quarterly, 18, 1, 59-82.

[3] Barki, H. and Hartwick, J. (1989) Rethinking the concept of user involvement. MIS Quarterly, 13, 1, 53-63.

[4] Boonstra, A., Boddy, D. and Bell, S. (2008) Stakeholder management in IOS projects: analyses of an attempt to implement an electronic patient file. European Journal of Information Systems, 17, 100-111.

[5] DeLone, W.H. and McLean, E.R. (1992) Information systems success: The quest for the dependent variable. Information Systems Research, 3, 1, 60-95.

[6] DeLone, W.H. and McLean, E.R. (2003) The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. Journal of Management Information Systems, 19, 4, 9-30.

[7] Dong, L., Neufeld, D. and Higgens, C. (2009) Top management support of enterprise systems implementation. Journal of Information Technology, 24, 55-80.

[8] Hartwick, J. and Barki, H. (1994) Explaining the Role of User Participation in Information System Use. Management Science, 40, 4, 440-465.

[9] Jensen, T.B., Kjaergaard, A. and Svejvig, P. (2009) Using institutional theory with sensemaking theory: a case study of information system implementation in healthcare. Journal of Information Technology, 24, 343-353.

[10] Jeyaraj, A. and Sabherwal,R. (2008) Adoption of information systems innovations by individuals: A study of processes involving contextual, adopter, and influencer actions. Information and Organization, 18, 205-234.

[11] Kappelman, L.A. and McLean, E.R. (1991) The respective roles of user participation and user involvement in information system implementation success. Proceedings of the twelfth international conference on information systems, New York, United States, 339 – 349.

[12] Ko, D-G., Kirsch, L.J. and King, W.R. (2005) Antecedents of knowledge transfer from consultants to clients in enterprise system implementation. MIS Quarterly, 29, 1, 59-85.

[13] Lewis, W., Agarwal, R. and Sambamurthy, V. (2003) Sources of influence on beliefs about information technology use: An empirical study of knowledge workers. MIS Quarterly, 27, 4, 657-678.

[14] Lin, A. and Silva, L. (2005) The social and political construction of technological frames. European Journal of Information Systems, 14, 49-59.

[15] Lynch T. and Gregor S. (2004) User participation in decision support systems development: influencing system outcomes. European Journal of Information Systems, 13, 286-301.

[16] Mantzana, V., Themistocleous, M., Irani, Z. and Morabito, V. (2007) Identifying healthcare actors involved in the adoption of information systems. European Journal of Information Systems, 16, 91-102.

[17] Markus, M.L. and Keil, M. (1994) If we build it, they will come: Designing information systems that people want to use. Sloan Management Review, 35, 4, 11-25.

[18] Markus, M.L. and Mao, J.-Y. (2004) Participation in development and implementation – Updating an old, tired concept for today's IS contexts. Journal of the Association for Information Systems, 5, 11-12, 514-544.

[19] Mignaret, M. and Rivard, S. Positioning the institutional perspective in information systems research. Journal of Information Technology, 24, 369-391.

[20] Mitroff, I. (1983). Stakeholders of the organizational mind. Jossey-Bass, San Francisco, CA.

[21] Miles, M. B. and A. Huberman (1994). Qualitative Data Analysis: An Expanded Sourcebook. Thousand Oaks, Sage Publications.

[22] Nasirin, S., Winter, N. and Coppock, P. (2005) Factors Influencing User Involvement DSS Project Implementation: Some Lessons from the United Kingdom Health Sector. In Proceedings of the Thirteenth European Conference on Information Systems, 104-114, Regensburg, Germany.

[23] Ngai, E. W. T., C. C. H. Law, et al. (2008) Examining the critical success factors in the adoption of enterprise resource planning. Computers in Industry, 59, 6, 548.

[24] Nordheim, S. and Nielsen, P.A. (2008) Enterprise System Implementations: Organizational Influence Processes for Corporate User Representatives. In 16th European Conference on Information Systems, 362-373, Galway, Ireland.

[25] Neuman, W. L. (2002). Social Research Methods: Qualitative and Quantitive Approaches, Pearson Education, Boston.

[26] Orlikowski, W.J. (1992) The duality of technology: rethinking the concept of technology in organizations. Organization Science, 34, 398-427.

[27] Orlikowski, W.J. (2000) Using technology and constituting structures: A practice lens for studying technology in organizations. Organization Science, 11, 4, 404-428.

[28] Orlikowski, W.J., Yates, J., Okamura, K. and Fujimoto, M. (1995) Shaping electronic communication: The metastructuring of technology in the context of use. Organization science, 6, 4, 423-444.

[29] Patton, M.Q. (2002) Qualitative research and evaluation methods. Thousand Oaks, Sage Publications.

[30] Purvis, R.L., Sambamurthy, V. and Zmud, R.W. (2001) The assimilation of knowledge platforms in organizations: An empirical investigation. Organization Science, 12, 2, 117-135.

[31] Seddon, P.B., Staples, S., Patnayakuni, R. and Bowtell, M. (1999) Dimensions of information systems success. CAIS, 2, 20, 1-32.

[32] Sharma, R. and Yetton P. (2003) The contingent effects of management support and task interdependence on successful information systems implementation. MIS Quarterly, 27, 4, 533-556.

[33] Somers, T. M. and K. G. Nelson (2001) The impact of critical success factors across the stages of enterprise resource planning implementations. Annual Hawaii International Conference on System Sciences, 10.

[34] Venkatesh, V., Morris, M.G. and Davis, G.B. (2003) User acceptance of information technology: toward a unified view, MIS quarterly, 27, 3, 425-479.

**Appendix A: Interview guide**

- How was the project started?
- How was the project structure?
- What was done to get support of the project?
- How were users involved in the project (type of participation, training, prototyping)?
- What was the task of (top) management?
- What was the task of the IT department?
- What was the task of the user organization?
- What are the experiences with the usefulness of the system?
- What are the experience with the usability of the system?
- What can you tell about the use of the system?