Using DrawBridge54© to improve the quality of user participation in IS projects

Master thesis – Jip Schwering

UNIVERSITY OF TWENTE.

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Summary

End-user participation in information system (IS) development and implementation projects is regarded by many theoreticians as an important mechanism to increase IS success. In literature, the effects of user participation have thus been much researched. The majority of these studies conclude that user participation has positive effects on IS success. In practice however, IS projects are still facing problems or even failing completely. A reason for this might be that user participation is not practiced much, because the efficiency seems to be a concern. Companies might be skeptic towards the need for the investment in time and money. Also, almost no approach to user participation is explicitly defined. This can lead to a sub-optimal approach in practice, which in turn leads to the absence of its effects. Furthermore, a successful IS change also requires complementary organizational changes in processes, tasks, structures and people. This aspect is often overlooked in practice. There are also theoretical problems thwarting the effects of user participation. The context of IS implementations has changed over the past ten years (bigger systems, more users, more stakeholders), which renders most positive studies on user participation outdated. Concretely, the positive effects of 'system quality', 'user involvement' and 'user-developer relationship' are much harder to achieve in today's context. This study investigates how DrawBridge54© (DB54) – a bottom-up, participative organizational change method – can contribute to the quality of user participation and solve these issues. This is done by identifying in which ways DB54 can theoretically contribute, and by measuring the effects of DB54 in four companies where the method was applied.

Conclusions

The main conclusion of this study is that:

- DB54 can contribute to the quality of user participation for IS implementations as a pre-IS implementation tool. In all the researched cases it achieves effects that are preconditions for a successful IS implementation. Through DB54, organizations and its employees achieve a holistic process insight and a culture of partnership and mutual respect. In an ideal situation, readiness for change, sense of urgency, organizational reshaping capabilities, perceived personal competence and a human relations culture can also be achieved. This ideal situation can be achieved by overcoming a number of challenges that are discussed in the recommendations for companies exercising DB54, and by effectuating actual changes through DB54. This sets the stage for a successful participative IS project. Also, DB54 can be used to gain insight into and effectuate the required complementary organizational changes.

Other conclusions have also been reached:

- DB54 can also be used as a business case tool for top-down and bottom-up initiated IS projects, because it offers the possibility to link the need for an IS to work floor issues.
- Not only top management support, but also middle management support is very important in a successful participation process. The middle manager should perform what is called 'top management support' in literature in order to involve and commit his employees in a participation process.
- In DB54, a trusted external process facilitator can identify issues that have been accepted as the way things work, identify possible solutions and he can keep the focus on objectivity and correctness.
- DB54 can be regarded as an efficient method through use of lead employees, small group sizes, a transparent web-based toolset and a focus on main items and objectivity.
- In DB54, the lead employees played an important role in achieving the commitment and involvement of all employees. The domain knowledge of the lead employees plays an important role here as well as the social and facilitating skills.
- Participants can be skeptic towards participating in a change process. They might not want to participate at all, and thus positive effects can never be achieved for them.
- Managers can perceive the participation process a lot more positive than their employees. So a participation process might not go as well as thought.

Recommendations

Based upon the conclusions, the following recommendations have been created:

DrawBridge54©

- Adjust the method and/or SPION models (a structure for describing a problem and a solution) so that they are more suitable for use as a business case tool for IS implementations.
- Create mechanisms and processes to ensure top and middle management support.
- Place (more) emphasis upon the personality characteristics of a person when selecting lead employees.

As a result, DB54 can be better used within the context of an information system project because business cases can be made. Also, the involvement, commitment and progress will be better safeguarded through top and middle management support and capable lead employees.

Companies exercising DB54

- Aim at creating and sustaining top and middle management support.
- Try to always exercise the method with an external process facilitator.
- Make use of lead employees with domain knowledge and social and facilitating skills.
- Let multiple departments work with the method at the same time, and make sure that they work together as well.
- Use the method as a continuous improvement tool to benefit from long-term effects.

These recommendations bring the process close to an 'ideal' situation. Employees will be committed and involved and the DB54 project will progress smoothly. DB54 will be better able to contribute to the quality of user participation for IS implementations as a pre-IS implementation tool, because more effects will be achieved in this ideal situation.

Practitioners of user participation in IS projects

- Use DB54 before starting an IS project.
- Create mechanisms and processes to ensure top and middle management support.
- Use lead employees, a transparent web-based toolset, and a focus on main items and objectivity to create efficiency and to include non-participating stakeholders in thin participation activities.
- Place emphasis upon the personality characteristics of a person when selecting lead employees, as well as his/her domain knowledge.

This will help to improve the quality of user participation for IS implementations. Through DB54, preconditions for a successful user participation process are achieved. Using elements from the DB54 method, the user participation process can be more efficient. And the involvement, commitment and progress will be better safeguarded through top and middle management support and capable lead employees.

Future research

- Research the actual use of DB54 as a pre-implementation tool (research if DB54 has an effect upon IS success in a case where an IS is implemented and DrawBridg54© is used beforehand).
- Further investigate how the domain knowledge of lead employees influences the efficiency of the participation process of the results, and how the importance of this domain knowledge relates to the importance of social and facilitating skills.

- Determine the possible reasons for skepticism towards user participation, and which people are prone to be skeptic and why. Investigate the influence of different cultural factors and types of leadership upon this skepticism.
- Look into the discrepancies of the managers' views in relation to the employees' views towards the participation process, and research ways to eliminate this discrepancy.

Research into the first two factors will lead to more understanding of how DB54 can lead to IS success and what role the domain knowledge of employees plays. Research into the latter two factors can lay bare and solve other issues surrounding user participation in IS projects.

Preface

In 2009, I started my graduation process. Daniel Moody convinced me to just go 'out there', read some papers in areas that I find interesting, search for a gap in the research and write a research proposal based upon that. So I was determined to create my own research proposal instead of looking for available research assignments. This turned out to be a bit harder and more time-consuming than I initially thought. There were so much areas of interest for me. In this regard, I must thank Celeste Wilderom and Christiaan Katsma. After a few talks with Celeste, she pointed me into the direction of user participation in information systems implementation. After reading some papers in that area, I concluded that this was what I had been looking for. It had the information systems element, the organizational change element, a 'people' element and a psychology element, all of which interest me a lot. From that moment on, I thought of what my thesis might add to this research area, together with Christiaan and Celeste. Something which was also very important to me was a large practical aspect, so we shaped the research so that it would be doable in a company. With that done, I approached Christiaan to be my first supervisor and Klaas Sikkel to be my second supervisor. Fortunately, they both saw an interesting research opportunity in my research proposal.

However, I soon found out that the research proposal I had written could only be performed at a few companies. My first choice company was enthusiastic, but had no resources available for me because of the financial crisis. Other companies in the IT consultancy sector that I knew of did not seem suitable to me. After a while, Christiaan put me in touch with Geert-Jan de Steur, a consultant who developed his own participative organizational change method. This method had been carried out in several cases before and was going to be carried out in the facilities management of a university. I took this opportunity to shape my research so that I could investigate the potential uses of this method in the context of a participative IT implementation process.

Somewhere during the process of defining my research proposal and conducting the research, I realized that I like practical issues (including putting theory to practice) and interacting with people more than theoretical issues and interacting with computers. Also, I have gained a lot of practical experience in performing organizational change; my role in the university case gradually changed from observant to assistant process facilitator. I have enjoyed this role very much. What I also learned is that it is difficult for me to write a brief report when I have set my own scope. I tend to include more and more and more in this scope, eventually blurring the main points of focus. Therefore some parts of this thesis may be quite a long read. I apologize for this, but I have created a brief summary and conclusion at each chapter for those of you that just want to read the most important bits of this thesis.

Persons that are to thank for this thesis are: Daniel Moody for providing me with valuable lessons on how to conduct research in the IS field; Celeste Wilderom for the discussions on my thesis subject, Christiaan Katsma and Klaas Sikkel for keeping me on track content-wise and methodologically and for providing much constructive criticism and feedback; Geert-Jan de Steur for allowing me to conduct my research as I wished and for providing me the opportunity to gain much practical experience; the people at the facilities management for accepting me as an assistant process facilitator and working with me to obtain the data I needed; and my girlfriend Linda for her ongoing support and encouragement. Another person that is to thank is Robin Hobb, for writing such amazing books that I have enjoyed as a welcome distraction to writing my thesis. Also I would like to thank a number of label records (Ultimae, Twisted, Aleph Zero) for continuing to release great music which I have enjoyed very much during the writing of my thesis. Furthermore, I thank Sicily and the Ozora Festival for providing me with nice summer holidays which were also a welcome distraction.

I hope you will enjoy reading this thesis and gain much knowledge from it. If this thesis raises any questions, you are welcome to e-mail me at *j.schwering@alumnus.utwente.nl*.

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1 Introduction

Literature has long used the term 'IS success' or derivatives of that term to measure the extent to which an implementation of an information system (IS) has succeeded. However, since before I was born, literature has mostly reported high failure rates of information technology (IT) projects. A much quoted report on failures of IT projects is the Standish Group's *CHAOS Report*. The report of 2009 shows that only 32% of the projects deliver on time, on budget, with required features and functions. 44% of the projects were 'challenged' – *"late, over budget, and/or with less than the required features and functions"* – and 24% have failed, meaning that they were *"cancelled prior to completion or delivered and never used"* [ST09]. The IT project failure rates differ per author though. For example, in a survey by Sauer et al. [SGR07], it was found that two-thirds of 412 studied IT projects delivered close to budget, schedule and scope expectations. However, this still means that one-third of the projects were considered a failure. A great deal of these projects is about the development and implementation of information systems. Papers mentioning specific IS development and implementation failure rates - quoting past research in turn - write about rates ranging around 1/3rd to 2/3rd as well [DNH09, SK09, DM09, KL08, KB06, GA01, VM00]. Therefore, it seems that the IS development and implementation processes are still far from optimal. In order to gain more insight into the determinants of and the relationships surrounding this phenomenon of a successful IS implementation, several models have been developed. These will now be discussed.

1.1 IS success models

A well-known and much referenced-to model is the DeLone and McLean's model of IS success [DM92], from here on referenced to as the D&M model. This success model is based upon studies in the 70ies and 80ies and was validated by a number of studies [DM03]. Ten years later, the authors updated the model based upon more than 100 additional studies, resulting in the D&M updated success model [DM03], which is depicted in the figure below. In this model, an IS is regarded as successful when it is used as intended and when it delivers benefits. Information, system and service quality are determinants for user satisfaction, intention to use and actual system use. These factors are in turn determinants of net benefits of the IS (IS success). And indeed, a meta-analysis of 52 papers by Petter and McLean [PM09] showed support for this updated success model.

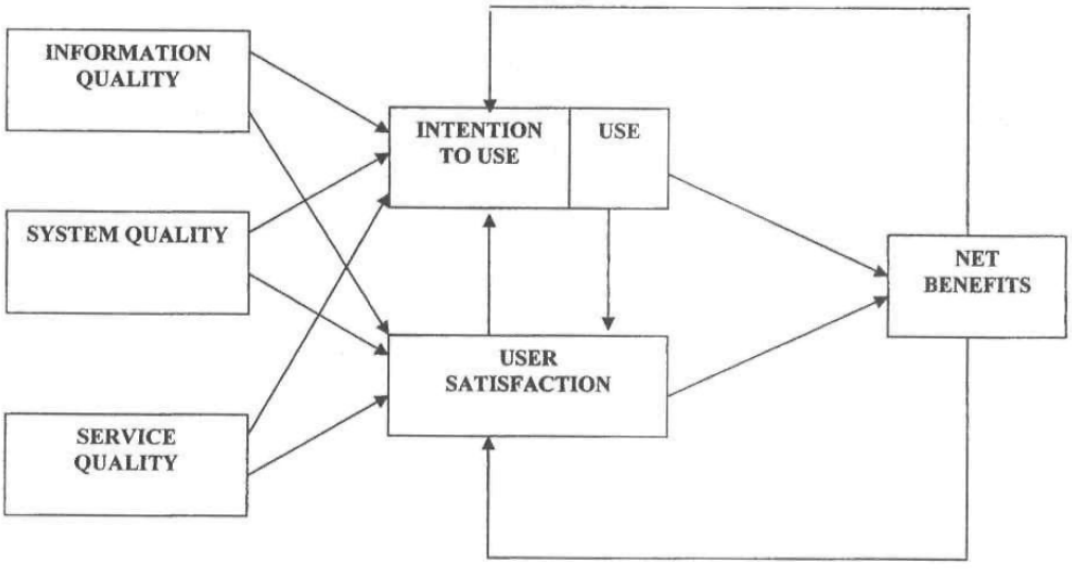

Figure 1 – D&M updated IS success model [DM03]

Another well-known and much referenced-to model is the Technology Acceptance Model (TAM) [DA89, DBW89]. A number of authors, including Davis himself, sought to improve this model and ended up developing the Unified Theory of Acceptance and Use of Technology (UTAUT) [VE03], which is depicted in the figure below. The UTAUT is based upon a great body of literature and integrates 8 acceptance models, namely the TRA (theory of reasoned action), TAM (technology acceptance model), MM (motivational model), TPB (theory of planned behaviour), C-TAM-TPB (combined TAM and TPB), MPCU (model of PC utilization), IDT (innovation diffusion theory) and SCT (social cognitive theory). As the name implies, the UTAUT model is about the acceptance and use of an IS by an individual, which can also be regarded as IS success. Performance expectancy (perceived usefulness, extrinsic motivation, job-fit, relative advantage, outcomes expectations), effort expectancy (perceived ease of use, complexity, ease of use) and social influence (subjective norm, social factors, image) are regarded as determinants for a behavioral intention to use the system. This behavioral intention, along with facilitating conditions (perceived behavioural control, facilitating conditions and compatability), will then in turn determine the use behavior. This relation is in turn moderated by user experience, voluntariness, age and gender. In contrast to most models UTAUT is based upon, user attitude has been eliminated as a direct determinant for behavioral intention. The model was empirically tested and the results were positive: UTAUT is said to explain 70% of the variance in the intention to use an IS.

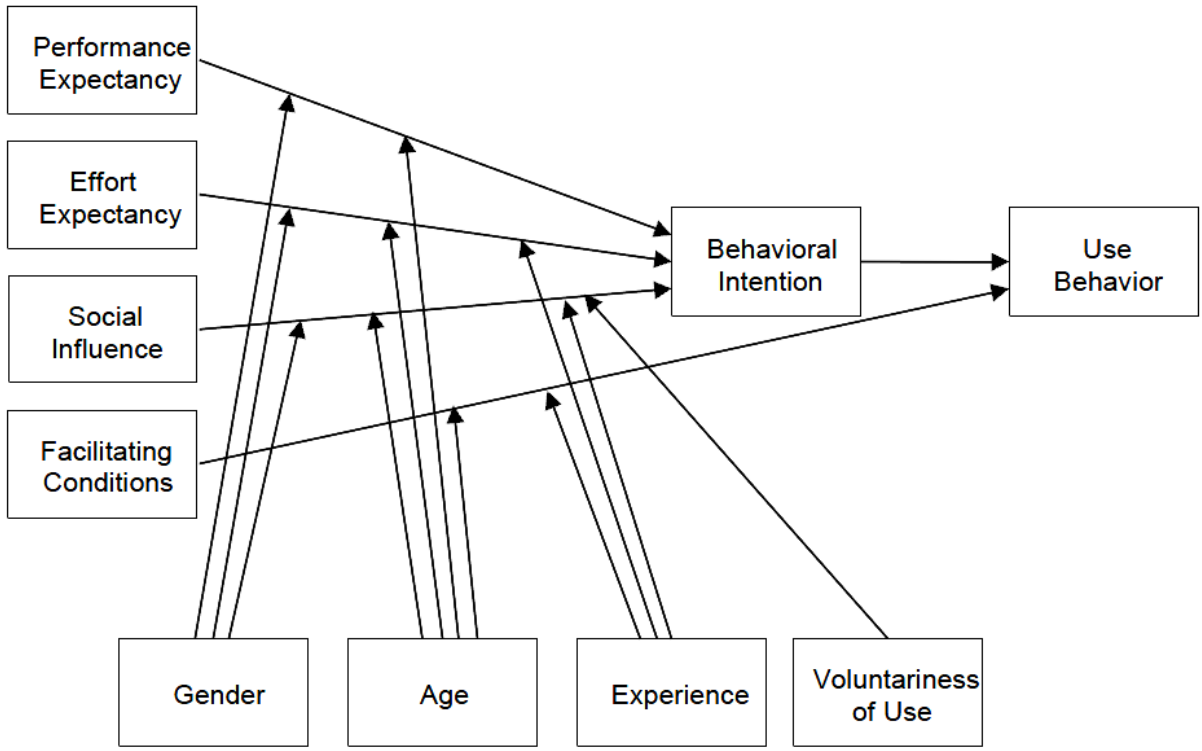

Figure 2 – UTAUT [VE03]

Next to the D&M model and the UTAUT, other – less influential – models have been developed. Some of these are a lot like the TAM or UTAUT models. Take for instance the model of IS success of Malhotra and Galletta [MG05]. They researched behavioral intention, attitude and commitment as determinants for acceptance and usage. They validated their model through a field study and found support.

Another study lies the focus on end-user satisfaction, since the authors argue that end-user satisfaction has been 'widely accepted' as an indicator for IS success [MB00]. The authors defined 9 determinants for user satisfaction in their model (user expectations, ease of use, perceived

usefulness, users attitude towards IS, organizational support, perceived attitude of top management, user involvement in system development, user skills, user experience) and empirically validated their correctness by means of a meta-analysis. Most of these determinants are also present in the UTAUT model in some form. However, user involvement, user skills and the perceived attitude of top management do not seem to be present in UTAUT, and neither is the user satisfaction construct. Similarly, a more recent study by Sabherwal et al. [SJC06] is also largely based upon UTAUT and researches determinants for IS success. Top management support, user participation, user training, system quality and user satisfaction are found to be important factors in IS success and are missing in UTAUT. Of these factors, system quality is present in the D&M model.

To top this, a recent study by Diez and McIntosh constructed an enormous list of possible (in)direct predictors of IS success and tested these through a meta-analysis [DM09]. They found that during the pre-implementation process, user participation is the single best predictor of IS success. During the implementation process, the behavioural intention, computer experience, external pressure, external information sources, perceived usefulness, professionalism of IS unit, subjective norms, system quality, top management support, user support and user training are important predictors for IS success. After the implementation, the user satisfaction is the single best predictor. These predictors influence factors such as adoption, adoption intention, actual use and success. And again, we see that user participation, top management support, external information sources, professionalism, system quality, user support, user training and user satisfaction are important factors here, but missing in UTAUT. Of these factors, system quality is present in the D&M model and the external information sources can be seen as similar to D&M's information quality construct.

Yet other researches study IS success in the context of an enterprise systems (ES) implementation. Some of those studies conclude with a list of critical success factors (CSFs), but provide little further guidance [NLW08, KB06, MMZ03, NZL03, UHU03, AH02]. In other words, they say what factors we should pay attention to but they do not say *how*. Some often mentioned factors again are top management support and user involvement. Other factors are clear goals and vision, interdepartmental co-operation and communication, management of expectations, a project champion and project management.

1.2 A socio-technical approach to IS success

We can see that there are a lot of determinants for IS success and critical success factors. But despite all these models and factors, IT projects are still failing. This might be because these models are still of little use in achieving IS success – they do identify the determinants, but do not mention how the project should be shaped so that these determinants are optimally achieved. Also, it might be that some models are missing the right focus; Garrity [GA01] feels that IS failures are often the result of a lack of attention to end user concerns, among other things. And indeed, the 'older' models such as the D&M model, UTAUT and the models upon which UTAUT is based (including the influential TAM) seem to be based upon the designer centered or 'American' approach to systems development, where systems are viewed from a functional standpoint. In this approach, the developers just build what they are told to build; with little to no regard of the end-users of the system they are building. Opposing this designer centered American approach is the user centered 'European' approach. This approach applies a user-centered development strategy where the end-users of the system play a great role in the design of the system [GA01].

This paying attention to the end-users in IS development and implementation is part of the so-called socio-technical approach. And indeed, in order to stop the IT failures, Hartswood et al. also recognize the need for a 'thoroughgoing socio-technical approach' to the design and implementation of information systems [HA03], and Vadapalli and Mone [VM00] and Lorenzi and Riley [LR03] also call for a stronger focus on people in IS development. These are just some of the many studies advocating a socio-technical approach to IS development.

From such a socio-technical perspective, workers are not seen as black boxes that should just do what they are told, but it is recognized that "*workers have psychological, physical and higher order cognitive needs and therefore their own distinct goals and aspirations that are separate from the goals of the organization*" [GA01]. Examples of such desires are the desires for promotion, advancement and challenging work. As such, the socio-technical approach recognizes and emphasizes the 'life world' or the 'quality of work life' of the workers. When implementing an IS, it means that it is important to understand its impact on the lifeworld of the workers: an IS can increase or reduce the span of control, autonomy and/or decision-making power, it can cause a redistribution of power and influence and it can disrupt the work habits of users [GA01]. In this way, end-user resistance to a change can grow. Prior studies indicated that this resistance is a major reason for IS failures [KL08], so Garrity [GA01] is right when he says that the lack of attention to end user concerns leads to IS failures. The socio-technical approach seeks to eliminate this resistance by recognizing the workers' needs and the interactions between people and technology. The idea is to create an optimal fit between the technical and social subsystems of the organization. Furthermore, the socio-technical perspective recognizes the necessity of learning and adaption (individually and in groups) to complete tasks [GA01].

The socio-technical perspective is usually realized through practicing user participation and/or creating user involvement. Through several methods of user participation and user involvement (which will be explained in more detail in chapter 3.2), it is believed that the IS will better fit in the work life of the employees and that resistance is mitigated. We can already see this shining through some of the IS success models mentioned before [MB00, SJC06, DM09], where user involvement and user participation are regarded as determinants for IS success. And most studies on critical success factors also recognize the importance of user participation and user involvement. User involvement and user participation can thus be seen as implementations of a socio-technical approach and follow from the rationale of the socio-technical approach, but user participation also has its own history and rationale.

1.3 The history and rationale of user participation

The theoretical foundations for user participation in IS development are to be found in organizational behavior and human relations literature; an approach called participative decision making (PDM) originated there. PDM refers to a management practice that encourages employees who are affected by the decision to participate in the decision-making process. User participation can be seen as a special case of PDM, limited to IS development and implementation processes [HK08].

The participation of users in IS development and its role in IS success have been researched since the 60ies [MM04]. One of the oldest and most used approaches to user participation in IS development is called participatory design (PD) [AS00, SP05, CR07 and ST08] (see also chapter 3.2), and the ideas behind this approach can serve as a good example for why one bothers with user participation in general. Participatory design originated in the 70ies and 80ies in Scandinavia, driven by a commitment to democratically empower workers [GA01, SP05]. Carroll and Rosson call this democratization the 'moral proposition' of PD [CR07]:

> *"…the people whose activity and experiences will ultimately be affected most directly by a design outcome ought to have a substantive say in what that outcome is. The moral proposition is that users have a right to be directly included in the process of design."*

Another reason why PD exists is that researchers have been looking for ways to increase the success and efficiency of new systems [AS00]. Carroll and Rosson call this the 'pragmatic proposition' of PD [CR07]:

> "*…the people who will need to adopt, and perhaps to adapt to an artefact or other outcome of design, should be included in the design process, so that they can more offer expert perspectives and preferences regarding the activity that the design will support, and most*

> *likely transform. The pragmatic proposition is that directly including the users' input will increase the chances of a successful design outcome".*

In other words, real users should be involved in the development process because they have relevant knowledge and understanding of the work processes that are subject of the information system [SHK08]. They know a lot about what is 'precious' and what is 'annoying' in their current work activities [CR07]. This tacit knowledge should be used in the development process [SP05]. To this end, they should be stimulated to offer expert opinions on how they think the information system can support their work process in the most efficient and effective manner, so that there will be an optimal fit between the user's needs and the system [GA01, FA03].

I believe these moral and pragmatic propositions of PD are applicable to user participation in general. What it all comes down to is working together with the people for whom the system is created and learning about their needs and preferences. Jacob Nielsen (1993, p. 74; quoted in [KU03]) adds to this:

> "*It is amazing how much time is wasted on certain development projects by arguing over what users might be like or what they may want to do. Instead of discussing such issues in a vacuum, it is much better (and actually less time-consuming) to get hard facts from the users themselves*".

While this may seem an obvious practice, it is not a common practice in the ICT world: many ICT innovations are still driven by the development of new technologies. An inherent risk of such a technology push is that designers may create a product or service that people do not need, do not want or cannot use. This risk can be highly mitigated by letting users participate in the design process and obtaining their valuable (innovative) contributions [ST08].

1.4 Summary and conclusion

IS success models like the D&M model and the UTAUT do not seem to have increased the IS success rates. This is not a big surprise, since most IS success models are more predictive *('if you have determinant x present, then IS success will occur'*) rather than descriptive *('in order to reach determinant x, you should follow steps y and z'*). In other words, it shows which determinants are important, but not how these can be achieved in practice. Other than that, these models are thought to lack a certain focus; that of the end-user. A significant part of literature recognizes a role for socio-technical approaches in this regard. Socio-technical models have thus been developed and some IS success models have integrated factors from the D&M and UTAUT models with the socio-technical approach, adding factors such as user participation and user involvement and validating them as indirect or direct determinants of IS success.

The main reasons for including user participation in an IS success model are that: 1. it should lead to a system of a better quality [MM04, SJC06, KU03, MK08, SP05] because it facilitates users to make their needs and wishes known [MM04] and 2. such a socio-technical approach should overcome the resistance of the users by focusing on the quality of work life [GA01] and by creating a psychological involvement [MM04, SK09, MK08]. Because of this, the system would be used as intended and IS success would be achieved, either directly [DM03, PM09, AM07] or indirectly.

Studies researching user participation usually describe how user participation was exercised and how it contributed to the several determinants of IS success. As such, they are more descriptive than traditional IS success models and can be emulated. It is thus better applicable in practice than models like the D&M model and UTAUT. However, since the IS success rates have not at all improved over the past years [ST09], it seems that user participation models have little effect in practice. Because of this, it is questionable to which extent findings from literature are actually used in practice. This implies that user participation has not been developed well enough for effective use in practice,

and/or that practice does not regard it as an effective and efficient way that brings benefits. The aim of this research is to further investigate this problem and to do something about it.

2 Research

In the previous chapter we have seen that user participation in IS implementations – or its effects - seems to remain absent in practice, whereas the theoretical benefits are great. This phenomenon reveals a gap between the theory and the practice of user participation: either the theoretically developed user participation methods are not used much in practice, or it has less effect on IS success in practice than in theory. This implies that from a practical perspective, there are some problems with the quality of user participation. When the quality of user participation is improved from a practical perspective, it might gain a better foothold in practice and actually contribute to IS success. Therefore, improving the quality of user participation form a practical perspective is the aim of this research. The practical perspective will take the form of a method called DrawBridge54© (DB54).

DB54 is a participative approach to organizational change management or continuous improvement, consisting of a method and a web-based tool. It encourages employees to conduct organizational change themselves, and in a participative manner. The method is a structured way of working together with employees from all levels in the organization in order to optimize the work processes. Currently, the method is focused upon departments. First, the employees of a department are all brought together in a group session and their processes, tasks and responsibilities are defined. In further sessions, issues relating to these processes, tasks and responsibilities are defined together with the employees. These issues are then fleshed out and possible solutions are created, which need to be worked out in detail by either a manager or an employee who is knowledgeable about the issue. Finally, it is also possible to create service level agreements (SLA's) with other departments using this method. This is an iterative process which does not take place from start to end; it occasionally takes a step backwards. For an optimal effect, it should be carried out simultaneously within multiple departments which are working together. The method strongly relies on a process facilitator, who can guide the employees. This guidance should focus on making the employees comfortable, making them participate in defining processes, issues and solutions, and working with the tool. The tool is a web-based application supporting the method. The processes, tasks, responsibilities, issues, solutions, SLA's, etc are all registered in online sheets in a clear and simple manner, so that everyone who looks into it knows what it is about. It can be seen as change process documentation so that no misunderstandings arise. Details of the DB54 approach shall be presented in chapter five.

DB54 was chosen because it is a user participation method developed and used in practice, and therefore closely matches to the aim of this research. DB54 does not specifically focus on IS projects, so in that sense the approach will most likely be incomplete to support the entire IS project. Physical IS design, for example, is not supported. Therefore, DB54 should not be seen as a complete approach to participative IS projects. Rather, I'm researching how it can add value to user participation in IS implementations.

2.1 Research question

The main research question of this research is thus as follows:

- In which ways can DB54 contribute to the quality of user participation for IS implementations?

In order to answer this question, a subset of questions must be answered in the following order:

1. What is the value of user participation in an IS implementation?
2. Which factors influence the quality of user participation?
3. Which of these factors can DB54 theoretically influence?
4. Which of these factors are actually influenced by DB54 in practice?
5. In which ways are these factors influenced by DB54?

Answering the first question is necessary to gain a better understanding of the user participation phenomenon. When it is known how user participation is supposed to work and what it is supposed to achieve, something can be said about the problems and issues surrounding user participation; they will mostly be related to user participation not working as it is supposed to, and not achieving the effects it is suppose to achieve. This will determine the areas of improvement for user participation. When the areas of improvement are known, factors that theoretically influence these areas and thus influence the quality of user participation can be suggested. As such, the second question is answered. Based upon this information plus a detailed knowledge of the DB54 method, question three can be answered by hypothesizing which of these factors can be influenced by the method. These hypotheses can then be tested, thus answering the fourth question. Combining these results with theoretical knowledge on user participation and a measurement of how DB54 is executed in practice will provide an answer to the fith question. Then, conclusions can be drawn as to the ways in which DB54 can contribute to the quality of user participation. This will provide an answer to the main research question. Finally, all of the information gathered during the answering of these questions it will also provide an opportunity to suggest theoretical improvements to the DB54 method and practical improvement to the user participation theory.

In general, answers to the research questions will provide theoreticians with more understanding of the relationships between user participation and IS development and implementation success. But most importantly, it will provide more insight into how the quality of the user participation for IS implementations can be improved. Practitioners will benefit from the understanding of the factors that influence the quality of user participation and may put more effort into achieving these factors, possibly using DB54 to that purpose. They will be able to use this knowledge in their own practices, thereby increasing the success chance of their IS (solution) development and implementation.

2.2 Research method selection

Question one and two can be answered by conducting a thorough literature review. The value of user participation in IS implementations is the subject of many papers, and the issues and problems surrounding the phenomenon are also discussed in literature. The answer to the second question can also be best given by literature, as is a great source of scientific information to identify factors that can influence the quality of user participation. To answer the third question, the answer to the second question plus a theoretical description of the DB54 method is needed. This theoretical description shall be created by gaining information from the developer of the method through interviews.

When choosing a proper research method to answer the fourth and fifth question, it is useful to note that the fifth question and the main research question are of a ‘how’ nature. This means that I will have to closely investigate how the participative process of DB54 takes place in practice, including the methods used and the supporting conditions and processes. And regarding the fourth question, this research is about measuring to which extent DB54 achieves certain effects. The best place to validate these effects would be in practice. Therefore, a non-reactive research method such as a theoretical literature review is not suitable to answer these questions.

In terms of other research methods, a field setting is preferable over a laboratory setting. An organizational change process as conducted by DB54 with all the roles involved plus the use and judging of it by end users seems hard and impractical to replicate in a controlled environment, so a laboratory setting does not seem to be feasible. Also, it will take too much time from participants for whom I do not have funds to compensate for their efforts. Furthermore, an experiment does not seem worth the effort when the required context is readily available at companies which actively exercise DB54.

I will use a research method that uses mainly qualitative data as opposed to quantitative data, because I intend to conduct a partly exploratory research. In this way, I will be able to explore in which ways DB54 achieves certain effects and thus uncover ingredients of a successful participative approach from practice that are not or barely present in the current state of the theory. Another reason for using qualitative data is that there are too many variables for quantitative methods to deal with effectively. This eliminates a survey as a research method. It should be noted however that a survey as a research method is not the same as using interviews and surveys as part of another research method. Interviews and surveys are a very useful source of information in a case study or action research, because I can use it to measure the effects DB54 has achieved.

Having made the choice for a field setting and using qualitative data, the choice is between a case study and an action research. These are the most suitable research methods available for a answering 'how' question and for getting insight into current practices. A case study or action research at a company actively exercising DB54 will provide a stage to test *how* DB54 works in practice and what effects it achieves. Since I do not have the necessary knowledge and resources available to conduct an action research myself, I will conduct a case study. As mentioned before, a survey will be a part of the case study in order to answer the fifth research question.

I conclude that the case study is the most suitable method to test the theoretical model. In this case study, the inner workings of DB54 can be explored and the effects which DB54 has can be measured. This will provide an answer to the main research question. Additionally, the gap between the current state of participation theory and the DB54 practice can be identified. Then, the theory can be extended with useful findings from practice and the effectiveness and efficiency of DB54 might be increased by the theoretical guidelines.

The remainder of this chapter shall discuss the designs of the literature review and the case study.

2.3 Literature review design

In order to answer question one and two, a literature review was conducted by using ISI Web of Knowledge and Scopus search engines and by manually browsing through the Communications of the AIS. This will result in the coverage of the top 25 IS journals [SR04]. In the beginning I generally searched for papers that were about participatory approaches to IS (solution) development and implementation. The following search terms were used in numerous combinations with each other: *IS, "information system*", IT, "information technology", develop*, design*, implement*, involv*, particip*, particip* decision making, PDM, "particip* design", change, user, readiness, ownership, commitment, collabor*, "collabor* design", "critical success factor*", CSF.* Soon it became clear that it would be useful to research user participation in the context of organizational change, and therefore the search term *"organizational change"* was also used in conjuction with the previously mentioned search terms.

Having read a few papers, I extended my search terms to include: "*contingenc*, condition*, factor, context, process*, method*, principle*, practic*, aspect*. These terms were used in conjunction with the terms I used in the first search in order to keep the focus on user participation. I also searched for papers unrelated to IS (solution) development and/or implementation, in order to be able to include ideas from other (more organizational) research areas. As such, I also included the terms: *leadership, trust, culture, "organizational learning", "cross-functional team*", CFT, "autonomous workgroup", "lead user*", open innovation, "group dynamics", "co-construction", "user roles", user types"*.

During the searches, I did not exclude any journals or areas because for example the medical field contains papers about user participation in hospital information systems and the business literature contains papers about user participation in organizational change. I browsed through all publications from the last decade and older papers with a significant amount of citations. Some papers could be

excluded based upon their title, others after reading their abstracts. In addition, some papers that were not accessible for me also had to be excluded. As a result, I ended up with a number of useful papers. This result was expanded by using backward citation on these papers. Forward citation has also been used to some extent. As a result, I ended up with approximately 150 papers which I categorized according to main subject and ranked according to usefulness for this study. The collection of these papers allowed me to answer research questions one and two.

2.4 Case study design

2.4.1 Case study propositions

The propositions that will be tested in the case studies can only be created when the third research question is answered. When we know which factors DB54 can theoretically influence, propositions can be created based upon that and they can be tested in practice, answering the fourth research question. The case study propositions will thus be formed in chapter six, after the theory of user participation and DB54 have been discussed. These propositions will guide the data collection and analysis in the cases, because they determine what I need to measure, and will thus provide the basis for the analytic generalization of the results. However, the propositions do not limit the data collection and analysis; it might be that I encounter interesting phenomena in the cases which are not captured by the propositions. I thus want to leave room for some grounded theory. Results of this will be discussed in the discussion chapter (chapter ten).

2.4.2 Data sources

Data sources that will be used in the case studies to evaluate the propositions are interviews, direct observation, surveys and resulting DB54 'documents' (mappings of processes, identifications of issues and solutions, etc). The direct observation and resulting DB54 documents are objective sources of information, whereas the interviews and surveys are subjective sources. Observation, documents and interviews are qualitative sources; the survey is a quantitative source. As such, the sources of evidence are complementary, allowing me to corroborate information through triangulation.

2.4.3 Research procedure

The managers of several companies where DB54 was performed will be interviewed. This interview and its details can be found in appendix B. The results of these interviews will be validated by interviewing the developer of the DB54 method. In the longitudinal case, all participants will be observed during DB54 sessions. I will join most sessions and observe the way managers and employees work with DB54. The resulting documents from DB54 will also be investigated to assess the progress and quality of the participation process. Finally, two surveys will be held; one for the manager and one for the employees. These surveys and their details can be found in appendix C.

2.4.4 Selection of cases

I will perform a multiple case study, with one longitudinal case study, and three cases where DB54 has been executed in the past. The longitudinal case is the main case in this study and takes place at the facilities management of a university in the Netherlands. This is a large instance in the public sector and is called 'Organization FM' in this study. The other three cases are a small instance in the public sector ('Company T'), a large instance in the private sector ('Company P') and a small instance in the private sector ('Foundation S'). As such, the cases are heterogeneous; they operate in a different sector and have different size, but also the goal for which DB54 was started differs in all of these cases. This will increase the external validity of this study because I will be able to generalize from multiple different situations. The relevance of the cases is a matter of discussion, because there are no IT implementations in any case, but there were no other cases available.

Each of these cases can be seen as a separate sample. When results are the same over different cases, this strengthens the results. When results differ over cases, it means that there is something in

the context of the cases which explains this difference. Explaining such differences in results is what I shall try to do in the data analysis. As such, the investigation of several cases allows me to identify reasons why results are achieved in certain cases and not in other cases.

2.4.5 Action research

In a case study, one should perform the role of independent or objective observer. During this research, I initially started out doing this in the case study at the Organization FM. However, during the process I got more and more involved in actively exercising and facilitating the DB54 method. My role gradually changed from passive observer to assistant change agent, thus one can also partly speak of an action research. I worked as a visible observer and a change agent, not as an unseen observer or participant. However, I do not think this has had much impact upon the results. After all, it was the DB54 process facilitator and the department managers who decided upon the when, where and how of the DB54 sessions. My role merely encompassed the facilitating of employees to speak their mind and the fine-tuning of the results, which the process facilitator would otherwise have done.

2.5 Thesis outline

In summary, the thesis thus follows the structure as depicted on the next page. Here, it should also be mentioned that several chapters can be quite a long read. Therefore, each chapter contains a summary and conclusion. I wrote these with the intention that the reader whom only reads the summary and conclusion of each chapter (and the main conclusion chapter) will be able to follow the reasoning and gain the most important knowledge from this study.

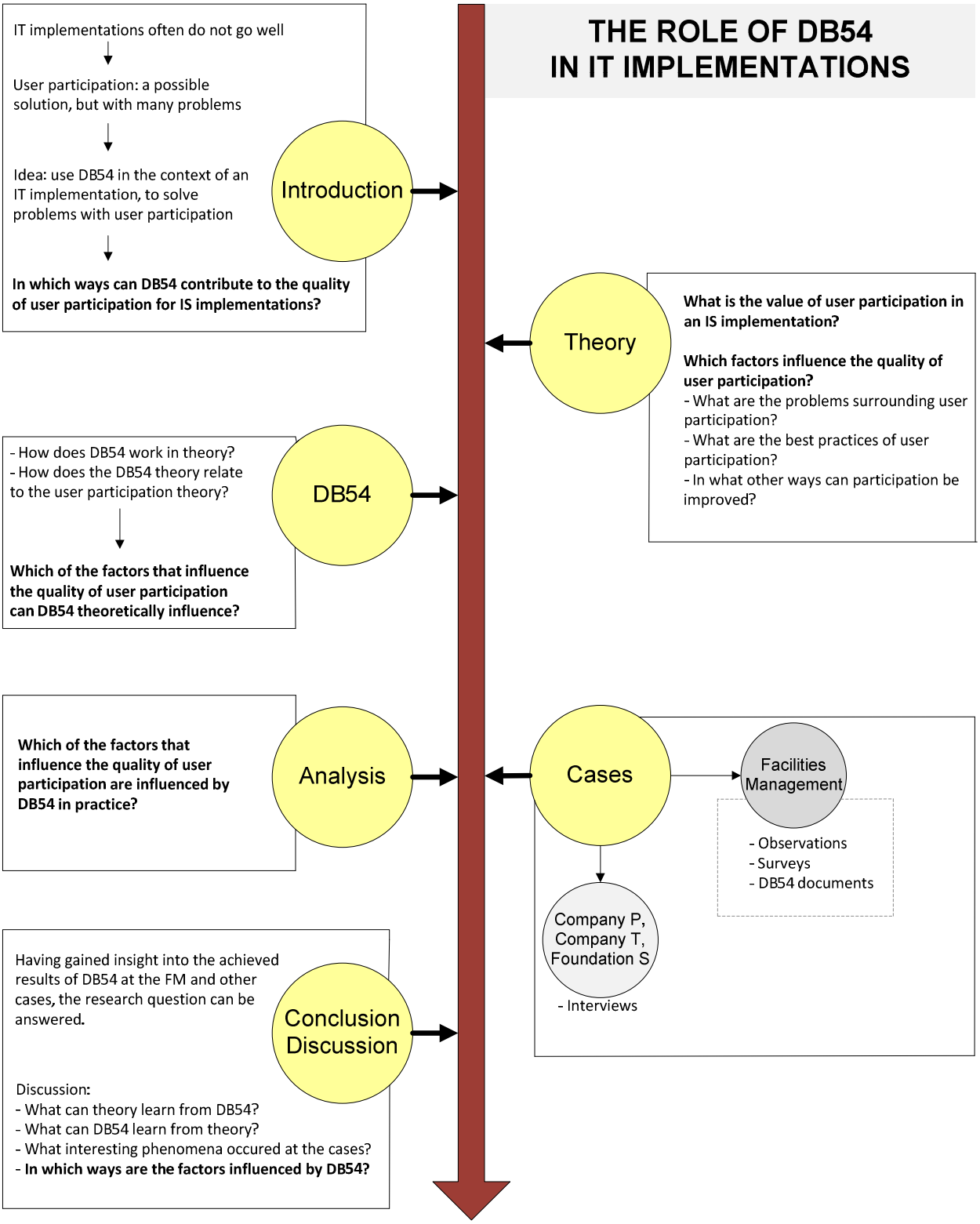

Figure 3 - Thesis outline

3 Value of user participation

This chapter will answer the first research question: *"What is the value of user participation in an IS implementation?"* In order to do this, the researched effects of user participation will be discussed. Based upon this, issues surrounding (the effects of) user participation can be identified, thus answering research question two. And factors that influence the quality of user participation can be identified when these issues are clear, which will provide an answer to research question three.

But before these questions about user participation are answered, it is useful to gain some more detailed knowledge on the concept of user participation. Therefore, the concept of user participation will first be defined in more detail. It will be related to the concept of user involvement and to existing socio-technical approaches to IS implementations. In the last part of this chapter, the effects of user participation are discussed.

3.1 Defining user participation and involvement

The terms user participation is very much related to user involvement, and the terms are sometimes used interchangeably. Because this thesis regards participation and involvement as two different things, it is important to first define the two terms in more detail.

3.1.1 Defining user participation

Barki and Hartwick have created a widely accepted definition of user participation in IS development: "*user participation refers to the behaviors and activities that users or their representatives perform in the system development process"* [BH94]. According to these authors, user participation consists of four concepts, being hands-on activities ("*specific physical design and implementation tasks performed by users")*, responsibility ("*user activities and assignments reflecting overall leadership or accountability for the system development project*"), user-IS relationship ("*development activities reflecting user-IS communication and influence*") and communication ("*activities involving formal or informal exchanges of facts, needs, opinions, visions, and concerns regarding the project among the users and between users and other project stakeholders"*) [BH01]. In other words, user participation is about designing and developing a system with the people who will be using it, by giving them an active role in the process. The end users have a voice and can exert influence over decisions [HP97].

The definition of user participation is broad enough for several practical methods, approaches, tools and techniques to fit in there. Luckily, Cavaye has taken it upon herself to create some structure in the user participation construct [CA95]. To that end, she has identified several dimensions of user participation, which are depicted in the table below.

Dimension	Description	Possible values
Type of participation	refers to the proportion of users that participate in development	all users / representatives of users (direct/indirect)
Degree of participation	recognizes that users may have different levels of responsibility during participation	advisory capacity, sign-off responsibility, part of design team, full responsibility (passive/active)
Content of participation	refers to the fact that users may be involved in different aspects of system design	technical design and/or social design
Extent of participation	acknowledges that participation can vary in scope during different phases of the development process	project definition, requirements definition, building, testing
Influence of participation	addresses the effect of participation on the development effort	input ignored, contribution considered, input taken seriously
Formality of participation	is about the formality of the participation	formal, informal

Table 1 - Participation dimensions [CA95]

Barki and Hartwick also identify a dimension which ranges from participating alone to participating in a group [BH94]. These dimensions of user participation give a good impression of what user participation can be like in practice. In order to be consistent with PDM, participation in information system development needs to include activities that are both direct and indirect, formal and informal, performed alone and with others, and activities should occur throughout the different stages of the development process [BH94b].

3.1.2 Defining user involvement

This notion of user participation is something different than user involvement, which is defined to be "*a psychological state of the individual - the importance and personal relevance of a system to a user*" [BH94]. In some studies, this is referred to as perceived relevance. This has nothing to do with participating in the development process. Despite these widely accepted definitions, some studies still use the term user participation when they mean user involvement and vice versa [HK08]. For example, several authors recognized the need to train users and to clearly communicate benefits of the new IS [NLW08, DNH09, AL01]. This communication is usually one-sided and users are mostly viewed as relatively passive sources of information [GA01]. While this is about creating user involvement, such approaches are still regarded as user participation by some. To make things more complicated, Amoako-Gyampa defines situational involvement and intrinsic involvement [AM07], where the first is user participation and the latter is user involvement as defined by Barki and Hartwick [BH01]. In this study, I shall stick to Barki and Hartwick's definitions [BH94, BH01].

3.1.3 Relation between participation and involvement

User participation and user involvement, defined as such, do have a strong relationship with each other. This makes it somewhat understandable that the terms are still used interchangeably. The relationship can be argued to go both ways. In one way, the user involvement is a very important factor in achieving IS success [BH94, AM07, MK08] and user participation can in turn foster (post-implementation) user involvement [BH94, PSJ06, MK08]; individuals who are active in the development process can influence the system to correspond to their needs and are therefore likely to develop beliefs that the system is important and personally relevant [BH94]. The other way around, it can also be argued that users who feel involved are more likely to be committed to participating in the design and development process, although Barki and Hartwick have researched this relationship and found no support for it [BH94].

3.2 Approaches to user participation and involvement

Several approaches to user participation and user involvement exist, of which all can be said to be socio-technical. Some authors have tried to gain some overview by comparing the approaches. A recent overview is created by Steen [ST08], who in his work also reflects upon the efforts of other authors. He compares several approaches and calls them forms of 'human-centred design' (HCD), which is about *"trying to jointly learn and to jointly create; letting users influence research and design processes".* Based upon this definition, one might also call this socio-technical design or user centered design. Steen identified six HCD approaches: participatory design (PD); lead-user approach; co-design; applied ethnography; contextual design; and empathic design [ST08]. The first three are user participation methods according to the definition of Barki and Hartwick [BH94]. The latter three are not participative methods according to the same definition, but are regarded as methods to indirectly learn about the users' needs. However, they can be powerful in conjunction with participative methods, and are regarded as methods to foster user involvement by some studies [KU03].

These approaches defined by Steen are the ones which are typically used in ICT projects, where users are involved in research and/or design, and where users and designers interact via face-to-face interviews, brainstorms, users' observation and feedback, user visits and meetings, or focus group discussions [ST08]. I'll briefly discuss these six approaches. Of these approaches, PD is probably the

most well-known and most used socio-technical approach. Therefore, it will get the most attention in this short review.

3.2.1 Participatory design

PD is about designing and developing a system *with* the people destined to use it [SP05], where the users have opportunities to deliver input through communication [BH01] or hands-on activities [BH94, GA01] and provide feedback through the entire design process [GLB99]. The input that users can deliver includes personal and organizational requirements and social and technical structures, to support their individual and organizational needs [KU03]. The users and developers engage in a cooperative relationship of mutual and reciprocal learning, where developers educate users on the technical side (computer software domain knowledge) and users educate developers on the work process side (business domain knowledge) in order to jointly reach a solution [GA01]. In this relationship, users are treated as experts, and it is attempted to bring their (tacit) knowledge and skills to the research and design process [ST08]. The idea is that users will eventually get involved in the system through the active user participation [BH94, PSJ06, MK08] in the form of PD.

According to Asaro [AS00], PD is roughly divided in two streams. The first is a top-down, structured, management-dominated approach in which steps are prescribed precisely and techniques such as Joint Application Design (JAD) are used. Senior managers are included to contribute, and the involvement of real end-users remains limited to requirements elicitation within group meetings [FA03].The second is a bottom-up, end-user focused approach where end-users ideally become the core designers themselves by having great influence on the IT development process.

The above description of PD may seem a bit vague. This is most likely due to the fact that to this day, PD is still more of a design philosophy than a design methodology, as Cherry and Macredie put it [CM99]. This statement is supported by Garrity, who argues that PD is "*an umbrella term or the name given to a host of projects that embody a general approach and a repertoire of flexible practices and general guidelines*" and that it is not a 'concrete methodology' [GA01]. Another support for the statement comes from the editorial introduction of a special issue on PD of Communications of the ACM (Vol. 36, No. 4, June 1993), where the field of participatory design was classified as spanning *"... a rich diversity of theories, practices, analyses, and actions, with the goal of working directly with users (and other stakeholders) in the design of social systems including computer systems that are part of human work.*" Hence, 'fixed techniques' have not been specified in the PD community [GA01]. This is also evident in the body of literature on PD, where specific PD techniques have indeed rarely been specified in empirical studies on the effects of PD. PD can be said to be a smaller umbrella under the HCD umbrella [ST08], covering a set of techniques and activities. In order to uncover these, let's see how people do participatory design in practice.

In order to do PD successfully, some creative approaches had to originate. Users of information systems may have useful knowledge about their work processes, but they usually have no systems design experience [SP05, KU03]. Therefore, the designers should take an active role [KU03]. In an early PD project, named UTOPIA [BO00], the designers used mock-ups and prototypes to give users an opportunity to provide feedback on the design, and they used future workshops to create a general understanding of the situation and the need for an IS and to give the users some influence in design decisions. In that way, the future workshop technique has been used as a change management tool [SHK08]. Prototypes have also been used in numerous other studies. Another way of giving users influence in design decisions is by giving end-users or group leaders an opportunity to join in the decision making process and to actively engage in the implementation process. It can range from just allowing group leaders to join in the decision making so that they can influence their subordinates to use the system [AL01] to encouraging a highly participative culture in which all employees are encouraged to join in the decision making process [JJG05, KW08]. More recently, other techniques such as multidisciplinary seminars [SHK08] or brainstorming [MP09] have been

suggested for PD. In these ways, the developers will get in touch with the users for which they are developing the system and their requirements. We can see that these practices of PD are mostly about hands-on activities, user responsibility, user-IS relationship and communication, which are the four elements of user participation [BH94].

3.2.2 Other participative approaches

The ***lead-user*** approach depends upon users who themselves come up with highly innovative solutions to problems they experience. Such lead users can be invited to help researchers and designers to jointly develop new products or services, and/or the lead users can be provided with toolkits so that they may develop things themselves [ST08]. The developer role of the user can lead to a user's psychological ownership of the system [PSJ06]. This leads to a perceived relevance of the system [PSJ06], which means user involvement [BH94, zie sebastiaan's thesis]. Similarly, ***co-design*** is an attempt to let everyday people with different backgrounds and skills cooperate creatively. It is like PD, but with an empathic design flavor: people who may not know each other yet are provided with tools to jointly create a possible future product which they themselves might not even use [ST08]. In this latter case, the fostering of user involvement seems unnecessary. In both approaches, the user plays an active role in the design and development process and she participates with other users, designers and developers. The focus lies on the hands-on activities and responsibilities of users, which are two important ingredients of user participation [BH94].

Participative approaches other than the ones discussed by [ST08] have also emerged. One of those is ***co-realization***, coined by Hartswood et al. [HA03]. In this approach, ethnography is combined with PD and spread out over the development *and* implementation processes. Co-realization is about taking the technical IT design and development work into the users' workplace and thus advocates 'design in use' in the context of an informal, shared practice between users and IT designers. IT designers should 'stick around' and see how a new system is used in practice, so they can respond to new requirements as they emerge from user-led processes (thus designing in use). Building this shared practices requires a strong relationship of mutual and reciprocal learning between developers and users where developers get a grasp of the users' needs and users get an idea of what is technically (im)possible. Here, the focus lies on hands-on activities, user-IS relationship and communication, which are three important ingredients of user participation [BH94]. Similar to the other approaches, the idea is that through this active user participation, users will become involved in the system [BH94, PSJ06, MK08].

3.2.3 Non-participative approaches

There are a number of approaches advocating a more indirect way of acquiring users' needs; ethnography, contextual design and empathic design. ***Ethnography*** (or: ethnomethodology) is about designers observing the users in their 'natural habitat', getting to know their behaviors and culture and how their actions are embedded in social and cultural contexts [KU03, HA03, and ST08]. The goal is to look at naturally occurring situations and to look at these 'holistically' and from the users' point of view [ST08]. Typical methods used are observation and video-analysis [KU03]. In this way, ethnographists do not engage in relationships with users but act as their proxy [HA03]. ***Contextual design*** (CD) can be considered a further application of ethnography [ST08]. Designers will study people in their work and also interview these people. It is more focused on studying the work context rather than the social aspects: what users do; how they communicate; the roles that power and culture play; the artefacts which they use; and their physical environment [ST08]. Prototypes may also be used, and the knowledge gained may be directly applied to redesign and change the work processes and to articulate functional requirements [KU03, ST08]. Closely related to ethnography and contextual design is ***empathic design***. Here, researchers and designers attempt to empathize with a user's experiences and emotions. In this way, their latent needs can be discovered. Roleplaying can be a helpful technique to empathize. In contrast to ethnography, where the focus lies on understanding current situations, empathic design is about envisioning future situations [ST08].

It might seem strange to elaborate upon these non-participative approaches in a chapter that is about user participation and involvement. However, these approaches can be used in conjunction with the aforementioned participative approaches, as a way to validate the results of the participative efforts. Also, it can uncover additional areas of interest that did not surface during the participative efforts. It can also be argued that users who are being observed – and thus know that they, their work life and their needs are being taken seriously – become somewhat involved and develop feelings of personal relevance towards the system. And indeed, Kujala regards ethnography and empathic design as 'user involvement methods' [KU03]. Personally, I feel this is disputable. I don't think user involvement can be acquired through these methods because of the lack of an active role of the user. Still, these approaches belong in this chapter for the sake of completeness – some would regard them as user involvement methods, and some even as user participation methods – and for their possible added value to participative approaches.

3.2.4 Plotting the approaches

Based upon the findings by Steen and Kujala which both presented an overview of socio-technical approaches [ST08, KU03], and a study by Olsson, which presented a categorization of the role of users in different approaches [OL04], I have created a table to summarize the different approaches. Both participative and non-participative methods are included in this table, which is depicted below.

	Type of approach	User role	Emphasis	Typical methods	Orientation
Participatory design	User participation **and involvement**	active; co-operation partner	democratic participation	workshops, prototyping	current situation
Lead-user	User participation and involvement	active; designer	innovation from users	users design with toolkits	current and future situation
Co-design	User participation and involvement	active; co-creator	creative cooperation	sketches, prototypes, generative tools	future situation
Co-realization	User participation and involvement	active; co-operation partner	a shared practice of users and IT; design in use	PD and ethnography	current situation
Empathic design	Non-participative supplement, (user involvement)	passive; subject of study	user experiences and emotions	roleplaying, observing, prototyping	future situation
Ethnography	Non-participative supplement, (user involvement)	passive; subject of study	social aspects of work	observation, video-analysis	current situation
Contextual design	Non-participative supplement, (user involvement)	passive; subject of study and informant	context of work	contextual inquiry, prototyping	current and future situation

Table 2 - User participation/involvement approaches

The first column, 'Type of approach', summarizes how these approaches relate to the concepts of user participation and user involvement. The first four approaches listed in the table are user participation methods that should lead to user involvement. The latter three are not participative methods but are powerful in conjunction with them. Other than that, they might lead to user involvement. Because this is not sure, I placed user involvement in between brackets. The 'User role' column is based upon the categorization of users in the study of Olsson [OL04] and the tension between the researchers and designers on one hand and the users on the other hand [ST08]. This tension is all about whether designers make a move towards the users' world, or users are encouraged to actively participate in the designers world. In ethnography, empathic design and contextual design, the former is the case, whereas in the other approaches the latter is the case. Other authors have viewed this tension as a matter of designing for vs. designing with or by users or

reactive involvement vs. proactive involvement, among other similar things [ST08]. One might view this tension as a question of whose knowledge is fore grounded; that of the user or that of the designer? I intend to capture this tension by clarifying the role of the user in the approach. The 'Emphasis' and 'Typical methods' columns speak for themselves. The 'Orientation' column could use some clarifying. It is about whether the approach focuses on what *is* or on what *ought to be*. Is it about understanding the current situation or about envisioning the future situation? Whereas successful methods need to consider both [ST08], there is a difference in where one starts. Empathic design and co-design do not start from a current problem such as PD and ethnography do, but start from a future opportunity. The contextual design and lead-user approaches apply findings from the current situation directly to future products [ST08].

It should be noted that these approaches are not mutually exclusive [ST08], and that they are beginning to resemble one another [KU03]. This means that when confronted with a case, it is not viable to just pick one of these methods and use it. Rather, the question should be what we can learn from these several methods and approaches and which aspects and lessons of these approaches we should use in practice, depending upon the context of the case [KU03]. Unfortunately, information is lacking about which practice is most appropriate for a given situation [ST08], so practitioners are still struggling in this regard.

3.2.5 Some words on user-centered design

In a much-cited study of Kujala, four approaches to user involvement were identified [KU03]. These were PD, ethnography, contextual design and user-centred design (UCD). The first three approaches are overlapping with the findings of Steen [ST08], but UCD is not. One reason might be that UCD is not really regarded as a participatory approach by some authors. As Spinuzzi sees it, UCD is about designing *on behalf of* the users instead of designing *with* the users [SP05]. In addition, Steen argues that UCD emphasizes usability rather than usefulness [ST08]. Kujala underlines this, mentioning that UCD has a lot of overlap with usability engineering [KU03]. But this is also a matter of terminology; some authors feel that UCD also includes active participation and/or involvement *with* users through the entire process [GU03]. There is no agreed definition or process for UCD, however it does have some principles and recommendations related to involving users in the design [KU03]. To make things more confusing, I get the impression that in literature, UCD is also used as an umbrella-term for participatory approaches [SA06, GA01]. The conclusion I reach here is that since UCD can either be seen as a non-socio-technical approach or as an umbrella-term for some approaches, I shall not regard it as a separate approach in this short review.

3.3 Effects of user participation

The previous subchapters have created an overview of what user participation is, how it relates to user involvement and what approaches to user participation exist. But it has not outlined what the practical effects of user participation are and how user participation relates to the previously discussed determinants of IS success. This chapter will give clear insights into the effects of user participation on IS development and implementation projects.

3.3.1 User participation effects

As becomes clear from the previous sections, user participation has been a major research area in IS development and IS success. So one would expect some effect of user participation on IS acceptance and usage (IS success). And indeed, a lot of studies have researched this effect, mostly using the participatory design approach, spin-offs of PD or simply a method the authors called 'user participation'. In determining the effects of user participation, I did not look at studies solely using ethnography, empathic design or contextual design because I do not regard those as true participative methods on their own. However, they may prove to be useful additions to participative approaches or contain useful elements for successful user participation. I did look at studies that

treated user participation as defined by Barki and Hartwick [BH01]. Some of these studies borrowed elements from TRA, TAM or similar success models [BH94].

The conclusion of most of the studies is that user participation directly influences factors such as system quality [SJC06, KU03], perceived usefulness [SJC06, MK08], user satisfaction [SJC06, DM09, MA00, MK08, KU03], a positive user attitude towards system use [HK08, SK09, BH94], involvement [MK08, BH94], psychological ownership [PSJ06], user acceptance [KU03] and/or of course IS use [DM09, HP97, KU03, MK08]. The latter is mostly seen as IS success since most IS success models define system acceptance and usage as IS success. It is generally believed that most of these effects are directly or indirectly caused by the inclusion of the users' knowledge and requirements, by giving users influence in design decisions and by the development of positive relationships between users and developers [MM04]. As such, these elements can be regarded as the 'working mechanisms' of user participation.

In the studies where user participation did not directly lead to system acceptance and/or use, it did so via other constructs mentioned above such as user satisfaction [SK09, DM09, HP97], a positive user attitude towards system use [SJC06, PSJ06], perceived usefulness [SJC06, DM09, PSJ06], system quality [DM03, PM09] and involvement [BH94, AM07]. Yet other studies had more complex relationships, with the effects of user participation leading to a behavioral intention to use the system, either directly or yet through another relationship. From the short review on IS success models, we have learned that this behavioral intention in turn will lead to actual usage of the system [VE03, DM03, PM09, BH94, HP97, DM09]. Many more of such constructs and relationships exist in the same and many more papers [BS08, MG05, KL08, PSJ06, HP97]. Due to the great number of them, a textual listing would probably decrease the comprehensibility (see Appendix A). I have also tried visualizing the relationships, but the resulting picture looked more like a spaghetti spider web than a comprehensible model. Luckily, the majority of the other constructs and relationships in these studies are similar to those mentioned above.

Having said that, some constructs are unique in their study are therefore worth mentioning. The first study I would like to mention is that of Hunton and Price [HP97], who did a field experiment to research the role of 'procedural justice' ("*…refers to the extent to which a decision process is perceived to be fair or in accordance with accepted norms of behavior*") [HP97]. Among other relations, it was found that meaningful participation in decision making - participation by *voice* and *choice* - leads to a sense of control (other authors might call it influence [BH01]), which in turn leads to procedural justice. The existence of procedural justice has a significant impact on user satisfaction and system use. The importance of meaningful, rich participation is also emphasized in other studies [BH94, SA96 and MM04]. Another interesting study is that of Pare et al. (2006), who introduced the concept of psychological ownership [PSJ06]. The research was driven by the fact that the IDT, TAM, TRA and TPB acceptance models all suggest that "belief about or perceptions of IT have a relation to usage behavior". The authors were curious how this belief could be fostered and suggested it might be through user participation. Therefore, the authors linked the concept of psychological ownership with Barki and Hartwick's notion of participation [BH94] and the TAM. They empirically validated that user participation leads to a psychological ownership of the IS, which in turn leads to perceived ease of use and perceived usefulness, eventually leading to system use.

3.3.2 Categorizing the effects

Because every case is different, every case varies in how user participation is implemented (variations in activities, system implemented, users, organization type, etc), and most researchers measure different effects or measure the same effects in different ways. Thus, it is hard to say which specific activities lead to which specific effects in which contexts. Therefore, Barki and Hartwick argue that the number of different constructs used to measure IS success or participation effects should be integrated into a more unified conceptualization [BH94]. In order to try to bring some

structure in the effects of user participation, Markus and Mao have created two categories of outcomes of user participation [MM04]. On one hand there are functional outcomes, defined as:

> *"A high quality process of system development (methodologies used, interactions and conflicts, progress against schedules and budgets) and/or a high quality outcome of system development, namely a project, a system, or an IT artifact."*

On the other hand, there are relational/affective outcomes, defined as:

> *"A high quality process of preparing the target user community for use of the system (often called "change management") and/or a high quality "change" outcome, namely that the intended users (regardless of whether they participated in development) adopt the system, use it as expected, and/or use it with the desired effects."*

He and King have also answered Barki and Hartwick's call and classified the several effects of user participation into two categories: attitudinal/behavioral outcomes (user satisfaction, intention to use and actual system use) and productivity outcomes (increased performance of the system, the user and the organization) [HK08]. The attitudinal/behavioral outcomes closely relate to Markus and Mao's relational/affective outcomes and the productivity outcomes seem similar to the functional outcomes defined by Markus and Mao [MM04].

Markus and Mao argue that because there are two different categories of effects, there are also two different forms of IS success [MM04]. When functional outcomes are achieved, it is viewed as IS *development* success, because a high quality system has been developed. When relational/affective outcomes are achieved, it is IS *implementation* success, because that means the system will actually be used by the end-users. By categorizing the effects in this manner, Markus and Mao have redefined IS success. In this research, I shall stick to their definitions.

3.4 Summary and conclusion

Where participation is about an active role of the end user in the IS development process, involvement is about creating a belief that the system is important and personally relevant. Several approaches to user participation exist, such as participatory design, lead-user approach, co-design and co-realization. Non-participative socio-technical approaches also exist, such as ethnography, empathic design and contextual design. In practice, a mixture of the aforementioned approaches is most likely be carried out, where the specific methods and activities largely depend upon the case context.

The first research question *"What is the value of user participation in an IS implementation?*" can be answered with the information in this chapter. User participation methods are reported to have positive effects on information system development and implementation success. The effects have been widely researched, and the most important effects of user participation seem to be system quality [SJC06, KU03], perceived usefulness [SJC06, MK08], user satisfaction [SJC06, DM09, MA00, MK08, KU03], a positive user attitude towards system use [HK08, SK09, BH94], user involvement [MK08, BH94], psychological ownership of the system [PSJ06], user acceptance [KU03] and/or of course IS use [DM09, HP97, KU03, MK08]. And in one way or another, these effects eventually lead to IS success. These effects can be categorized into behavioral outcomes which lead to IS implementation success and functional outcomes which lead to IS development success [HK08, MM04].

Based upon the above information, we can conclude that user participation, through many alleged determinants and relationships, has a positive effect on IS development and implementation success. To strengthen this claim, it is worth mentioning that of the abovementioned papers, some are meta-analyses of several studies on the effects of user participation, sometimes including the results from previous meta-analyses (from the 80ies and 90ies) as well [MA00, KU03, SJC06, HK08 and DM09]. In other words, a very great deal of the extensive body of literature in this field has been covered. User

participation is a useful extension to the IS success models discussed before (UTAUT, DeLone and McLean's model, etc), since most studies successfully link user participation either directly or indirectly to constructs which are determinants of success in those validated models.

4 Quality of user participation

Now that some insight is gained on the value of user participation, it is time to uncover the gap between the theory and practice; why does user participation increase IS success in theory, but not in practice? In order to uncover factors that influence the quality of user participation, I shall regard user participation from a problem perspective and from a solution perspective

From the issues surrounding (the effects of) user participation and the solution directions, requirements to a qualitative and successful user participation approach can be distilled. Requirements that, when satisfied, prevent or solve the issues with the quality of user participation. In this way, the research question *"Which factors influence the quality of user participation?"* is also answered in this chapter. In the next chapter, DB54 will be described in more detail, after which the next research question can be answered: *"Which of these factors can DB54 theoretically influence"?*

4.1 A problem perspective: issues with user participation

In the previous chapter, we have seen that user participation brings many positive effects in theory. However, opposed to the studies mentioned in the previous chapter, several other empirical studies have had mixed results and cannot conclusively prove a link between user participation and system success [OI81, BH94, BH94b, CA95, HP97, HT99, HK08, MA09]. Also, Steen [ST08] found that information is lacking about which method or practice is most appropriate for which kind of project.

Another major problem is that the concept of user participation has become outdated in today's changing IS context where systems keep on getting bigger and affect more and more (heterogeneous groups of) people, other stakeholders and organizational areas [LR00, MM04]. Whereas the project and environment complexity have increased, the time to deliver has been reduced [ST09]. And indeed, a lot of the studies mentioned above focus on small or outdated contexts, where a small information system is implemented locally for a relatively small group of homogeneous people. From this perspective, Markus and Mao have taken a critical look at the asserted effects of user participation [MM04]. They note that "*qualitative evidence suggests that the state of IS participation practice is poor*" and they urge that researchers "*revisit and refresh IS participation theory*". They reached these statements partially by taking a slightly different, critical perspective on the positive effects of user participation. The three effects they critically assessed were that of the psychological state of involvement (which they call 'buy-in'), the enhanced system quality and the emerging interactions (which is about the formation of good relationships between developers and users). These effects are not optimally reached in today's IS context.

The efficiency of a participative process itself also proves to be an issue [GA01, KU03], which can be a prohibiting factor for its practice. And indeed, user participation is not used much in practice [OL04, ST08]. All these issues feed the idea that a different approach to user participation is needed. The issues will be discussed in detail the following sections.

4.1.1 Inconclusive results

First, let us discuss the less positive studies on user participation effects. Some studies cannot conclusively prove a link between user participation and system success [OI81, BH94, BH94b, CA95, HP97, HT99, HK08, MA09]. Together, these meta-analyses cover all research of user participation effects in the past 50 years. In some of these analyses, only 1/3rd of the studies reported positive effects. And to make matters worse, [SK09] have not observed much improvement in the success rate of ISD in recent studies.

The inconclusive results have been attributed to difficulties in definition - primarily a lack of distinction between participation and psychological involvement - associated with problems of

measurement [MK08]. The difficulties in definition are illustrated by a study of He and King [HK08], who conducted a meta-analysis of 82 empirical studies investigating the effects of user participation. An interesting thing they saw was that despite Barki and Hartwick's definitions of user participation and user involvement [BH94], the terms are still used interchangeably in some (new) studies. Therefore, it seems that the difficulty in definition is a relevant factor in explaining the inconclusive results of the studies. They also found a meta-analysis which reported very positive effects of user participation [HT99], but they question the bias of that study. A possible measurement problem lies in the distinction between objective participation and subjective participation. The user participation construct objectively measures user participation, whereas that may differ greatly from the subjective participation (the participation perceived by the users). Such a difference can occur in a case where the user does not like the resultant information system, so that she remains unsupportive of the project [SK09]. In other words, user participation may not have occurred everywhere where it has been found with objective measurements. In those studies, the relationship between user participation and IS success could be a false negative one, because user participation could have an incorrect value.

Another reason for the conflicting results may be the approaches managers and analysts use when users participate. They all have different views and frames of reference; there is no one approach to user participation that guarantees IS development and/or implementation success [MA09, MK08, KU03]. This lack of a single approach is evident in literature, where participative approaches in empirical studies are rarely specified in detail. This is unfortunate, because the manner in which participative activities are carried out is a very important factor [BH01]. This issue cannot be solved by prescribing *the* successful participation approach in detail, because a successful participation approach relies largely upon contextual factors in its details. This teaches us that user participation activities, their effects *and* the context should be described in detail so that it becomes clearer how user participation should be shaped in certain contexts in order to reach certain effects. This will help determine which method or practice is most appropriate for which kind of project, which is now very difficult [ST08].

Unfortunately for this study, these problems are about suboptimal studies and possible incorrect theoretical conclusions on user participation and do not give any clue as to how the quality of user participation can be improved in practice. What we do learn from this, is that studies about user participation should define the concept thoroughly and should measure user participation at least subjectively. Also, the user participation process and the contextual factors should be described in detail and taken into account when reaching conclusions. This study will follow these lessons in order to strengthen its conclusions.

In an attempt to create conclusive results, a meta-analysis on the effects of user participation on both types of outcomes (productivity and behavioral) has been conducted by He and King (2008). This study shows us that participatory approaches to information systems development and implementation are not working optimally [HK08]. More specifically, the productivity benefits of user participation in IS development are very small (though it must be noted that few empirical studies researched this effect) and the attitudinal/behavioral benefits are significant, but moderate. He and King (2008) compared these results to other meta-analyses of user participation in IS and of user participation in a broader context, namely participative decision making in organizational change [HK08]. Those meta-analyses also suggest that the effect of user participation is problematic and does need additional investigation; some important factors or mechanisms may have been ignored or underinvestigated. This conclusion is similar to that of Markus and Mao (2004), whom identified a need to revisit and refresh IS participation theory and set a step in this direction themselves [MM04]. As a result, issues with the asserted effects of involvement, system quality and user-developer relationships were identified, which are discussed next.

4.1.2 Involvement

The psychological involvement effect of user participation is believed to lead a commitment to, acceptance of and use of an IS [BH94, AM07]. There are some problems with this effect. The biggest problem they see is that in today's IS context, where systems are bigger and typically have more users than in the previous decade, only a small proportion of those users can effectively participate. Other than that, more types of users and stakeholders are affected by these larger systems [LR00, MM04]. Some of those stakeholder groups might not be able to realistically participate at all. So in reality, only a very small proportion of certain users or stakeholders can participate, whereas the system will also have to be accepted and/or used by the non-participants. So how can one explain system acceptance and use by these non-participants? It seems that it is very important who the participants are, how they can influence the non-participants and which processes are available to support this. Another problem is that if participation activities are poorly designed or executed, the effect will not occur at all. If participants do not have influence on development choices or their participation tasks are not meaningful in other ways, they will regard the participation as a sham [SA96, HP97]. This claim is consistent with Barki and Hartwick's findings. They found that overall responsibility is the most important factor of user participation and has the most influence on involvement and attitude towards the system [BH94]. By overall responsibility they mean meaningful participation, consisting of personal autonomy, control, making important decisions, and performing significant tasks. However, in literature, it is often not specified which users participate and what their tasks are.

Based upon this issue, the following requirements to a qualitative approach can be defined:

R1: The participation activities should be experienced by the participants as being rich and meaningful.

This requirement can (partly) be satisfied by satisfying the following requirements:

R2: The participants should be given influence and responsibility, at least during participation activities.

R3: The group of participants should be not too large, so that they can all participate effectively.

The problem with R3 here is that it is unclear what the optimal size for a group is. It can be argued that this depends largely upon the size of the company, the number of end-users, the impact of the IS on work processes, the nature of the IS and other context-specific variables. However, the extent to which each participant effectively participates can be measured.

Other requirements that follow from this issue are:

R4: Relevant types of stakeholders should be represented as participants where possible.

R5: Non-participants should become committed to the IS project.

This requirement can (partly) be satisfied by satisfying the following requirements:

R6: Participants should engage in activities to commit the non-participants.

R7: There should be processes in place to support the non-participant's commitment.

4.1.3 System quality

Similarly, there are also problems with the system quality argument. The idea is that participation improves system quality because the developers will get a better grasp of the user requirements. This would be because users have a thorough understanding and relevant knowledge of the actions and consequences of their work [SHK08], and they can identify their needs based upon that. These needs can then be made known to the developers, and requirements are born. However, there is no guarantee that good user requirements will lead to a system that satisfies those requirements, because developers might not handle the user's input correctly [MM04]. A reason for this might be that user input itself can have its flaws as well, since users often focus on their particular part of the work and have difficulties reaching the holistic overview of the entire work process [SHK08]. This leaves the developers with the difficult task of blending together the different users' views. Other than that, the user's social and humanistic requirements will also have to be covered by a system in order for users to perceive it as a high quality system [MM04, SHK08]. These types of requirements

are unlikely to surface when users are simply involved in requirements elicitation through user questionnaires, which happens all too often [SHK08].

Another issue in this area is that when users have limited computer skills or when they work in a non-computerized environment, they will most likely neither know nor be able to articulate their requirements [SHK08, ST08]. If they are encouraged to do so anyway, it is obvious that the system quality argument will most likely not hold. Another problem is that users may even be unaware of their needs, or they may be unwilling to speak about their needs with an interviewer. Another risk is over-emphasizing the opinions of a few users, because it may lead to an over-customized product that will interest only a few users. And finally, designers should take care that they do not become prejudiced about users' needs and that their role is not eroded by the user, because the designer's vision and creativity are 'essential' [ST08]. In practice, system quality issues seem to be accepted and degraded to 'maintenance issues' after the system has been implemented [HA03].

Based upon this issue, the following requirements to a qualitative approach can be defined:
R8: Users should be aware of and encouraged to articulate all of their requirements.
This requirement can (partly) be satisfied by satisfying the following requirements:
R9: Users should have a thorough understanding and relevant knowledge of the actions and consequences of their work.
R10: Users should have a holistic overview of the entire work process.
R11: Users should be informed about the technical possibilities of an IS.
R12: The social and humanistic requirements of users should be made explicit.
Other requirements that follow from this issue are:
R13: Developers should: keep communicating with the users about their requirements until a satisfactory 'blend' is achieved.
R14: Developers should take care that requirements of a few users are not over-emphasized.
R15: Developers should not become prejudiced about user's needs.

4.1.4 User-developer relationships

Although this effect is not explicitly mentioned in the previous chapter, Markus and Mao categorized it as a main effect of user participation [MM04]. I think it might be seen more as a supporting factor to reach the main effects. The idea of the user-developer relationship effect is that through the participation activities, developers and users will build good relationships, resulting in mutual and reciprocal learning [GA01] and the incorporation of user requirements in the system design [MM04]. This will in turn satisfy the users, leading to system acceptance and adoption (relational and affective outcomes). The problem here is that these outcomes do not necessarily relate to system quality (functional outcomes). In other words, a system that is adopted by participants because they are satisfied with it may not meet organizational needs or satisfy organizational objectives [MM04]. Also, there can be a tension between several types of stakeholders because of their different interests, poor communications and/or a perceived lack of competence on either side [SK09]. This can thwart the positive effects of user participation.

Based upon this issue, the following requirements to a can be defined:
R16: The resulting IS should meet organizational needs and objectives.
R17: Conflicts and tensions between stakeholders should be prevented, or mechanisms should be in place to resolve them.
This requirement can (partly) be satisfied by satisfying the following requirement:
R18: Communication between stakeholders should be clear and open.
R19: A party should be appointed with the authority to make decisions in case of a non-ending conflict.

4.1.5 Efficiency

An improved IS efficiency and an improved efficiency of its users is often mentioned as an advantage of user participation [HK08, OL04, AS00, PSJ06, HK08, KU03]. However, a healthy focus on the efficiency of the participative process itself lacks in almost every study. Times frames for development are not being discussed and issues related to speed and efficiency are ignored. In a lot of cases, a participative approach is merely defined in terms of processes, methods and tools, with no economical focus on how much time and resources it costs [GA01]. In other cases, the time and other resources needed are mentioned, but no economical consequences or cost-benefit analyses follow. Having said this, there have also been a few studies about the cost-benefit aspect of participatory approaches [VT02, KU03]. These studies both mention that it is very challenging to address this cost-benefit aspect in a thorough manner. This could somewhat explain the lack of an economical focus. Another reason could be that participatory design - by nature - emphasizes effectiveness instead of the efficiency that is emphasized by the more traditional approaches [CM99].

Regardless, I believe this lacking focus on economical efficiency to be one of the reasons why highly participative approaches are still not used much in practice; clients can be skeptic about the major investment required. This belief is supported by Kensing and Blomberg, who argue that in the 'international scene', efficiency is emphasized over quality of work life – which a participative approach allegedly brings – and that the power of workers declines [KB98]. Garrity adds to this that efficiency in development is indeed very important for IS managers in most firms [GA01]. So, potential clients might not be very interested in participative approaches because of the unknown efficiency of such an approach. And you can't blame them; even some academics characterize an increase in IS design workload as a negative effect of user participation [HK08]. In order to be able to 'sell' the participative approach to clients and in order for the approach to have a greater impact on information systems development, a greater focus on controlling the participative project's costs and efficiency must be achieved [GA01]. This statement is supported by Kujala [KU03], who - in his meta-analysis on the benefits of user participation - suggested that more cost-efficient practices are needed for gathering users' implicit needs and requirements.

Based upon this issue, the following requirement is defined:
R20: The approach should be efficient in terms of controlling costs and time.

4.1.6 Summary and conclusion

There are issues with the asserted effects of involvement, system quality and user-developer relationships, which might explain the lack of IS success results in practice. Where these effects might be reached in an outdated or theoretical environment, they are harder to achieve in today's practice. Besides, not all studies researching user participation could even prove a link between user participation and system success. Among other reasons, this is because the user participation and its context have not been described in enough detail to relate specific actions or context factors to specific effects that were achieved. This, along with the perceived inefficiency of user participation, most likely prevents successful practice of user participation in IS implementations in practice.

This study *will* pay attention to details of user participation and contextual factors. And the issues must be solved, and for that purpose requirements R1 to R20 have been defined. These requirements can therefore be seen as factors that influence the quality of user participation. They are part of the answer to the following research question: *"Which factors influence the quality of user participation?"*

When looking at all these issues, it becomes understandable that the conclusion from the introduction ('user participation has not been developed well enough for effective use in practice, and/or practice does not regard it as an effective and efficient way that brings benefits') surfaced. It

seems that to this date nobody is sure on how to exactly practice effective user participation and tackle the issues associated with it. But of course, other researchers have encountered these issues before me and made some suggestions. One suggestion is that of taking an organizational change perspective to IS implementations, another is to look more closely into the methods, processes, conditions, contexts, contingency factors and supporting factors for user participation. In other words, more insight is needed into the best practices of user participation on several aspects. This organizational change perspective and the best practices shall be discussed next, and factors influencing the quality of user participation will be distilled from these solution directions as well, in the form of requirements for qualitative and successful user participation. This will complete the answer to research question three: *"Which factors influence the quality of user participation?"*

4.2 A solution perspective: an organizational change perspective

There is a growing demand for an organizational change perspective on information system development [SK09, LR00, VM00, BF01, GA01, LR03, MM04, KB06, KL08]. The rationale is that due to the evolving role of the IS, it penetrates into nearly all business functions [SK09], which means that changes in IT change work practices [SHK08]. Therefore, an IS implementation is essentially an organizational change. Simply focusing on an IS without looking at the organizational environment can create a closed world perspective, while information systems are usually associated with changes to organizational processes and functions that involve different stakeholders [GA01, KL08]. This can lead to elegantly designed software, but a poor business solution for the organization and ineffective information system design [SK09]. Therefore, one should take a wider perspective of the change, including the components of people, structures, tasks, and business processes [GA01, BF01, VM00, LR03, JJG05, KB06]. In this perspective, a multitude of social, organizational and cultural factors relating to the work process should also be considered [SHK08]. It is believed that when users are committed to this change and allowed to take initiative, they will get involved with the IS as well [JJG05, KL08, SK09].

Thus, an IS change should be seen as an organizational change [BF01, SK09], where the IS change goes hand in hand with complementary organizational changes [MM04, GA01]. This statement is implicitly supported by identifications of 'business process reengineering' [NLW08], 'a fit between ERP and business/process' [NLW08] and 'change management culture' [NLW08, NZL03] as critical success factors for an ERP implementation. More implicit calls for an organizational focus also exist, such as "*TAM should be integrated into a broader model with variables related to human and organizational dimensions*" [KL08].

The organizational change perspective does not aim to position users only *during* ISD - as the current forms of user participation and involvement do - but also considers the user factors *around* ISD. Sheu and Kim feel this is a promising direction in search of winning approaches to ISD [SK09]. Also, many authors have found that IT investments deliver the greatest business value and return on investment when they are combined with such complementary changes in work practices [GA01, MM04]. We can conclude that this organizational change perspective may be a critical element in the shaping of a successful and qualitative user participation approach to IT projects.

It is questionable whether the current definitions of IS development success and IS implementation success still suffice when we talk about an organizational change perspective to ISD. Luckily, Markus and Mao felt the same [MM04]. They argue to replace the concepts of system development success and system implementation success with the concepts of *solution* development success and *solution* implementation success. Here, the solution refers to a package of IT plus complementary changes, such as process redesign, physical layout of the workplace, changes in job design and development of an IT infrastructure. I think the distinction between the several kinds of success made by Markus and Mao is very useful, because it defines success from the organizational change perspective [MM04]. This definition will be maintained in this study.

4.2.1 Process focus

One way to accomplish the organizational change perspective is by applying a process focus to change. The need for a process focus can be viewed from several perspectives. The first perspective is that in many organizations, processes are bureaucratically decomposed into narrow tasks. Due to this Taylorism, employees have a limited view of how their work contributes to customer value. When employees are participating in decision making in this particular context, this creates a risk of sub optimization of the entire process chain due to local optimizations of process parts. No synergy effects are created in this way; the sum will not be greater than the parts. And in some situations, it might even be worse. It can thus be said that IT failures are often the result of a lack of attention to whole business processes. Therefore, employees need to get a holistic view of the work processes (see also requirement R6.2); they need to apply a business process focus [GA01, SHK08]. Only then can they change their processes so that they better contribute to the end result. Also, non-value adding work (such as reviews, audits, checks and approvals) that was needed to piece back together the broken-down processes can be greatly reduced because employees can take more responsibility through their increased understanding of the business process. It is shown that through this job enrichment/enlargement and employee empowerment, employees are more satisfied with their work and experience higher levels of quality of work life. This quality of work life is an interesting by-product of process centering, because it lies at the heart of the philosophy of user participation and provides synergy with IT implementations [GA01].

The second perspective starts from the argument that the organizational change perspective should include factors such as processes, functions, people, structures, tasks, social factors and cultural factors. This can be accomplished by creating a *business process focus* in the change, because the business process is at the heart of all these factors; an organization exists to produce value to a customer, and to that end a business process is defined. The focus should be on how *all* processes, pieced together, contribute to customer value. Functions, people, structures and tasks are all serving the main business process and the social and cultural factors are a by-product of that. User participation in IS projects should be thus be process-centered, where an entire business process with its people, structures, etc. is the focus of the change. To achieve the process focus, participating employees should at least be organized into process teams [GA01]

When focusing on changing the entire business process in such a way, it will be more likely that a *solution* success [MM04] will occur instead of just an IT project success. Next to this, the process centering can have multiple other positive effects for a successful IS implementation:

1. The users' own socio-technical and psychological needs can be taken into account on a business process level, leading to a more emancipated approach and a higher quality of work life, which in turn provides synergy with IT implementations [GA01].
2. Users may be more willing to participate because of the opportunity to change their own work system [GA01].
3. Users will be better able to articulate requirements for an information system if they have gained insight in the main business processes.

In conclusion, we can see that alongside other positive effects, a process focus can be a key ingredient in achieving requirement R8, through satisfying requirements R9, R10 and R12. Therefore, the following requirement for a qualitative user participation approach is added:

R21: User participation should be process-centered, where an entire business process is the focus of the change; there should be a healthy focus on organizational changes in people, structures, tasks, and business processes that go hand in hand with an IS implementation.

4.2.2 Readiness for organizational change

In literature approaching ISD from an organizational perspective, it is recognized that creating user readiness for organizational change can play a critical role in mitigating resistance to change, and

thus in increasing the success rate of ISD [JJG05, KL08, SK09]. Readiness for change is defined as "*the extent to which organizational members hold positive views about the need for organizational change, as well as their belief that changes are likely to have* positive implications for them and the organization" [JJG05, KL08]. Essentially, it is an about the employees' attitudes towards the change event. Some studies also include the extent to which the employee feels he can cope with the change (self-efficacy) and whether or not management has demonstrated support for the change [JJG05].

Why

Organizations often initiate a change program before the individuals and groups impacted by this change are psychologically ready [JJG05]. Because of this, researchers in organizational change have started looking into ways to foster user readiness for change. It is generally believed that when organizational members are ready for change, they will be more likely to participative positively, they will expect enhanced performance after the implementation of the IS and they are more willing to try out the IS because they think that they might miss benefits if they do not try it out. All in all, they will find the system more useful [KL08]. Also, raising user readiness might enhance other forms of readiness, such as cultural readiness, process readiness, infrastructure readiness, and ultimately organizational readiness for ISD.

To empirically support the need for readiness for change, Sheu and Kim found that the success rate of ISD projects depended largely on the status of user readiness in the initial stages of ISD [SK09]. In other words, where user readiness was high at the beginning of the IS project, the success rate of ISD was higher [JJG05]. Other than that, readiness for change has been proved to affect the perceived usefulness and perceived ease of use of a system, which in turn affects the behavioral intention to use the IS [KL08]. And we have seen before that this behavioral intention to use is very closely related to actual IS success.

When

It is hypothesized by Sheu and Kim that this user readiness lacks responsiveness to project specific efforts [SK09]. They also mention that user attitude towards a proposed IS is formed soon after the announcement of an ISD project, and any attempts to change it may be ineffectual. For these reasons, the user readiness for organizational changes should be considered as a *prerequisite* for ISD [SK09]. This implies that the organizational change perspective can play a critical role in the early stages of information systems development. And indeed, user readiness is found to be most important in the initial stages of ISD [SK09], and pre-implementation levels of readiness for change are found to have a positive effect on some aspects of user satisfaction with the system (accuracy, user friendliness, formatting characteristics) [JJG05]. This calls for people-intensive planning at the beginning of the project.

Based upon the paragraphs above, the following requirement for a successful participative approach is defined:

R22: User readiness for organizational change should be created, before or in the early stages of the IS project.

How

In order to create the readiness for change, the gap between the current and desired states needs to be recognized by the organizational members [KL08]. User participation should be considered mainly for this purpose [JJG05, SK09]. In the cognitive dimension of user readiness, user participation can play a role by helping formulate clear goals and/or functional specifications for ISD. In the motivational dimension of user readiness, user involvement can play a role by making users enthusiastic and fostering a supportive attitude towards ISD. When users are ready in both motivational and cognitive dimensions, they will contribute to ISD success no matter which role they play [SK09]. User participation itself should be considered secondary; it correlates more strongly with

user readiness than with user satisfaction and user readiness was found to impact the success rate of ISD more than that user participation itself did [SK09]. The gap between the current and desired states should also be communicated clearly; employees who received high-quality information about the changes also reported higher levels of readiness for change [JJG05].

Another way to create readiness for change might be through determinants of readiness for change. Kwahk and Lee identified two such antecedents of readiness for change [KL08]. They are perceived personal competence *("the degree of the individual's feelings of competence in the work role"*) and organizational commitment *("the relative strength of an individual's identification with, and involvement in, a particular organization"*). The rationale behind this is that with a high level of perceived competence, employees believe that they can perform their job well when performing different tasks. Also, more innovative employees are perceived to have a smooth transition into a new technology. Employees with a strong organizational commitment should be more willing to accept change if it does not alter basic values and goals and is seen as beneficial. They should also be willing to expend more effort – participate better – on behalf of the organization [KL08]. The authors have validated these positive relationships between these antecedents and user readiness by a survey. Perceived personal competence can also be viewed as self-efficacy, a construct which has been researched to be predictive of readiness for change in one study and has been included in the measure of readiness for change in another [JJG05].

Another determinant for readiness for change is organizational culture, more specifically an organizational culture strong in human relations values. This human relations culture aims to foster high levels of cohesion and morale among employees through training and development, open communication, and participative decision-making. It is interesting to note that factors already empirically demonstrated to be associated with readiness for change (e.g. communication and employee involvement) are characteristic of the human relations culture [JJG05]. In the study, this culture is associated with high levels of pre-implementation readiness for change, which in turn predicts system usage. Jones et al. [JJG05] support this relationship further by piecing together more research evidence from other studies; change resistance is low in a supportive and participative culture and people-oriented values are related to successful IS development.

Readiness for change was also found to mediate the relationship between reshaping capabilities and system usage. Reshaping capabilities is about the capability of the organization to effectively manage the changes and is defined as follows: "*reshaping capabilities involve the knowledge, skills, and abilities of the organization as a whole to carry out the necessary requirements for successful change implementation*" [JJG05]. If an organization has strong reshaping capabilities, many actions that help to achieve organizational change will take place as part of the normal way in which the workplace functions. Employees who perceive high levels of reshaping capabilities also perceive heightened levels of readiness for change [JJG05].

These insights lead us to the following requirements, which are all aimed at creating user readiness for change and can therefore (partly) satisfy requirement R22:

R23: User participation activities should be practiced in the context of organizational change.
R24: The gap between the current and desired states needs to be recognized and communicated clearly.
R25: Perceived personal competence should be present at participants, otherwise nurtured.
R26: Organizational commitment should be present at participants, otherwise nurtured.
R27: A human relations culture should be fostered, with open communication and participative decision making as the most important ingredients.
R28: Organizational reshaping capabilities should be present, otherwise created.

4.2.3 From technology push to pull

As mentioned before, many ICT innovations are still driven by the development of new technologies. In this way, designers may create a product or service that people do not need, do not want or cannot use [ST08]. In other words, there will be no readiness for change at all. Another risk is that because of such a technology *push*, there will be a lack of shared responsibility between the end-users and individuals might withhold their priorities [SK09]. A *pull* system in the context of an organizational change, however, may lead to a more successful effort. For ISD, this means that the transition to new technologies is initiated by the people who will manage them. This pull system can be achieved by focusing on user readiness for change, and identifying circumstances under which users are receptive to it [KL08]. And indeed, it does seem logical that the need for a new IS can appear and is recognized by users when, for example, organizational changes to business processes are initiated.

Based upon this paragraph, we can add another requirement so satisfy R22:

R29: People who will manage new technologies should be allowed to initiate technological changes.

4.2.4 Summary and conclusion

An organizational change perspective can be mainly applied by focusing on changing processes as opposed to only changing information systems. The people, structures, tasks, and business processes need to change as well, as a consequence of an IS implementation. Therefore, an IS implementation can be even be seen as an organizational change itself. This process focus is most likely to influence the issues about the system quality as well, because users might gain a better insight into work processes and are therefore better able to define their requirements to the information system.

In applying this organizational change perspective, the concept of readiness for change also seems to play a very important role. This readiness for change will most likely enhance the quality of participation, because participants will be more likely to participative positively, they will expect enhanced performance after the implementation of the IS and they are more willing to try out the IS because [KL08]. And indeed, readiness for change has been researched to have a positive effect on IS success [JJG05, KL08, SK09]. Readiness for change can be created by fulfilling certain conditions, which are captured in requirements R23 to R28.

The requirements R21 to R29 represent those requirements that a participation process should satisfy in order to create and organizational change focus that contributes to IS success. In turn, this organizational change focus is assumed to increase the quality of user participation in IS implementations. Therefore, R21 to R29 are another part of the answer to the research question *"Which factors influence the quality of user participation?"* The final part of the answer to this question will consist of requirements based upon the best practices of user participation in IS implementations, which will now be discussed.

4.3 A solution perspective: best practices in user participation

As we have seen in the issue about the inconclusive results, describing details on the user participation and its context and researching the relationships between these two factors are important to gain more stable conclusions about user participation and to improve the quality of user participation. Literature has long wrestled with this problem, and as a result, several research ideas have been developed as solution directions.

An interesting research area is coined by McKeen and Guimaraes [MG97]. They suggest looking at the context within which user participation works. *Where* and *how* should user participation occur and what would be an appropriate participation strategy? This could tackle the effectiveness problem regarding the behavioral and productivity benefits (described under 'inconclusive results')

as found by He and King [HK08]. Although this suggestion was made more than a decade ago, the literature doesn't seem to have picked it up yet. A similar suggestion comes from Butler and Fitzgerald [BF01]. They suggest to "capture the institutional and development-related contexts that shape and influence the processes of user participation and the management of change". An answer to this question again seems to be mostly suited to tackle the effectiveness problem regarding the behavioral and productivity benefits. The study is in turn relates to the study of Markus and Mao [MM04], where a lot of hypotheses about relationships between participation activities and IS (solution) development and implementation success are formed. Most of these hypotheses are actually about the organizational context, conditions and supporting processes within which user participation works, and thus about solving the identified issues with the asserted effects of user participation. The authors recommend that their propositions could be further explored through case/qualitative studies either within a single context or across contexts. They also invite other to extend their theoretical framework in various ways, for example by incorporating more participation methods and conditions. This could in turn add value to the research area of the behavioral and productivity benefits. More recently, He and King vouched for research that refines the contingency factors under which user participation is effective [HK08]. They mention that user participation alone may not be sufficient and should be used in conjunction with other strategies – for instance, bringing (IT) knowledge and expertise of user participants into play – to achieve satisfactory IS (solution) development outcomes. As we can see, this suggestion is again about improving the effectiveness of user participation in IS projects.

All of the above suggestions boil down to researching general methods, (supporting) processes, conditions, contexts and contingency factors that influence the effect of user participation on IS solution success. It encourages us to research best practices that should be accounted for when shaping a successful, qualitative approach to user participation. This can improve the quality of user participation. Therefore, I have created an overview of the best practices in IS user participation literature. These best practices can be categorized into: participation activities; participants; change agency; teams and leadership; balance between managers and users; top management support; and relationships and trust. Requirements are distilled from these best practices, completing the answer to the research question *"Which factors influence the quality of user participation?"*

4.3.1 Participation activities

When searching for best practices in IT participation, the participation activities can be said to play a central role. After all, the activities performed are believed to result in IS success. However, the problem is that there are so many forms participative activities which can be carried out in so many different ways, it is impossible to describe a single best practice in detail. This would greatly depend upon the context and content of the project. However, we can learn some things when regarding some approaches in detail. To illustrate this, this section will describe forms of activities on a high level, give examples of how these activities could be carried out in participative approaches, show how these approaches relate and what we can learn from that. After that, the focus will be shifted to 'types of activities' and 'richness of activities', where the activities will be described in a more general and abstract way. This permits us to learn essential lessons on how participation activities should be shaped in general, from a different perspective.

4.3.1.1 What are anticipation activities

Some frequently used activities in IT participation projects are brainstorming about problems and solutions, developing scenario's, creating (working) prototypes and evaluate them, rapid application development (RAD) and joint application design (JAD) [MM04, HK08]. Scenario's are narratives exploring the experiences of possible users [CR07], also referred to as 'personas and storylines' which can provide a context for understanding or envisioning people's needs or preferences [ST08]. RAD and JAD can be said to be specific forms of working prototypes. More specifically, "*JAD prescribes a*

series of workshops facilitated by a session leader trained in group dynamic techniques, where users and developers work together to plan and design a new system" [BH01].

Barki and Hartwick went into more detail to describe a total of fiftynine participation items [BH94b]. They are about responsibility ("*project leadership, project initiation, estimating costs and requesting funds, and making decisions concerning system hardware and software"*), user-IS relationship ("*reviewing, evaluating, and approving both an information requirements analysis and the work done by the IS staff, as well as drawing up, changing, and signing off on a formal agreement with IS"*) and hands-on activities ("*designing or helping design input and output formats, access and security procedures, and training users"*). Later, these items were extended by communication activities ("*e.g., activities involving formal or informal exchanges of facts, needs, opinions, visions, and concerns regarding the project among the users and between users and other project stakeholders"*) [BH01]. As we can see, the focus of Barki and Hartwick in describing participation activities is on a more detailed level, but in the end it all comes down to the same thing.

4.3.1.2 Example approaches

One of the best known participation approaches is the 'future workshop'. In a future workshop, there is first a brainstorm in which participants can give their criticisms on the current situation. Then, based upon these critiques, a better future situation is envisioned. In the final phase, plans of action are formulated to reach this desired future [ST08]. Based upon the future workshop technique, a 'multi-disciplinary thematic seminars' (MdTS) method was recently developed [SHK08]. In order to give the reader an impression of how prototypes, brainstorming and application design can all fit together, I shall dedicate some lines to the summary of how the MdTS is set up in terms of activities, and show how it relates to other methods that have been developed and what we can learn from that.

MdTS

The idea is to first do a project start-up with all stakeholders (users, buyers/owners, operational services and designers/developers) where they should agree on common goals and strategies. Furthermore, they recommend the use of an external expert with domain knowledge as a participant. Before the seminars are held, some pre-seminar work is proposed, consisting of field studies, observations and interviews held by external experts, to understand current work situations and to capture user's tacit knowledge.

Then, there are 6 seminars with a holistic perspective (project start-up/introduction; current work situation; organization; information and communication handling; technical workshop; future perspective). This holistic perspective aims to create a platform where participants can gain understanding of each others' work processes. All end-user participants should participate here (hence multi-disciplinary seminars). When a theme is not fully understood yet or new information has emerged, it may be necessary to repeat a seminar. Internal or external lecturers were invited to provide inspiration and to encourage the participants to think creatively.

Next, there are 6 seminars with a detailed perspective (current work scenario's for different groups of participants; detailed analysis of information needs; future work scenario's for different groups of participants; visualization of future work scenario's). In this detailed seminars, results from the holistic perspective are analyzed, examining points of intersection and specific professions details. The two groups used in the current and future work scenario seminars are the intra-profession groups, where the focus lies on one profession's work, and the inter-profession groups, where the cooperative aspects of the work are handled. When a theme is not fully understood yet or new information has emerged, it may be necessary to repeat a seminar. Internal or external lecturers were invited to provide inspiration and to encourage the participants to think creatively.

After every seminar, an external expert should analyze the user's needs and translate them into more technical specifications. These should then be fed back to the working groups. In early stages, paper sketching and mock-ups can be used in order to capture the participant's ideas. In this way, the developers can be involved quickly. As the requirements evolve, prototypes illustrating the future work scenario should be continually provided by the developers. The idea is that hands-on testing of these prototypes will help the participants describe their exact needs and that the prototypes can clarify the complex, integrated work processes and the workflow in practice.

There is also 'out-of-seminar' work to be done. In between the seminars, the users should do homework. This homework is to be completed in cooperation with colleagues from other professions, and to be discussed in the next seminar.

Other approaches

Because the MdTS method is based upon the future workshop, it obviously has strong links to that method. But there are other, independently formed methods in literature that are quite similar.

First of all, the EASE method developed by Garrity [GA01] is in a lot of ways similar to the MdTS method. The EASE method consists of a number of steps. The first step is to define the problem. The second step is to visualize the current workplace, similar to the second holistic seminar and the first detailed seminars of the MdTS method. After that, the third step is to visualize the future workplace, with an emphasis on business processes. This is similar to the sixth holistic seminar and later detailed seminars of the MdTS method. Through brainstorming, prototypes are created and evaluated in iterations. This is also done in the MdTS method. Garrity mentions that these prototypes should be simple and designed in a way that allows for debate and change. The prototypes are first meant to educate the technicians on the user's workworld, and later the idea is to educate the users on the technical possibilities [GA01].

In this way, the focus lies on mutual learning and collaboration, which is the same in Hartswood's co-realization method [HA03]. In co-realization, the focus lies on design in use through prototyping and evaluation iterations between IT experts and employee participants. The prototypes can be based on scenario's describing the future situation [HA03]. We can see this is also similar to the MdTS method.

The pre-seminar work and the holistic seminars have a close relation to the work carried out in the cases described by [CR07]. They mention that they observed and interviewed the stakeholders about their use of IT (pre-seminar work) and carried out a technology assessment with them. In this process, the current technology resources, practices and concerns as well as possibilities for future enhancements were documented, which relates strongly to the holistic seminar work. They call this the identifying of the IT needs.

Supporting activities

A form of participation activity that has not really been touched upon by the aforementioned approaches is 'probing'. Probes often consist of some materials or tools that help people to document and report on their daily worklife and experiences. Example tools are diaries, questionnaires, visual materials and photo/video cameras. These probes are a way for designers to interpret information about the needs and wishes of end-users, and can thus inform or inspire their design processes. Other than that, it empowers users to participate and facilitates dialogue about user's perspectives [ST08]. In order for it to be a real participative activity, these probes should be discussed with those people who made them; otherwise it will just be an empathic design approach.

4.3.1.3 Lessons learned

In terms of the organizational change perspective, it is interesting to see how the MdTS and EASE methods apply a process focus. In the holistic MdTS seminars [SHK08], participants from multiple

professions come together and share their ideas. In this way, the cooperative work processes will be addressed rather than discrete tasks, and a common understanding and integrated, holistic view of the entire work process should be achieved. Other than that, it may lead to a greater understanding of other professions' work, thereby implicitly facilitating a greater cooperation and coordination between the different professions. After the holistic perspective is clear, there is room to dive in processes in more detail [SHK08]. In the EASE method, employees are organized into process teams, who have the responsibility to change entire business processes instead of just giving opinions about information system design [GA01]. These workshops with holistic and detailed themes and process teams are seem to be good approaches to achieving the much needed process focus.

What we can also see is that these methods and the co-realization method, the focus is on both the current work situation and the future situation, where this latter can be shaped through brainstorming or through the creation of scenario's. With a scenario, project-team members can refer to a persona or real user and create a shared understanding of the needs and preferences of this persona, which can guide their design decisions [ST08]. In combination with the process focus, it also gives the participants influence to shape their future work situation as they see fit, and to also satisfy their psychological and socio-technical requirements [GA01, SHK08], which is essential when regarding an IS implementation as an organizational change. Also, this is one way to give participants decision-making responsibility and influence, which is a critical participation element [BH94]. Therefore, in terms of content of participation, we can conclude that shaping the current as well as the future situation is desirable.

We can see that these future workshop, MdTS and EASE (and other) approaches rely on workshops where users can give their input about the current and future work situation. A much used technique for this is brainstorming, and this activity is not to be underestimated. Brainstorming sessions have been concluded to be a highly effective approach to facilitate user participation, resulting in high levels of psychological involvement and proactive participation behavior [MP09]. Thus, we can tentatively conclude that, in terms of forms of participation, brainstorming is a vital participation activity. Another way of gathering user's input about the current and desired future situation is the use of probes [ST08], or workplace observation (ethnography) [KU03, HA03].

The prototyping and feedback sessions are present in almost all participation approaches. Simple paper sketches and mock-ups can be used in early phases, as well as more detailed working prototypes in later phases. On one hand, this gives the developers the opportunity to learn about the exact needs of the participants, and on the other hand this gives the participants an opportunity to learn about the technical possibilities of an information system [GA01, HA03]. Therefore, prototyping is regarded as an important form of user participation.

In this prototyping, iterations play a great role [GA01, HA03, SHK08], meaning that there can be a large number of prototypes created and evaluated. The strength of iteration does however not only lie in prototyping, but also in the sessions where current and future situations are discussed through brainstorming and other techniques [SHK08]. Although iterations generally cost a lot of time, it is a good way to ensure an optimal result which can be largely agreed upon by the majority of the participants. In choosing a form of participation, the power of iteration is not to be underestimated.

Finally, the MdTS method is slightly unique in that it discusses the possibility to hire internal or external lecturers to provide inspiration and to encourage the participants to think creatively. Also, it gives good reasons for using inter-profession groups as well as intra-profession groups during participation activities, and discusses giving homework to participants and the execution of 'pre-seminar' work where users are observed in their workplaces [SHK08]. I have not encountered these elements explicitly in other approaches, but they might prove useful.

When giving homework outside of group seminars, it means that people are participating alone and in groups, as advocated by Barki and Hartwick [BH94b]. Furthermore, Barki and Hartwick argue that activities should be both direct and indirect, formal and informal, and take place during several phases of the project. In terms of direct and indirect participation, it seems that brainstorming and evaluating prototypes are the more direct forms of participation, and the observation of users as a form of ethnography or so-called 'pre-seminar' work are the more indirect forms. Regarding formality, it is hard to say how it is done in the above approaches because formality depends upon the context, culture and forms of communication used. The next section will discuss the participation in several phases of the project.

4.3.1.4 Types and richness of activities

As we can see, several forms of participation activities exist and the details can be filled in many ways. The MdTS method is an just example of how such details could be shaped. The 'ultimate' work-form, however, will always depend upon specific context variables of the organization and the IT system to be implemented. That is why I attempted to extract some more general lessons from the existing approaches. However, these lessons generally pertain to the *form* of participation activities, and not to the *content.* So far we have seen that participants should participate on a process level and define a future situation, but not more. However, users can participate in many different phases of the project and according to Barki and Hartwick, they *should* participate in different phases of the project [BH94b]. In order to create some more structure in this chaos, [MM04] make a useful distinction in types of participation activities and richness of participation activities.

Types of activities

In defining the types of participation activities, one can view activities in system development, system implementation and project management as different types of activities [MM04]. Examples of specific activities are in the system development phase are requirements generation, design, development and testing. Examples in the implementation phase are planning, executing installation and evaluating system performance. Project management activities are about budget and schedule performance. Other types of activities that can be distinguished are business process redesign, which is all about applying a process focus, or change management. Markus and Mao [MM04] argue that this distinction is important because different kinds of participation activities are related to different kinds of participation outcomes. These participation outcomes have no necessary relationship. In other words, activities that promote one set of outcomes might fail to promote or even inhibit the other set of outcomes.

It is vital that the activities which will be most effective and efficient in the case are selected. [MM04] have made a number of propositions regarding the effectiveness of several kinds of participation activities upon several kinds of outcomes.

- *"User participation in project management activities can be expected to have greater effects on project completion and budget/schedule performance than on system quality and user acceptance".*
- "*Project management participation is most closely related to the outcome of project success"*
- *"User participation in change management activities such as planning or scheduling conversion and planning, scheduling, or conducting training is much more likely to affect system acceptance and use outcomes than it is to affect system development project performance or system quality".*
- *"Solution implementation participation is most closely related to the outcome of solution acceptance and use. Solution implementation participation is more likely to increase solution acceptance and use when the quality of the solution to be implemented is high."*
- *"When developers use the cognitive elaboration approach, participation in system development is more likely to contribute positively to system quality." [MM04]*

- *"When developers choose analysis techniques that are appropriate for users' non-specialist IT knowledge (e.g., business process modeling instead of data flow diagrams), participation in system development is more likely to contribute positively to system quality."*
- *"When developers choose analysis techniques that capture socio-technical requirements in addition to functional requirements, participation in system development is more likely to contribute positively to both system quality and system implementation success."*

Richness of activities

Other than different types, participation activities are also differentiated by [MM04] based upon their richness. Participation richness is defined as "*the extent to which participants are likely to experience them as personally meaningful and consequential (ability to have an influence)*". The importance of participation richness is underlined by the studies of [BH94, SA96, HP97], where Barki and Hartwick in turn make the link with organizational behavior literature. The studies suggest that participation activities that are not rich and meaningful have a less strong effect upon the user acceptance of the IS than rich and meaningful activities. As an example, participating in a planning or decision-making role provides a richer participation experience than participating in an operational role (e.g. being trained) [BH94, MM04]. Thus, participants should make choices and participate in decision making. Such participation by choice is more effective than participation by voice, and leads to a sense of deterministic instead of probabilistic control. This sense of control in turn enhances intrinsic motivation, improves psychological health and boosts self-efficacy [HAP97]. The need for meaningful participation relates strongly to the 'responsibility' dimension of participation [BH94], which was found to be a very important antecedent to IS success and whose elements will ensure meaningful participation. Other than decision making and control, meaningful participation involves personal autonomy and performing significant tasks [BH94].
Markus and Mao [MM04] have also made some proposition regarding rich participation, which gives us some examples on how participation can be meaningful:

- "*being a full-time member of a process mapping or configuration team requires more involvement, in terms both of time commitment and of psychological investment, than participation in a requirements interview or a prototype review*"
- "*stakeholder participation in system development by means of working iteratively with functional prototypes is more likely to promote system quality and better relationships among developers and users than participation via responding to a requirements questionnaire*".

When certain stakeholder groups cannot be included in rich participation activities, Markus and Mao [MM04] argue that it would still be better to include them in thin participation activities than to not include them in any activities at all. This will lead to a greater likelihood of solution implementation success. Thin participation activities can be realized through the use of approaches like anthropological methods and workplace observation. This will provide developers with an understanding of the stakeholders requirements without requiring time commitments.

4.3.1.5 Conclusion

In summary, we have seen that sessions with participants should holistic as well as a detailed process foci, where the current work situation is described and the future situation is envisioned. Such a process focus can also be called solution implementation participation and promotes solution success instead of just IS success.

The lessons learned strongly relate to requirement R8 and its relating requirements R9, R10, R12 and R21, and it also relates to requirement R16 and R23. What we see here is that putting participants from multiple disciplines together, having them focus on both the current and the future situation, and organizing the participants in process teams could be ways to achieve these requirements. Therefore, the following requirements are added:

R30: Participants from multiple disciplines should be put together in workshops
R31: The focus should be on the current situation as well as the future situation.
R32: Participants should be put together in teams focusing on a business process.

What this section also shows is that the current and future situation workshops, brainstorming, prototyping, feedback, iterations, lecturers, homework and pre-seminar work give us some ideas as to what participation activities should be performed. This leads to the following requirement:
R33 Participation activities should at least include brainstorming, prototyping and feedback sessions, and iterations in these sessions.

The part about types of activities relates to requirements R13 to R15 on the role of developers. What we see here is that in terms of participation activities, users should participate in system development (requirements generation, design, development and testing), system implementation (planning, executing installation and evaluating system performance), project management (about budget and schedule performance), change management (planning or scheduling conversion; planning, scheduling or conducting training*)* and business process redesign. Also, we can see that developers should use a cognitive elaboration approach, they should choose business-focused instead of IT-focused analysis techniques and they should employ techniques to capture socio-technical requirements. We can thus add the following requirements:
R34: Participants should participate in system development, system implementation, project management, change management and business process redesign activities.
R35: Developers should use a cognitive elaboration approach
R36: Developers should use business-focused instead of IT-focused analysis techniques
R37: Developers should employ techniques to capture socio-technical requirements

The part about richness of activities is strongly related to R1: "The participation activities should be experienced by the participants as being rich and meaningful" and it's relating requirement R2: "The participants should be given influence and responsibility, at least during participation activities". And indeed, we see here that participants should participate in a planning or decision-making role and make choices. Furthermore, we learn here that meaningful participation involves personal autonomy and performing significant tasks, and that thin participation activities (anthropological methods and workplace observation) are better than no activities. Therefore, the following requirements can be added:
R38: Participants should be given personal autonomy.
R39: Participants should be given the opportunity to perform significant tasks.
R40: Stakeholders that cannot participate in a rich manner should be included in thin participation activities such as anthropological methods and workplace observation

4.3.2 Participants

A major factor in the success of a participative approach is the selection of the actors that will participate. But selecting participants is a difficult challenge and a poor participant selection can undermine a theoretically sound participation process in several ways. Despite this, the participant selection has had little attention from traditional IS literature [MM04].

4.3.2.1 What are participants

Let us first take a look at what participants are. Markus and Mao made a distinction between stakeholders and participants, where stakeholders are defined as "*those who are likely to be affected by a solution, whose acceptance and use of that solution could be problematic, and who are therefore logical candidates for participating in solution development or implementation*" and participants are defined as "*the subsets of stakeholders who are actually given the chance to participate in solution development and/or implementation activities*" [MM04]. In summary, participants are subsets of people who are affected by the solution.

In existing literature, participants are usually defined as (future) end-users of the IS to be developed and/or implemented. This is good, because real users have the relevant knowledge and understanding of the actions and the consequences of their work [SHK08], and can thus prove to be a very valuable resource. However, in focusing only on these users, a lot of subsets of stakeholders who could and/or should also participate are forgotten. An example is the end-users managers [MM04, CR07]. Markus and Mao argue that these managers also need to be able to provide some input. This can for example be realized by managerial delegation (allowing sub-ordinate decision making) and project chartering (setting decision-making parameters for subordinates) [MM04]. This can somewhat be seen as a way of guarding the balance between managers and end-users, which will be discussed in more detail later. Other stakeholders who are potential participants and should not be forgotten are for example executive champions, process owners, functional area or business unit managers, (business) customers, end-consumers, HRM personnel, external management, IT consultants and technology vendors/suppliers [MM04, CR07]. Also worth noticing is that the developers themselves are in fact also participants. They need to engage in several participative activities, together with other participants such as end-users and managers. The participation process should thus become a 'social negotiation' among several stakeholders, where the designer's responsibility is to "*faithfully translate, collaborate, and respond to the concerns of the other stakeholders*" [CR07]. A significant proportion of these stakeholder groups should be invited to participate, but one should not select so many participants that it forms a problem for the efficiency of the user participation process.

4.3.2.2 Who will participate

We have seen that participation should take place in different phases of the project and that participation should be rich and meaningful. And in order for an optimal buy-in effect [MM04] or psychological involvement of the users, everyone should participate. In a small scale implementation, a large proportion of users may be able to participate without the absolute number of participants becoming a practical issue. But if we look at an enterprise system implementation, an inter-organizational IS or another large scale IS, it is impossible to let everyone participate in a rich and meaningful manner. This would take a long time (more participants means more opinions), and create a lot of overhead in the organization of the participation. In such cases, only small proportions of several actor types will be able to participate. Therefore, it is important that they manage to influence the non-participants in turn [MM04, MA09], and that they communicate with them about the progress of the project. Additionally, they could act as input gatherers, listening to what the non-participants have to say about the project and do something with this. In this way, the non-participants would become indirect participants.

As such, it is important that the participants are able to act as opinion leaders or advocates [MM04] and have a strong social network [MA09]. This means that participants should not be afraid to voice their opinion, that they should be respected by colleagues, and that they should have short and preferably informal connections with their colleagues. In order to influence non-participants, it also seems important that participants engage in activities by themselves, outside of workshops or other organized sessions. We learn this from the MdTS example [SHK08], where participants got engaged in creating work processes. Their work continued outside the seminars and in this context it spread to colleagues who were not directly participating in the seminars.

Finally, in selecting participants, Barki and Hartwick's research ideas are very interesting; they argue that personality characteristics (e.g. need for achievement, locus of control, dominance), a person's experience (e.g. education, amount of experience with IS or quality of experience with IS) and a person's organizational status (e.g. organizational function, hierarchical level) are possible antecedents of user involvement [BH94]. One could argue that the higher the values of the variables in personality characteristics and experience, the more effective participation will be for that

individual. I think that organizational status will not have an effect on an individual's participation effectiveness and I think that participants are needed from all layers of the organization.

In practice, participants can be selected by themselves (volunteering), change agents, top managers, developers or other stakeholders. What the theory teaches us is that when individuals volunteer to participate, they will be intrinsically motivated and continue to participate in the activities simply because they enjoy it. Selecting participants that will continue to participate to a useful extent may become more challenging when there are no volunteers and they all have to be selected top-down [CR07].

Having selected the participants, the next barrier is to actually take time away from their full-time job responsibilities [MM04]. Employees may not be able to afford putting time in participating in an IS project. Therefore, the developing and implementing team should aim to overcome this barrier, possibly by lobbying of senior executives. The goal of this lobbying would be to ensure that there is money in the project budget for temporary replacements of operational participants or to commit managers to making their best people available for participation [MM04]. The section on teams and leadership will explain about how the participants will work together in teams and how they could be led.

4.3.2.3 IT Expertise

Both stakeholders and participants can vary in numerous ways, such as status, rank, membership in groups and IT expertise [MM04]. This IT expertise factor deserves a few more words because it is an interesting and underinvestigated one. According to [HK08], direct assessments of the knowledge and expertise of user participants are rare in the literature, except in the paper by [SA96]. This study shows that user participation had significantly stronger impact (in terms of behavioral/attitudinal outcomes) on those who perceived themselves as functional experts than those who perceived themselves as functional nonexperts. [HK08] suggests that this factor needs to be considered to assess the productivity benefits of participation. And indeed, recently [SHK08] argued that when users have limited computer skills or don't work in a computerized environment, it will be difficult for them to articulate their requirements. Good user requirements closely relate to system quality. Therefore, one could assert that when not enough users who are used to computers participate, it will have a negative effect upon the system quality.

4.3.2.4 When and where

Other then knowing who the participants are, it is also important to determine when and where they will be participating. The answer to when seems to be "as soon as possible". Advocates of user involvement suggest that users are ideally involved from the start of a project. This is because in the early stages of a project, the problems, opportunities, ideas and concepts are explored and defined and decisions are already being made. These definitions and decisions should be made with the participants to realize the full potential of user involvement. If participants would only be involved in the middle and end stages, they will only be able to test (semi)finished products which most likely do not satisfy their needs [ST08]. The problem might have been incorrectly defined, opportunities and ideas from knowledgeable workers are ignored, and developers can have already made up their mind on fundamental issues where participants disagree. In this way, the participants did not get a chance to steer the development when it was most needed.

The context in which the participation activities take place is also important. An example is the location of participation. In contextual design and co-realization, it is believed that working with users in their workplace is most effective [KU03, HA03]. However, with country-wide or globally dispersed users, this hard to achieve.

4.3.2.5 Conclusion

In conclusion, it is vital to make a good selection of participants from these affected stakeholders [MM04, EK00, OL04], because the selection of participants is plausibly related to development and implementation success [MM04]

The paragraph on 'what are participants' strongly relates to requirements R4: "relevant types of stakeholders should be represented as participants where possible". We learn here that important stakeholders could be managers of all sorts (top managers, middle managers, business unit managers, functional area managers, and external managers), process owners, personnel of other departments such as HRM or IT, and IT consultants, vendors and suppliers. In some cases, business customers and end-consumers could also play a role as participants.

R41: All internal managers, personnel and process owners should be considered to be participants, as well as external managers, IT specialists and customers.

Managerial participants are important, because they can make a greater contribution than operational users to solution implementation success through their participation, and they are more likely than operational participants to be able to secure the acceptance and use of the solution by others [MM04].

The part on 'who will participate' is all about requirement R3: "The group of participants should be not too large, so that they can all participate effectively." Especially in a large scale implementation, it is a great challenge to select an effective group of participants. This is where the previously defined requirement R6 comes in: "Participants should engage in activities to commit the non-participants". We see here that in order to be able to do so, participants should be able to act as opinion leaders, advocates, input gatherers and mediators. This means that they should be respected and influential. Furthermore, they should have a strong social network and commit to informal participation activities outside of organized sessions. We also see that personality characteristics, experience and organizational status could play a role, although it is unsure which role. Therefore, they are not included in the best practices summary. It is also argued that some of the participants should have some IT expertise. In selecting participants, volunteers are preferred over a top-down selection. Finally, sufficient resources (time, budget) should be available for the participants to actually participate. Based upon this, more requirements are defined:

R42: Participants should be able to act as opinion leaders, advocates, input gatherers and mediators. Therefore, they should have a strong social network and commit to informal participation activities outside of organized sessions.

R43: A number of participants should have relevant IT expertise.

R44: Stakeholders should be given the opportunity to volunteer for participation.

R45: Sufficient resources (especially time and money) should be available for the participants to effectively participate.

Other factors which are relevant in selecting participants but which have not surfaced in the description of the best practices are to be found in requirements R25 and R26: Participants should have perceived personal competence and organizational commitment.

In regard to 'when and where' participants should participate, requirement R22 gives us an idea: "User readiness for organizational change should be created, before or in the early stages of the IS project." And indeed, the literature seems to support this, because advocates of user involvement mention that users are ideally involved from the start. To the 'where' question, the only answer seems to be that working with users in their workplace is most effective. Therefore, the following requirements are added:

R46: Stakeholders should already be invited to participate before or during the start of the project.

R47: Participants should perform participation activities in their own workplace.

4.3.3 Change agency

An important role that should be distinguished in user participation activities is that of a change agent/facilitator/mediator: someone who guides the participants in their activities and who safeguards efficiency and effectiveness of the participation process.

4.3.3.1 What should a change agent do

Generally, the change agent is responsible for the management of user's commitment and expectations, and should therefore look for ways to keep users actively engaged [HA03]. The following definition gives an idea of how this can be done: *"Change agents are people who play important roles in designing and executing participation opportunities for stakeholders. They might decide who gets to participate, how they will participate (via interviews, JAD sessions, or on teams), and what participation techniques (e.g., modeling methods) are used. Change agents might also lead teams of participants or facilitate their discussions"* [MM04]

According to Markus and Mao, change agents should use a 'facilitation' approach rather than a 'technical expert' approach to participation. A facilitating approach is asserted to be more likely to elicit socio-technical requirements next to technical requirements [MM04]. This inclusion of socio-technical requirements can in turn lead to a better system quality and an enhanced solution implementation success, the latter meaning that the users will use the system in the intended way with the desired effects. In order to facilitate discussion, the facilitator could summarize, critique and present visions and goals for the future [CR07] and facilitate communication activities as defined by Barki and Hartwick: *"formal or informal exchanges of facts, needs, opinions, visions, and concerns regarding the project among the users and between users and other project stakeholders"*. The focus therein lies on listening to users and advocating their needs or desires [BH01]. As such, the facilitating approach requires strong social skills. In terms of facilitating activities, it was found that 'consultant support' - which can be seen as a form of facilitating change agency - is a factor affecting the success of brainstorming [MP09], which is a major participatory activity.

In a more technical approach, the facilitator can fulfill the roles of design consultant, developer, technician, trouble-shooter and handyman, but still with the ultimate goal of helping users to realize their needs [HA03]. More specifically, this entails verifying user requirements, exploring how the work environment impacts IS use and reliability and vice versa, and conducting usability tests and formative assessments of prototypes [SHK08].

Finally, change agents can make greater contributions to solution implementation and development success when they select participants effectively; focus on not only developing a solution but also on developing relationships with participants and other stakeholders; and work together to design participation opportunities rather than work independently of competitively [MM04].

4.3.3.2 Who can be change agent

The role of a change agent can be filled in by several actors, and of course there can be more than one change agent in an IS project. It can be an external person, such as a consultant, vendor or developer, but it can also be an internal person, such as an end-user, HR professional, IS professional, 'project champion', or manager [GA01, HA03, MM04]. Let us explore both possibilities.

When the change agent role - also referred to as the role of 'facilitator' - is filled in by an external expert, she will be better able to maintain a 'birds-eye-view' of the domain. She should take place *between* the developers and users and be able to balance requests from different stakeholders and mediate between them. Ultimately, it would also be beneficial if the external expert has relevant IT expertise *and* work domain expertise, thus being fluent in the languages of both IT and business processes. This would make her better able to convert organizational and socio-technical requirements to IS requirements and iteratively verify these requirements with the users [SHK08].

This suggestion is underlined by the co-realization approach, where it is advocated that the facilitator role is filled in by IT professionals [HA03]. This IT professional is however not explicitly mentioned to be external. I think that depending upon the situation (in-house or outside development), this IT professional could be internal or external.

Closely related to the IT professional is the notion that the change agent task can be integrated in the job of the designer [CR07]. The authors argue that "*it's the designer's responsibility to translate, collaborate, and respond to the concerns of the other stakeholders*" in the process of participation. And although Markus and Mao argue that the developers should be considered as participants, they also see a role for them in change agency. Developers can "*create opportunities for users to participate, select participants, structure participation encounters (e.g., using or not using prototypes, selecting tools and languages for representing requirements), and so forth*" [MM04]. On the other hand, they mention that developers can employ third party facilitators.

In theory, it could also be a good idea to let an internal end-user take the role of facilitator. The idea is that it will be more effective because they have intimate knowledge of the context and credibility with the users, and therefore their actions are more likely to be accepted. This user facilitator should however be technically skilled in order to be able to make changes to the requirements and the system via user-led processes. This will however only work if the facilitator is supported and when she is granted sufficient authority and resources. In practice, this support is usually lacking [HA03].

4.3.3.3 Conclusion

In conclusion, it is important to have change agents who can be assigned responsible for designing and executing participation, including the selection of participants, the management of participants' commitment and expectations. They should essentially be facilitators and could play a mediating role between groups of stakeholders by facilitating discussions, or lead them in their participation activities. Such a facilitation approach is more likely to satisfy requirement R12: "The social and humanistic requirements of users should be made explicit." Therefore, agents should develop positive relationships with participants and other stakeholders. There can be multiple change agents working together and the roles can be filled in by several groups of actors: work domain experts, IT experts, consultants, developers, and end-users. Most of these actors can be internal or external. In conclusion, the following requirements for a successful participation approach can be defined:

R48: Change agents should be (partly) responsible for managing the commitment and expectations of participants, selecting participants, and designing and executing participation activities.
R49: Change agents should take a facilitation approach to user participation.
R50: Change agents should have strong social skills and aim to develop positive relationships with participants and other stakeholders.

4.3.4 Teams and leadership

An implicit element for successful participation activities with participants, developers, change agents, top managers and other stakeholders is teamwork and collaboration [BH01], where the teams are led in an efficient manner.

4.3.4.1 On teams

When doing participation, the participants should be put together in teams [GA01, BH01]. A user can take up a role in a team because they are assigned a role by their superiors, because they are selected by peers/developers/change agents, or because their hierarchical position in the organization requires it. When a user is a member of a project team, she performs a wide variety of participative activities with greater frequency than nonmembers. This in turn has a strong impact on overall participation and the hands-on activities, overall responsibility, user-IS relationship and communication [BH01].

Participants should be put in process teams so that they can focus on changing the entire business process instead of just implementing an IS. Moreover, the entire project team should be made responsible for the results so that transferring blame is pointless [GA01]. As we have seen in the the MdTS example [SHK08], several groups are formed, each of a specific profession. These teams or groups should perform intra-group activities to reach the required level of detail on a profession, but they should also perform multi-disciplinary inter-group activities in order to maintain the holistic focus on the entire work process [SHK08, ST08]. When using only an intra-profession-group, there is the risk of a fragmented picture of the work processes and no understanding of the cooperative aspects. When using only an inter-profession group, the necessary level of detail might not be reached. Therefore, both sets of groups should be used [SHK08].

Depending upon the content of the participation activities, certain types of participants should be present in the team. In the MdTS example, during project start-up, all stakeholders should be present. During a definition of work processes, only end users have to be present and other stakeholders are regarded as receivers of information [SHK08]. However, it is very well imaginable that depending upon the context of the case, other stakeholders should become participants at several points in time as well. Unfortunately, I think this is too context-specific to be able to say something less generic about it.

4.3.4.2 On leadership

As we have seen in the previous section, the change agent plays an important role in managing teams. The agent has to structure and manage the team, and might lead or facilitate it personally. This is the case in the MdTS example, where the external expert led the seminars [SHK08]. It was found that users who were leaders themselves performed less hands-on activities than normal members, but had a greater sense of responsibility [BH01].

In further exploring the leadership phenomenon in this context, [BH01] stumbled upon work from Vroom and Jago [VJ88]. In the study, different leadership styles are distinguished, namely:

1. *Autocratic* (the leader makes the decision without input from subordinates)
2. *Consultative* (the leader gets some input from subordinates, but makes the decision him- or herself)
3. *Group* (the leader and subordinates meet as a group, making the decision together)
4. *Delegated* (the leader delegates the decision to one or more subordinates, giving them the responsibility for making the decision alone).

According to Vroom and Jago, the subordinate participation and influence increases as one goes from autocratic to delegated. Based upon this, [BH01] assert that users will report higher levels of participation (consisting of [BHo1]'s 4 dimensions discussed before) as the participative style moves from autocratic to group style (where users are participants on a project team). They expect that when moving to a delegated style, the participation level will increase even further, except for the communication activity which is likely to decrease. Since in their study the communication activity is found to be a very important aspect of user participation, Barki and Hartwick suggest that a group style would be the most effective form of user participation [BH01]. In this light, it is interesting to see that it has been argued that participants who have volunteered should be enforced by group leadership [CR07]

4.3.4.3 Conclusion

First of all, we see that participants should take up a role in a team. This relates to the previously defined requirement R32: "Participants should be put together in teams focusing on a business process". Furthermore, we learn that participants should perform profession-specific intra-group activities as well as multi-disciplinary inter-group activities. The following requirement is thus added:

R51: Participants should perform profession-specific intra-group activities as well as multi-disciplinary inter-group activities.

On leadership, the conclusion seems to be that a group leadership style is most effective, because this will give the participants influence in decision making. While this is also true for the delegated leadership style, it is feared that communication will not go well in that case. Therefore, a change agent should lead a group as a facilitator, which relates to requirement R49: "Change agents should take a facilitation approach to user participation". Or a manager could lead a group as a decision-maker. This group leadership style is also argued to work well for participants that have volunteered. As a result, another requirement can be defined:

R52: Teams of participants should be led in a 'group' leadership style, where a change agent or a manager is most likely to take up the leading role.

4.3.5 Balance of influence

In user participation, there is a dimension regarding the influence several parties can exert during the project [CA95]. On one end of this spectrum is the management-dominated or top-down approach [FA03], where managers and developers are in charge. This could also be called the designer centered or American approach [GA01]. On the other end of the spectrum lies the end-user focused or bottom-up approach [FA03], where end-users are in charge. This can also be called the user centered or European approach [GA01]. It seems crucial for a participative project that the influence of both parties is balanced [FA03, GA01].

If the focus lies too much on the top-down approach, the benefits of user participation will not be achieved and there can be a big discrepancy between the way managers perceive how the work should be done and how employees actually carry out their work, resulting in a failing solution [FA03]. But when users are given too much influence, other undesirable things can happen. On one hand, there is the situation where tools of the past have shaped users' tasks. In this case, an adaptation of the new system to these existing tasks can lock users into obsolete behavior. On the other hand, there's the risk that well-established work procedures are ignored by users and new systems make it impossible to get the job done [OL04]. On top of that, when the number of end-users and their influence is high, it may lead to customizations and variations in the information system and its use because of the different foci of the end users. This can become problematic with cross-disciplinary work, because there is not one 'standard' work process [FA03].

Because both ends of the spectrum do not work optimally and efficiently [FA03], there is a need for a *balance* in top-down and bottom-up participatory approaches [FA03, GA01]. This is a difficult challenge, because the approaches seem to be incompatible with each other. There's also the risk that the balance will be shifted too far in favor of one of the approaches if it was perceived to be too far in favor of the opposite approach before. However, the challenge can supposedly be overcome by "*developing a strict top-down vision in which a strong sense of overall direction of the project is kept*" [FA03] and by having common viewpoints and clear goals [GA01]. Management should be made responsible for the execution of the project and they should decide at what points the end-users will participate and when they are in the lead [FA03].

4.3.5.1 Conclusion

In conclusion, this balance of which [GA01] and [FA03] talk should increase the efficiency of the user participation process because the issues that can arise when one of the parties has too much influence are mitigated. It should lead to a situation where neither developers nor managers nor users will have too much power and ideally there will be no useless user participation. This leads to the following requirements for a qualitative user participation approach:

R53: Neither managers nor end-users should have all influence in decision-making; there should be a healthy balance.

R54: The participation process should be guided by a vision; an overall direction with common viewpoints and clear goals.

4.3.6 Top management support

The importance of top management support (TMS) in IS implementation projects is underlined by several studies. [AH02] showed that user participation and TMS are mutually reinforcing tactics and other studies consistently show that TMS is a major (if not the number one) CSF in IS and ES implementations [DNH09, YJ08, NLW08, BS08, KB06, MMZ03, NZL03, UHU03]. It was also found that it affects the success of brainstorming sessions [MP09]. However, the body of research linking TMS to IS implementations, conceptual definitions of TMS and its measurement constructs are inconsistent and under-specified [DNH09]. So, in order to see how TMS construct relates to a successful participative project, let's first take a closer look at what TMS is. Then, I shall elaborate upon how TMS should be exercised.

In their analysis of IS participation research, [MM04] found that "top management support" (TMS) is often seen as enabling or constraining conditions for user participation. They argue that this labeling implies that TMS is a distinctly different concept from user participation and that this is a mistake. Instead, they believe that TMS is a form of user participation [MM04]. This is the behavioral perspective to TMS, where TMS is viewed as a set of managerial behaviors such as offering technical assistance, providing resources, engaging in personal interventions, participating in decision-making, and taking on sponsorship of a project [DNH09]. It is also called the 'active participant' view [MM04] or 'top management participation' [LI07].

This behavioral perspective opposes the attitudinal perspective where TMS is seen as a set of favorable attitudes that managers should express, such as active and enthusiastic approval, involvement and commitment. It is also called 'top management beliefs' [LI07], or the 'back-seat driver view' [DNH09]. In their study, [DNH09] concluded that the behavioral perspective should be the point of focus in TMS, rather than the attitudinal perspective.

So, we want managers to actively participate. But how should they do this? Specific TMS activities are not well-specified in literature, and of course they depend upon the IS implementation context. But what should managers generally do? [DNH09] dug through a substantial body of research and came up with three main ingredients for TMS:

- Resource provision – actions related to supplying key resources such as funds, technologies, staff, and user training programs. This ingredient affects project completion [DNH09].
- Change management – actions related to fostering organizational receptivity of a new IS (examples: showing strong leadership, attending meetings, decision-making participation, actively encouraging and helping users, offering rewards/incentives, actively involving and engaging users, demonstrating commitment to users, developing coordination mechanisms, instituting changes to performance goals, etc). This ingredient impacts the formation of user satisfaction and attitudes [DNH09].
- Vision sharing – actions related to ensuring that lower-level managers develop a common understanding of the core objectives and ideals for the new system (e.g. by clearly communicating a strong and consistent message and by proactively clarifying any confusion or uncertainty that may arise). This can also be viewed as marketing the project [AH02]. This ingredient influences middle-manager buy-in [DNH09].

A possible supporting structure to exercise TMS is a steering committee, which will be in charge of resource provision, planning and management of activities and processes and setting up communication structures [CR07].

4.3.6.1 Conclusion

Top management support plays a large part in the shaping of a successful participative project. First of all, top managers are also participants, as we have seen in the section on participants. This is thus in accordance with requirement R41: "All internal managers, personnel and process owners should be considered to be participants, as well as external managers, IT specialists and customers". As a participant, a top manager can also take a role as advocate or influential opinion leader (R42). This would be a behavioral as well as an attitudinal perspective to top management support, which is most likely to gather support. A manager could also take a role as a process facilitator whom leads a group of employees during participation activities (R48). Managers must however not gain too much influence (R53). In conclusion, the following requirement can be defined for top managers:

R55: Top managers should be active participants instead of back-seat drivers. In participating, they could also take a role as advocate or facilitator.

Secondly, it is concluded that managers have to (pro-)actively participate in the project and provide resources, share visions and exercise change management techniques. In relation to previously defined requirements, this means that they could ensure that there are processes in place to support non-participants' commitment (R7), that participants are actually allowed time to participate and that there is a budget to hire replacements when necessary (R45), that the gap between the current and desired states is to be recognized and communicated clearly (R24) by top managers, that there is a clear and shared vision (R54), that a human relations culture is fostered (R27) and that there is an aim to create organizational reshaping capabilities (R28). Therefore, another requirement that can be defined for top managers is:

R56: Top managers should provide the necessary resources, share their visions and undertake action to foster organizational receptivity of an IS.

4.3.7 Relationships and trust

Another implicit condition for successful participation activities with participants, developers, change agents, top managers and other stakeholders is the existence of positive relationships and trust between them. Several papers explicitly highlight the importance of the relationship between developers and users [HK08, MM04, EK00, OL04, HA03, GA01]. And indeed, PD advocates that users and developers should engage in a relationship of mutual and reciprocal learning, where users can make their needs known to developers and the developers can educate the users about the technical possibilities [GA01, HA03]. Where some studies see a role for prototypes in that regard, [HA03] argues that prototypes are not enough. A shared understanding and shared practice of needs and technological possibilities has to be developed by a strong relationship [HA03].

This social relationship will make the developers feel closer to the users and their work processes. In this way, they can better take care of the social and humanistic requirements of the users [MM04, HA03]. This is also the idea behind ethnography [KU03]. Through this relationship, developers can also better communicate the relevance and importance of the project to the participants [EK00]. In this relationship, developers should give users the space to tell their stories, because such narrations can disclose a lot of tacit knowledge essential to a good systems design [OL04].

In order for this relationship to form, it is necessary that there are open lines of communication and a healthy amount of trust between the users and the developers [EK00]. Other than relations and trust between users and developers, [MM04] argues that interactions among *all* parties of stakeholders are likely to have important but poorly understood consequences for the functional and relational outcomes of the projects. An obvious example is the relationship the change agent has with the users, developers and other stakeholders. There will be a lot of interaction between them with a lot of different purposes [HA03]. The several ingredients of positive relationships and trust will now be explored in more depth.

4.3.7.1 Communication

The IS implementation literature has identified communication as an important factor in achieving IS success [BH01]. We can already see from the previous sections on best practices that communication is very important. It plays a role during the identification of user requirements, assumptions, attitudes, problems, etc. The communication efforts of users can help to make their needs and desires known, and they can discuss them with other users. Also, they can discuss their reservations and concerns. As such, communication forms the basis for information systems development [BH01]. Communication is defined as *"activities involving formal or informal exchanges of facts, needs, opinions, visions, and concerns regarding the project among the users and between users and other project stakeholders"* [BH01]. As such, it is implicitly woven into almost every participation activity, as we can see in the section on participation activities best practices.

Furthermore, the importance of communication emerges in the roles of the participants, developers, change agents and top management. Communication and sharing of knowledge between these parties is vital [GA01, ST08, HK08]. Examples are that the developer should inform the user about the technical possibilities of the information system [HA03] so that she can better articulate her requirements and so that she is less intimidated by information technology [CR07], and that the gap between the current and desired state needs to be communicated clearly among all parties [KL08]. But most important is probably the communication between developer and user in the process of identifying requirements. The developer can take several approaches to this. She could take an analytical approach to communication where the end user has preexisting needs and the job of the developer is to identify those. Or, she might take an interpretive view where the customer has no needs until they are articulated through the interaction between developers and users. In literature, the latter approach is advocated [ST08]. As we have already seen in the section on participation activities, prototypes and simple representations of work and systems can aid such communication [GA01].

4.3.7.2 Trust

Trust is important to make sure that everyone is comfortable contributing to the process. To build trust, the developing team can offer a workshop to allow the participants to get to know the developers on a personal basis. Such a workshop can also be used to give the users some technical expertise [EK00], which might play a very important role [HK08, SA96]. Also, this workshop or meeting may be used to let users tell their stories. However, [OL04] fears that the users might be overwhelmed by developers on a first meeting, which would inhibit them from telling their stories. Therefore, he suggests that the participants first have their own meeting. After that, they can meet with the developers without getting overwhelmed by their plans, designer tools, ideas and perspectives.

4.3.7.3 Common ground

Another important aspect in the relationship between developers and users is the development of a common ground and common viewpoints, to develop some mutual understanding [SHK08, GA01]. Different work practices use different terminology, therefore the important terms, definitions, and objectives of the practices should explained to other participants, on a personal and organizational level [SHK08]. Users and developers should get a shared holistic overview of the work processes that are about to change [SHK08] and they need to share the same domain-specific vocabulary [OL04]; this is the key to a better understanding of what takes place at work.

4.3.7.4 Conclusion

In conclusion, it is important that stakeholders carefully invest in their relationships. The importance has already been shown specifically for change agents in requirement R50. In order for relationships to form, open lines of communication, transparency and a healthy amount of trust are needed. This will in turn enhance a shared, mutual understanding of the work practice with common ground,

viewpoints and terminology (R9; R10) and a shared understanding of needs and technological possibilities. In this way, the social and humanistic requirements of the users can be better taken into account (R12). Also, through this relationship, the relevance and importance of the project can be communicated more clearly (R24) and the technological possibilities of the IS can be clarified (R11). Thus, communication and sharing of knowledge between stakeholders is very important. In order to build trust, a workshop or other activity can be organized where stakeholders can get to know each other on a personal basis before starting the project. Overall, a culture of partnership and mutual respect should be engendered [EK00]. This leads to the identification of the following requirements:

R57: Stakeholders should have positive relationships with each other and trust each other.

R58: There should be open lines of communication during the project, where decisions and issues are transparent.

R59: A culture of partnership and mutual respect should be present, otherwise engendered.

An addition to R13, R14 and R15 has also surfaced here: Developers should take an interpretative view during communicating with stakeholders about requirements for the system to be developed. Prototypes and simple representations of work and systems can aid such communication. As such, another requirement for developers has surfaced:

R60: Developers should take an interpretative view during communicating with stakeholders about requirements for the system to be developed.

4.3.8 Summary and conclusion

Researching the best practices of user participation has uncovered methods, (supporting) processes, conditions, contexts and contingency factors that influence the effect of user participation on IS solution success, and thereby the quality and success of user participation. These best practices are categorized into: participation activities; participants; change agency; teams and leadership; balance between managers and users; top management support; and relationships and trust. Requirements R30 to R60 have been distilled from these best practices, completing the answer to the research question *"Which factors influence the quality of user participation?"*

Additionally, these best practices provide a framework to describe the DB54 method in great detail, covering all relevant aspects of participative methods. In this way, the method will be described thoroughly and conclusions can be linked to activities and contexts. This will prevent an issue such as described under the 'inconclusive results' issue, where studies lacked a detailed description of the participation activities and the context in which they were performed.

4.4 Categorizing requirements

As an answer to the research question *Which factors influence the quality of user participation?",* a whole list of requirements has been identified in this chapter. These are the factors that theoretically influence the quality of user participation. A categorized overview is presented below.

4.4.1 Stakeholder requisites

The stakeholder requisites can be seen as the requirements that should be satisfied for participants and other stakeholders on an individual level before a successful IS participation process can take place. This relates mostly to gaining insight in work processes to solve the system quality issue and creating readiness for change. Also, it relates to roles participants should be able to fulfill and what skills this requires of them, and to the existence of open and transparent communication and good relationships and trust between the participants and other participants and stakeholders.

R9 Users should have a thorough understanding and relevant knowledge of the actions and consequences of their work.

R10 Users should have a holistic overview of the entire work process.

R22 User readiness for organizational change should be created, before or in the early stages of the IS project.
R25 Perceived personal competence should be present at participants, otherwise nurtured.
R26 Organizational commitment should be present at participants, otherwise nurtured.
R42 Participants should be able to act as opinion leaders, advocates, input gatherers and mediators. Therefore, they should have a strong social network and commit to informal participation activities outside of organized sessions.
R43 A number of participants should have relevant IT expertise.
R50 Change agents should have strong social skills and aim to develop positive relationships with participants and other stakeholders.
R57 Stakeholders should have positive relationships with each other and trust each other.

4.4.2 Organizational requisites

The organizational requisites can be seen as the requirements that should be satisfied on an organizational level before a successful IS participation process can take place. This relates mostly to a culture of strong communication, partnership and mutual respect. It also relates to the existence of supporting processes and mechanisms for user participation, on an organizational level.

Supporting mechanisms

R7 There should be processes in place to support the non-participant's commitment.
R17 Conflicts and tensions between stakeholders should be prevented, or mechanisms should be in place to resolve them.
R19 A party should be appointed with the authority to make decisions in case of a non-ending conflict.
R24 The gap between the current and desired states needs to be recognized and communicated clearly to participants.
R28 Organizational reshaping capabilities should be present, otherwise created

Culture

R18 Communication between stakeholders should be clear and open.
R27 A human relations culture should be fostered, with open communication and participative decision making as the most important ingredients.
R58 There should be open lines of communication, where decisions and issues are transparent.
R59 A culture of partnership and mutual respect should be present, otherwise engendered.

4.4.3 Participant selection

These requirements relate to who should be selected to participate, how they should be selected and in what form they should participate.

R3 The group of participants should be not too large, so that they can all participate effectively.
R4 Relevant types of stakeholders should be represented as participants where possible.
R41 All internal managers, personnel and process owners should be considered to be participants, as well as external managers, IT specialists and customers.
R44 Stakeholders should be given the opportunity to volunteer for participation.
R46 Stakeholders should already be invited to participate before or during the start of the project.
R48 Change agents should be (partly) responsible for managing the commitment and expectations of participants, selecting participants, structuring teams, and designing and executing participation activities.
R55 Top managers should be active participants instead of back-seat drivers. In participating, they could also take a role as advocate or facilitator.

4.4.4 Participation process

These requirements mostly follow from the best practices on user participation. It tells us which requirements should be satisfied during the participation process, in order to have a theoretically qualitative and successful participation process.

Participation activities

R1 The participation activities should be experienced by the participants as being rich and meaningful.
R6 Participants should engage in activities to commit the non-participants
R21 User participation should be process-centered, where an entire business process is the focus of the change; there should be a healthy focus on organizational changes in people, structures, tasks, and business processes that go hand in hand with an IS implementation.
R23 User participation activities should be practiced in the context of organizational change.
R31 The focus should be on the current situation as well as the future situation.
R33 Participation activities should focus at least include brainstorming, prototyping and feedback sessions, and iterations in these sessions.
R34 Participants should participate in system development, system implementation, project management, change management and business process redesign activities.
R40 Stakeholders that cannot participate in a rich manner should be included in thin participation activities such as anthropological methods and workplace observation.
R47 Participants should perform participation activities in their own workplace.

Participants' role

R2 The participants should be given influence and responsibility, at least during participation activities.
R38 Participants should be given personal autonomy.
R39 Participants should be given the opportunity to perform significant tasks.
R53 Neither managers nor end-users should have all influence in decision-making; there should be a healthy balance.

Creation of teams

R30 Participants from multiple disciplines should be put together in workshops
R32 Participants should be put together in teams focusing on a business process.
R51 Participants should perform profession-specific intra-group activities as well as multi-disciplinary inter-group activities.
R52 Teams of participants should be led in a 'group' leadership style, where a change agent or a manager is most likely to take up the leading role.

Developers' role

R8 Users should be aware of and encouraged to articulate all of their requirements.
R12 The social and humanistic requirements of users should be made explicit.
R13 Developers should keep communicating with the users about their requirements until a satisfactory 'blend' is achieved.
R14 Developers should take care that requirements of a few users are not over-emphasized
R15 Developers should not become prejudiced about user's needs.
R35 Developers should use a cognitive elaboration approach.
R36 Developers should use business-focused instead of IT-focused analysis techniques.
R37 Developers should employ techniques to capture socio-technical requirements.
R60 Developers should take an interpretative view during communicating with stakeholders about requirements for the system to be developed.

Change agency

R11 Participants should be informed about the technical possibilities of an IS.

R48 Change agents should be (partly) responsible for managing the commitment and expectations of participants, selecting participants, structuring teams, and designing and executing participation activities.
R49 Change agents should take a facilitation approach to user participation.
R55 Top managers should be active participants instead of back-seat drivers. In participating, they could also take a role as advocate or facilitator.

Top management support

R24 The gap between the current and desired states needs to be recognized and communicated clearly.
R45 Sufficient resources (especially time and money) should be available for the participants to effectively participate.
R54 The participation process should be guided by a vision; an overall direction with common viewpoints and clear goals.
R55 Top managers should be active participants instead of back-seat drivers. In participating, they could also take a role as advocate or facilitator.
R56 Top managers should provide the necessary resources, share their visions and undertake action to foster organizational receptivity of an IS.

4.4.5 Other

These are the requirements that do not really fit into the above categories.

R5 Non-participants should become committed to the IS project.
R16 The resulting IS should meet organizational needs and objectives.
R20 The approach should be efficient in terms of controlling costs and time.
R29 People who will manage new technologies should be allowed to initiate technological changes.

4.5 Summary and conclusion

There are issues with the efficiency and the effects of user participation, from which factors that influence the quality of the participation have been distilled. Additionally, literature has come up with suggestions to improve user participation effects. These suggestions encourage us to research methods, processes, conditions, etc. that should be accounted for when shaping a successful approach. Factors that influence the quality of the participation have been distilled from such best practices. Also, it is asserted that participation in IS design and development leading to IS success is not enough because it does not guarantee an optimal business solution. Instead, the focus should lie on participating in the entire organizational change, which will lead to *solution* success. Factors that influence the quality of the participation have thus also been distilled from applying this organizational change perspective.

In light of the organizational change perspective, I feel that in today's context [LR00, MM04], merely focusing on IS design participation does indeed seem unrealistic. Systems get bigger, there are more and more users, more stakeholders having a say [MM04]. Simply having users participate in the physical design of such systems (which is a common practice in participatory design) would probably prove fruitless. I believe that the functionality of the system is more important than the interface, and this required functionality (including humanistic and social requirements) is what will surface when focusing on entire business processes. Therefore, I think it is wise to let users participate in the entire organizational change and embrace the new IS as part of it [JJG05, KL08, SK09].

Based upon the issues and solution directions of user participation, factors that influence user participation in IS implementations have been defined and have taken the form of requirements R1 to R60. This list of requirements is the final answer to research question "*Which factors influence the*

quality of user participation?". Satisfying these requirements and thus influencing these factors will theoretically improve the quality of user participation. I do not believe that I can define an approach that satisfies all of these requirements, because the theory has its flaws and I have no practical experience. I do however believe that I can make a big move towards shaping an approach that satisfies the requirements by testing a user participation approach with a focus on organizational change that has been developed in practice: DB54.

And now, with the factors influencing the quality of user participation being clear, it can be suggested which of those factors DB54 can influence (or: which of these requirements DB54 can satisfy), and hypotheses can be created based upon that. But first, more insight into the method is needed. Therefore, the next chapter will explain the DB54 method in detail. What we have learned in this chapter regarding this is that the approach should be well-defined in terms of methods, processes, activities, roles of participants, conditions and context in order to reach valuable conclusions. Therefore, I shall use the knowledge on the best practices in user participation as a framework to describe DB54. When the method is well described, the research question *"Which of these factors can DB54 theoretically influence?"* can be answered.

5 DrawBridge54©

In this chapter, the DrawBridge54© method (DB54) will be described in terms of the best practices from the previous chapter. With more insight into the detailed workings of the method, the research question *"Which of these factors can DB54 theoretically influence?"* can be answered. 'These factors' refer to the list of requirements to a successful user participation approach as defined in the previous chapter which, when satisfied, improve the quality of user participation in IS implementations. But first, the philosophy of the method will be described to give the reader some useful background information.

5.1 Philosophy

5.1.1 Why was the method developed

In his work as a consultant and interim manager, the developer of the DrawBridge54 method noticed that managers often felt that employees did not understand what they meant, and that employees often felt that managers did not understand the way things were run at their level. This might be attributed to the fact that in today's market, businesses are constantly changing and moving to keep up. Strategic and tactical changes like (de)centralizing, outsourcing, implementing an Enterprise System, etc. may follow each other quickly. For top managers, middle managers, their departments and their employees, it can thus become unclear who does what, who has which responsibilities and what part they play in the main business processes. Also, employees are usually resisting top-down enforced changes for several reasons, which results in a discrepancy between strategy and operation. All this can lead to strategic, tactical and operational issues, frustrations and inefficiencies. And the developer of DrawBridge54 also noticed that there is no time to straighten this out, because they are usually overwhelmed by their operational, day-to-day work activities. As such, DrawBridge54 was originally developed to draw a bridge between the managers, departments and employees, to give them insight in each other's perspectives and improve or change processes so that they are optimally aligned and efficient.

5.1.2 The philosophy of the process

A basic foundation

In the DrawBridge54 philosophy, the departments with their employees are first the main point of focus. The idea is that in order to improve or change, you first need a basic foundation there. This foundation would be created by defining a shared understanding of their work practice, a common language, common rules, etc. together. Also, employees are challenged to translate the business strategy to the department strategy and consider how they implement this strategy in their operational processes. The idea here is that a bridge is drawn between business strategy and employee operations. Furthermore, the departments are encouraged to map their work processes to responsibilities; who do they think has which responsibility in a certain task?

DrawBridge54 aims to achieve this effect in several departments simultaneously. Discrepancies in defined responsibilities and between several departments can be identified in this way. Also it can be seen what views other departments have of what work a certain department does, and if this is correct. Managers and other departments can see which language a certain department speaks, and if they speak the same language. If not, they can act upon it. DrawBridge54 aims to lay all types of discrepancies bare, because they can be the basis of interdepartmental issues.

Identifying and solving issues

Upon this foundation, employees and managers are encouraged to define and solve both intra- and interdepartmental issues that they recognize in their daily work practice. Because employees of one department now speak the same language and have the same view of their work process, they can

all agree upon an issue and help each other to define it and think of solutions. The philosophy here is that employees should take as much responsibility as they can; they must influence what they can influence and not waste energy on things that fall outside of their scope of influence. This act of influencing encompasses actively involving third parties which are required to solve an issue. When involving other parties, it is essential that they understand each others' language. This is where the language foundations from several departments come in; they can be compared and discrepancies can be recognized. When these are solved, a language foundation is created for the entire business. This can change the nature and solution of an issue by eliminating possible misinterpretations; once the entire business speaks the same language, they can further define the problem and the possible solutions together, without room for misinterpretations. Here, the focus of DrawBridge54 changes from departments to the entire business. Discrepancies in views on processes and responsibilities between departments and operational, tactical and strategic issues are made transparent and be solved by a cooperation of the involved stakeholders.

5.1.3 Key aspects

Emotional to rational

DrawBridge54 gives individuals the chance to first express their emotions and opinions in defining an issue. The idea is that this inevitable as well as necessary, because most people first need to get their emotions heard before they are able to approach a problem rationally. DrawBridge54 later encourages individuals to change their way of looking at a problem and to convert the issues to an objective story, so that every involved party can treat it rationally rather than emotionally.

Participation

DrawBridge54 relies heavily on user participation; the employees themselves are given responsibilities and influence in carrying out the method. This will partly lead to bottom-up initiated changes, which will largely bypass the resistance to change problem, because such user participation generally leads to user involvement. Top-down initiated changes could also be more successful, because the employees will be well informed of what is changing (managers and employees now speak the same language) and the objective reason for that change.

Continuous improvement

The DrawBridge54 method is not intended as a onetime exercise. With the business and its context constantly changing, the definition of work processes, mapping of responsibilities etc. will also change and therefore new issues may arise and other may become irrelevant. Therefore, DrawBridge54 is intended as an iterative method, where one can constantly go back to the previous steps and alter processes and issues. In this way, DrawBridge54 can be used a continuous improvement method for an entire business. Whenever something changes or a new issue arises, it can be picked up in DrawBridge54 by a manager or employee. This can ensure that processes are always optimally aligned and efficient.

When can you use this method

According to the developer of the method, DB54 can be used in situations where there is a misbalance of any form within any aspect of the organization; if something does not quite work in an organization, DB54 can solve it. In practice, it has been used for several purposes such as operational excellence and creating shared service centers. But in the end it all comes down to changing processes, policies, structures, culture, etc – which also need to be changed in an IS implementation. This is already a possible value of DB54 in IS implementations.

5.2 Method

5.2.1 Participation activities

The method consists of several steps. First, the manager of a department is informed of how the method works and what results it could bring. The manager should then relay this information to the employees and invite all employees to the first activity that is performed; the group brainstorm.

All the activities that are described next (except the brainstorm), can be performed in groups of differing compositions, in a flexible timeline. All employees may be directly involved at once, or in several sub groups, or can even work on it individually. But it is vital that with each activity, each employee has been involved and given the opportunity to exert influence on the result. Therefore, more group sessions can be held, and when individuals or sub groups further work it out, other group sessions should be organized to gain everyone's feedback and eventually their approval.

Brainstorm

The first brainstorm session has to be a group brainstorm where all employees of a department are present. During this group brainstorm, employees are challenged to think about what they are actually doing. While a department may have visualized process flows and documents describing their process, in practice it seems that the employees view their work from a different perspective. Therefore they are encouraged to mention the tasks that they perform, and to structure and cluster these in main and sub tasks. Also, the sub tasks are to be described by verbs, to further flesh them out. Two standard defined sub tasks are overall strategy and derivate strategy, which forces the employees to consider the overall business strategy, what this means for their department and what it means for their tasks.

The result of this session is that all employees of a department have created a representation of their perspective on their work processes, which they all agree upon. Also, it has forced them to take a more abstract look at their work than they might usually do. This is a first step in creating the shared understanding of their work practice. The overall value of this result for the business is that other parties have insight into the way a certain department views their work, which can improve mutual communication and understanding. Also, if another party (for example a top manager) does not agree on the representation of the tasks, there is a solid base for discussion about it.

Responsibilities, overlaps and issues

Here, employees are first encouraged to define other departments and/or stakeholders that are involved in their tasks. The RACI model can be used for this; for each task, employees will define which other parties have a responsibility, accountability, are consulted or are informed. Where other parties are involved in a task, this can potentially lead to issues because employees will have an overlap with and be dependent upon other parties for an optimal completion of their tasks. Therefore, issues are also defined in this session, along with a ranking of how critical these issues are. These issues do not all originate from overlaps in tasks; issues can be interdepartmental as well. Issues do always have to relate to a subtask; if there is an issue which cannot be related to a subtask, this means that the definition of subtasks is incomplete. And in some situations, one issue may manifest itself in several subtasks.

The result of this session is that all employees of a department have created a representation of their perspective on where the responsibilities, overlaps and issues are in the daily tasks that they perform. This is the second step in creating the shared understanding of their work practice. The overall value of this result for the business is that other parties have insight into what a certain department sees as their responsibilities. It also gives other parties a transparent insight into which issues a department encounters in performing their daily tasks. This can also improve mutual communication and understanding, and forms the basis for the definition of solutions. What also

applies here is that if another party (for example a top manager) does not agree on the representation of the responsibilities or issues, there is a solid base for discussion about it.

Detailed activities

The next activity that is to be performed is a detailed description of activities that are performed for each sub task. Also, it is asked whether this task is described somewhere or not and whether an IT system is involved in this task. This allows the employees to really get down to their level, where the first two activities might be seen as a more abstract exercise for them.

The result of this session is that all employees will have had the opportunity to speak everything on their mind on a certain task, and have a place to write this down. Other than a possible psychological effect for the employees, this can function as a test of the results of the previous two activities. When working out the tasks and describing them in detail, it might for example show that one sub task is better defined as more, or vice versa, or that there are more parties involved than originally was thought, or that the issue has not been clearly defined yet. This can be seen as the final step in creating a shared understanding of a department's work practice. The overall value of this result for the business is that other parties gain even more insight into the way a certain department views their work, which can improve mutual communication and understanding.

Action plan

The next session is all about creating possible solution directions for the issues. For each issue, one or more solution actions are defined in a hugely summarized form. Also, employees are asked to think of how one could measure whether or not this solution has had effect. In this manner, solutions are made measurable.

The result of this session is that all employees are encouraged to think about solutions to their problems on a high level, because of the summarized form of solutions. In this way, they might find out that the solution is actually a matter of for example policy, structure, or process change. And of course it is a first step in defining a solution to a problem. The overall value of this result for the business is that other parties can see which direction a department wishes to take in solving an issue. They might agree or not, or might have alternative ideas, and the basis for a constructive discussion has been laid. Also, several departments might encounter the same issue from their own perspective, and they can compare their solutions and discuss them with each other, based upon their mutual understanding of each other's views.

SPION models

The final activity that will be performed, and the one that should take the longest, is the creation of SPION models. In English, this translates to SPY Models, but SPION is also an abbreviation of 'Situatie' (situation); 'Probleem' (problem); 'Implicatie' (implication); 'Oplossing' (solution) and 'te Nemen acties' (actions to undertake). Each of these five aspects are to be described in detail, with the correct focus and in an objective manner. Before describing the situation however, is the description of the definition of the task which this issue relates to. After this, the employees are encouraged to describe the current situation of the task in prose. This relates to the 'detailed activities' exercise, but more detail is required, as well as explicit mentions of involved parties and their role in the process. From this situation, the problem should follow logically. This problem relates to the defined issue in the 'responsibilities, overlaps and issues' exercise, but is here worked out in more detail and if necessary, split up into several sub problems. After the detailed problem definition, the implication is defined: "What would happen is this problem is not solved?" This will clarify the weight of the problem, and is also a test for the criticalness rank the issue got before. Then, it is time to define the solution to the problems. This related to the 'action plan' exercise, but again the focus here is on more detail. Several alternative solutions can be worked out here. The idea is that the 'SPIO' elements will all fit onto one page and form a logical story that external people will immediately

understand. Finally, detailed actions to undertake to implement this solution (such as 'planning a meeting with Tom', 'describe the process in a document') are defined, and employees/managers are made responsible for performing these actions within a certain time limit.

The result of this SPION models is that issues can be solved, by employees themselves. This will give them the opportunity to alter their tasks as they see fit and become intrinsically motivated for the change that will follow from it; they have been given influence and responsibility. The overall value of this result for the business manifests itself mainly in intradepartmental issues. Ideally, a SPION model objectively explains the situation, problem and proposed solution in a focused and detailed manner. This forms an excellent basis for discussions to solve this issue. Also, several departments might have created a SPION model for the same issue, or all relating to the same task. They then have great bases for discussions, based upon which they can work out a solution which they can all agree upon. In the end, participants have participated in all phases of a change, including the execution.

Iterations

These activities seem chronological in the sense that you need to complete one activity in order to move on to the next. However, this is only true per subtask. When having defined only one subtask, you can perform all other activities for that subtask, including making a SPION model. You need not have defined all tasks, and this might not even be possible because of constant movement and changes in businesses and department. Therefore, an activity is always only completed 'for the time being'; it is always open to the addition or change of elements. For example, new insights or changes made to tasks (including as a result of SPION models) can lead to new or altered tasks, responsibilities and issues. In such cases, these changes are to be processed by DB54, by going back to the appropriate activities (usually the first or second), perform the changes, and redo the following activities for that element, because they will be partly based upon outdated information.

Web-based tool

All of the activities are supported by a web-based tool. In this web-based tool, an environment is provided where each of the described activities can be performed. This means that each result is documented, always up to date and always viewable for participants and stakeholders. Each department has their own environment in the tool in which they can fill in their tasks, subtasks, responsibilities, SPION models, etc. Departments are able to view the results of each other, so the tool also brings transparency.

5.2.2 Participants

Department manager

The role of the manager can vary per case. Ideally, the manager himself would participate on the same level as the employees. Because the manager usually has a lot of knowledge about the way the department works, he can provide useful insights. The manager should not overrule employees; otherwise the effect of participation would not be achieved for them. The manager could also take a more back-seat view and see what the employees come up with. What the manager should always do however is show full support for the method and offer resources, support and encouragement to the employees to work with DB54. Employees should feel able to afford putting time in participating.

Employees

The DB54 method does not provide a framework for selecting employees that will participate. Instead, all employees are given influence and responsibility. Depending upon the size of the group, this can be done in different ways. In small groups, each employee can directly work with the method and tool himself. In larger groups, it may be necessary to appoint 'lead' employees who will participate directly and gather feedback and opinions from the other employees and process this input in DB54. For these 'other employees', participation might seem thin, but they still get influence and responsibility, only in a more indirect way. Besides, thin participation is better than none

[MM04]. The DB54 method also does not provide a framework for selecting such 'lead' employees. In practice, they can volunteer , or be selected by managers and/or the process facilitator.

Other stakeholders

Other stakeholders, such as top managers, can be given read or write access in the DB54 tool, so that they can also participate or at least keep an eye on the results and discuss them with the responsible parties when they sense a need to do this.

5.2.3 Change agency

The DB54 activities and the working with the tool are facilitated by a process facilitator. This process facilitator can be either external or internal. When he is external, it means he will facilitate all activities from beginning to end and keep an eye on the results. This guidance focuses on making the employees comfortable, making them participate in defining processes, issues and solutions, and working with the tool. What he mostly does is ask questions to raise discussions and give his objective opinion. When the process facilitator is internal, this means that the developer of the method will train the internal facilitator in the method and tool, so that the department / business can use the method and tool completely by themselves. In practice, the businesses first let the external facilitator facilitate the process until results are achieved (issues are solved), after which they can use the method and tool by themselves. In some cases, there can also be an external as well as an internal process facilitator.

5.2.4 Teams and leadership

Employees are flexibly put together, but they are not in fixed teams. Everyone is free to participate with whomever he wants, at any point in time. When there are organized sessions, sometimes all employees will be present and sometimes a sub group will be present. However, the 'lead' employees can be said to form the project team. Depending upon the context, teams might be created which will focus on performing the DB54 activities for certain (sub)tasks, but this does not have to happen. Also, activities are not necessarily performed by inter as well as intra profession groups. DB54 does not create a holistic overview in that manner, but rather tries to create it through transparency and discussions. In this sense, there are intra profession groups, only they are not working together physically but virtually.

In terms of leadership, it is true that when the manager operates on the same level as the employees, there will be group leadership (where the managers and employees jointly make decisions). DB54 can however not enforce this, and therefore the consultative leadership style (where the manager gathers input from employees but makes the decision himself) could also occur in practice. The process facilitator leads the group in the sense that he explains which activities should be undertaken and why, and facilitates the group in this activities. He does however not have any authority, but this could always be granted to him in practice.

5.2.5 Balance of influence

The balance between management and end-user influence is healthy, in theory, because DB54 allows end-users as well as managers to fully participate. However, in some cases, managers or participants might not take enough influence, or managers might take too much influence, or in extreme cases participants could even take too much influence. DB54 does not have mechanisms in place to straighten this out, other than communication efforts by the process facilitator.

5.2.6 Top management support

In most cases, top management support is either present or not. Ideally, top management will actively engage in resource provision, change management and vision sharing. DB54 does not provide a mechanism to create management support, other than communication of its necessity by the process facilitator. To this purpose, the developer of the method has set up some guidelines for management support:

1. Inform the employees.
2. Repeat this information.
3. Discuss the progress of the project during bilateral or departmental meetings.
4. Visualize the results of the process by printing the sheets from the web-based tool and posting them.
5. Address inappropriate or unsupportive behavior.
6. Delegate responsibilities to employees.
7. Give priority to the project, mostly in terms of time.
8. Give a good example by actively participating.
9. Make sure that the project keeps some pace.

5.2.7 Relationships and trust

For relationships, trust and good communication, it is also true that it usually is present or not. However, due to the transparent nature of DB54, these factors could be nurtured by use of the method and tool. DB54 enforces lots of communication and knowledge sharing in order to create the results in each activity, guided by the process facilitator. DB54 also explicitly communicates gaps between current and desired states. Also, an explicit aim of DB54 is to create a shared understanding, where employees all speak the same language. This strongly relates to the creation of a common ground and a shared terminology. These communication activities and the creation of a shared understanding could in turn better inter- and intradepartmental relationships and trust.

5.3 Summary and conclusion

In summary, we can see that DB54 is an organizational change method which is all about employees speaking the same language and solving issues themselves in a structured way. It focuses on objectivity, rationality, participation and is meant to be used as a continuous improvement method with many iteration cycles. It consists of a number of steps, eventually leading to more efficient processes which are partly shaped by the employees themselves. It is supported by a web-based tool which keeps track of the progress and results. The usual participants are department managers and employees, and they are a team led in a group or consultative leadership style. An external process facilitator fulfills an important role as change agent and facilitator of discussions. With this information on the DB54 method, we can hypothesize which of the factors that influence the quality of user participation can be influenced by DB54, thus answering the research question *"Which of these factors can DB54 theoretically influence?"*.

6 Theoretical model

Based upon the issues and best practices of user participation in IS projects and the organizational change perspective, a lot of requirements have been identified in chapter four. The requirements have been categorized in: stakeholder requisites; organizational requisites; participant selection; participation process and others. These requirements give an idea of what user participation for IS projects should look like, in theory. They are the factors that influence the quality of user participation. Based upon these requirements and the description of the DB54 method in the previous chapter, this chapter will explain what the requirements mean for the theoretical model in this study, and thereby answer the following research question *"Which of these factors can DB54 theoretically influence?"* in the form of propositions.

6.1 Research model

The central question in this thesis is how DB54 can contribute to the quality of user participation for IS implementations. Based upon the description of the method, DB54 is not fit to be employed as a full-fledged user participation tool in IS projects. This is because some requirements, such as R11, R16, R34 and R43, are very IS specific. Since the focus of DB54 is used for organizational changes and not for IS implementations, the method is not developed to satisfy these requirements. Also, since there is no 'developer' of an information system in a DrawBridge54 project, requirements R13, R14, R15, R35, R36, R37 and R60 also fall out of scope.

Consequently, DB54 is not used as a user participation method for IS implementations in the case studies. Instead, it is used as a method to create operational excellence. Therefore, it is impossible to measure how the user participation process of DB54 directly contributes to IS success. Also, the theory of user participation in IS projects is not sacred; otherwise the need to contribute to this theory from a practical perspective would not have been identified in chapter one and two.

For these reasons, the intention of this study is not to test to which extent DrawBridge54 satisfies all the defined requirements for a user participation process in IS projects. Instead, these requirements are used to compare the DB54 practical user participation process to the theory of a user participation in IS projects. First of all, this provides a framework to describe the participation process in detail. In chapter four, we have seen that this is important for the conclusions of the study. Second, this will allow us to notice differences and similarities between theory and practice and generate a discussion based upon that. This can lead to interesting insights because in my opinion, there does not have to be much difference between a user participation process in implementing operational excellence and a user participation process in implementing an IS. We can see to which extent these are similar things, and what the DB54 method could then learn from theory and vice versa. In this way, a practical perspective to user participation can add a value to the theory. For these two reasons, the 'participation process' requirements have been used as a basis to describe the DB54 method in the previous chapter and will also function as a basis to measure the user participation in the practical cases in the next chapter.

When looking at the other requirements, it is interesting to see if DrawBridge54 could theoretically be used as a pre-IS project tool, by satisfying the requirements of the participant requisites and organizational requisites. These are the requirements that are about supporting conditions and processes for user participation, and they are related to practicing organizational change and creating readiness for change. Additionally, in light of an IS change, it is interesting to see if DB54 can be used to successfully accomplish the complementary organizational changes in processes, policies, structures and people. Fulfilling these requirements will theoretically increase the quality of user participation in IS projects, and the propositions will therefore be based upon these requirements.

6.1.1 Propositions

As a result of exercising the DrawBridge54 method, I propose that the requirements relating to the stakeholder and organizational requisites can be satisfied, and that organizational changes are effectuated. This leads to the following propositions:

When participants exercise the DrawBridge54 method, they:

P1: will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work (R9/R10).

P2: will gain a more positive attitude towards change and report higher levels of readiness for change (R22)

P3: will report higher levels of perceived personal competence (R25)

P4: will report higher levels of organizational commitment (26)

P5: will gain a better understanding of the gap between the current and desired states (R24)

When the DrawBridge54 method is exercised within an organization, it will:

P6: create organizational reshaping capabilities (R28)

P7: foster a human relations culture with open, clear and transparent ways of communication and participative decision making (R18/R27/R58).

P8: foster a culture of partnership and mutual respect (R59) with positive relationships and mutual trust with involved stakeholders (R57)

P9: lead to changes in processes, policies, structures and people (R21)

These propositions form the answer to the research question *"Which factors can DB54 theoretically influence (to influence the quality of user participation)?"* Of the other requirements mentioned under stakeholder and organizational requisites, believe that R7, R17 and R19, R42 and R50 are requirements that cannot be fulfilled as a result of practicing the DB54 method, but rather have to be fulfilled *around* DB54 by other factors such as the organization and her managers. Requirement R43 is irrelevant due to its IT specific nature.

Rationales behind the propositions

The rationales behind these propositions are as follows:

P1: DB54 has an inherent focus on work processes and speaking the same language; as described in chapter five, a major goal of the method itself is that employees gain a holistic overview of work processes and knowledge of the actions and consequences of their work.

P2: Employees are allowed to initiate changes which they find necessary, through DB54. When employees initiate a change bottom-up, they are less resistant to it than when it's decided top-down because it's their *own* thing. I propose that this leads to a more positive attitude towards change in general, and thus to higher reported levels of readiness for change.

P3: Through Drawbridge©, employees are forced to critically assess their work and come up with improvements themselves. This is likely to lead to a better fit between the employees' wishes and the actual performed tasks. As a result, the employee will better like her work and possibly gain responsibilities, and thus report higher levels of perceived personal competence.

P4: After focusing on departments, the DB54 method shifts the focus to the entire business. Tasks, responsibilities, issues and solutions of the entire organization are made transparent to each individual employee. Also, the employee can gain insight into how her own tasks, responsibilities, issues and solutions fit into the whole of the organization. For that reason, I propose that employees will report higher levels of perceived personal competence.

P5: DB54 gives a transparent insight into the actual, current state of the departments and business. On the other hand, employees and managers always have an ideal situation in mind. Through DB54, the employees and managers can see the current situation, and identify

and communicate the gaps between the current and their desired state of the department and business in a concrete, objective manner.

P6: DB54 is meant to be used as a continuous improvement tool by an organization. As such, DB54 can be seen as an organizational reshaping capability itself; it presents a framework for change that organizations can learn to use effectively.

P7: A key aspect of DB54 is the user participation in making decisions. Also, the method forces employees to agree upon things and state issues objectively. They will have to communicate clearly with each other in order to do that. The web-based tool supports a continuous transparency in this. Therefore, I propose that DB54 encourages a human relations culture.

P8: Employees will gain a better and more objective insight into the work of their colleagues. They will also have to work together to define a common language and solve issues. Therefore, I propose that DB54 encourages a culture of partnership and mutual respect.

P9: As becomes clear from chapter five, DB54 has an inherent focus on working with work processes and effectuating changes in processes, policies, structures and people.

6.1.2 Measuring participation

As mentioned before, the theory and/or DB54 practice might learn a few lessons based upon the results that DrawBridge54 does or does not bring in relation to how the participation process is shaped. In addition, chapter four has shown that it is very important for the conclusions of the study to describe the participation process in detail. Therefore, I will also measure the participation process by answering the following questions for each investigated case:

1. Who are the participants (R4/R41) and when (R46), how (R32/R44), where (R47) and by whom (R48) are they selected to participate?
2. How large is the group of participants (R3), how are they led (R52) and what sort of groups are participating in workshops (R30/R51)?
3. What is the form of the participation activities that are executed (R23/R31/R33)?
4. In which phases and activities of the DrawBridge54 method are the participants allowed to participate, and to what extent (R34)?
5. How are the non-participants involved (R5/R6/R7/R40)?
6. How much influence and responsibility do the participants have in the several phases of the DrawBridge54 method (R1/R2/R38/R39/R53)?
7. What is the role of the change agent/facilitator and what activities do they perform (R48/R49/R50)?
8. What is the role of the top management and what activities do they perform (R17/R19/R45/R53/R54/R55/R56)?

These questions can be answered by looking at the theoretical description of the method, but the method needs to be analyzed in practice in order to be able to say something about how participation was really executed, and to be able to subjectively measure user participation. As we have seen in chapter four, such subjective measurements are important for the conclusions of the study. If answers to these questions differ from the guidelines that are encompassed in the requirements, this creates a possibility to argue why certain effects are or are not achieved. For example, if top management support is lacking in practice and participants only participate in a thin way, it is likely that the propositions will not hold, because they rely on heavy user participation and a structured and transparent process. But do these questions cover all we want to know about the DB54 practical participation process? To answer that question, let us take another look at the dimensions of participation by Cavaye [CA95]:

Dimension	Description	Possible values
Type of participation	refers to the proportion of users that participate in development	all users / representatives of users (direct/indirect)
Degree of participation	recognizes that users may have different levels of responsibility during participation	advisory capacity, sign-off responsibility, part of design team, full responsibility (passive/active)
Content of participation	refers to the fact that users may be involved in different aspects of system design	technical design and/or social design
Extent of participation	acknowledges that participation can vary in scope during different phases of the development process	project definition, requirements definition, building, testing
Influence of participation	addresses the effect of participation on the development effort	input ignored, contribution considered, input taken seriously
Formality of participation	is about the formality of the participation	formal, informal

Table 3 - Dimensions of participation [CA95]

Question 1, 2 and 5 relate to the 'type of participation' dimension [CA95], and the second also to Barki and Hartwick's participating alone versus participating in a group [BH94]. The fourth question is all about the 'content of participation' and 'extent of participation' dimensions [CA95]. Question 6 relates to the 'degree of participation' and 'influence of participation' dimensions [CA95]. Then the only item left to observe in the DrawBridge54 practice is:

9. How formal or informal is the participation?

We see here that most requirements and questions based upon them (except question 7 and 8) relate to the dimensions of participation defined by Cavaye [CA95]. In order to create some structure in the case descriptions, the participation process in the DrawBridge54 cases will be described in terms of the participation dimensions. Question 1 to 6 will be answered there. The roles and activities of the change agent/facilitator and the (top) managers can be seen as supporting or mediating factors in satisfying the propositions, and will also be described in describing the participation dimensions.

6.1.3 Theoretical model

Now that the propositions have been created, it should be remembered that P3, P4, P5, P6 and P7 all have a direct and proven influence on P2: readiness for change [JJG05, KL08]. Therefore, by validating propositions P3, P4, P5, P6 and P7, readiness for change is created and P2 is also validated. Proposition 5, 'a better understanding of the gap between the current and desired states', is all about communicating the importance of change, and is henceforth called 'sense of urgency'. This leads to the following theoretical model as depicted upon the next page:

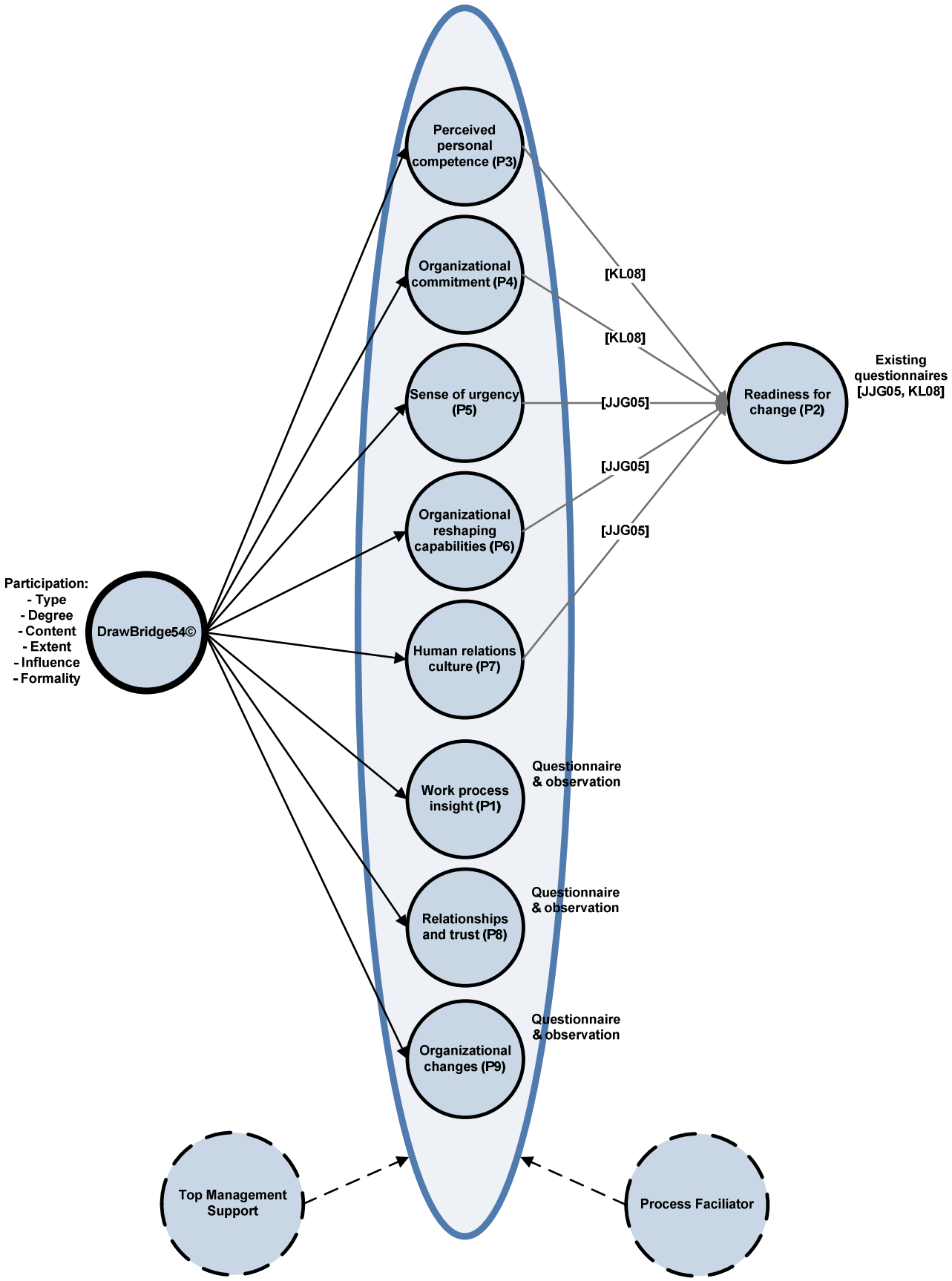

Figure 4 - Theoretical model

In words, this says that the DrawBridge54 method consists of user participation which can be measured by observing the six dimensions of Cavaye [CA95]. The method is proposed to create a perceived personal competence, organizational commitment, sense of urgency for change, organizational reshaping capabilities, a human relations culture, work process insight, relationships and trust, and changes in processes, policies, structures and people. This also depends upon the top management support and the process facilitator; if they do not fill in their roles correctly, there is a risk that the results are not achieved. The perceived personal competence, organizational commitment, sense of urgency for change, organizational reshaping capabilities and human relations culture have a proven positive relationship to readiness for change, according to two studies [JJG05, KL08]. These factors will be measured by using existing questionnaires from these studies, along with observation on my part. The work process insight and relationships and trust will also be measured by a questionnaire and observation on my part. The top management support and the role of the process facilitator will be observed by me also. More details on the case study design are described in chapter two. The interview and surveys are to be found in appendices B and C, respectively. The results of the surveys of Organization FM are presented in appendix D.

6.2 Summary and conclusion

In conclusion, the research question "*Which of these factors can DB54 theoretically influence?*" has been answered in terms of the following propositions:

When participants exercise the DrawBridge54 method, they:

P1: will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work.

P2: will gain a more positive attitude towards change and report higher levels of readiness for change.

P3: will report higher levels of perceived personal competence.

P4: will report higher levels of organizational commitment.

P5: will gain a better understanding of the gap between the current and desired states.

When the DrawBridge54 method is exercised within an organization, it will:

P6: create organizational reshaping capabilities.

P7: foster a human relations culture with open, clear and transparent ways of communication and participative decision making.

P8: foster a culture of partnership and mutual respect with positive relationships and mutual trust with involved stakeholders.

P9: lead to changes in processes, policies, structures and people.

In the next chapter, these propositions are investigated in the four practical cases. This will answer the next research question: *"which of the factors are influenced in practice?"*.

7 Cases

This chapter will describe the cases and the data that was collected at these cases to answer the research question *"Which of these factors are actually influenced by DB54 in practice?"*, where 'these factors' now refer to the propositions as defined in the previous chapter. The next chapter will then answer this question by analyzing the data. By also discussing possible interpretations of the results, the research question *"In which ways are these factors influenced by DB54?"* will also be answered in the next chapter.

Data has been collected in four different cases. For each case, the context and goal of the DB54 project are first described. Then, the participation process is described in terms the participation dimensions as defined by Cavaye (1995), where the nine questions relating to the measurement of participation as described in the previous chapter are answered. Then, the results regarding the propositions are discussed.

7.1 Organization FM

7.1.1 Context

A university in the Netherlands wants to be a leading research university where the campus fulfills a central role, and one of the main objectives of the Organization FM is to contribute to this goal by delivering facilitating services to the University. The departments of the Organization FM that use DB54 are logistics, purchasing, maintenance and finance. This case study will investigate the use and effects of the method at those departments. Departments of the Organization FM that will use the DB54 later are security, internal services and reservations & events. However, they started too late for me to be able to include them in this case study.

Each department is dependent upon other departments of the Organization FM or third parties in their processes. For example, when a faculty of the university needs a product, it is ordered at purchasing. The finance department of that faculty then has to approve of this purchase order. When approved, purchasing orders the product from a supplier. The supplier delivers the product to the logistics department. The logistics department in turn delivers the product to the faculty, where the internal services are responsible for the personal delivery within the faculty building on the campus of the university. In this sense, each department also has internal customers and suppliers.

From the perspective of the departments of the Organization FM, external parties are faculties of the university that are in need of services like the purchasing of goods, delivery of goods and mail, and building maintenance. Other external parties are the suppliers of goods, and the contractors who carry out maintenance projects issued by the maintenance department.

The Organization FM has had a lot of change projects lately, so the employees may be a bit tired of change. This may lead to some resistance to the DB54 method in the beginning. Also, the purchasing department hired an external party to optimize the entire supply chain from beginning to end. This process optimization happens simultaneously to the execution of DB54. Also parallel to the execution of DB54 was the development and execution of plans to split up the purchasing department. Both of these factors may influence the effect of DB54.

7.1.2 Content

The University as a whole wants to reduce costs by working more efficiently. To achieve that goal, the Organization FM needs to improve the overall efficiency of the departments by optimizing the internal processes from beginning to end, and thus create synergy advantages and a better link with strategic goals. They want to set in motion a process of continuous and sustainable development.

Some might call this 'operational excellence'. Also, they want to improve their image to the outside world and to their customers. A derivative of improving the image is the improvement of customer satisfaction. Furthermore, they want to make the organization more transparent, give employees more responsibility and create stronger connections between departments, between departments and the employees, and between employees. According to the Organization FM management, this will require a major cultural shift.

7.1.3 Process

A major difference between this case and the next three ones that are discussed is that the external process facilitator is here hired for five days per department, instead of guiding the departments from the beginning to the end. The idea here is that after the five days of facilitation, the departments have enough knowledge of the DB54 method to continue working with it themselves. This makes the roles that top management, department managers and employees fulfill crucial for the success of the method. DB54 started in the logistics department. In a few months since then, the purchasing, maintenance and finance departments have also gradually started. Other departments, such as security, internal services and reservations & events will not start for a while.

7.1.3.1 Type of participation

Overall

In each department, every employee was invited to the project kick-off and the very first brainstorm session, which was led by the external process facilitator. In each department except purchasing, the external process facilitator then led several group feedback sessions. In the purchasing department, the first brainstorm group session was held in a building different from the one they work in. But for the rest, participants were involved in the process in the context of their own work environment in each case. In each case, there was not really a matter of voluntary participation. Ether the managers or lead employees led the participants in a group leadership style; decisions were made with the input and consent of the entire group.

In the departments where there were indirect participants (logistics, purchasing and maintenance to some extent), the department managers and lead employees were responsible for making them involved. In the logistics department this went well, in the purchasing and maintenance department this did not seem to work very well. In the departments where lead employees were selected, they were not explicitly selected based upon their skills as opinion leaders, advocates, input gatherers and mediators. Rather, they were selected based upon their knowledge about the subject-matter. This base of selection was recommended by the external process facilitator. Furthermore, participants only participated in session in their own department and were not involved in sessions of other departments. The type of participation is now discussed in more detail for each department.

Logistics

In the logistics department, there are around ten employees, half of which are part-time workers. Therefore, not everyone was present during the each group session in the beginning. Because sitting together with a part of a group of ten in every session seems impractical and takes too much time from, a few of the employees gained access to the web-based tool. They shall be referred to as lead employees, and were selected by the department manager to fulfill this role. Together with the department manager, they would create the base of the results and involved all other employees by acquiring feedback and comments on these results. Also, they would invite employees personally to work with them in the web-based tool. In the beginning, the external process facilitator would lead sessions with the department manager and lead employees, but later on the department was working independently. The overall participation in this department was relatively high.

Purchasing

In the purchasing department, there are around eighteen employees, some of which are part-time workers as well. Most of them were present at the first session, but it the external process facilitator and department manager regarded it as impractical to organize more sessions with this large group. Therefore, a few lead employees with access to the web-based tool were selected by the manager. However, the lead employees the manager failed to involve the employees from that moment on, and the process stagnated because of a lack of effort. The external process facilitator then identified two new lead employees. They worked well with the tool under guidance of the process facilitator, but they also did not have time to involve other employees and to work with the tool without the facilitator. So in the beginning, only a few users participated in the process. A choice was then made to create one group per main task, each with their own lead employee, who would work with the tool and involve the few others who also worked on that certain task. These lead employees per group were asked to fulfill this role by the external process facilitator because they seemed enthusiastic. However, since both the department manager and these lead employees still had not enough time, this again did not lead to many results. Eventually, the decision was made to let the manager of the logistics department lead the DB54 process in the purchasing department, but the participation in this department still remained low.

Maintenance

In the maintenance department, everyone was granted personal access to the web-based tool from the beginning, although there were around twelve employees. This decision was made because every employee had their own specific area of work. However, the persons who participated in the group feedback sessions were the persons that had time at that moment. Because of this, some employees lost their involvement. Therefore, the decision was made to select lead employees here too. This was done by the manager and the external process facilitator together, and one employee practically offered himself as lead employee. During the process however, both the department manager and lead employees did not take enough time to really get involved with the method and to get other employees involved with it. In that sense, participation was low in this department.

Finance

In the finance department, all four employees had personal access to the web-based tool. Also, everyone stayed involved because of the small size of the department. Each employee fully participated in the areas of those tasks he/she performed. At first they were led by the external process facilitator, later on they worked independently. Results were achieved quickly, so participation was relatively high in this department.

Other stakeholders

No other stakeholders except the department employees and managers participated in the sessions. Top management did not actively participate and did not take a very active role as advocate or facilitator. Top management did however decide upon the use of DB54 and communicated this clearly to the department managers. During the process, top management would sometimes ask for status updates from the department managers.

7.1.3.2 Content of participation

Logistics

The logistics department started using DrawBridge54 first. There was a brainstorm session to roughly define the processes, tasks, responsibilities and issues. These were further defined in numerous follow-up sessions with the department manager and some lead employees. Then, there was a group session to present the results to all employees. After some minor changes, they agreed upon everything. After that, sessions followed to flesh out the issues even more and to think of solutions to these issues and create SPION models. The focus was on issues with the logistics processes, because the mail processes did not seem to have much serious issues. After the group sessions, the

manager and the lead employees mostly worked with the tool, sometimes being led by the external process facilitator in the beginning and working more independently and involving other employees later on. At the moment of writing, most SPION models have been fully created.

Purchasing

The purchasing department was ill-prepared for DB54 by their manager. During the first brainstorm session in which the idea was to define the processes and tasks of the departments, employees argued with each other and the end result was not very good. Process definitions were ambiguous and unclear. After this, a lot of sessions with only lead employees followed to better define the tasks, responsibilities and issues, and to think of solutions and create some SPION models. After a lot of such sessions with mixed results, there was another group session, where the feedback on the process was quite negative. After this, sessions were organized in order to completely work on a specific task from beginning (map the tasks correctly) to end (identify and carry out solutions for issues with these tasks). These were mostly executed independent of the external process facilitator, but were instead lead by the logistics department manager. At the moment of writing, there have not been many SPION models fully created.

Maintenance

In the maintenance department, there were a lot of brainstorm sessions to identify the tasks, responsibilities, issues and solutions. This went in much the same way as in the logistics department. It took quite some sessions and iterations to define the tasks in a logical manner. Also, it took quite some sessions to fill in the rest of the base (processes, responsibilities, issues) well enough to work with it. After this, the idea was that the employees would create SPION models themselves. However, at the moment of writing, there have not been any SPION models fully created.

Finance

In the finance department on the other hand, only a few brainstorm sessions were necessary to define tasks, responsibilities and issues. This went in much the same way as in the logistics department. After that, there were a lot of facilitator-led sessions to create SPION models. At the moment of writing, most SPION models have been fully created.

7.1.3.3 Extent of participation

In each department, all employees participated in the first brainstorm session where tasks, responsibilities and issues were roughly defined. In the logistics and purchasing department, these were further fleshed out by the process facilitator, department manager and lead employees. In the finance department, all employees participated in fleshing out this base. In the maintenance department, the employees who had time at the moment of a session participated in this task. In the purchasing department however, only a few employees were actively involved in these phases. The purchasing department manager is not much involved in each phase. In each case, these sessions were led by the process facilitator.

In the phase where solutions are defined and SPION models are made, theoretically all employees were involved by the lead employees and the department managers. In the maintenance department however, no SPION models have been created so far. In the purchasing department, only a few have been created. Few employees of these departments have actively participated in creating SPION models. In the logistics department, the manager and lead employees would make SPION models and acquire feedback and comments from employees, and invite employees to work on SPION models together. In the finance department, employees individually made SPION models without being led by lead employees. Instead, the manager and employees distributed the SPION models between themselves. In the beginning of the creating of SPION models at the logistics and finance departments, the participants were led by the process facilitator. Later on, the participants worked independently.

7.1.3.4 Formality of participation

In all departments, there was a balance between formality and informality. There was formality in the sense that people were put together for a certain task and goal, and they had to create time for this and approach it seriously. There was informality in the sense that discussions regarding the DB54 could take place anytime, anywhere, and anything could be said regardless of hierarchical structures; one's position in the organization did not matter in the DB54 process.

Additionally, in the logistics department, the results of the process (mapped tasks, responsibilities, issues, SPION models) were printed and pinned up on a board in the canteen. In this way, the employees could talk about it informally. Also, the discussions initiated by lead employees (when they want to know what other employees think about it) were quite informal. The logistics department manager also discusses the progress in departmental meetings, which can be considered more formal.

7.1.3.5 Degree of participation

In all departments, the employees are responsible for making sure that the tasks, responsibilities and issues are defined correctly. In the maintenance and finance department, the employees have a bit more responsibility in that regard than the employees in the logistics and purchasing department, because in those latter departments the department manager and lead employees took up more responsibility in defining the tasks, responsibilities and issues. This was the same for the SPION models; in the finance and maintenance department, individual employees are given responsibility to fill in SPION models, whereas in the logistics and purchasing department the lead employees are made responsible for this. Of course, in each department the manager is accountable, but the employees are given responsibility.

In the logistics, maintenance and finance departments, employees seemed quite committed to the process and not afraid to take the responsibility, although it differed per individual. In general, an individual seemed to get committed once he/she saw value for him/herself. For some individuals this happened faster than for others. Where there were lead employees, it was them who were the most committed. In the purchasing department, only the lead employees seemed to be somewhat committed, and some of gave the impression that they'd rather not work with DB54 at all. Other employees were not committed in the beginning and did not want to make time to work with DB54. Some also felt that they had been left out because they had not been involved by the manager or the lead employees. On top of that, the department was very busy with a lot of other projects, all having influence on their work process. This also had a negative influence on the commitment of the employees, because they were unsure of the role of DB54 in the context of the other projects.

The external process facilitator was responsible for leading the sessions and in doing that, he took the responsibility of making sure that everything was 'sharp' and clear. He would do this by asking questions to give the participants a better focus. Also, the process facilitator had the responsibility of giving constructive criticism on the solutions defined by the employees.

The department managers had the same responsibility as the employees. On top of that, they were responsible for motivating the employees to work with DB54, responsible for selecting lead employees, and accountable for the end results and SPION models. In all but the purchasing department, this went well. In the purchasing department, the manager did not take his responsibilities. Instead, he delegated these responsibilities to the (lead) employees, who were not very pleased with this.

The manager of the Organization FM was in his turn responsible for keeping an eye on the progress of DB54 in each department. His responsibility was to make sure that each department manager

placed enough effort in DB54. Due to the issues and the lack of progress in the purchasing and maintenance departments, it is questionable to which extent this responsibility was actually taken.

7.1.3.6 Influence of participation

With the responsibilities of the employees come many opportunities for them to exert influence on how tasks and responsibilities are defined, which issues are recognized and what solutions are to be carried out. In the maintenance and finance department, where employees had individual responsibilities, they were very influential. In the logistics department, the lead employees were very influential and the other employees also had opportunities to exert influence, but they had to actively seize those opportunities. The same was true for the purchasing department, but where the employees seized their opportunities for influence in the logistics department, this did not happen as much in the purchasing department.

During all sessions in the early phases, the facilitator took a rather passive role. During sessions in later phases, the facilitator took a more active and influential role. He tried to steer the definition of tasks and subtasks in a manner that will help the employees work with it more efficiently. Also, when an unrecognized problem is spotted, he discusses and asks questions, making sure the problem will eventually take its place in DB54. When managers and employees are at a loss regarding the solutions for problems, the facilitator offers possible solution directions, based upon his business experience as a consultant and manager. In that sense, the facilitator subtly exerts influence.

In the logistics department, the manager exerted a lot of influence on the definition of tasks, responsibilities, issues and SPION models. In early phases, he would define most of the things. Later on, the employees were given more influence. But all in all, the manager had relatively more influence. In the purchasing department, the manager exerted a lot of influence when he was present. However, since he was not present a lot, the employees relatively had more influence than the manager in defining the results. In the maintenance and finance department, there was a better balance between manager and employee influence. The manager had relatively more influence when present at sessions, which was about half of the time, and the employees had all influence when the manager was not present.

The manager of the Organization FM did not exert any influence upon the content.

7.1.3.7 Subjectively measured participation

The participation items as described above are as how I observed them. However, I also measured the participation subjectively. I measured the perceived responsibility and the perceived influence as these are subjective, personal factors that matter in participation and one's perception of these items can differ per person. I also measured the subjective involvement and the commitment of the employees, and their perception of the communication before and during the processes.

Communication

In the logistics department, all employees felt that the communication before and during the DB54 project was good. At purchasing, some employees felt well informed beforehand but others did not feel that way at all, resulting in an overall neutral perception. Communication during the project was perceived as worse; a majority of people did not feel well informed during the project. But here, there were also a few people who did feel well informed during the project. In the maintenance department, employees felt well informed beforehand. Overall, they were neutral regarding the quality of the communication during the project; whereas two employees were slightly positive, one was negative. At the finance department, the overall perception towards the communication beforehand and during the project was respectively neutral and slightly negative, but the consistency in perception between employees was higher than in the purchasing department. In all cases, the department manager reported very high levels of communication. In the purchasing and finance

departments, the managers' perception thus seems to differ quite much from the employees' perception.

Responsibility

In the logistics department, all employees felt responsible for filling in the sheets about the tasks, responsibilities, issues and SPION models. In the purchasing department, the perceived responsibility of the department employees was average. Some felt slightly responsible; others felt as if they were not really responsible. In the maintenance department, the employees perceived themselves to be slightly responsible for filling in the sheets about the tasks, responsibilities, issues and SPION models. In the finance department, the employees felt averagely responsible. All department managers perceived that all their employees were responsible. However, in the purchasing and finance departments, employees did not really feel responsible.

Influence

In the logistics department, the employees felt influential in filling in the sheets about the tasks, responsibilities, issues and SPION models. In the purchasing department, the perceived influence of the department employees was average. Some felt slightly influential; others felt as if they were not really influential. In the maintenance department, the employees felt averagely influential. In the finance department, the employees perceived themselves to be slightly influential in filling in the sheets about the tasks, responsibilities, issues and SPION models. All department managers perceived that all their employees were influential. However, in the purchasing and maintenance departments, employees did not really feel influential.

Involvement and commitment

In the logistics department, the employees feel involved in the DB54 project and motivated to work on it. Also, they feel that their input is really making a difference. This is also how the department manager perceives this. He mentions that after the first few meetings, it became clear what the meaning and goal of the DB54 method was, and that his department started off motivated. In the purchasing department, some employees do not feel involved at all and those same employees are not motivated to work with DB54. On the other hand, there are some involved employees who do feel motivated. But overall, all employees feel that their input does not make much of a difference. One employee has the impression that the method is not really taken seriously within the department. It is not being accepted as a tool to help them improve their processes, but instead it is seen as an extra project with no connection to the daily practice. The department manager also perceives that the employees are averagely motivated, but regarding the involvement of the employees and the employees' feeling that something is done with their input, the department manager feels slightly more positive then his employees. The manager feels that the lack of involvement and motivation are due to the culture of reticence in the department; there is little initiative, action and reaction from the employees. In the maintenance department, employees feel averagely involved as well. The employees do feel motivated to work in the DB54 project. The employees' perception regarding the influence of their input is neutral. The manager perceives that his employees are very involved and motivated, and that the employees feel that their input matters. In the finance department, the manager is quite positive as to how involved and motivated the employees are. The employees report that they feel slightly involved and motivated. They are neutral as to whether they think their input matters, but the manager thinks that employees feel that they are influential.

7.1.4 Results

The results of the surveys of Organization FM are presented in appendix D. Here, those results are analyzed.

P1: Overall, the maintenance department feels neutral about this aspect. As a reason, they mention that important steps of the DB54 method still need to be worked out. In the logistics department, all

employees and the manager reported a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work (tasks, responsibilities and issues). They gained this insight mostly in their own department, and somewhat for other departments. The purchasing department did not report an achievement of insight into work processes due to DB54; the response was rather negative whereas their manager is slightly positive on this point. In the finance department, the employees were neutral as to whether they gained more insight into the processes of their own department, and slightly negative as to whether they gained insight into the processes of other departments. Their manager however felt very positive on both of these aspects.

Overall, the results are mixed. In gaining insight into the own work processes, only the logistics department employees and all department managers were positive. Finance employees however were neutral and purchasing employees were negative. The insight into work processes of other departments was low for each department.

P2: In the logistics department, all employees reported increased readiness for change. They agreed that they were supportive of the changes that followed from the SPION models and that they were looking forward to these changes. Also, they think that in the future they would sooner bring up an issue and a possible solution than before. The employees of the logistics department did however not really feel as if their perception towards change in general had become more positive; three were neutral and one slightly disagreed. The department manager on the other hand reported increased readiness for change in his department including a more positive perception towards change. The results in the purchasing department are very mixed: some employees looked forward to changes that followed from SPION models, others did not at all; some employees are supportive of the changes, others are not; some employees would sooner bring up an issue and a solution in the future, others would not. For a few, the perception towards change did become slightly more positive, but most employees neither agreed nor disagreed. Overall, the department manager reported a small increase in readiness for change for his employees. He mentions that this is a matter of long-term. At this moment, there is a lot of unrest and changes in work practices. In the maintenance department, results are positive. Employees reported a small increase in readiness for change. They agreed that they were supportive of the changes that followed from the SPION models and that they were looking forward to these changes. Also, they think that in the future they would probably sooner bring up an issue and a possible solution than before. The department manager does not think this will happen. The employees of the maintenance department did slightly feel as if their perception towards change in general had become more positive; one employee slightly agreed and two were neutral. In the finance department, the employee that felt influential, committed and involved did report increased levels of readiness for change and the other one (who perceived the participation neutrally) did not. The manager reported a small increase in readiness for change, mostly in that he thinks the employees look forward to the changes that follow from the SPION models. The manager further commented that he was unsure as to how the DB54 would work in the future. They intend to follow the structure of DB54 to change, but he mentions that this depends upon how the other departments use the method and how the top manager supports the project.

Logistics and maintenance departments agree that they have increased their readiness for change. Finance is also slightly positive. Purchasing is neutral overall, but the opinions between the employees differ a lot. Therefore, DB54 can be said to have increased the readiness for change.

P3: In the maintenance department, all employees were neutral as to whether their perceived personal competence has improved. As a reason, they mention that a important steps of the DB54 method still need to be worked out, and therefore their tasks and responsibilities are still same, their job is still the same and they have not gained more insight into how the work they do contributes to the whole of the Organization FM. In all three other departments, the employees were neutral to

slightly negative as to whether their tasks and responsibilities were extended. The logistics and purchasing managers were however positive on this point. As to whether their jobs had become more fun and challenging, only the logistics department was slightly positive. Their department manager did not agree upon this however. But on this point, he commented that the work already was fun and challenging before DB54. Purchasing and finance employees are negative on this point, whereas their managers are neutral. The logistics department employees and manager were also slightly positive as to whether the department gained insight into how their daily work tasks contribute to the processes of the Organization FM. Purchasing employees are negative on this point and finance employees are neutral, whereas both their managers are positive on this point.

Overall, the logistics department reported a small increase in perceived personal competence. The other three departments did not, despite some positive perceptions by the department managers.

P4: In the maintenance department, all employees were neutral as to whether their organizational commitment has improved. As a reason, they mention that a important steps of the DB54 method still need to be worked out. In all three other departments, the employees and the managers did not agree that they felt more connected to the Organization FM due to DB54. The purchasing and finance departments and their managers also disagreed upon whether they felt that the issues of their department and the Organization FM were their own, whereas the logistics department employees and their manager were slightly positive on this point.

Overall, no department reported an increased organizational commitment.

P5: In the logistics department, all employees seem to have gained a sense of urgency. Overall, they reported that they have more insight into the current work processes and how it differs from an ideal situation. Furthermore, the SPION models were reported to give a good insight into the need to change certain processes or tasks and the department reached a consensus on which issues to solve first and how. The department manager perceived this in the same way as his employees. In the purchasing department, there was no overall sense of urgency reported. A minority reported that they have more insight into the current work processes and how it differs from an ideal situation and that the SPION models give insight into the need to change. A majority was neutral regarding these items, and a few disagreed. The department did not reach consensus on which issues to solve and how to solve them; no employee agreed on this statement. The department manager on the other hand was slightly positive regarding the sense of urgency created in his department. The maintenance department reports a small increase in the sense of urgency for change; they were either neutral or positive on all items of the sense of urgency for change. The manager on the other hand was positive regarding the insight into current work practices and the value of the SPION models to show a need for change, but was negative regarding the value of DB54 to see a difference between the current and desired states and regarding consensus on which issues need to be solved and how. The finance department employees were mostly neutral as to whether their sense of urgency increased, although one employee did report that she gained a better insight into the current work practice and the difference with an ideal situation. The department manager did feel that the sense of urgency has increased for his employees.

So overall, the results are slightly positive. The logistics and maintenance departments reported an increase in sense of urgency for change, the finance department was also slightly positive and purchasing was neutral.

P6: The logistics and maintenance departments agree that the SPION models of DB54 provide a good opportunity to explain, structure and carry out a solution for an issue. In that sense, they report increased reshaping capabilities. The purchasing and finance departments feel neutral about this whereas their managers feel positive about this. In the purchasing department, the opinion differs

largely between employees; some feel negative about this item and some positive. The majority is neutral, however.

Overall, the logistics and maintenance departments and all department managers report an increase in reshaping capabilities (in the form of DB54). Employees of the other two departments are neutral.

P7: At logistics, all employees except one reported that DrawBridg54© facilitated and fostered a human relations culture in some ways: it facilitated open and transparent communication within the department and allowed employees to have influence in decisions that regarded their own work. The other employee felt neutral about this. As to whether the method allowed open and transparent communication with other departments, the overall response was neutral. The department manager did report that DB54 fostered a human relations culture on all items. He commented that the morale and solidarity were already high in the department, but that DB54 increased this even more. So overall, the logistics department reported that DB54 somewhat fostered a human relations culture. At the purchasing department, the overall opinion on whether DB54 fosters a human relations culture is negative. All employees are either neutral or do not agree. The same goes for the manager. The only positive notes are that the manager and a few employees agree that they are influential in decisions that regard their own work, but more employees do not feel influential in this regard. One employee commented that the current work in DB54 was not done by everyone in the department, but only by a few. This is the reason that she reported that DB54 has not facilitated open and transparent communication within the department. At maintenance, the overall result is slightly positive. The employees and the manager are either neutral or agree upon the items that measure the impact of DB54 on a human relations culture. At the finance department, results are mixed. One employee feels that DB54 facilitated open and transparent communication, the other did not feel this way. Both employees and the manager did not agree that the method facilitated communication with other departments. As to whether the employees feel that they have decision-making power, they are neutral. So overall, the results for the finance department are neutral to slightly negative.

So purchasing, maintenance and finance reported that DB54 does not facilitate open and transparent communication about tasks, issues and solutions between departments. This is most likely due to the fact that the DB54 project has not yet progressed to the point where multiple departments discuss their SPION models together. This is also what the manager of the finance department commented on this item. Logistics and maintenance reported that the method facilitated an open and transparent communication within their department and that the employees had decision-making power. So overall, DB54 does foster a human relations culture, but only in some aspects and only in some departments.

P8: At logistics, the overall response of the manager and employees as to whether DB54 facilitated a culture of partnership and mutual respect was neutral to positive on all items that were measured. One employee disagreed on two items however, namely that DB54 made her feel more connected to her superiors and to colleagues outside the department. At the purchasing department, the overall opinion on whether DB54 fosters a culture of partnership and mutual respect is negative. All employees are either neutral or do not agree. The manager is slightly more positive. The only positive note here is that the manager and most employees agree that DB54 does offer a good opportunity to work together to solve issues. However, one employee commented on this that she has not really noticed much of this. That same employee commented that she did not perceive and increase in relationship and trust between her and the department manager, because the department manager has not been much involved in the DB54 project. At maintenance, the overall result is slightly positive on each item that measures an increase in culture of partnership and mutual respect due to DB54. The employees are either neutral or agree upon the items that measure the impact of DB54 upon these items. Interestingly, the manager disagrees that DB54 facilitates a culture of partnership and mutual respect. At the finance department, only one employee and the manager responded to

questions about these items. The employee is neutral on all items except one; she does feel that DB54 made her more connected to her direct colleagues. The department manager however disagrees upon this point. The manager further feels that there neither are better connections between his employees and employees of other departments or their supervisors. He does however feel that DB54 increases the trust between employees and between employees and their supervisors. The manager gives an explanation for the lack of increase in relationships and trust with other departments, which is that the project has not yet progressed far enough to work together work other departments.

Overall, all departments agree that DB54 creates an opportunity for people to work together to solve issues. For all other items, logistics and maintenance were slightly positive, finance is neutral and purchasing is negative. So overall, DB54 does foster a culture of partnership and mutual respect, but only in some departments.

P9: In the logistics department, all SPION models have been created at the moment of writing, and some of them also have been carried out. In this department, this has lead to changes in tasks, responsibilities, processes and policies. In all other three departments, not enough SPION models have been carried yet out to speak of such changes. What I did notice however, is that almost all solutions in the SPION models are layered. They consist of actions on a strategic level, a tactical level and an operational level. This leads to changes in policies, processes/responsibilities/structures and day-to-day tasks, respectively. This has already happened at logistics, and it is very likely that it will also happen for the other three departments as soon as the actions that follow from the SPION models are performed. However, overall I can so far only conclude that logistics have effectuated organizational changes due to DB54.

The results per proposition are now summarized in a table, to create an overview:

	Logistics	Purchasing	Maintenance	Finance	Overall
P1	+	-	+/-	+/-	**+/-**
P2	+	+/-	+	+	**+**
P3	+	-	-	-	**-**
P4	-	-	-	-	**-**
P5	+	+/-	+	+	**+**
P6	+	+/-	+	+/-	**+**
P7	+	-	+/-	-	**+/-**
P8	+	-	+	+/-	**+**
P9	+	no results	no results	no results	

Table 4- Summary of Organization FM results

In this table:

- '+' denotes positive/agree;
- '+/-' stands for neutral/neither agree nor disagree;
- '-' means negative/disagree.

Of course, this table is highly summarized and has no room for all the nuances mentioned in the textual description of the results.

7.2 Company P

7.2.1 Context

Volkswagen Company P is a financial and insurance company in the automobile industry. It has several daughter companies, each with their own accounting & control and HRM departments. These departments deliver their services to their companies.

7.2.2 Content

An external developed a strategy for the company which involved setting up a Shared Service Center. The five daughter companies' departments of human resource management, accounting, control and risk were to be put together. The roles and responsibilities for this back-office had to be defined. What should the departments look like? What are the tasks? Who does what and why? What are the main processes, what services do we deliver to our clients? What are our Service Level Agreements? Because the responsible director saw the magnitude of the change and department managers were having their hands full already, DrawBridge54 was utilized and an external DB54 process facilitator was hired to answer these questions. In other words, DB54 was used to set up new departments with new processes.

7.2.3 Process

7.2.3.1 Type of participation

In all new departments, the manager and each employee were involved with DB54 from the start of the project and in a direct manner, except in the accounting department. There were twenty people in this department, which were represented by their team leaders. These team leaders and the manager participated in a direct manner. The team leaders in turn consulted their employees, so in that sense the non-participants did participate. The other departments had less employees, so it was easier to have them all participate. The size of the groups did not lead to any efficiency problems. In all cases, there was thus no volunteering involved and the facilitator played no role in selecting participants. There were no other stakeholders participating. All participants performed the participation activities in their own 'to-be' workplace in their new department. All employees were prepared for DB54 with a session in which the vision was explained: 'We want to go from A to B and we need your help'.

In some departments all sessions were led by the external process facilitator, who was thus responsible executing and facilitating the participation activities. In other departments, there were also sessions being led by the department manager (for example the HRM department), taking over the facilitators' responsibility of executing and facilitating the participation activities. The employees were led in a group leadership style; they made decisions together with managers and other employees. In some cases, employees from accounting were put together in a session with employees from control, but the sessions mostly had an inter-profession focus.

Top management was not directly involved in the sessions. They were sometimes invited to make a decision on a point where the departments could not agree and they were kept informed on the progress. Furthermore, they did support the process in an 'attitudinal' way, because they are the ones that started the project. They provided resources and allowed employees to spend time in the DB54 process.

7.2.3.2 Content of participation

First, the basic outlines of the processes were mapped and then described in more detail. For the accounting department, this took around 50 sessions of 1 to 2 hours. The controlling department had 3 sessions a week for a number of months, also for 1 to 2 hours. For the HRM department, it did not take that long. They had 4 to 5 sessions of around 2 hours. But it must be noted that these are only the sessions which were led by the external process facilitator. The HRM department performed a lot

of activities without guidance of the facilitator. Another reason for the difference is that the department is smaller than the others, allowing the department to work quicker. The accounting department with 30 employees proved to be a different challenge in this respect.

According to the department managers, these sessions should probably not have been any longer, otherwise the focus would be lost, and they were best held in the morning, when people still had their focus anyway. Also, the controlling and accounting departments have had some sessions together, because it had to be determined where the tasks of accounting ended and where those of control started. In the old situation, one department in the daughter company did both accounting & control, but now this was to be split up.

Usually, the external process facilitator would determine the content of the session, together with the department manager. Based upon the process and issues outlines, employees made SPION models which would then be validated in sessions with the external process facilitator and the department manager. The external process facilitator also had weekly sessions with the top management to discuss the progress and the SPION models.

7.2.3.3 Extent of participation

Early on, everyone was involved in the sessions. Later on, less people might be present in a session, depending upon the content and subject matter. Some people were more fit to determine tasks a and b and the issues and solutions, and other people were more fit to determine tasks z and y and the issues and solutions. So, the size of the group and who participated in these later sessions depended fully upon the subject. The selection of these participants was mainly done by the external process facilitator, where he was sometimes advised by the department manager. In the end, each participant participated in each phase of DB54, except in the accounting department where the team leaders acted as mediators. They would involve users during the department meetings, so that the employees participated indirectly.

7.2.3.4 Formality of participation

In all departments, the progress of the project and the SPION models was a matter of discussion during departmental and/or bilateral meetings between the department manager and employees. In that sense, DB54 was also present in the formal structure. This has made sure that the employees did not lose their focus, and to-do lists were gradually diminished. Furthermore, there was formality in the sense that each week, the external process facilitator had a meeting with the top management, to discuss the progress.

For the rest, the ambience is reported to be quite informal. The teams were open and free and not afraid to speak out because they felt safe in their environment.

7.2.3.5 Degree of participation

The employees were given all responsibility in filling in their processes, responsibilities, issues and solutions, because they know what is going on in those areas. The external process facilitator and the department manager made employees individually responsible for making SPION models. Sometimes, the employees themselves were also responsible for taking the course of action to solve an issue, but not always.

The employees saw that the method was very concrete. This made them quite committed to the process. This took a while, however. Everyone needed time to see the value. But in time, they enjoyed the process and started asking questions like ‘why did we actually do this process like this?’. They were forced to think about what they did and what they should do. They did not walk away from their responsibilities and saw that they needed to go though DB54 in order to set up a good department. It can thus be asserted that the participation activities were experienced as rich and

meaningful. On the other hand, the day-to-day operations had to continue so sometimes the progress was a bit slow because the employees did not have much time to work on DB54.

In the controlling department, the employees that were not committed left the department to apply for jobs at other companies. In another department, the manager distinguished three types of employees. Some had to be pulled along, some participate spontaneously and some only look back and do not want to participate. What the department manager saw, was that once he had given responsibilities and influence to the spontaneous participants and they became enthusiastic, the rest would follow.

In the accounting department, the employees had no direct responsibilities. Team leaders were responsible for making sure that what they did with DB54 was supported by the employees. They had to talk to employees, extract information and ideas from them, do something useful with this, and get feedback from the employees. Employees were of course responsible for conveying the right information and feedback to the team leaders.

The top management has made the external process facilitator responsible for the form and content. He was the project leader, the management factor. He filled in this responsibility by constantly being on top of the employees and pushing them to make sure they had it all right, to the details. He would ask questions like 'last week, we came up with this, is this correct?', make strict statements when needed; 'now I need an answer!' and let the employees fill in their own things as much as possible. He would make sure it would become a group process. He would also ask 'stupid' questions and challenge and provoke people, to start and facilitate discussions. According to the department managers, this was a crucial role which had to be filled in by someone who was not afraid. Also, top management took up the responsibility of providing resources (mostly time) for the departments to participate.

The department managers were also very committed to the process. They were responsible for making sure that the employees were there when they were needed, and this went well. In some departments, the department managers also gradually took up the responsibilities of the process facilitator. They did this because they felt that in the end, they were responsible for the results and they had to work with the resulting processes.

The top management gave their support for DB54, but did not actively participate. In this case, this did not seem to be needed, because all employees participated well, and it was clear to them that the top management really wanted them to do this. Furthermore, the top management was responsible for making a decision when two or more departments could not reach a decision on an issue that mattered for all of them. In those cases, the top management would decide the course of action.

7.2.3.6 Influence of participation

Department managers and team leaders tried to influence the results, but in the end the employees also had a lot of influence because they determined their processes, responsibilities, issues and solutions. The external process facilitator and the department manager made employees individually responsible for making SPION models, so the employees could exert a lot of influence on the course of action to take to resolve an issue. In the accounting department, the balance between the influence of team leaders and the indirect participants was 50-50.

The external process facilitator also exerted influence in the sense that he defined issues and came up with possible solutions. And in the end, he and the department manager were responsible for the quality of the solutions, so they exerted their influence and changed things where needed (when SPION models were incomplete or unclear), but not without acquiring feedback from the employees.

In most cases, the employees would come to the department manager with a filled in SPION model and ask for his opinion on it. This also gave the department manager a possibility to exert some influence. In that sense, there was a balance between employee and manager influence. According to the external process facilitator, this balance was 50-50 in each department.

In some cases, other departments also exerted influence in a solution. This would happen in a case where one issue was between departments. Then those departments would sit together and try to jointly come up with a solution.

The top management only exerted influence when they were asked to decide upon a course of action when two or more departments could not work out a shared issue.

External customers (daughter companies' departments) also had influence in the process because they would sometimes define additional issues or missing processes.

7.2.4 Results

P1: A holistic overview of tasks and responsibilities was achieved in all departments. There was a good insight in the processes (not only how they were but also how they should be formed), the responsibilities and the issues. This insight is on a high level, not too detailed. The department managers did mention that it was a work-intensive exercise, but this made sure that the employees really thought well about what they did and why. Once documented, it's clear to everyone. And it serves as a base to execute changes. A shared understanding and work practice was also achieved in all departments and between departments. Employees were forced to sit together and speak the same language before they could form their processes and define solutions to their issues. Definitions of business terms, business objects, reports etc. are made clear so that there's no misunderstanding anymore, for example about what should or should not be in a certain report. Reports are now uniform, to diminish differences in interpretation. Also it's now clear which people are responsible for which things. One department manager mentioned that these effects could still be larger if more departments had participated.

The department managers I interviewed did not have the impression that the perceived personal competence and organizational commitment of participants has increased (**P3** & **P4**). In terms of organizational change capabilities (**P6**), the result also seems to be absent, because DrawBridge54 was used as a one-time project and not supported by top management afterwards. However, according to the external process facilitator, these factors did increase *during* the project, but decreased again when the method was not used anymore.

P5: A sense of urgency for change was also achieved. It became clear for employees where change was needed. Sometimes however, this was a painful realization which could take some time. First, employees could be careful and withholding, but in the end they all saw the value. They would identify an issue and acknowledge that something needs to happen. And thus, in the end, they see that they need to get from A to B. For some employees this happened slower than for others. DB54 is seen as a helpful tool to facilitate this process because it facilitates the discussion on a low level.

P2: Despite the fact that P3, P4 and P6 have not been proven, positive results have been achieved in terms of change readiness. This is most likely due to the positive effects in the sense of urgency. The perception towards change is positive for most employees, because employees saw the need and the value for the change. This is automatically not true for everyone though; some people like to go with the change flow and others have to be convinced. According to a department manager, this is not something DB54 can do on its own, but the process facilitator, managers and other employees have to do this. After having used the method and tool for a while, department managers and employees themselves would like to use it to initiate further changes. Change now comes more from the

employees themselves, the will to change more things is there. According to a department manager, this has everything to do with the fact that they've been given influence. Employees are committed to the DB54 change project and are used to the method and tool. In that sense, employees have gained change capability and a positive attitude towards change. The problem however is that top management does not support the method and tool anymore, so currently it is not used.

P7: For the interdepartmental problems, the collaboration and communication was good and open. Especially between accounting and control, where there were some unclear borders. Department managers found that DB54 helped to scope the discussions and facilitate the discussion on which task belongs to which department and which solution to go for to resolve an issue. Discussion points became clearer, though not easier. One department manager felt that not DB54 was responsible for facilitating a clear and open discussion, but he himself was. Department managers mostly agreed that DB54 facilitated communication and a group process. Employees sat together and were forced to speak the same language eventually, and identify processes, responsibilities, issues and solutions together. And when it's used in multiple departments at once, they think you can get synergy effects and broad enthusiasm. And since the participative decision making is a key element in the DrawBridge54 method, it can thus be asserted that a human relations culture is fostered through DrawBridge54.

P8: Relationships and trust is a slightly positive story. In the accounting department, employees were very open, and in harmony. In the beginning, there were some trust issues between the employees and the external process facilitator, but conflicts and discussions were not evaded. In the HRM department, there were only five employees so the relationships and trust were already very well, according to the department manager. The HRM department did however improve relationships with their customers, and this is most likely true for the other departments aswell. In the control department, the manager felt that DB54 helped to establish positive relationships between employees. Another department manager felt that there was indeed increased relationships and trust, but that it had nothing to do with the DB54 tool but with the 'project': "You put people together in a room, and link them together. Then you automatically get a harmony". This is however part of the DB54 method.

P9: Employees were happy with most solutions to the issues. It was clear to them how the total picture improved by a certain solution, they saw the positive value. This is partly because they had a lot of discussion in defining the solutions: 'why do we do it like this?', 'cant we do it more efficiently?' etc. Other than that, department managers were happy with the **quality of the solutions** and with the fact that the decision making process is registered; the whole chain from process to solution is traceable in the DB54 application. However, for some employees, not much changed. Eighty percent of their tasks would remain exactly the same. Responsibilities did not change for many employees. In that sense, the solutions and changes did not have a lot of impact. There were of course also those solutions that had to be made by the top management, with which not all employees/managers were happy. As a result, not everyone will commit to such a solution. So it's not always a positive story. Finally, there were also process optimizations happening outside of the context of DB54, where DB54 did not have influence.

7.3 Company T

7.3.1 Context

Company T is a fast-growing pharmaceutical company. It is an international company with establishments in other countries as well, and the headquarters are located in Israel. In the past five years, it has doubled in size and the aim is to double in size again in the coming five years. This growth has been and will mainly be realized by taking over other companies. This case takes place at Company T Netherlands.

Company T Netherlands is working on an implementation of an Oracle Enterprise System. This implementation was pushed, top-down, from the headquarters in Israel. I am not sure whether the organization was really ready for this implementation; middle managers would have preferred SAP; 80% of the Company T establishments in other counties use SAP; the majority of companies that will be taken over most likely also use SAP; a SAP implementation has gone well in some countries and an Oracle implementation has failed in other countries. On the other hand, it is a large project with many stakeholders (and shareholders) that need to be kept satisfied, so the choice for Oracle gradually seems to have been accepted ('it's not like we have any choice in the matter, we have to do this'). The entire ES implementation project has been running in this company since 2000. Due to the Oracle implementation, there are also a lot of other projects running where IT applications are modified to be able to interact with Oracle.

7.3.2 Content

The sales and marketing department was faced with new employees, new management, changing roles and responsibilities and changing information needs in the fast evolving market. Therefore, the main goal was to map the department processes, tasks and activities and optimize them, in light of the changing internal and external environment. One could call this 'operational excellence'.

The sales and marketing department also served as a test case. Results that DB54 brings in this department will be presented to a top manager, based upon which the decision will be made whether DB54 has enough potential to use it in other departments as well.

7.3.3 Process

7.3.3.1 Type of participation

All four employees of the sales and marketing department, including the department manager, have participated in a direct manner, from the start of the project. There were no other participants, and no indirect participants. This is a very small group, which does not create any efficiency issues. The department manager volunteered his department for working with DB54. The participation activities were physically performed within the department. There were no other professions involved, so inter-profession activities were not possible.

An external process facilitator fulfilled the role of process facilitator, thus being responsible for executing and facilitating the participation activities. The employees and manager fulfilled the role of participants. The employees were led in a group leadership style, where the employees made decisions together with their manager.

Top managers are not involved in the project yet. They do not explicitly support it, facilitate it, advocate it, or clear resources for it. Rather, all time and money is invested in the Oracle implementation and day-to-day businesses.

7.3.3.2 Content of participation

The process facilitator first led a group session with all employees, and conducted 1-on-1 sessions with employees in between. The goal of the individual sessions was to map the processes,

responsibilities and issues which the individual encountered in his day-to-day work. During the group brainstorm sessions, the results were presented to the rest and there was room for feedback. Afterwards, the employees made SPION models on their own, which were validated by the process facilitator and the department manager in later sessions.

7.3.3.3 Extent of participation

All employees fully participated during each step of the DB54 method that was performed. The execution of the SPION models has not been performed by anyone in this case.

7.3.3.4 Formality of participation

So far, the participation has been quite informal. However, the steps to achieve the envisioned improvements are to be planned and implemented in the daily routine of the department. Also, departmental reports will be made based upon the SPION models. At this time however, the department is not ready for that yet.

7.3.3.5 Degree of participation

The employees and department manager were responsible for making sure that their own tasks were correctly mapped and that the issues they encountered were clarified. Also, the employees and manager have been made responsible to define solutions to these problems that they encounter. So the activities were rich and meaningful, in theory.

The manager did not feel that the employees were very committed to doing this, however. A possible reason is that DB54 was just a 'try-out' project for them, and that the Oracle project stole all commitment. Also, the manager and employees felt that the web-based tool did not look very well and was not very user friendly. According to the external process facilitator however, Company T has been spoiled with good looking software by pushing their suppliers to the maximum, giving them an unrealistic perspective on software.

The external process facilitator was responsible for leading the sessions and in doing that, he took the responsibility of making sure that everything was 'sharp' and clear. He would do this by asking questions to give the participants a better focus. Also, the process facilitator had the responsibility of giving constructive criticism on the solutions defined by the employees.
Other than taking the responsibilities of a participant, the department manager motivated the employees to participate and distributed the task of making SPION models to employees. Later on in the process, the manager also gradually took up the responsibilities of the process facilitator.

The top management had no responsibilities at all. They were just informed of the progress. There were no other stakeholders with responsibilities.

7.3.3.6 Influence of participation

In the end, the employees themselves filled in everything, from process to problem to solution (SPION model). In that sense, they had a lot of influence in deciding what the department looked like in terms of processes, clarifying issues and deciding what to do to solve a problem.

In mapping processes, issues and solutions, the external process facilitator exerted influence in a careful way. He would ask questions to get things more clear, and speak when something strikes him as odd or when he did not agree with something. Sometimes, he would hint into a direction that seemed fruitful to him.

The external process facilitator and the department manager also had some more influence regarding the SPION models. They would validate the SPION models together and change things where it was deemed necessary. However, this had more often to do with form (logic, objectivity)

than content. In this sense, there was a balance between employee and manager influence, but the main influence seems to have come from the employees.

Top management and other stakeholders did not have any influence.

7.3.4 Results

P1: According to the department manager, "*the simplicity and step by step approach led, in a short time, to a good insight of the processes and bottlenecks that need attention*". It gives insight in what works, what does not and why not. These insights are shared by all employees. So a holistic overview of tasks and responsibilities and a shared understanding and work practice is acquired.

P5: A sense of urgency for change was not really achieved, because the pending Oracle implementation stole all urgency. There are some issues defined and worked out, however there is no time to solve these issues. According to the process facilitator however, some of these issues were quite critical and radical.

The project scale was too small (other departments did not participate) to really speak of an increase in organizational reshaping capabilities (**P6**). Also, the scale was too small for changes in relationships and trust (**P8**). The small department itself already had solid relationships and trust. And it seemed that due to the no-nonsense culture, there were no psychological changes within the employees such as change readiness (**P2**), perceived personal competence (**P3**) and organizational commitment (**P4**). At least, no conscious changes.

P7: Because there was only one group of people working with DB54, there was no cooperation with other groups and therefore I cannot say anything about how DB54 stimulated interdepartmental cooperation and communication in this case. The communication within the department was already solid, as were the relationships and trust.

P9: Measuring **the quality of the solutions** seemed not to be possible because the solutions defined with SPION models have not yet been implemented. However, the department did improve processes, solved issues, and better aligned tasks and responsibilities. This was done outside of the scope of DB54, meaning that SPION models were not used for it. However, DB54 has triggered attention to these solutions. Now, the department has a better understanding of the department's current and future role within the organization.

7.4 Foundation S

7.4.1 Context

Foundation S is a foundation that facilitates sports in a sports park. It is run by a board which has 5 to 6 members and consists entirely of volunteers. The main goal of the foundation is to facilitate as much sportspeople as possible on the sports park. Hence, the foundation maintains the physical sports park with its accommodations and tries to retain the 'park' culture. They also directly facilitate the 12 sports associations (with around 3500 members in total) which use this park. In pursuing this goal, there are also external stakeholders that need to be kept satisfied, such as the municipality who previously exploited the sports park but funds the foundation and people living in the area surrounding the sports park.

7.4.2 Content

Because the foundation consists of volunteers, there's no hierarchy and most things happen based upon good will. But with the many stakeholders (sports associations, sportspeople, municipality and its inhabitants) come many responsibilities. And due to the size of the sports associations and park there's also a large financial responsibility; the cash flow is in the millions. In these regards, the board members were not functioning optimally. Instead of functioning on the strategic and tactical level that was required, they were busy mostly with operational business. As a result, errors were made, the dissemination of information took too long and stakeholders went straight to the municipality instead of the foundation for affairs relating to the sports park. Therefore, the goal was to professionalize the board.

7.4.3 Process

In order to professionalize the board, a consultant was attracted. This consultant became a member of the board on the position of communication. To professionalize the board and get it to a more strategic level, he decided to use DB54 to map the different tasks and responsibilities of each board member, with participation of the board members. The consultant was involved in the creation of the DB54 method and too, and as such he trained himself in the use of the method and tool.

7.4.3.1 Type of participation

Every one of the board members participated in the DB54 process, in a direct manner, from the beginning, and in their own workplace. There were no other stakeholders involved. As such, it's a small group with no apparent efficiency issues. Since there are no other parties involved, inter-profession sessions are not possible on that level. However, since each board member has a different set of tasks and responsibilities, it was possible to conduct inter-profession activities on that level.

The consultant fulfilled the role of process facilitator, being responsible for executing and facilitating the participation activities. The other board members fulfilled the role of participants. Since a consultant was hired to professionalize the board and that same consultant facilitated the DB54 process, it is likely that the leadership style was more consultative than group.

7.4.3.2 Content of participation

First, there were several brainstorm sessions with each and every one of the board members individually. These sessions were mostly done through 1-on-1 conversations. The goal of these sessions was to use DB54 to map the processes, tasks and responsibilities of each board member individually. This was done mainly on a strategic level.

After that, there were group sessions with multiple board members together. Based upon individual's views of their tasks and responsibilities, the main goal of these sessions was to facilitate discussions and confrontations and reach a consensus on the tasks and responsibilities of everyone.

This is where the process stopped. In this case, DB54 was not used to identify issues and possible solutions and therefore the board members have not actively participated herein.

7.4.3.3 Extent of participation

The participation the board members was equal during the several phases of the project; only three steps of the method were completed, and all board members fully participated in these steps.

7.4.3.4 Formality of participation

No data was collected here. However, due to the voluntary nature of the foundation, the sessions and the participation are very likely to be more informal than formal.

7.4.3.5 Degree of participation

The responsibility of the board members was mostly to participate and voice their opinion on tasks and responsibilities. Therefore, they were also responsible for a correct description of the tasks. They were committed to this because they saw value in doing this and were enthusiastic from the first session. Due to the fact that only half of the method was used, board members could not be given any responsibility in solving problems and executing changes in the context of DB54. Still, the tasks which they were responsible for made it a rich and meaningful participation.

The consultant board member took up the role as process facilitator and the accompanying responsibility. He was responsible for a sharp and consistent definition of the tasks and responsibilities. He also took responsibility for executing solutions, but not as part of DB54.
Because there was no management, the consultant board member was also somewhat responsible for exercising top management support; motivating the employees and making them participate.

There were no other stakeholders with responsibilities in this case.

7.4.3.6 Influence of participation

The board members were given influence on how the tasks and responsibilities were defined, by asking them what they thought and putting it down in the DB54 web-tool. It is not known how much influence the consultant board member, who took the role as facilitator, exerted on the definition of tasks and responsibilities in relation to the other participants.

Because the solution phase was carried out outside of DB54, it is not clear how much influence the participants exerted there, and it is not sure how the balance of influence between the consultant and the other board members was. It is however likely that the consultant had the most influence on the definition of problems and solutions. After all, this is why he was attracted. However, he defined solutions outside of the context of DB54.

There was no management and no stakeholders exerting any influence in this project.

7.4.4 Results

P1: Due to the direct manner in which DB54 confronts people, the tasks and responsibilities of the board members quickly became clear to everyone. This created a holistic overview of tasks and responsibilities, and a shared understanding and work practice. Board members are now speaking the same language again.

The quick results of DB54 created the necessary support for the method. The method and tool were embraced by the participants. However, not as a tool to change, but as a tool to document and gain insight. Also, changes have not been executed in the context of the DB54 method and tool. Therefore, the change readiness (**P2**) and its antecedents perceived personal competence (**P3**) and organizational commitment (**P4**) cannot have reached its potential during this project for the board members. Also, the sense of urgency (**P5**) to map the tasks was already present at each of the board

members before DB54 was started. Due to the minimal application of DB54 where no actual change was initiated within its context, the organizational reshaping capabilities (**P6**) have also not improved due to DB54.

P7: Because there was only one group of people working with DB54, there was no cooperation with other groups and therefore I cannot say anything about how DB54 stimulated interdepartmental cooperation in this case. DB54 did however facilitate clear and open communication between all board members, based on which they had fruitful discussions.

P8: The relationships and trust between the board members does not seem to have changed, however the relationships and trust with the stakeholders seem to be improved because the board is now taking its responsibilities more clearly. The image with the external stakeholders has improved because the problems of unclear tasks and miscommunication have been solved with help of DB54.

P9: As a result of DB54, the information flow is steady, the board is working more efficiently and the foundation is without stress. In this case, the mapping of the processes alone was the number one solution to achieve this. The foundation was enthusiastic enough about these results to introduce the method to the sports park manager, who could use it for his own employees.

7.5 Summary and conclusion

To summarize and conclude the cases, the following table has been created:

	FM	Company P	Company T	Foundation S
Project Goal	Improve service quality and customer satisfaction	Create shared service centers	Try-out project to solve operational issues	Gain insight into tasks and responsibilities
Type of participation	Four departments, with a total of ~45 participants. 8 lead employees (selected by manager) did the most direct participation.	Four departments, everyone participated directly in 3 departments. Lead employee was appointed (by manager) in 1 department.	One small department with four people who all participated directly.	One small group of five people who all participated directly.
Content of participation	Solutions have been created in SPION models but most of these have not yet been executed.	All phases of the DB54 method were performed and solutions were effectuated.	Solutions have been created in SPION models but have not yet been executed (for almost a year now).	Only the first two phases were performed, there were no issues and solutions identified with DB54
Extent of participation	Everyone participated directly in the brainstorm, later less people joined the sessions	Everyone participated directly in the brainstorm, later less people joined the sessions	Everyone participated directly in each performed phase	Everyone participated directly in each performed phase
Formality of participation	Formal as well as informal	Formal as well as informal	Formal as well as informal	Formal as well as informal
Degree of participation	Users get full responsibility during the entire process	Users get full responsibility during the entire process	Users get full responsibility during the entire process	Users get full responsibility during the entire process
Influence of participation	Participants have influence as well as the managers, balance is ~50-50, Input is taken seriously.	Participants have influence as well as the managers, balance is ~50-50. Input is taken seriously.	Participants have influence as well as the manager, balance is ~50-50. Input is taken seriously.	Participants have influence as well as the manager, balance is ~50-50. Input is taken seriously.
P1	+/-	+	+	+
P2	+	+	-	-
P3	-	-	-	-
P4	-	-	-	-
P5	+	+	-	+/-
P6	+	-	-	-
P7	+/-	+	+/-	+
P8	+	+	+/-	+
P9	+	+	no results	+

Table 5- Summary of cases

In this table:

- '+' denotes positive/agree;
- '+/-' stands for neutral/neither agree nor disagree;
- '-' means negative/disagree.

Of course, this table is highly summarized and has no room for all the nuances mentioned in the textual description of the results. The next chapter 'data analysis' will further analyze the data and the differences between the cases.

8 Data analysis

8.1 Data analysis and discussion

In order to create some overview, all case results have been summarized a simple table, with an emphasis upon Organization FM:

	FM Logistics	FM Purchasing	FM Maintenance	FM Finance	**FM Overall**	P	T	S	**Overall**
P1	+	-	+/-	+/-	**+/-**	+	+	+	**+**
P2	+	+/-	+	+	**+**	+	-	-	**+/-**
P3	+	-	-	-	**-**	-	-	-	**-**
P4	-	-	-	-	**-**	-	-	-	**-**
P5	+	+/-	+	+	**+**	+	-	+/-	**+**
P6	+	+/-	+	+/-	**+**	-	-	-	**-**
P7	+	-	+/-	-	**+/-**	+	+/-	+	**+**
P8	+	-	+	+/-	**+**	+	+/-	+	**+**
P9	+	no results	no results	no results	+	+	no results	+	**+**

Table 6 - Summary of results

In this table:

- '+' denotes positive/agree;
- '+/-' stands for neutral/neither agree nor disagree;
- '-' means negative/disagree.

Of course, this table is highly summarized and has no room for all the nuances mentioned in the textual description of the results. The Organization FM is emphasized in the table, because this is the main case of this study. Now, the overall results for each proposition will be discussed.

P1: "Employees will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work"

Regardless of the many differences in the several cases, proposition P1 holds true in each one except the Organization FM case, where the result is neutral. Positive results do seem quite likely, since the focus of the first three steps in the DrawBridge54 method (brainstorm, responsibilities, overlaps and issues, detailed work activities) is to get employees to speak the same language and agree upon the work they are doing. In doing these first three steps, employees are forced to think about what their work consists of and how it relates to other processes, departments and stakeholders. As such, they gain a thorough understanding of the actions and consequences of their work. And due to the transparent nature of DB54, employees can not only see the work processes for other employees in their department, but also for other departments. In the Foundation S case, we can see that performing only these first three steps of DB54 can be enough to achieve this effect.

The results are neutral for the Organization FM because there was a lack of insight in processes of other departments. This is most likely due to the fact that the DB54 project has not progressed far enough for departments to work together. And indeed, the manager of the purchasing department commented that the interaction with other departments still needs some time to crystallize, and this could be a reason why all employees did not feel that they gained insight into the work processes of other departments. On the other hand, in the web-based tool, the results of other departments are transparent for everyone. This means that departments do not have to work together on solving

issues to gain an understanding of other departments' issues. In this case, it seems that this 'transparency' functionality of the web-based tool was not used much to look at the results of other departments.

With this in mind, it is interesting to note that in each case, participation was mostly inter-profession, except in the Foundation S case where each participant had a different set of tasks and responsibilities. However, theory argues that intra-profession sessions are also necessary to gain a holistic process focus. Of course, this does not really apply for the Company T case, because only one department participated there. But it does apply to the Organization FM and Company P cases. In the Organization FM case, this might be another reason why insight into other departments was not achieved. If the web-based tool is not used to gain insight in other departments and there are no intra-profession sessions, it is logical that there is no holistic overview of the entire work process spanning over multiple departments. In the Company P case, some intra-profession sessions did take place, but incidentally. But at Company P, the transparency in the web-based tool was used to gain a holistic insight; everyone viewed results of other departments and the points of disagreement are eventually discussed.

The question that arises is now why this transparency function was used in the Company P case but not in the Organization FM case. A possible reason lies in the comment of the logistics department manager, where it was mentioned that not all departments started at the same time. Logistics started first, and therefore they could not gain any insight into other departments early on. The logistics manager feels this is a pity. On the other hand, multiple departments had started at the time of writing, so this is not the entire reason. I think it has more to do with how seriously the project is being taken. At purchasing, an employee commented that he had the feeling that nobody was taking the project seriously. In the maintenance and finance departments, the progress is rather slow and other activities get priority. The top manager of the Organization FM does not act upon this. In contrast, Company P gave all priority to DB54 because it was a necessary step to take to create the shared service centers. Although they did not actively participate, top managers gave full and visible support and resources. For those reasons, employees of the Company P departments seemed much more committed and involved in their DB54 project than the Organization FM employees.

P2: "employees will gain a more positive attitude towards change and report higher levels of readiness for change"

In the Organization FM and Company P cases, the readiness for change has improved for the employees. But in the Company T and Foundation S cases, it has not. A major factor in explaining this difference could be the fact that the latter two have not carried out any changes defined in the SPION models. In Foundation S, the SPION models were not even constructed. Readiness for change is partly created through positive experiences with change, and these only took place in the Company P case and to some extent in the Organization FM case.

But why have these changes not been carried out? One factor might be the scale of the project. In the Company P case, multiple departments worked with DB54, with some attitudinal top management support at Company P. In both the Company T and Foundation S cases, it was only one department with a few people and no top management support at all. This might have created a lack of extrinsic motivation: they did it only for themselves. In the Company P case, other departments were dependent upon the DB54 results of one department, possibly creating some extrinsic motivation. Another factor in the Company T case was the total lack of priority for the DB54 process; at the moment of writing, the department has not yet undertaken any actions to solve problems that are described in the SPION models. A reason for all of this is the Oracle implementation and the accompanying IT application modification projects, which have more priority than DB54 and cost a

lot of time. DB54 was positioned in the bottom of the priority list. Therefore, employees were not very committed to the process.

Another major factor in the Foundation S case is that in this case, the DB54 web-based tool was used but the method not so much. The tool was used only to document processes, tasks and responsibilities. There was no intention to change or improve a process by defining issues and solutions with DB54. The consultant board member did not use the same methods as the process facilitator in the other cases. In this sense, this case is a very limited application of DB54.

In the Company P case on the other hand, DB54 was given much priority because they were using it to set up their shared service centers. Therefore, there was attitudinal top management support and the department managers themselves and the employees became very committed to the process. And in the Foundation S case, the process facilitator was a hired consultant who went his own way after the first three steps in DB54, rather than following the complete DB54 process. Changes have been carried out here, but not within the context of DB54. Therefore, the readiness for change due to changes effectuated with DB54 cannot be measured.

With the results of the Organization FM in mind, this discussion becomes more interesting. In the Organization FM case, two departments did not effectuate any changes, and three departments did not give much priority to DB54. Also, there was not much top management support. Based upon the discussion above, one could then assume that the Organization FM has not reached readiness for change. However, the Organization FM did report an increased readiness for change overall. Therefore, a positive experience with changes may not be necessary in order to create readiness for change. And indeed, the logistics department did report increased levels of readiness for change but on the other hand reported that their attitude towards change in general had not become more positive. What seems to be the big difference here is that in the Organization FM case, there are changes on the horizon which are positively regarded by the employees. In the Company T and Foundation S cases, there never really were changes on the horizon in the near future and in the context of the DB54 project. So, readiness for change was created in the Company P case where changes were effectuated and in the Organization FM case where changes are placed in the near future, and readiness for change was not created in the cases where no changes were effectuated or where no changes would happen in the near future.

Furthermore, it is interesting to note that in theory, the propositions P3, P4, P5 and P6 are all regarded as antecedents of readiness for change. However, in the Company P case, where readiness for change was created, only proposition 5 was satisfied and the others were not. In the Organization FM case, only propositions 5 and 6 were satisfied and 3 and 4 were not. This means that the lack of perceived personal competence and organizational commitment had no negative influence on the creation of readiness for change.

P3: "employees will report higher levels of perceived personal competence" and **P4: "employees will report higher levels of organizational commitment"**

In each case, the perceived personal competence and organizational commitment were not perceived to be increased after DB54 was executed. In the Organization FM case, this is again most likely due to the fact that changes in the organization and in employees' day-to-day tasks have not yet been effectuated much. Therefore, their job is still the same and the organization as a whole is also still the same. This was only different in the logistics department, where some changes were effectuated and employees did report higher levels of perceived personal competence.

In the Company T case, this might be due to the 'no-nonsense' culture in the department, causing people to not express such things easily. And like in the Organization FM case, no changes have yet

been effectuated so the employees' jobs are still the same. Also in the Foundation S case only half of the DB54 method was exercised, which most likely had a major influence on the results. In this latter case, this is most likely because of the internal process facilitator. In the interview, he said that he did not see DB54 as a change method and did not see the value of performing the later steps. In the Company P case, changes have been effectuated and the external process facilitator did perceive an increase in perceived personal competence and organizational commitment, but only during the process and not after it.

Another big reason for the lack of these factors in the Company P, Company T and Foundation S cases is that I asked the department manager whether he perceived an increase in personal competence and organizational commitment in his employees. And this was asked some time after the DB54 process was finished. Naturally, the department manager would not measure these factors during the process and thus had not much to say about this. Also, it is rather difficult for a manager to assess the perceived personal competence of an employee! Finally, according to the external process facilitator, most managers did not possess strong empathic abilities, so they would not consciously perceive an increase in perceived personal competence and organizational commitment of their employees. Plus, the external process facilitator noticed that these factors did increase during the process, but decreased again when DB54 was not used anymore. And in all of these three cases, DB54 is not used anymore, so this can also explain the lack of increased perceived personal competence and organizational commitment.

P5: "employees will gain a better understanding of the gap between the current and desired states"

A sense of urgency was created in the Organization FM and Company P cases. In these cases, changes were required and the employees eventually saw this and gave their input. In the Foundation S case, the sense of urgency for change was said to be already present before the DB54 process started. And indeed, the board members themselves hired the consultant to straighten things out for them. In the Company T case, DB54 did point out some issues and the need for change was apparent, but not urgent. This is due to the Oracle implementation, which stole all urgency and priority, and the fact the top management did not give any support for the DB54 project. In fact, top management did not set any goal for DB54. This is in sharp contrast to the Organization FM and Company P cases, where the DB54 method was exercised with a clear goal which was communicated by top management.

P6: "the organization will create organizational reshaping capabilities"

An increase in organizational reshaping capabilities was not present at each case except the Organization FM case. In the Company P case, the reason is that DB54 was used in the context of a project, and perceived to be useful only there by top managers. Whereas department managers and employees saw the value and benefits of further use, top managers did not. In other words, there did seem to be potential for an increase in organizational reshaping capabilities, if only the departments would have continued to use DB54. This would have provided them a structure for continuous improvement and thus create organizational reshaping capabilities. In the Company T and Foundation S cases, there were no changes executed in the context of DrawBridge54 for reasons mentioned before (in the analysis of proposition P2) and therefore there cannot have been an increase in organizational reshaping capabilities due to DrawBridge54. This explanation is supported by the external process facilitator, who noticed that this factor did increase during the process, but decreased again when DB54 was not used anymore. And in all of these three cases, DB54 is not used anymore, so this can explain the lack of organizational reshaping capabilities. In contrast, DB54 is being used at the Organization FM at the moment of measurement, and they report organizational reshaping capabilities.

So why is DB54 not used anymore? At Company P, the DB54 methodology has fallen into a black hole at Volkswagen Company P Financial Services after the external process facilitator left. There were not enough people to take over the role of process facilitator, and the top management did not lend enough support for it, they gave no pressure to adopt the tool. They did not buy the tool and thus DB54 could not be embraced as a continuous improvement tool. All of the managers I spoke to think this is a pity, because they would have liked to use DB54 more. One manager said: "I think the employees are convinced of the method and tool, but the top management has never visibly supported it. The external process facilitator took care of it while he was there, but the tool was really never adopted by the organization". They think it's a pity that they don't use it anymore, and that other departments have never used it. They feel that they are missing out on something. This shows that despite the fact that the department managers and employees are very positive, they do not undertake any actions on their own to adopt the tool. Instead of asking top management to buy the tool, they wait for top management to make a decision about the use of DB54.

P7: "DrawBridge54 will foster a human relations culture with open, clear and transparent ways communication and participative decision making" and **P8: "DrawBridge54 will foster a culture of partnership and mutual respect with positive relationships and mutual trust with involved stakeholders"**

The results for both of these propositions are more or less the same. In the Organization FM case, the positive results regarding the culture were mostly intradepartmental, but not interdepartmental. This can gain be attributed to the fact that the project has not progressed far enough for departments to actually work together. Therefore, communication, relationships and trust between departments have not increased as a result of the DB54 method. At the purchasing department, no intradepartmental results have been achieved. This is most likely because the department manager is not at all involved in the project, employees don't take the project seriously and they don't give it any priority. Therefore, no project results have been achieved at all for the majority of the employees in that department.

At Company T, results were also only intradepartmental. This is because the sales and marketing department served as a test case at Company T, DB54 was so far only used in this department. It has not been rolled out in other departments yet. Therefore, no effect was achieved in terms of clear and open communication between departments about shared responsibilities and collaboration between departments in defining solutions to issues, and other effects were suboptimal. However, despite the fact that only one department used DB54 so far, the manager of this department is '*very positive about the method and tool*'.

In several departments of Company P and in Company T and Foundation S, the humans relations culture and mutual trust and positive relationships were already present to some extent. In the Company T case, the impression was that DB54 did not add any value to this. This might again be attributed to the 'no-nonsense' culture within the department. In the Foundation S case however, DrawBridge54 was perceived to facilitate clear and open communication due to the transparency in the web-based tool, and DB54 did improve relationships and trust with external stakeholders. And in the Company P case, DrawBridge54 was also perceived to support clear and open communication within and between departments and to improve relationships and trust between departments and with external parties. When the managers were asked about this however, these effects were not always attributed to DrawBridge54. Rather, they attributed the effect to themselves and to the process facilitation. It must be noted however that the process facilitation is actually a part of the DrawBridge54 project, so in that sense the results can be attributed to DB54. Plus, the clear and open communication effect was attributed to the DB54 tool by some.

Seeing that Foundation S also achieved this results, it is interesting to note that the internal process facilitator in the Foundation S case did handle the DB54 process differently: he did not complete all processes and had a more consulting than facilitating role. Also, the personality characteristics can be different from those of the external process facilitator in the Organization FM, Company P and Company T cases (which was one and the same process facilitator), who does seem to have strong social and facilitating skills. However, the results in these areas were the same. This can mean that this internal process facilitator also had strong social and facilitating skills, or that the DB54 method and tool does bring more results in this area than what is perceived by the department managers in the Company P and Company T cases.

P9: " DB54 will lead to changes in processes, policies, structures and people"

In the cases where changes were effectuated as a result of DB54, these changes were regarded as good and positive by the managers and the employees. Unfortunately, in the Company T case and in three departments of the Organization FM, no changes have yet been executed. In the Foundation S case, issues have not been solved in the context of DB54, but there the mapping of the processes alone was a huge step towards achieving operational changes in processes and responsibilities.

8.2 Summary and conclusion

Based upon this data analysis, we can answer the research question "*Which of these factors are actually influenced by DB54 in practice?"* To this goal, the conclusion for each proposition is now discussed.

P1: "employees will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work"
In conclusion, this proposition holds true, except to some extent in the Organization FM case, where no insight was gained in processes of other departments. The big difference between the Organization FM case and the others is that there were no intra-profession activities and the transparency functionality in the toolset was not used much. Also, the departments have not progressed far enough to actively start working together with other departments in the project, because project was not really taken seriously by some and did not have much priority overall. It is likely that for these reasons, where no insight was gained in processes of other departments in the Organization FM case.

P2: "**employees will gain a more positive attitude towards change and report higher levels of readiness for change"**
Overall, readiness for change was created in two out of the four cases. Readiness for change was created in the cases where changes were effectuated and where changes are placed in the near future, and readiness for change was not created in the cases where no changes were effectuated or where no changes would happen in the near future. So to create readiness for change, you need to have executed changes or have them planned in the near future. And it seems likely that in order to create positive experiences with these changes, it is very important that the employees are given responsibility and influence in defining and carrying out change. This was the case at both the Organization FM and Company P. The two positive cases have another factor in common which the two negative ones do not have; large project scale over multiple departments. Furthermore, it is interesting to see that in two cases, the lack of perceived personal competence and organizational commitment did not prevent the creation of readiness for change.

P3: "employees will report higher levels of perceived personal competence" and **P4: "employees will report higher levels of organizational commitment"**
Overall, there was no perceived personal competence and organizational commitment, except in the logistics department of the Organization FM where there perceived personal competence increased

somewhat. This only difference between logistics and all other cases that can explain this is that changes have recently been effectuated at logistics, which have changed the employees' jobs. At Company P, changes have been effectuated but this happened some time ago so the effects on perceived personal competence and organizational commitment have faded away over time. In all other cases, changes have not been effectuated based upon DB54. Based upon this, we can tentatively conclude that an individual's perceived personal competence can increase for a short period of time as a result of a recent change in the work environment.

P5: "employees will gain a better understanding of the gap between the current and desired states"
The sense of urgency for change was created in those cases where the DB54 project had a clear goal communicated by top management and where changes were required to achieve these goals. In the cases where there was no clear goal and/or no changes in the context of DB54, a sense of urgency was not created. So DB54 does have the potential to create a sense of urgency, as long as all steps are performed and the project gets a priority status by top management, and the initial goal of the project should be clear.

P6: "the organization will create organizational reshaping capabilities"
It seems that organizational reshaping capabilities are only reported during the DB54 project. And this makes sense, because when an organization does not use DB54 anymore, it loses the opportunity to use the method and tool to explain, structure and execute changes and improvements. Therefore, it can be concluded that DB54 brings organizational reshaping capabilities for as long as it is used, for the method itself could be seen as a reshaping capability. Top managers should take the decision to continue the use of DB54.

P7: "DrawBridge54 will foster a human relations culture with open, clear and transparent ways communication and participative decision making" and **P8: "DrawBridge54 will foster a culture of partnership and mutual respect with positive relationships and mutual trust with involved stakeholders"**
When actively and seriously working with DB54 within a department, the intradepartmental communication, relationships and trust will increase. Interdepartmental communication, relationships and trust can increase when the project has progressed to the point where departments work together on the project. So in conclusion, solid process facilitation in the DrawBridge5©4 process can sustain or enhance clear and open communication and positive relationships and trust in departments, between department and with external parties. Furthermore, the DB54 web-based toolset facilitates clear and open communication and possibly improves trust and relationships as well.

P9: " DB54 will lead to changes in processes, policies, structures and people"
In the cases where changes were effectuated as a result of DB54, these changes were regarded as good and positive by the managers and the employees. Therefore, DB54 can be said to effectuate positive organizational changes.

9 Conclusion

The main research question of this thesis is:

- In which ways can DB54 contribute to the quality of user participation for IS implementations?

In order to answer this question, a sub-set of questions have been answered in the following order:

1. What is the value of user participation in an IS implementation?
2. Which factors influence the quality of user participation?
3. Which of these factors can DB54 theoretically influence?
4. Which of these factors are actually influenced by DB54 in practice?
5. In which ways are these factors influenced by DB54?

The first four questions are answered in chapter three, four, six and eight, respectively. Each of these chapters contains a summary and conclusion paragraph in which a short answer to the research question is given. The last question is answered in this chapter and the next.

This has eventually led to an answer to the main research question. Through DB54:

- Employees can gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work. However, insight into others' work can only be gained if multiple departments are working with DB54 at the same time, the transparency functionality of the tool is used, and/or intra-profession activities are performed as well as inter-profession sessions.
- Employees can gain a more positive attitude towards change and report higher levels of readiness for change, provided that changes have been effectuated or planned in the near future as a result of DB54.
- Employees might gain an increase in their perceived personal competence, but only when the employees' work environment changes positively due to DB54.
- Employees can gain a better understanding of the gap between the current and desired states and thus a sense of urgency for change. This does however require a clear communication of the goals and top management support and priority.
- The organization has an organizational reshaping capability in the form of DB54, which can be used to explain, structure and execute a change. This effect will vanish when the method and tool are no longer used.
- A human relations culture is somewhat fostered in the organization, mostly through open, clear and transparent ways of communication and participative decision making. However, this culture is fostered only on a departmental level when there is no cooperation between departments.
- A culture of partnership and mutual respect is fostered in the organization. However, this culture is fostered only on a departmental level when there is no cooperation between departments. Also, relationships and trust with external parties can increase due to changes and insights that DB54 brings.
- Positively regarded organizational changes can be effectuated.

To gain insight into how the strengths of these relationships relate to each other and how they relate to the theoretical model, the actual model with the relationships is depicted on the next page. In comparison with the theoretical model, organizational commitment has disappeared because no support was found. Also, there's a direct line from DrawBridge54 to readiness for change, because there was a moderate correlation between participation in DB54 and readiness for change in the Organization FM survey.

In the model, the relative strength of the relationships is denoted by the thickness of the lines; the thinner the line, the weaker the relationship. Such a weaker relationship usually needs important additional aspects to thrive (as described above). No line means that no correlation was found.

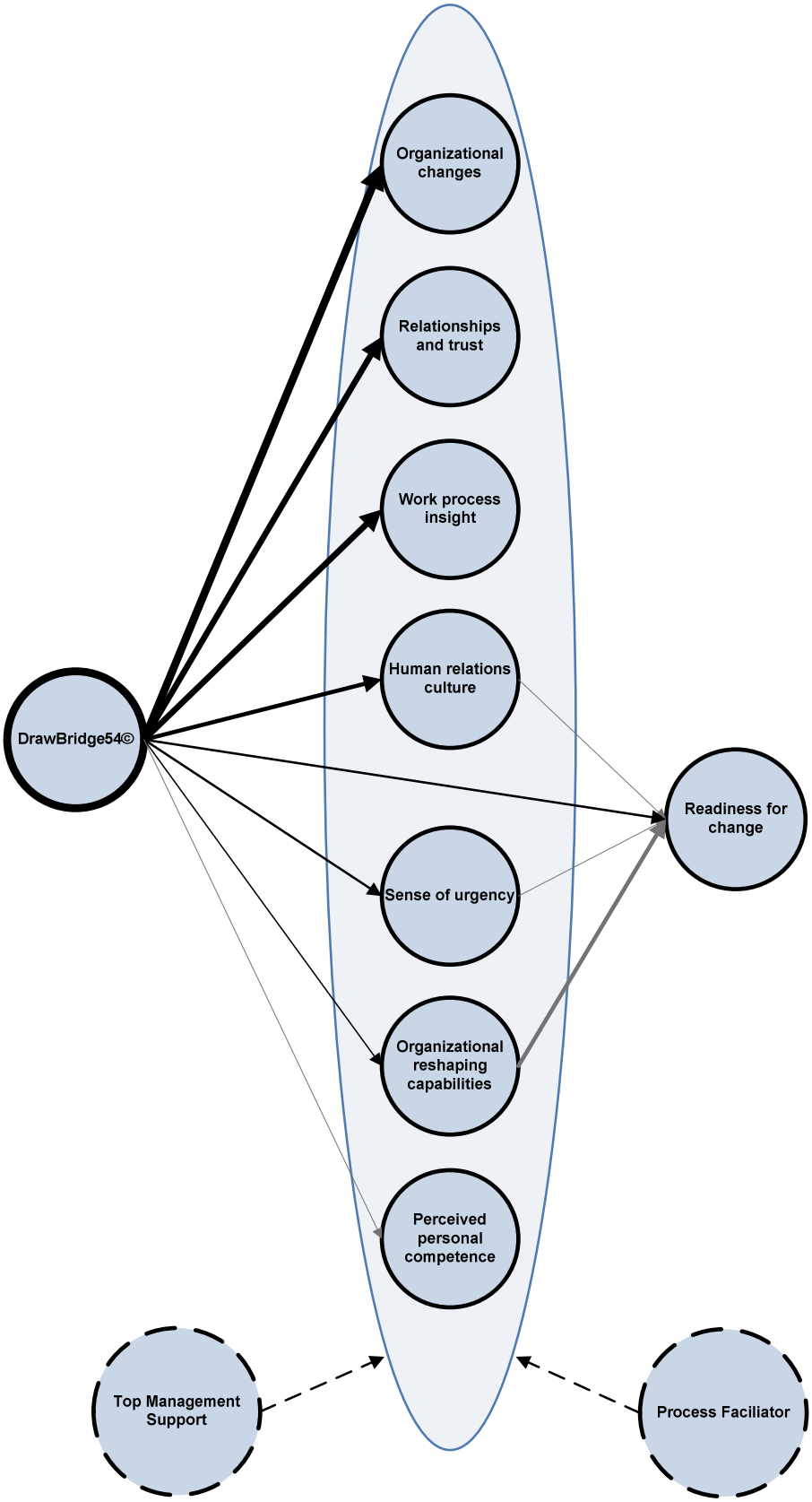

Figure 5 - Resulting model

As we can see from the resulting model, DB54 influences the factors that should be present before starting an IS implementation process weakly to moderately strong. The only factor that DB54 had completely no effect on is the organizational commitment. Based upon these results, it can be concluded that DB54 can set the stage for a smooth IS implementation mostly by fostering a work process insight, a culture of partnership and mutual respect and by effectuating organizational changes. I think that these are very important factors contributing to a successful IS change. First of all, the system quality issue is solved because of the work process insight. We have seen that users should be aware of and encouraged to articulate all of their requirements, and they need a holistic overview of the entire work processes for that. DB54 can bring this overview, and therefore the employees will have better ideas on how an information system can support their work processes. Because they have a better idea of their work and the position they take in the greater scheme, they will be more aware of their social and humanistic requirements. Secondly, the user-developer relationship issue is somewhat mitigated by DB54 because it fosters culture of partnership and mutual respect and a human relations culture. This can prevent conflicts and tensions. Also, the transparency that the web-based toolset bring can prevent a lot of miscommunications which usually are at the base of user-developer relationship issues. And last but not least, changes in processes, policies, structures and people can be effectuated. In this sense, DB54 can take care of the complementary organizational changes that are required when implementing an information system. As such, DB54 brings the organizational change perspective which was called for in literature. Because of this, the chances that the information system will meet organizational needs and objectives and that it will actually support the day-to-day processes of the organization are much larger.

It must be noted that the weaker relationships are caused mostly by the execution of DB54 in a less than ideal situation. In more 'ideal' situations, the weaker relationships were notably stronger. Based upon these ideal cases, I conclude that the following aspects are important in order to better achieve the other effects:

- multiple departments should work with the method at the same time, and they should work together as well;
- the transparency functionality of the tool should be used;
- intra-profession activities should be performed as well as inter-profession sessions;
- there should be actual changes effectuated or planned in the near future as a result of DB54;
- the employees' work environment should change positively due to DB54;
- the goal of the DB54 should be clear and communicated by top management;
- top management should give full priority and support to the project;
- the method should be used as a continuous improvement tool to benefit from long-term effects

These can be seen as recommendations to companies exercising the DB54 method. By satisfying these aspects, the quality of user participation in IS projects can be influenced even more by DB54. In addition to strengthening the present effects, employees will be more ready for changes because DB54 brings them a positive experience with bottom-up participative change; employees will better understand the sense of urgency for change; the perceived personal competence of employees could increase; and the organization will have an organizational reshaping capability in the form of DB54. Additionally, if the DB54 method of participation is continued to be used in the context of an IS implementation – with of course some additions and modifications to account for the IS-specific elements – the method can also add much value in solving the user involvement issue; in the cases where there was top management support and clear communication, participants felt involved and committed.

Thus, in conclusion, DB54 can contribute to the quality of user participation for IS implementations by achieving a holistic process insight, a culture of partnership and mutual respect and by

effectuating organizational changes. In an ideal situation, readiness for change, sense of urgency, organizational reshaping capabilities, perceived personal competence and a human relations culture can also be achieved. This sets the stage for a smooth IS implementation, because achieving these effects will mitigate or solve issues that prevent a qualitative and successful user participation in IS projects. By solving these issues, a user participation process in an IS implementation is much more likely to bring the effects it is supposed to bring, eventually leading to IS success.

9.1 Limitations

9.1.1 Internal validity

In terms of internal validity, it should be mentioned that in the Company P, Company T and Foundation S cases, I interviewed the department manager and the external process facilitator. Such interviews have been subject to bias, poor recall and concealment. This might have given an incomplete picture of the situation. Also, I did not interview the employees. Speaking to the employees could have provided me with more perspectives and would make me able to measure the results more thoroughly, although I do not get the impression that the results would change much.

By specifically asking for an *increase* in the measured items *because of* DrawBridge54©, I have attempted to eliminate confounding variables and thus rival explanations for the measured results. Further, I have no reasons to assume alternative explanations for the results in the cases. There may however be some variables 'in between' the measured relationships which this study did not account for. Also, there can always be alternative explanations of which I am not aware. Finally, the analysis might have become a bit subjective due to my changing role from case studier to action researcher.

9.1.2 External validity

The external validity of this study has greatly increased through the use of four different cases in different contexts and natural settings. However, these cases were all department based companies with relatively small departments. But the conclusions will most likely also hold in larger departments with more employees, as long as the process is well coordinated and each employee is given the opportunity to participate. There are no reasons to assume that the effects that DB54 achieves will be harder to achieve within a larger context, because individuals can be approached in the exact same manner. DB54 will have an added value for at least departmental information systems, because the effects are proven on a departmental level. I think DB54 can also be used in the context of larger information systems, because the conclusions will most likely hold in larger organizations with larger departments. It would however be a good idea to actually test the use of DB54 within the context of an IS implementation in practice, because then one can better investigate whether DB54 has an effect upon IS success. The question remains if DB54 can also be used in more dynamic companies which are not department based. I think it does not matter much; if the word 'department' is replaced by 'a group of people' in all cases, the results would not have been different. As long as there is a group of people performing certain tasks, all steps of the DB54 method can be performed as described in chapter five. When there are no fixed groups of people in an even more dynamic situation, I think DB54 can also be used. Then, you cannot create an overview per department or per group of people, but you can create an overview per process, and assign a random group of people who are involved in these processes to perform the DB54 phases for these processes.

9.1.3 Construct validity

Construct validity has been created by establishing appropriate measures for constructs and by using multiple sources of evidence. However, items such as organizational commitment proved hard to measure and only one source of evidence could be used (the survey). The problem with this is that someone might gain an increase in an item, but not consciously, and therefore not report it. It is not unthinkable that this happened with the organizational commitment construct, and possibly other constructs as well.

10 Discussion

In this chapter, the several other conclusions which have been drawn from this study are discussed. In each section, the conclusion of that section is first given. Then, the discussion from which this conclusion is drawn follows.

First, the implications of DB54 for IS projects are discussed, providing another answer to the question in which ways DrawBridg54© can contribute to the quality of user participation for IS implementations. Then, the role of (top) management and the process facilitator are discussed in more detail, because they have been identified as mediating factors in the theoretical model of this study. The way DB54 handles the issue of efficiency is also discussed, because this is the only issue surrounding user participation (as identified in chapter 3) that cannot be solved by answering the research questions. Finally, a few aspects that struck me as remarkable in the DB54 cases are discussed: the role of lead employees; participation skepticism and discrepancies in views of managers and employees. Finally, all conclusions are summarized, and recommendations are created based upon them.

10.1 DB54 as a business case tool

DB54 could be used as a business case tool, because it offers the possibility to link the need for an IS to work floor issues. This can be done from a top-down perspective, in which case top-down IS changes should be linked explicitly with the results of the DB54 process. A bottom-up scenario is also possible, where employees can propose a new IS implementation or a change to an existing system based upon a SPION model.

10.1.1 Business case tool

The SPION models of the DB54 method are suitable to be used in the context of the creation of a business case for an information system. A solution to a problem described in a SPION model might be an information system. When SPION models that have a certain IS as (part of) a solution are bundled together, a document is formed which clearly shows all of the problems that are solved by implementing the IS. The implications of the problems which are described in the SPION models then offer a base to deduct measurable benefits of that IS, by answering the questions “What do these implications cost us?” and “What would the benefits be if these implications were mitigated?”. This can be approached qualitatively as well as quantitatively (in financial terms), although the current SPION models do not yet support the latter. As such, a SPION model can give a major insight into how an information system can solve operational, tactical or even strategic issues and how it will benefit the work floor and the organization as a whole. DB54 can be used as a business case tool in the context of a top-down initiated IS change as well as in a bottom-up initiated IS change. Both scenarios are discussed next.

10.1.2 Top-down IS change

As we have seen in chapter four, many IT innovations are still driven by the development of new technologies instead of business needs [ST08]. In practice, it also seems that companies often implement a certain IS because their competitors also use that system, and they are afraid to miss out on something. In this way, designers may create and companies may implement a product or service that people do not need, do not want or cannot use [ST08]. And whether an IS project is based upon business needs or not, it is usually the top management making the decision. With such a top-down technology *push*, there is a risk that there will be a lack of shared responsibility between the end-users, and individuals might withhold their priorities [SK09]. In practice, it is not an uncommon phenomenon that end-users thus view the IS as yet another project of the managers which is forced upon them. In such cases, it will be hard to involve the end-users; they will most likely

not feel a psychological ownership of the system [PSJ06] as long as they perceive it as a managers' project. This can create a lot of initial resistance to the IS project.

Additionally, the participative nature of the DrawBridge54 method in defining tasks and responsibilities creates a situation where the result is the work floors' view on processes, instead of the managers' views. As such, the process insight, solutions to issues and resulting changes are based upon the 'real' process which the work floor recognizes, instead of a managers' representation of that reality, which the work floor may not recognize. If changes and information systems are implemented in the managers' representation of the reality, the work floor might not recognize the need for change and thus offer more resistance. In short, one can practice DB54 to gain insight in processes and improve them, but when top management proposes a new IS, there may still be resistance if it is not perceived to relate processes and issues identified with DrawBridge54. This issue is not explicitly solved by the effects that are achieved by DB54 as described in the conclusion chapter.

DB54 could be used as a business case tool in this top-down perspective. Top-down IS changes can be linked explicitly with the results of the DB54 process. When employees have identified issues and top management can convince employees that *their* issues are solved with the new IS and that the new IS supports *their* processes, employees may feel more committed to the IS. An entirely different scenario is also possible. When top management cannot convince the employees of this, they might realize that the IS is not needed at all. It might be the case that their view of the processes was indeed very different from the work floor, which would render an IS useless. Or, employees themselves may come up with better or cheaper solutions to certain issues, thus minimizing the need for an IS.

10.1.3 Bottom-up IS change

The goal of user participation is to dissolve the resistance by giving end-users a voice and a choice. But one can wonder if this maybe happens too late in the case of a top-down IS implementation. The end-users may participate in developing or designing a new system to support a business process or they may participate in configuring an off-the-shelf IS, *after* top management has made a decision and when the initial resistance is already there. The most straightforward way to circumvent this initial resistance and to involve end-users from the start, is to also let them participate in or even initiate a decision to start an IS project. In other words, the decision to implement an IS should be made bottom-up instead of top-down, leading to a technology pull instead of technology push. When the IS is a decision made by the end-users, I propose that they will have a strong psychological ownership [PSJ06] of the system because it is *their* project, and it is based upon *their* direct needs. Therefore, they will be involved with and committed to the IS.

DB54 can play an important role in a bottom-up initiation of an IS project. This leaves less room for the initial resistance that occurs in a top-down initiated project. When creating a SPION model, an employee might realize that a certain problem or issue with a business process can be solved with an IT solution. It might even be that several issues relating to several processes can all be solved with one IT system. This has occurred at the logistics department of the Organization FM. They had several problems, such as having to register a received good in many different system and not always being able to tell the customer where there goods are. When creating SPION models of these problems, a digital track and trace system for the goods emerged as a solution in several of these SPION models. This was a solution coined by the department manager and instantly agreed upon by all employees, because they immediately saw the value. When the business case in the form of SPION models is convincing and presented to superiors, it can gain approval of top management.

A solution to a problem might also be the change of an existing IS. The use or misuse of an IS can sometimes be a cause of a problem. An example is in the finance department of the Organization

FM, where one of their tasks is to approve of purchases made by departments of the Organization FM. This approval takes place as part of a workflow in an Oracle system. However, the system does not present the information that is needed to approve of the purchase. In such cases, a solution might be a change to, a replacement of, a better profiling of and/or more pressure to use the existing IS. SPION models can be used to create business cases for such IT changes in a similar fashion as described before.

10.2 Role of management

Not only top management support, but also middle management support is very important. The middle manager should perform what is called 'top management support' in literature in order to involve and commit his employees. They should fulfill roles as change agents, facilitators and active participants. A middle manager should view himself as an active participant and as a part of the self-sustaining whole, and he should be in close contact with his department.

As we have seen in chapter three, top managers have an important role to fulfill. They should take a behavioral as well as an attitudinal approach to top management support, which is most likely to gather support with employees. Whereas literature often takes this employee perspective to top management support, middle management support is often not explicitly mentioned.

However, in an online article by the business process management institute, the importance of this middle management support is underlined [TU10]. The article argues that middle managers can in fact be the number one resisters in change initiatives because they feel that they have a lot to lose. This poses a risk for the involvement and commitment of employees, because they are involved with their middle managers on a daily basis. If the middle manager is unsupportive, does not endorse the project, is skeptical, does not attend key meetings and/or is unwilling to provide resources, it can have a negative influence on the involvement and commitment of the employees. Therefore, top managers should involve middle management from the start of the change initiative and gain support from them.

What also becomes clear when discussing middle management support is that the middle managers in turn have to fulfill this 'top management support' role for their department employees. Middle managers need to actively participate, provide resources, communicate the vision and encourage transparent communication in order to gain the involvement and commitment of their employees. From an employee's perspective, this 'middle management support' of a project is probably more important than 'top management support' because the middle managers are their direct managers with whom they interact on a daily basis. In conclusion, both top managers and middle managers have to fulfill the same important role, only on a different level.

What becomes clear from the description of the results in the Organization FM case is that overall, logistics have achieved the best results and purchasing has achieved the least. The maintenance and finance departments can be said to be positioned in between these two departments. So now the question is if there are differences in the ways the department managers have fulfilled their 'middle management support' role, and if these differences can explain the differing results.

At the logistics department, the manager basically adhered to all guidelines of middle management support. What also seemed to be a very important factor is that the manager was present at the work floor as much as possible, keeping strong connections and relations with his employees and helping them perform their daily tasks. Therefore, the manager seemed to be well respected. This could be a big reason why his good example in participating in DB54 was followed by the employees. In this case, where there was management support and encouragement, employees experienced their participation activities as rich and meaningful and they had the feeling that they were responsible and influential.

In the purchasing department, the situation was almost the opposite. The manager adhered to few of the guidelines and was barely present at the work floor. Employees occasionally did not know where he is or what he was doing. What the department manager himself had to say about this was that he wanted to make the DB54 project a project of the department, instead of a project of the manager. Therefore, he immediately delegated responsibilities and hoped that the purchasing department would be self-sustaining in working with DB54. As such, he did not view himself as an active participant in the project, whereas literature argues that managers should be active participants. And as the employees did not take the responsibility, this did not work out well. However, some more perspective upon the purchasing case is required: another reason why the purchasing manager was not very actively participating and that the employees were not enthusiastic about DB54 is that alongside DB54, multiple other projects were run with high priority.

Still, these two cases clearly show the influence a department manager can have upon his employees' commitment and involvement in the project. Where the manager stuck to the guidelines of 'middle management support', the results were much more positive than in the department where there was no perceived middle management support. The role that finance and maintenance managers fulfilled seems to be 'in between' the roles of the logistics manager and the purchasing manager. In that light, it is very interesting to observe that the results are also 'in between' the results of those departments.

In conclusion, the role of the middle manager seems to be very important. He should perform what is called 'top management support' in literature in order to involve and commit his employees, because it does have an observable effect in practice; the extent to which the role was fulfilled is in all cases highly correlated with the achieved results. These cases also show that a department manager should view himself as an active participant and as a part of the self-sustaining whole, and that he should be in close contact with his department. Without management support, a department will not become self-sustaining in working with DB54.

In the cases where middle management support seems to be lacking, top management should fulfill their role. As mentioned before, it is the role of top management to gain middle management support. Top management can do this by basically performing the same actions that the middle managers should perform in order to gain involvement and commitment of their employees. In this regard, the top manager of the Organization FM did not perform the role to its full extent, and this can explain the lack of total commitment from the middle managers of purchasing, finance and maintenance, which in turn is a partial explanation for why the results of these departments are different in comparison to the logistics department. In conclusion, top management support is vital for middle management and eventually employee support. Unfortunately for this study, the fact that management support was not present in the entire Organization FM was a large factor in not satisfying all propositions in the Organization FM case. This is because some factors such as the holistic process insight and the sense of urgency for change have not been fully satisfied because the project has not progressed far enough.

10.3 Role of process facilitator

The external process facilitator brings much positive effects. A trusted facilitator can identify issues that have been accepted as the way things work, identify possible solutions and he can keep the focus on objectivity and correctness. The external process facilitator is a major factor of DB54 which has influenced the results.

A risk of DB54 when a department uses the method without external facilitation, is that issues are sometimes not seen. Instead, they can be accepted as 'the way things are', because they have been that way for so many years. What I have seen in the Organization FM case is that for a few

participants who are used to such a reality, it seems hard to acknowledge that it can be done better, and that they can exert influence upon the situation. This requires some nudging on the behalf of the external process facilitator. Such an external process facilitator has a fresh, objective perspective, allowing him to see an issue where an internal employee has gotten so used to an inefficient way of working that he does not perceive it anymore. In this sense, an external process facilitator can play a vital role. And when this external process facilitator is aware of the companies' main goals and end-results, he can use this knowledge to exert influence upon the definition of issues and solutions in a department, in order to steer them into a direction that is fruitful for the entire company, thus mitigating the risk of sub-optimal departmental solutions (what can happen when employees come up with a solution that is positive for themselves but adds work for other departments or a solution that negatively contributes to the end-result of the entire business).

In order to be able to exert influence, the external process facilitator can try to gain the respect and trust of the employees. Upon this base of respect and trust, he can approach individuals to work with him on a certain aspect of the project or to encourage them to put more effort into the project. Also, this base of respect and trust allows him to exert influence upon the definition of issues and solutions. And where necessary, he can also engage in personal relationships with people. This is what happened in the cases described in this studuy and I think this plays a very important role overall; a mistrusted process facilitator's influence will not be accepted as easily as that of a trusted process facilitator.

10.4 The efficiency issue

DB54 can be regarded as an efficient method through use of lead employees, small group sizes and a transparent web-based toolset (which can be regarded as a thin participation mechanism). DB54 further brings a focus on main items and objectivity as opposed to details and subjectivity/emotions, which can save time.

In literature, we have seen that "a user participation approach should be efficient in terms of controlling costs and time". This is of course a very vague statement, since I have no insight into when a user participation approach is being regarded as cost- and time efficient. There does not seem to be any consensus in literature as to when a method is efficient and when it is not. However, I can of course say something about the perceived efficiency in cases that were investigated.

On average, exercising DB54 took about one to two hours of an employees' time per week. For lead employees and department managers, this number is slightly higher. Also, it has been shown that results can be achieved in a matter of weeks, of course depending upon the department complexity. In the case interviews, several managers mentioned that they found the method quite efficient, as well as very 'approachable' for everyone. So I believe that the method can be regarded as efficient.

The most important reasons for this efficiency are probably the use of lead employees and the use of the web-based tool. Because of the lead employees being responsible for letting other employees participate and making them feel committed as well, participation sessions can be kept relatively small and there are less overhead costs in not having to put the entire group together everytime. All results are immediately filled in the web-based tool, which thus provides a constant and consistent up-to-date overview. There are no 'older' versions of results and there are no overhead costs and inefficiencies in having to translate results from a brown-paper exercise. Also, this transparency creates insight for employees into the processes of other departments, thus minimizing the need for inter-profession sessions. Furthermore, DB54 encourages employees to not focus upon details and subjectivity, but more on the bigger, objective picture. Once this has landed, this saves a lot of time in achieving results because there are less (emotional) and clearer discussions.

These lead employees and the web-based toolset can be seen as thin participation activities aimed at giving everyone an opportunity to participate. Whereas DB54 does not employ anthropological methods for this participation, it does seek to involve stakeholders that cannot participate through these lead employees and the web-based toolset. The lead employees can involve the stakeholders by presenting results and progress and asking for feedback. The web-based toolset provides transparency for the stakeholders; they can remain informed of the progress and results without being physically present at sessions. When they see something in the web-based tool that they find disputable, they can give feedback to the participants. These are efficient mechanisms to involve every stakeheolder, and they can also prove useful in other user participation processes.

10.5 Role of lead employees

The lead employees played an important role in achieving the commitment and involvement of all employees. The domain knowledge of the lead employees plays an important role here, not just the social skills. These lead employees are a major factor of DB54 which have influenced the results.

In literature, we have seen that some participants should be able to act as opinion leaders, advocates, input gatherers and mediators. In that way, they can involve the people who participate indirectly and encourage other participants. This seems very much applicable to DB54, because in most cases 'lead employees' have been appointed with the responsibility of gathering input from other employees and involving them in the participation process. Generally, the importance of such lead employees has been underlined by most cases described in this thesis; the lead employees played an important role in achieving the commitment and involvement of all employees.

In the Company P accounting department for example, not every employee participated directly. Rather, the team leaders were selected as direct participants who were present at each session, and it was their responsibility to involve the other employees. It seems that in this case, the participants were selected on a hierarchical ground and their domain knowledge rather than for their advocating skills and informal social network. However, the results from the accounting department are the same as for the other departments of Company P. This can mean that the team leaders did have strong advocating skills and good relations with the employees, and/or that domain knowledge is also very important.

In the Organization FM cases, lead employees were also mostly selected based upon their domain knowledge. The idea is that lead employees with much domain knowledge can perform a lot of work in the several phases of the DB54 method. Then, when it is time for employees to give their feedback, there will be a lot of progress upon which they can give their feedback. This is more efficient than a situation where employees are asked to give input upon a set of incomplete information because the lead employees lack domain knowledge. However, some lead employees seemed to have some trouble with filling in their role. Some found it difficult to act as a facilitator or input gatherer. As a result, some lead employees did not take their responsibilities and others had to be selected in some cases. In most cases however, the lead employees performed their tasks well and their domain knowledge did have value.

10.6 Participation skepticism

Participants can be skeptic towards participating in a change process. They might not want to participate at all, and thus positive effects can never be achieved for them.

In the purchasing department of the Organization FM, employees explicitly mentioned that they thought the department did not take the project seriously. They did not take responsibilities and did not work with DB54 as they were supposed to. In other departments, there are also some people reluctant to participate. The lack of middle management support as described before may be a

reason for this. However, there seems to be more to this. It is not just that employees are skeptic towards change, but they are skeptic towards the participation process itself, for several reasons: they don't think it will work; they think it can be used against them; they have no time; they are skeptic towards participation because it is a part of a change process towards which they are skeptic and/or they don't see the purpose or value.

I believe this 'skepticism' of participants towards user participation processes has not had much attention in literature. Rather, most studies do not mention anything about skeptics. It seems like literature generally assumes that people like to participate, and that they like to become responsible and influential. However, this does not always seem to be the case. I do think this phenomenon needs more research because there are undoubtedly more (psychological) reasons. When people do not really want to participate (for any reason), it makes sense that the effects of participation are not achieved for them. And indeed, those employees of Organization FM who were negative about their extent of participation also reported negatively on the effects that were achieved mainly on readiness for change. This skepticism at participants can also be an explanation for a gap between objectively measured participation and subjectively measured participation in previous studies, which in turn can explain for the conflicting results in user participation studies. However, these consequences of having such skeptics in a group of participants are rarely discussed in literature.

10.7 Discrepancies in views

Managers can perceive the participation process (communication, influence, responsibility) a lot more positive than their employees. So a participation process might not go as well as thought.

The theory of user participation mentions that the participation activities should be experienced by the participants as being rich and meaningful. Therefore, participants should be given influence, responsibility, personal autonomy and opportunity to perform significant tasks, at least during participation activities. And neither managers nor end-users should have all influence in decision-making; there should be a healthy balance. In this light, the results of the Organization FM survey are rather interesting.

In a lot of Organization FM cases, there is a large difference in the perception of the department manager and the department employees. This is true for the measured items of participation, but also for the measured results. Mostly, the managers perceive things a lot more positive then the employees. In other words, a manager may think that communication went well, and that his employees are responsible, influential, involved and committed, but the employees will not feel this in the same way. This once again underlines the importance of subjectively measuring participation.

In the case of communication, an explanation could be that the communication is very one-sided. The manager may feel that he communicates well to his employees, but he does not check if the message has actually landed with the employees. In the case of responsibility, it could be the case that employees do not want to take responsibilities that their manager gives them. And maybe the employees do not want influence in decisions; maybe they are somewhat scared of the consequences of this. Because then, they can feel that they can be partly held responsible. Also, the employee can be given influence by a manager but if he has the feeling that he is constantly overruled by the manager of that his input is not used, he will not feel influential. And regarding involvement and commitment, the Organization FM case has shown that if a department does not actually *want* to participate, they will of course not feel involved and committed. This, in combination with a lack of management support, can really kill a participative process. You can have a participative process with sessions with activities in which employees are given influence and responsibility, but if the employees do not really care about this, they will not actually participate.

10.8 Summary of conclusions

The conclusions from the discussion chapter are summarized here:

1. DB54 could be used as a business case tool, because it offers the possibility to link the need for an IS to work floor issues. This can be done from a top-down perspective, in which case top-down IS changes should be linked explicitly with the results of the DB54 process. A bottom-up scenario is also possible, where employees can propose a new IS implementation or a change to an existing system based upon a SPION model.
2. Not only top management support, but also middle management support is very important. The middle manager should perform what is called 'top management support' in literature in order to involve and commit his employees. They should fulfill roles as change agents, facilitators and active participants. A middle manager should view himself as an active participant and as a part of the self-sustaining whole, and he should be in close contact with his department.
3. The external process facilitator brings much positive effects. A trusted facilitator can identify issues that have been accepted as the way things work, identify possible solutions and he can keep the focus on objectivity and correctness. The external process facilitator is a major factor of DB54 which has influenced the results.
4. DB54 can be regarded as an efficient method through use of lead employees, small group sizes and a transparent web-based toolset (which can be regarded as a thin participation mechanism). DB54 further brings a focus on main items and objectivity as opposed to details and subjectivity/emotions, which can save time.
5. The lead employees played an important role in achieving the commitment and involvement of all employees. The domain knowledge of the lead employees plays an important role here, not just the social skills. These lead employees are a major factor of DB54 which have influenced the results.
6. Participants can be skeptic towards participating in a change process. They might not want to participate at all, and thus positive effects can never be achieved for them.
7. Managers can perceive the participation process (communication, influence, responsibility) a lot more positive than their employees. So a participation process might not go as well as thought.

10.9 Recommendations

Based upon the conclusions from the discussion and the main conclusion as described in the previous chapter, the following recommendations are made:

10.9.1 Recommendations for future research

- Research the actual use of DB54 as a pre-implementation tool (research if DB54 has an effect upon IS success in a case where an IS is implemented and DrawBridg54© is used beforehand).
- Further investigate how the domain knowledge of lead employees influences the efficiency of the participation process of the results, and how the importance of this domain knowledge relates to the importance of social and facilitating skills.
- Determine the possible reasons for skepticism towards user participation, and which people are prone to be skeptic and why. Investigate the influence of different cultural factors and types of leadership upon this skepticism.
- Look into the discrepancies of the managers' views in relation to the employees' views towards the participation process, and research ways to eliminate this discrepancy.

10.9.2 Recommendations for DB54

- Adjust the method and/or SPION models so that they are more suitable for use as a business case tool for IS implementations.
- Create mechanisms and processes to ensure top and middle management support.

- Place (more) emphasis upon the personality characteristics of a person (can he/she be an opinion leader, advocate, facilitator, input gatherer and mediator?) when selecting lead employees.

10.9.3 Recommendations for companies exercising DB54

- Aim at creating and sustaining top and middle management support.
- Try to always exercise the method with an external process facilitator.
- Make use of lead employees with domain knowledge and social and facilitating skills.
- Let multiple departments work with the method at the same time, and make sure that they work together as well.
- Use the method as a continuous improvement tool to benefit from long-term effects.

10.9.4 Recommendations for practitioners of user participation in IS projects

- Use DB54 before starting an IS project.
- Create mechanisms and processes to ensure top and middle management support.
- Use lead employees, a transparent web-based toolset, and a focus on main items and objectivity as opposed to details and subjectivity/emotions to create efficiency and to include non-participating stakeholders in thin participation activities.
- Place emphasis upon the personality characteristics of a person (can he/she be an opinion leader, advocate, facilitator, input gatherer and mediator?) when selecting lead employees, as well as his/her domain knowledge.

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12 List of figures and tables

13 Appendices

13.1 Appendix A – relations in IS success

References in grey indicate meta-analyses; references in black are mostly field studies.

13.1.1 X → Y

Behavioral intention to use → system use [DM03, PM09, BH94, VE03, DM09, HP97], perceived ease of use [MG05]

Benefits → user satisfaction [DM03, PM09], intention to use [DM03, PM09]

Communication → cooperation [BS08], user influence [BH01]

Complexity (less) → behavioral intention [VE03], perceived ease of use [BS08]
Cooperation → perceived usefulness [BS08]

Decision control/(perceived) individual impact/influence → Procedural justice [HP97], user satisfaction [HP97, MK08], behavioural intention/task commitment [HP97], system quality [MK08]

Ease of use → behavioral intention [VE03]

External pressure → adoption and adoption intention [DM09]

Extrinsic motivation → behavioral intention [VE03]

Facilitating conditions → user experience [SJC06], user attitude [SJC06], user training [SJC06], use behavior [VE03]

Information quality →Intention to use [DM03, PM09], User satisfaction [DM03, PM09]

Information sources → adoption intention [DM09]

(Intrinsic/psychological) involvement → commitment, acceptance, intention, usage and satisfaction, perceived usefulness [AM07] , behavioral intention [AM07], attitude towards use /system [BH94, MK08], subjective norm concerning use [BH94], user readiness, perceived system quality [MK08]

Perceived ease of use → behavioral intention [VE03, AM07, KL08], Perceived usefulness [BS08, PSJ06], Attitude towards use [BS08, PSJ06]

Perceived usefulness → system use [SJC06, DM09, PSJ06], user satisfaction [MA00], behavioral intention [MG05, VE03, AM07, KL08, BS08], attitude [MG05, BS08, PSJ06]

Procedural justice → user satisfaction [HP97], user task performance (use) [HP97]

Professionalism of IS unit → adoption and adoption intention [DM09]

Psychological ownership → perceived usefulness [PSJ06], perceived ease of use [PSJ06]

Responsibility → attitude towards system [BH94], involvement [BH94], user influence [BH01]

Service quality →Intention to use [DM03, PM09], User satisfaction [DM03, PM09]

Subjective norms (concerning use)→ adoption [DM09], intention to use [BH94, VE03]

System quality → perceived usefulness [SJC06], user satisfaction [SJC06], perceived system quality [MK08], Intention to use [DM03, PM09], User satisfaction [DM03, PM09], system use [DM09, PM09]

System use → user satisfaction [DM03, PM09], net benefits [DM03, PM09]

Task meaningfulness → Decision control [HP97], user task performance (use) [HP97], behavioural intention [HP97]

Top management support / organizational commitment → facilitating conditions [SJC06], user participation [SJC06], perceived usefulness [SJC06], system use [SJC06], user satisfaction [SJC06, MA00], adoption [DM09], communication [BS08], readiness for change [KL08]

User attitude → user satisfaction [SJC06, SK09, MA00], system use [SJC06, PSJ06], behavioral intention [BS08, BH94], involvement [BH94], attitude towards use [BH94], subjective norm concerning use [BH94], perceived usefulness [SJC06], !→ behavourial intention [VE03]

User/computer experience/perceived competence → system use [SJC06], user attitude [SJC06], user training [SJC06], user satisfaction [MA00], readiness for change [KL08], adoption [DM09], perceived ease of use & ease of use [KL08]

User-IS relationship → user influence [BH01]

User participation → system quality [SJC06, KU03], perceived usefulness [SJC06, MK08], user satisfaction [SJC06, DM09, MA00, MK08, KU03], user attitude [SK09, BH94], success/use [DM09, HP97, KU03, MK08], attitudinal/behavioural outcomes [HK08] (moderated by user expertise [SA96]. information satisfaction [MK08], decision control [HP97], involvement [MK08, BH94], psychological ownership [PSJ06], avoidance of useless features [KU03], user acceptance [KU03], productivity outcomes (cost-benefit 1:100) [KU03], !→ productivity outcomes [HK08], decreased training costs (35%) [KU03], decreased user support [KU03], influence [BH01]

User readiness for change → IS success [SK09], user involvement [SK09], perceived usefulness [KL08], perceived ease of use [KL08]

User satisfaction → ISD success [SK09, DM09, HP97], intention to use [DM03, PM09], net benefits [DM03, PM09], perceived usefulness [MA00], perceived system quality [MK08]

User training → user participation [SJC06], system quality [SJC06], system use [DM09], cooperation [BS08], perceived ease of use [BS08]

13.1.2 Y ← X

Adoption/acceptance ← TMS [DM09], Computer experience [DM09], external pressure [DM09], professionalism of IS unit [DM09], subjective norms [DM09], user participation [KU03]

Behavioral intention ← extrinsic motivation [VE03], Attitude (towards system/use) [BS08, BH94], !attitude [VE03] (other factors), Commitment to use [MG05], user participation [HK08], Task meaningfulness [HP97], Decision control/indiv impact [HP97], Intrinsic involvement [AM07], perceived usefulness [MG05, VE03, AM07, KL08, BS08], perceived ease of use [VE03, AM07, KL08], Ease of use [VE03], user satisfaction [DM03, PM09], information quality [DM03, PM09], system quality [DM03, PM09], service quality [DM03, PM09], Net benefits [DM03, PM09], Subjective norm concerning use [BH94, VE03]

Communication ← TMS [BS08]

Cooperation ← Communication [BS08], User training [BS08]

Decision control/(perceived) individual impact/influence ← User participation [HP97, [BH01], Task meaningfulness [HP97]

Decreased training costs (35%) ← User participation [KU03]

Decreased user support ← user participation [KU03]

Ease of use ← user experience/computer efficacy [KL08]

Facilitating conditions ← TMS [SJC06]

Involvement ← Attitude [BH94], User participation [MK08], Responsibility [BH94], readiness for change [SK09]

Net benefits ← user satisfaction [DM03, PM09], System use [DM03, PM09]

Perceived ease of use ← Commitment to use [MG05], user training [BS08], Complexity (less) [VE03], user experience/computerefficacy [KL08], Readiness for change [KL08], Psychological ownership [PSJ06]

Perceived individual impact → user satisfaction [MK08]

Perceived system quality← User satisfaction [MK08], System quality [SJC06], involvement [MK08]

Perceived usefulness ← TMS [SJC06], cooperation [BS08], User attitude, [SJC06], User participation [SJC06, MK08], involvement [AM07], user satisfaction [MA00], Readiness for change [KL08], System quality [SJC06], perceived ease of use [BS08, PSJ06], Psychological ownership [PSJ06]

Procedural justice ← Decision control [HP97]

Productivity outcomes !← User participation [HK08], ← user participation [KU03]
Psychological ownership ← User participation(bh4things) [PSJ06]

Subjective norm concerning use ← Attitude towards use [BH94], involvement [BH94]

System quality← User training [SJC06], User participation [SJC06, KU03], Perceived System quality [SJC06], Decision control/Indivimpact [MK08]

System use/success ← TMS [SJC06], Facilitating conditions [VE03], user experience [SJC06], user attitude [SJC06, PSJ06], Behavioral intention [VE03, DM03, PM09, BH94, HP97, DM09], Affective commitment (internalization and identification) [MG05], User training [DM09], Complexity (less) [VE03], user participation [DM09, HP97, KU03, MK08], Task meaningfulness [HP97], Procedural justice [HP97], involvement [AM07], user satisfaction [SK09, DM09, HP97], user readiness [SK09], Perceived usefulness [SJC06, DM09, PSJ06], system quality [DM03, PM09]

User attitude ← Facilitating conditions [SJC06], User experience [SJC06], user participation [SK09, HK08], involvement [BH94, MK08], Responsibility [BH94], perceived usefulness [MG05, BS08, PSJ06], perceived ease of use [BS08, PSJ06]

User experience ← Facilitating conditions [SJC06]

User participation ← TMS [SJC06], User training [SJC06]

User readiness for change ← Perceived personal competence [KL08], involvement [SK09], Organizational commitment [KL08]

User satisfaction ← Top management support [SJC06], user experience [MA00], user attitude [SJC06, SK09, MA00], user participation [SJC06, DM09, MA00, MK08, KU03], Decision control [HP97], Procedural justice [HP97], involvement [AM07], Individual impact/decision control [MK08], System quality [SJC06, DM03, PM09], perceived usefulness [MA00], information quality [DM03, PM09], service quality [DM03, PM09], System use [DM03, PM09], Net benefits [DM03, PM09]

User training ← Facilitating conditions [SJC06], User experience [SJC06]

13.2 Appendix B – Interview

This interview was held with the managers of several departments of Company P, the manager pof the department of Company T and the consultant/board-member of Foundation S. Most interviews were held face-to-face, some by phone. The goal of this interview was to measure particular effects of DB54 in the several cases.

Questions in grey were created to be able to 'ask through' on a main question. In most cases however, the answers to the grey questions were already giving by the answer to the main question.

13.2.1 Wat is de beginsituatie?

- Wat was de beginsituatie; welke problemen/uitdagingen speelden er op welke gebieden?
- Wanneer, hoe en waarom is DB54 betrokken geraakt bij de situatie?
- Welke onderdelen van het DB54 traject zijn er afgelopen?

13.2.2 Hoe is DB54 gebruikt in participatief opzicht?

13.2.2.1 "Type of participation" (plus teams, rollen en leiderschap)

- Wie hebben er allemaal geparticipeerd door gebruik te maken van DB54?
    - Hoeveel van de werknemers die uiteindelijk iets hebben gemerkt van de verandering zijn direct betrokken geweest in het DB54 traject?
    - Welke rollen zijn te onderscheiden in het DB54 traject (procesbegeleider, werknemer/deelnemer, …)?
    - Wat voor groepen zijn hierin te onderscheiden (hele afdeling, management, klein team dat inhoudelijk dingen uitwerkt, multidisciplinair team van werknemers)?
    - Door wie en hoe zijn deze verschillende groepen geselecteerd? Hoe is er bepaald wie in welk onderdeel van DB54 mocht meedoen? Wat waren de selectiecriteria?
    - Hoe zijn deze verschillende groepen geleid (door Geert-Jan, een procesbegeleider, een teamleider, anders, niet)?
    - Hoe zijn de werknemers voorbereid op het participeren in het DB54 traject?
    - Hoe zijn degenen die niet direct hebben geparticipeerd meegenomen in de verandering?

13.2.2.2 "Content, extent and formality of participation"

- Hoeveel groepssessies of andersoortige DB54 bijeenkomsten zijn er (geweest), en hoe zijn deze vormgegeven?
    - Wat was de vorm (brainstorm, workshop, overleg, …) en het doel van verschillende sessies? Waar gingen de sessies inhoudelijk om?
    - Welke groepen/rollen waren er betrokken bij de verschillende sessies?
    - Hoe comfortabel waren de verschillende deelnemers in deze sessies? Hoe formeel/informeel zijn de bijeenkomsten vormgegeven?
    - Wordt de status en voortgang van het DB54 proces besproken tijdens afdelings- en/of managementvergaderingen en/of bila's?
    - Zijn er nog andere activiteiten rondom DB54 georganiseerd? Zo ja, hoe zijn deze vormgegeven?

13.2.2.3 "Degree of participation" van werkvloer

- Welke rol vervulden de werknemers in het DB54 traject?
    - Wat waren de taken en verantwoordelijkheden van de werkvloer in het DB54 traject?
    - Hoe betekenisvol waren deze taken en verantwoordelijkheden, en wat was het doel ervan?
- Hoe betrokken was de werkvloer in de verschillende fases van het DB54 traject? Hoe gecommitteerd was de werkvloer om mee te doen en er iets van te maken?

13.2.2.4 "Influence of participation" van werkvloer

- Hoeveel invloed heeft de werkvloer nu uiteindelijk in het gehele DB54 traject, en op welke gebieden?
    - Hoeveel invloed hebben werknemers op de beslissingen die gemaakt worden? Hoe werd omgegaan met de input van de werknemers?
    - Hoeveel van de verbetering/verandering wordt daadwerkelijk door hen uitgevoerd?

13.2.2.5 "Degree and influence of participation" van procesbegeleider

- Hoe werd de rol van procesbegeleider ingevuld, en door wie?
    - Was het een extern of intern persoon? Wat waren hiervan de gevolgen? Hoe belangrijk is de domeinkennis van de procesbegeleider?
    - Wat ziet u als taken en verantwoordelijkheden van de procesbegeleider?
    - Hoe groot is de invloed van de procesbegeleider op het inhoudelijke vlak (identificeren van problemen, oplossingen)?

13.2.2.6 "Degree and influence of participation" van management

- Welke rollen vervulden de verschillende lagen in het management (top managers, middle managers, afdelingsmanagers, …) in het DB54 traject?
    - Hoe participeren ze in de verandering? Welke activiteiten voeren ze uit in welke fases? Wat zijn haar verantwoordelijkheden met betrekking to DB54?
    - Hoe groot is de invloed van de verschillende lagen management op het inhoudelijke vlak (identificeren van problemen, oplossingen)?

13.2.2.7 "Degree and influence of participation" van andere stakeholders

- Welke andere stakeholders waren relevant in het DB54 proces en hoe is hun rol m.b.t. DB54 ingevuld?
    - Wat zijn de taken en verantwoordelijkheden van deze stakeholders in het DB54 traject?
    - Hoe groot is de invloed van die stakeholders op het inhoudelijke vlak (identificeren van problemen, oplossingen)?

13.2.3 Effecten van DB54 die nuttig kunnen zijn voor IT implementatie

13.2.3.1 Holistisch inzicht in processen, taken, en verantwoordelijkheden

- In hoeverre heeft DB54 bij de start van het traject voor de verschillende betrokken partijen geleid tot meer inzicht in de op dat moment bestaande processen, taken en verantwoordelijkheden?

- Heeft DB54 geleid tot een duidelijk inzicht in knelpunten met betrekking tot deze processen, taken en verantwoordelijkheden? Zo ja, hoe?

13.2.3.2 Inzicht in noodzaak tot verandering

- Indien er een goed inzicht in knelpunten is bereikt door DB54, heeft dat er dan toe geleid dat werknemers daardoor de noodzaak tot verandering/verbetering zien?

- Is er tijdens het gebruik van DB54 tussen de werknemers onderling een overeenstemming ontstaan dat er iets moet gebeuren?

13.2.3.3 Goede oplossing voor bestaande problemen

- Zijn er met behulp van DB54 goede oplossingen bedacht en uitgevoerd om deze knelpunten op te lossen?

- Gelooft u - en de andere betrokken partijen zoals werknemers op de werkvloer - erin dat deze doorgevoerde oplossingen positieve gevolgen voor hebben voor u en de organisatie?

- Zijn er als onderdeel van het DB54 traject processen/taken gewijzigd en/of verantwoordelijkheden verlegd? Zo ja, hoe ingrijpend zijn deze veranderingen geweest? Zijn er variaties aangebracht in bestaande processen en procedures of is er een nieuwe manier van werken geïntroduceerd?

13.2.3.4 Shared understanding/practice

- In hoeverre spreken verschillende partijen nu dezelfde taal als ze het over de processen, taken en verantwoordelijkheden binnen de afdeling hebben? M.a.w. is er sprake van een eenduidig inzicht, verkregen door DB54?

13.2.3.5 Betere relaties en vertrouwen tussen verschillende partijen

- Hoe waren de relaties en het vertrouwen tussen de verschillende betrokken partijen (management, werkvloer, procesbegeleider, consultant) tijdens het DB54 traject? In welk opzicht denkt u dat DB54 een rol kan spelen bij het opbouwen van goede relaties en vertrouwen?

13.2.3.6 Change readiness

- Is uw kijk – en die van de andere betrokken partijen zoals werknemers op de werkvloer - tegenover 'verandering' gewijzigd door het gebruik van DB54? Is er nu een positiever beeld van verandering, is er motivatie om nieuwe dingen te proberen?

- In hoeverre heeft u, de werknemers individueel en de organisatie als geheel waardevolle kennis en vaardigheden opgedaan om een verandering tot een goed einde te brengen?

- Denkt u dat het gebruik van DB54 een sterkere identificatie van werknemers met de organisatie bevordert? Voelen ze zich tijdens het gebruik van DB54 en naderhand meer betrokken bij de organisatie?

- In hoeverre denkt u dat werknemers een beter gevoel over hun werk hebben gekregen na gebruik van DB54?

13.2.3.7 Overig (exploratief)

- Wat voor verdere invloed heeft DB54 volgens u gehad op de mindset van de werknemers? In welk opzicht zijn de werknemers zelf veranderd?

- Zijn er nog dingen die u verder kwijt wilt wat betreft de resultaten die DB54 u heeft gebracht?

13.2.4 Specifieke bijdrage DB54 - hoe heeft DB54 het gedaan?

- Op welke manieren heeft DB54 positief (en negatief) bijgedragen aan resultaat van het veranderproces? Wat waren de werkzame onderdelen?
    - Waar heeft de tool een grote rol gespeeld? En waar heeft de procesbegeleider een rol in gespeeld? Wat was de rol van de verschillende sessies en bijeenkomsten voor het resultaat? Welke andere onderdelen spelen een grote rol volgens u?
    - Faciliteerde DB54 een goede samenwerking tussen verschillende afdelingen wat betreft het oplossen van de problemen? Zo ja, hoe?

- Leidde het gebruik van DB54 tot heldere en open communicatie tussen verschillende partijen over de situatie, knelpunten en oplossingen? Zo ja, hoe? En hoe was de kwaliteit van de informatie die werd gecommuniceerd?
- Vindt u dat DB54 een efficiënte manier is om een verandering of verbetering door te voeren in de organisatie? Waarom?

13.3 Appendix C – Surveys

These surveys were held at Organization FM. The goal of these surveys was to subjectively measure the achievement of particular effects by DB54. The results of these surveys are presented in appendix D.

13.3.1 Managers' survey

Questions relating to the participation process

- Bij welke afdeling binnen het Organization FM bent u werkzaam?
- Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mijn afdeling.
- Tijdens het DrawBridge54 project is de afdeling geregeld goed geïnformeerd over de voortgang van het project.
- Mijn afdeling is gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.
- Mijn afdeling is gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.
- Mijn afdeling is gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
- Mijn afdeling heeft invloed in de invulling van taken in de DrawBridge54 tool.
- Mijn afdeling heeft invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.
- Mijn afdeling heeft invloed in de invulling van SPION modellen in de DrawBridge54 tool.
- Mijn afdeling heeft het gevoel dat er ook daadwerkelijk iets met hun input wordt gedaan.
- Mijn afdeling is betrokken bij het DrawBridge54 project.
- Mijn afdeling is gemotiveerd om mee te doen in het DrawBridge54 project.

Questions relating to P2: employees will gain a more positive attitude towards change and report higher levels of readiness for change

- Mijn afdeling kijkt uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.
- Mijn afdeling zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.
- Door het DrawBridge54 project is het beeld van mijn afdeling bij 'verandering' in ons werk positiever geworden dan voorheen
- Als gevolg van het DrawBridge54 project zal de afdeling in de toekomst eerder zelf een knelpunt aangeven dan voorheen.
- Als gevolg van het DrawBridge54 project zal de afdeling in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.

Questions relating to P5: employees will gain a better understanding of the gap between the current and desired states

- Door het DrawBridge54 project heeft de afdeling een beter inzicht gekregen in waar de afdeling nu staat qua werkprocessen.
- Mede door het DrawBridge54 project ziet de afdeling nu in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.
- De SPION modellen in DrawBridge54 geven de noodzaak om bepaalde taken of processen te wijzigen helder weer voor de afdeling.
- Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.
- Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt hoe knelpunten worden opgelost.

Questions relating to P7: the organization will foster a human relations culture with open, clear and transparent ways of communication and participative decision making

- Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.
- Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen.
- Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.
- Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.
- Met DrawBridge54 kan mijn afdeling meepraten over beslissingen die hun werk aangaan.
- Door DrawBridge54 Is de saamhorigheid en het moraal van onze afdeling verbeterd.

Questions relating to P8: the organization will foster a culture of partnership and mutual respect with positive relationships and mutual trust with involved stakeholders

- DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen
- Door het DrawBridge54 project voel ik me sterker verbonden met medewerkers van mijn afdeling.
- Door het DrawBridge54 project voel ik me sterker verbonden met medewerkers van andere afdelingen.
- Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende(n)
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en medewerkers van mijn afdeling.
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en medewerkers van andere afdelingen.
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en mijn leidinggevende(n).

Questions relating to P3: employees will report higher levels of perceived personal competence

- Door het DrawBridge54 project er taken en verantwoordelijkheden van mensen binnen de afdeling uitgebreid.
- Door het DrawBridge54 project ervaart mijn afdeling hun werk als leuker en uitdagender dan voorheen
- Door het DrawBridge54 project heeft mijn afdeling een beter inzicht gekregen in hoe het werk dat ze uitvoeren iets bijdraagt aan het werk van het Organization FM.

Questions relating to P4: employees will report higher levels of organizational commitment

- Door de verschillende inzichten die DrawBridge54 mijn afdeling biedt, zijn medewerkers binnen mijn afdeling persoonlijk sterker verbonden met het Organization FM.
- Door DrawBridge54 voelen medewerkers van mijn afdeling zich alsof de problemen en knelpunten van mijn afdeling en het Organization FM ook hun eigen problemen zijn.

Questions relating to P6: the organization will create organizational reshaping capabilities

- De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.

Questions relating to P1: employees will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work.

- Door DrawBridge54 heeft mijn afdeling een beter inzicht gekregen in de taken en verantwoordelijkheden.

- Door DrawBridge54 heeft mijn afdeling een beter inzicht gekregen in de knelpunten.
- Door DrawBridge54 heeft mijn afdeling een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Organization FM.
- Door DrawBridge54 heeft mijn afdeling een beter inzicht gekregen in de knelpunten van andere afdelingen van het Organization FM.
- Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.

13.3.2 Employees' survey

Questions relating to the participation process

- Bij welke afdeling binnen het Organization FM bent u werkzaam?
- Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mij.
- Tijdens het DrawBridge54 project ben ik geregeld goed geïnformeerd over de voortgang van het project.
- Ik voel me gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.
- Ik voel me gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.
- Ik voel me gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
- Ik heb invloed in de invulling van taken in de DrawBridge54 tool.
- Ik heb invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.
- Ik heb invloed in de invulling van SPION modellen in de DrawBridge54 tool.
- Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan.
- Ik voel me betrokken bij het DrawBridge54 project.
- Ik voel me gemotiveerd om mee te doen in het DrawBridge54 project.

Questions relating to P2: employees will gain a more positive attitude towards change and report higher levels of readiness for change

- Ik kijk uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.
- Ik zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.
- Door het DrawBridge54 project is mijn beeld bij 'verandering' in ons werk positiever geworden dan voorheen
- Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een knelpunt aangeven dan voorheen.
- Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.

Questions relating to P5: employees will gain a better understanding of the gap between the current and desired states

- Door het DrawBridge54 project heb ik een beter inzicht gekregen in waar mijn afdeling nu staat qua werkprocessen.
- Mede door het DrawBridge54 project zie ik in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.
- De SPION modellen in DrawBridge54 geven wat mij betreft de noodzaak om bepaalde taken of processen te wijzigen helder weer.
- Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.
- Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over oplossingen voor knelpunten.

Questions relating to P7: the organization will foster a human relations culture with open, clear and transparent ways of communication and participative decision making

- Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.
- Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen.

- Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.
- Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.
- Met DrawBridge54 kan ik meepraten over beslissingen die mijn werk aangaan.
- Voel ik mij persoonlijk sterker verbonden met het Organization FM

Questions relating to P8: the organization will foster a culture of partnership and mutual respect with positive relationships and mutual trust with involved stakeholders

- DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen
- Door het DrawBridge54 project voel ik me sterker verbonden met collega's binnen mijn afdeling.
- Door het DrawBridge54 project voel ik me sterker verbonden met collega's buiten mijn afdeling.
- Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende(n)
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's binnen mijn afdeling.
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's buiten mijn afdeling.
- Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en mijn leidinggevende(n).

Questions relating to P3: employees will report higher levels of perceived personal competence

- Door het DrawBridge54 project zijn mijn eigen taken en verantwoordelijkheden uitgebreid.
- Door het DrawBridge54 project is mijn werk leuker en uitdagender geworden
- Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ík uitvoer iets bijdraagt aan het werk van het Organization FM.
- Door DrawBridge54 kan ik meepraten over beslissingen die mijn werk aangaan.

Questions relating to P4: employees will report higher levels of organizational commitment

- Door de verschillende inzichten die DrawBridge54 mij biedt, voel ik mij persoonlijk sterker verbonden met het Organization FM.
- Door DrawBridge54 voelt het alsof de problemen en knelpunten van mijn afdeling en het Organization FM ook mijn problemen zijn.

Questions relating to P6: the organization will create organizational reshaping capabilities

- De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.

Questions relating to P1: employees will gain a holistic overview of the entire work process and a thorough understanding and relevant knowledge of the actions and consequences of their work.

- Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van mij en mijn afdeling.
- Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van mijn afdeling.

- Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Organization FM.
- Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van andere afdelingen van het Organization FM.

- Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.
- Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ik uitvoer iets bijdraagt aan het werk van de afdelingen van het Organization FM.

13.4 Appendic D – Survey results

The results of the survey are presented below. For each question, one could either disagree completely (1) to completely agree (5). The response rates were about 33%, 50%, 25% and 50% for logistics, purchasing, maintance and finance, respectively.

At each table, the 'average score' on which the analysis was based is given. The ranges I created were negative (1 to 2); slightly negative (2 to 2,8); neutral (2,8 to 3,2); slightly positive (3,2 to 4) and positive (4 to 5). Furthermore, I categorized the average score as 'unstable' when the difference in scores for the participants was 4 points, 'differing' when the difference in scores was 3 points and 'stable' when the difference was 2 points or smaller. The emphasis lies on the scores of the participants because I noticed that the managers perceive things to be more positive than they actually are. Also, the result on the participants' level is the only thing that matters for these effects, because it is all about how *they* feel. Therefore, the managers' scores are not accounted for in the average scores.

13.4.1 Participation process

TRANSPOST/LOGISTIEK	Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mij.	Tijdens het DrawBridge54 project ben ik geregeld goed geïnformeerd over de voortgang van het project.
Manager	**5**	**5**
Participant 1	4	4
Participant 2	5	5
Participant 3	4	4
Participant 4	5	4
	4,5 (stable positive)	**4,25 (stable positive)**

INKOOP	Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mij.	Tijdens het DrawBridge54 project ben ik geregeld goed geïnformeerd over de voortgang van het project.
Manager	**4**	**4**
Participant 1	2	2
Participant 2	1	4
Participant 3	4	2
Participant 4	4	2
Participant 5	5	
Participant 6	3	3
Participant 7	2	2
Participant 8	5	3
Participant 9	4	3
	3,1 (unstable neutral)	**2,6 (stable slightly negative)**

ONDERHOUD	Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mij.	Tijdens het DrawBridge54 project ben ik geregeld goed geïnformeerd over de voortgang van het project.
Manager	**5**	**4**
Participant 1	3	1
Participant 2	4	4
Participant 3	5	4
	4 (stable positive)	**3 (differing neutral)**

FEZ	Het doel van het DrawBridge54 project is duidelijk gecommuniceerd naar mij.	Tijdens het DrawBridge54 project ben ik geregeld goed geïnformeerd over de voortgang van het project.
Manager	**5**	**5**
Participant 1	3	2
Participant 2	3	3
	3 (stable neutral)	**2,5 (stable slightly negative)**

TRANSPOST/LOGISTIEK	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
Manager	**4**	**4**	**4**
Participant 1	4	4	3
Participant 2	4	4	5
Participant 3	4	4	4
Participant 4	5	5	5
	4,25 (stable positive)	**4,25 (stable positive)**	**4,25 (stable positive)**

INKOOP	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	2	2	2
Participant 2	3	3	3
Participant 3	3	3	3
Participant 4	4	4	4
Participant 5		3	3
Participant 6	3	3	2
Participant 7	4	4	4
Participant 8	4	4	4
Participant 9	2	2	2
	3,1 (stable neutral)	**3,1 (stable neutral)**	**3 (stable neutral)**

ONDERHOUD	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	2	2	2
Participant 2	4	4	4
Participant 3	4	4	4
	3,3 (stable slightly positive)	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**

FEZ	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van taken in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik voel me gedeeltelijk verantwoordelijk voor de invulling SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	3	3	3
Participant 2	3	3	3
	3 (stable neutral)	**3 (stable neutral)**	**3 (stable neutral)**

Man: De afdeling is m.i. volledig verantwoordelijk voor de invulling van de eigen tools. Wel is het zo dat andere afdelingen taken/knelpunten o.i.d. melden die ook voor onze afdeling van invloed zijn. Daar is geen directe verantwoordelijkheid.

TRANSPOST/LOGISTIEK	Ik heb invloed in de invulling van taken in de DrawBridge54 tool.	Ik heb invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	I Ik heb invloed in de invulling van SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	3	3	3
Participant 2	5	5	5
Participant 3	4	4	4
Participant 4	5	5	5
	4,25 (stable positive)	**4,25 (stable positive)**	**4,25 (stable positive)**

INKOOP	Ik heb invloed in de invulling van taken in de DrawBridge54 tool.	Ik heb invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik heb invloed in de invulling van SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	3	3	3
Participant 2	4	3	3
Participant 3	2	2	2
Participant 4	4	4	4
Participant 5	3	3	3
Participant 6	3	3	3
Participant 7	4	4	4
Participant 8	4	4	4
Participant 9	2	2	2
	3,1 (stable neutral)	**3 (stable neutral)**	**3 (stable neutral)**

ONDERHOUD	Ik heb invloed in de invulling van taken in de DrawBridge54 tool.	Ik heb invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik heb invloed in de invulling van SPION modellen in de DrawBridge54 tool.
Manager	**5**	**5**	**5**
Participant 1	2	2	2
Participant 2	4	4	4
Participant 3	3	3	3
	3 (stable neutral)	**3 (stable neutral)**	**3 (stable neutral)**

FEZ	Ik heb invloed in de invulling van taken in de DrawBridge54 tool.	Ik heb invloed in de invulling van verantwoordelijkheden en knelpunten in de DrawBridge54 tool.	Ik heb invloed in de invulling van SPION modellen in de DrawBridge54 tool.
Manager	**4**	**4**	**4**
Participant 1	3	3	3
Participant 2	4	4	4
	3,5 (stable slightly positive)	**3,5 (stable slightly positive)**	**3,5 (stable slightly positive)**

TRANSPOST/LOGISTIEK	Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan.	Ik voel me betrokken bij het DrawBridge54 project.	Ik voel me gemotiveerd om mee te doen in het DrawBridge54 project.
Manager	**5**	**5**	**5**
Participant 1	3	4	4
Participant 2	5	5	5
Participant 3	3	4	4
Participant 4	5	4	4
	4 (stable positive)	**4,25 (stable positive)**	**4,25 (stable positive)**

Man: Bij de eerste Brainstorm sessie van DB54 was het aftasten wat ermee te doen en wat wordt ermee bedoeld, naarmate de uitleg werd het duidelijker en helder en is het team Transpost gemotiveerd van start gegaan. Bij Transpost zijn er twee kartrekkers aangesteld één voor Logistiek en één voor post. samen met de teamleider wordt DB54 gevuld en voorgelegd doormiddel van informele werkoverleggen en door het fysiek plaatsen van modellen uit DB54 op het bord.

INKOOP	Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan.	Ik voel me betrokken bij het DrawBridge54 project.	Ik voel me gemotiveerd om mee te doen in het DrawBridge54 project.
Manager	**3**	**4**	**3**
Participant 1	1	2	2
Participant 2		1	1
Participant 3	2	2	2
Participant 4	3	4	4
Participant 5	3		
Participant 6	2	2	2
Participant 7	3	4	4
Participant 8		4	4
Participant 9	2	3	3
	2,3 (stable slightly negative)	**2,75 (differing neutral)**	**2,75 (differing neutral)**

Man: Terughoudendheid/veranderingsvaardigheid is een taai onderdeel van de cultuur binnen FB/Inkoop. Zonder actie is er weinig initiatief en/of reactie vanuit de groep medewerkers. Zie opmerking bij 1. Spionmodellen staan nog onvoldoende cetnraal in de dagelijkse dienstverlening.
Part2: Ik heb niet de indruk dat DB54 serieus genomen word binnen de afdeling inkoop, ook wordt het nut er niet van ingezien (het wordt niet geaccepteerd als een middel om te helpen bij het werk, maar als een extra iets wat ernaast gedaan moet worden en dat geen raakvlak heeft met de dagelijkse praktijk
Part8: Ik houd mij nog niet lang genoeg met DB54 bezig, om een antwoord te kunnen geven op de laatste vraag (Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan)

ONDERHOUD	Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan.	Ik voel me betrokken bij het DrawBridge54 project.	Ik voel me gemotiveerd om mee te doen in het DrawBridge54 project.
Manager	**4**	**5**	**4**
Participant 1	2	2	4
Participant 2	4	3	4
Participant 3	3	4	4
	3 (stable neutral)	**3 (stable neutral)**	**4 (stable positive)**

FEZ	Ik heb het gevoel dat er ook daadwerkelijk iets met mijn input wordt gedaan.	Ik voel me betrokken bij het DrawBridge54 project.	Ik voel me gemotiveerd om mee te doen in het DrawBridge54 project.
Manager	**4**	**5**	**5**
Participant 1	2	3	3
Participant 2	4	4	4
	3 (stable neutral)	**3,5 (stable slightly positive)**	**3,5 (stable slightly positive)**

13.4.2 P2

TRANSPOST/LOGISTIEK	Ik kijk uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.	Ik zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.	Door het DrawBridge54 project is mijn beeld bij 'verandering' in ons werk positiever geworden dan voorheen	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een knelpunt aangeven dan voorheen.	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.
Manager	**4**	**5**	**4**	**4**	**4**
Participant 1	4	4	2	4	4
Participant 2	5	4	3	5	5
Participant 3	4	4	3	4	4
Participant 4	4	5	3	4	4
	4,25 (stable positive)	**4,25 (stable positive)**	**2,75 (stable neutral)**	**4,25 (stable positive)**	**4,25 (stable positive)**

INKOOP	Ik kijk uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.	Ik zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.	Door het DrawBridge54 project is mijn beeld bij 'verandering' in ons werk positiever geworden dan voorheen	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een knelpunt aangeven dan voorheen.	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.
Manager	**3**	**4**	**3**	**4**	**4**
Participant 1	2	2	3	1	1
Participant 2	1	2	2	2	2
Participant 3	5	5	3	4	4
Participant 4	4	4	3	3	4
Participant 5	3	4	3	3	3
Participant 6	3	3	2	2	2
Participant 7	3	4	1	2	4
Participant 8	4	4	4	4	4
Participant 9	4	4	4	3	3
	3,2 (unstable neutral)	**3,5 (differing slightly positive)**	**2,8 (differing neutral)**	**2,7 (differing slightly negative**	**3 (differing neutral)**

Man: Kwestie van middellange termijn. Momenteel veel onrust en verandering in werkwijze. Doseren is belangrjik om het doel als haalbaar te beschouwen

ONDERHOUD	Ik kijk uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.	Ik zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.	Door het DrawBridge54 project is mijn beeld bij 'verandering' in ons werk positiever geworden dan voorheen	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een knelpunt aangeven dan voorheen.	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.
Manager	**3**	**5**	**3**	**2**	**2**
Participant 1	3	3	3	3	3
Participant 2	5	5	4	4	4
Participant 3	4	4	3	4	3
	4 (stable positive)	**4 (stable positive)**	**3,3 (stable slightly positive)**	**3,7 (stable slightly positive)**	**3,3 (stable slightly positive)**

FEZ	Ik kijk uit naar de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen.	Ik zal de oplossingen die uit de SPION modellen van het DrawBridge54 project volgen steunen.	Door het DrawBridge54 project is mijn beeld bij 'verandering' in ons werk positiever geworden dan voorheen	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een knelpunt aangeven dan voorheen.	Als gevolg van het DrawBridge54 project zal ik in de toekomst eerder zelf een oplossing voor een knelpunt opperen dan voorheen.
Manager	**5**	**4**	**3**	**3**	**3**
Participant 1	3	3	2	2	2
Participant 2	4	4	4	4	3
	3,5 (stable slightly positive)	**3,5 (stable slightly positive)**	**3 (stable neutral)**	**3 (stable neutral)**	**2,5 (stable slightly negative)**

Man: Hoe het project in de toekomst gaat werken is niet te voorzien. De intentie is wel om de structuur van DB54 te blijven volgen. Belangrijk is ook de integrale benadering binnen alle afdelingen en in hoeverre de directeur stuurt op de knelpunten.

13.4.3 P5

TRANSPOST/LOGISTIEK	Door het DrawBridge54 project heb ik een beter inzicht gekregen in waar mijn afdeling nu staat qua werkprocessen.	Mede door het DrawBridge54 project zie ik in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.	De SPION modellen in DrawBridge54 geven wat mij betreft de noodzaak om bepaalde taken of processen te wijzigen helder weer.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over oplossingen voor knelpunten.
Manager	**5**	**4**	**4**	**4**	**4**
Participant 1	3	4	4	3	3
Participant 2	4	4	5	4	4
Participant 3	4	3	4	4	4
Participant 4	5	4	3	4	3
AVERAGE PART	**4 (stable positive)**	**3,75 (stable slightly positive)**	**4 (stable positive)**	**3,75 (stable slightly positive)**	**3,5 (stable slightly positive)**

INKOOP	Door het DrawBridge54 project heb ik een beter inzicht gekregen in waar mijn afdeling nu staat qua werkprocessen.	Mede door het DrawBridge54 project zie ik in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.	De SPION modellen in DrawBridge54 geven wat mij betreft de noodzaak om bepaalde taken of processen te wijzigen helder weer.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over oplossingen voor knelpunten.
Manager	**4**	**3**	**4**	**3**	**3**
Participant 1	2	1	2	1	1
Participant 2	2	2	2	1	1
Participant 3	3	3	3	1	1
Participant 4	3	3	3	3	3
Participant 5	3	3	3	3	3
Participant 6	3	3	3	2	2
Participant 7	4	4	4	2	2
Participant 8	5	5	5	3	
Participant 9	3	3	3	3	3
AVERAGE PART	**3,1 (differing neutral)**	**3 (unstable neutral)**	**3,1 (differing neutral)**	**2 (stable negative)**	**2 (stable negative)**

Man: Processen staan nog 'vers' op papier. Met name operationeel bestelproces kent lange aanloop om te komen tot uniformering. Dit vormt wel de basis voor verdere optimalisatie.
Part8: De laatste 2 vragen kan ik niet naar behoren invullen, omdat onze afdeling zich hier nog niet zo lang mee bezig houdt.

ONDERHOUD	Door het DrawBridge54 project heb ik een beter inzicht gekregen in waar mijn afdeling nu staat qua werkprocessen.	Mede door het DrawBridge54 project zie ik in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.	De SPION modellen in DrawBridge54 geven wat mij betreft de noodzaak om bepaalde taken of processen te wijzigen helder weer.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over oplossingen voor knelpunten.
Manager	**4**	**2**	**5**	**2**	**2**
Participant 1	3	3	3	3	3
Participant 2	4	4	4	4	4
Participant 3	4	4	4	3	3
	3,7 (stable slightly positive)	**3,7 (stable slightly positive)**	**3,7 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**

FEZ	Door het DrawBridge54 project heb ik een beter inzicht gekregen in waar mijn afdeling nu staat qua werkprocessen.	Mede door het DrawBridge54 project zie ik in hoe de huidige situatie van de afdeling verschilt van de ideale situatie.	De SPION modellen in DrawBridge54 geven wat mij betreft de noodzaak om bepaalde taken of processen te wijzigen helder weer.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over welke knelpunten moeten worden opgelost.	Door DrawBridge54 is er binnen mijn afdeling nu overeenstemming bereikt over oplossingen voor knelpunten.
Manager	**4**	**4**	**5**	**5**	**3**
Participant 1	4	4	3	3	3
Participant 2	3	3	3	3	3
AVERAGE PART	**3,5 (stable slightly positive)**	**3,5 (stable slightly positive)**	**3 (stable neutral)**	**3 (stable neutral)**	**3 (stable neutral)**

13.4.4 P7

TRANSPOST/LOGISTIEK	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge 54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge 54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.	Met DrawBridge 54 kan ik meepraten over beslissingen die mijn werk aangaan.	Door DrawBridge54 is de saamhorigheid en het moraal van onze afdeling verbeterd.
Manager	**5**	**5**	**5**	**4**	**5**	**5**
Participant 1	4	4	3	3	4	
Participant 2	4	4	4	4	5	
Participant 3	4	3	3	3	4	
Participant 4	3	3	2	2	3	
AVERAGE	**3,75 (stable slightly positive)**	**3,5 (stable slightly positive)**	**3 (stable neutral)**	**3 (stable neutral)**	**4 (stable positive)**	

Man: de saamhorigheid en het moraal van de afdeling heeft altijd hoog in het vaandel gestaan, DB54 heeft dit nog sterker gemaakt

INKOOP	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.	Met DrawBridge54 kan ik meepraten over beslissingen die mijn werk aangaan.	Door DrawBridge54 is de saamhorigheid en het moraal van onze afdeling verbeterd.
Manager	**2**	**3**	**3**	**3**	**5**	**4**
Participant 1	2	2	2	2	1	
Participant 2	1	1	1	1	1	
Participant 3	2	2	3	3	2	
Participant 4	3	3	3	3	3	
Participant 5	2	2	2	2	2	
Participant 6	2	2	2	2	3	
Participant 7	1	1	1	1	4	
Participant 8	3	3	1	1	5	
Participant 9	3	3	3	3	3	
AVERAGE PART	**2,1 (stable slightly negative)**	**2,1 (stable slightly negative)**	**2 (stable negative)**	**2 (stable negative)**	**2,7 (unstable slightly negative)**	

Man: Inkoop is zeer recent op basis van formatie gewijzigd waardoor aanleiding in taken en verantwoordelijkheden meer vanuti formatieplan is ontstaan dan vanuit DB54

Part8: Wat tot nu toe is ingevuld, is niet door de hele afdeling gebeurd. Zodoende is er niet met de hele afdeling een open en transparante communicatie geweest. Volgens mij gaat dit nog gebeuren.

ONDERHOUD	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.	Met DrawBridge54 kan ik meepraten over beslissingen die mijn werk aangaan.	Door DrawBridge54 is de saamhorigheid en het moraal van onze afdeling verbeterd.
Manager	**4**	**4**	**3**	**3**	**5**	**2**
Participant 1	3	3	3	3	3	
Participant 2	4	4	4	4	4	
Participant 3	4	4	3	3	3	
AVERAGE PART	**3,7 (stable slightly positive)**	**3,7 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	

FEZ	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er binnen onze afdeling een open en transparante communicatie over knelpunten en oplossingen.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over taken en verantwoordelijkheden.	Met het gebruik van DrawBridge54 ontstond er met andere afdelingen een open en transparante communicatie over knelpunten en oplossingen.	Met DrawBridge54 kan ik meepraten over beslissingen die mijn werk aangaan.	Door DrawBridge54 is de saamhorigheid en het moraal van onze afdeling verbeterd.
Manager	**3**	**3**	**1**	**1**	**4**	**1**
Participant 1	2	2	2	2	2	
Participant 2	4	4	2	2	3	
AVERAGE PART	**3 (stable neutral)**	**3 (stable neutral)**	**2 (stable negative)**	**2 (stable negative)**	**2,5 (stable slightly negative)**	

Man: De communicatie met andere afdelingen moet nog worden opgestart. Op dit moment werkt het nog niet.De saamhorigheid en moraal is op de afdeling nog niet anders geworden.
Part1: Laatste bijeenkomst was begin december 2010. Daarna is er niks meer gedaan door ons team. Het Drawbridge-gevoel zakt nu dus weg, ook omdat we geen resultaten zien zoals een vergelijking in knelpunten met andere afdelingen.

13.4.5 P8:

TRANSPOST	DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen	Door het DrawBridge54 project voel ik me sterker verbonden met collega's binnen mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met collega's buiten mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende(n)	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's binnen mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's buiten mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en mijn leidinggevende(n).
Manager	**4**	**4**	**4**	**3**	**4**	**3**	**3**
Participant 1	3	4	3	4	4	3	4
Participant 2	5	5	5	5	4	4	5
Participant 3	4	3	3	3	3	3	3
Participant 4	4	3	1	2	3	3	3
AVERAGE PART	**4 (stable positive)**	**3,75 (stable slightly positive)**	**3 (unstable neutral)**	**3,5 (differing slightly positive)**	**3,5 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,75 (stable slightly positive)**

Manj: De start van DB54 bij Transpost is in de zomer van 2010 begonnen. bij andere afdelingen zijn ze begonnen in januari 2011 waardoor er nog niet echt gesprekken met spion medellen zijn geweest
Part3: Het contact met mijn collega's was voor die tijd ook goed DB54 heeft hierin geen extra's aan gegeven.

INKOOP	DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen	Door het DrawBridge54 project voel ik me sterker verbonden met collega's binnen mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met collega's buiten mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende(n)	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's binnen mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's buiten mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en mijn leidinggevende(n).
Manager	**4**	**4**	**3**	**3**	**3**	**3**	**2**
Participant 1	2	1	1	1	1	1	1
Participant 2	4	1	1	1	1	1	1
Participant 3	5	2	2	1	2	2	1
Participant 4	4	3	3	3	3	3	3
Participant 5	2	2	2	2	2	2	2
Participant 6	3	2	2	2	2	2	2
Participant 7	4	2	2	2	1	2	2
Participant 8	5	3	1	1	1	1	1
Participant 9	3	3	3	3	3	3	3
AVERAGE PART	**3,6 (differing slightly positive)**	**2,1 (stable slightly negative**	**1,9 (stable negative**	**1,8 (stable negative)**	**1,8 (stable negative)**	**1,9 (stable negative**	**1,8 (stable negative)**

Man: Vertrouwen wordt niet als zodanig versterkt door de komst van DB54. Het is wel een middel om de eigen dienstverlening scherper te verbeteren.
Part8: DB54 geeft inderdaad de mogelijkheid om samen te werken om knelpunten op te lossen. Ik merk hier echter nog weinig van.DB54 heeft geen invloed op mijn leidinggevende en mij, omdat hij hier tot nu toe niet zoveel bij betrokken is geweest.

ONDERHOUD	DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen	Door het DrawBridge54 project voel ik me sterker verbonden met collega's binnen mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met collega's buiten mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende(n)	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's binnen mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's buiten mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en leidinggevende(n).
Manager	**5**	**2**	**2**	**2**	**2**	**2**	**2**
Participant 1	4	3	3	3	3	3	3
Participant 2	4	4	4	4	4	4	4
Participant 3	3	3	3	3	3	3	3
AVERAGE PART	**3,7 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**	**3,3 (stable slightly positive)**

Part3: antwoorden zijn neutraal de uitwerking moet nog komen

FEZ	DrawBridge54 geeft afdelingen de mogelijkheid om efficiënt samen te werken om knelpunten op te lossen	Door het DrawBridge54 project voel ik me sterker verbonden met collega's binnen mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met collega's buiten mijn afdeling.	Door het DrawBridge54 project voel ik me sterker verbonden met mijn leidinggevende	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's binnen mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en collega's buiten mijn afdeling.	Door het DrawBridge54 project is er meer vertrouwen ontstaan tussen mij en leidinggevende(n).
Manager	**4**	**2**	**1**	**1**	**4**	**3**	**4**
Participant 1	3	4	3	3	3	3	3
Participant 2							
AVERAGE PART	**3 (stable neutral)**	**4 (stable positive)**	**3 (stable neutral)**	**3 (stable neutral)**	**3 (stable neutral)**	**3 (stable neutral)**	**3 (stable neutral)**

Man: Ook hier denk ik dat er nog vooral interngericht wordt gekeken en niet naar de andere afdelingen.

13.4.6 P3

TRANSPOST/LOGISTIEK	Door het DrawBridge54 project zijn mijn eigen taken en verantwoordelijkheden uitgebreid.	Door het DrawBridge54 project is mijn werk leuker en uitdagender geworden / vertrouwen in eigen kunnen	Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ík uitvoer iets bijdraagt aan het werk van het Facilitair Bedrijf.
Manager	**4**	**2**	**5**
Participant 1	2	2	2
Participant 2	4	5	5
Participant 3	3	3	3
Participant 4	1	4	4
AVERAGE PART	**2,5 (differing slightly negative)**	**3,5 (differing slightly positive)**	**3,5 (differing slightly positive)**

Man: het werk was voor db54 altijd al uitdagend maar door db54 zijn de werkprocessen helderder gemaakt.

INKOOP	Door het DrawBridge54 project zijn mijn eigen taken en verantwoordelijkheden uitgebreid.	Door het DrawBridge54 project is mijn werk leuker en uitdagender geworden / vertrouwen in eigen kunnen	Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ík uitvoer iets bijdraagt aan het werk van het Facilitair Bedrijf.
Manager	**4**	**3**	**4**
Participant 1	1	1	1
Participant 2	1	1	1
Participant 3	1	1	1
Participant 4	3	3	3
Participant 5	1	1	1
Participant 6	2	2	2
Participant 7	2	2	3
Participant 8	1	1	1
Participant 9	3	3	3
AVERAGE PART	**1,7 (stable negative)**	**1,7 (stable negative)**	**1,8 (stable negative)**

Man: Betrokkenheid is neutraal positief met het FB; nu de spionmodellen tot concrete inzet gaan leiden wordt het zakelijk contact meer centraal gesteld.

ONDERHOUD	Door het DrawBridge54 project zijn mijn eigen taken en verantwoordelijkheden uitgebreid.	Door het DrawBridge54 project is mijn werk leuker en uitdagender geworden / vertrouwen in eigen kunnen	Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ík uitvoer iets bijdraagt aan het werk van het Facilitair Bedrijf.
Manager	**1**	**1**	**1**
Participant 1	3	3	3
Participant 2	3	3	3
Participant 3	3	3	3
AVERAGE PART	**3 (stable neutral)**	**3 (stable neutral)**	**3 (stable neutral)**

Part3: antwoorden zijn neutraal de uitwerking moet nog komen

FEZ	Door het DrawBridge54 project zijn mijn eigen taken en verantwoordelijkheden uitgebreid.	Door het DrawBridge54 project is mijn werk leuker en uitdagender geworden / vertrouwen in eigen kunnen	Door het DrawBridge54 project heb ik een beter inzicht gekregen in hoe het werk dat ík uitvoer iets bijdraagt aan het werk van het Facilitair Bedrijf.
Manager	**1**	**3**	**5**
Participant 1	2	2	3
Participant 2	2	3	3
AVERAGE PART	**2 (stable negative)**	**2,5 (stable slightly negative)**	**3 (stable neutral)**

13.4.7 P4

TRANSPOST/LOGISTIEK	Door de verschillende inzichten die DrawBridge54 mij biedt, voel ik mij persoonlijk sterker verbonden met het Facilitair Bedrijf.	Door DrawBridge54 voelt het alsof de problemen en knelpunten van mijn afdeling en het Facilitair Bedrijf ook mijn problemen zijn.
Manager	**3**	**4**
Participant 1	2	2
Participant 2	4	4
Participant 3	3	3
Participant 4	1	4
AVERAGE PART	**2,5 (stable slightly negative)**	**3,3 (stable slightly positive)**

INKOOP	Door de verschillende inzichten die DrawBridge54 mij biedt, voel ik mij persoonlijk sterker verbonden met het Facilitair Bedrijf.	Door DrawBridge54 voelt het alsof de problemen en knelpunten van mijn afdeling en het Facilitair Bedrijf ook mijn problemen zijn.
Manager	**2**	**2**
Participant 1	1	1
Participant 2	1	1
Participant 3	1	1
Participant 4	3	3
Participant 5	1	1
Participant 6	2	2
Participant 7	3	3
Participant 8	1	3
Participant 9	3	3
AVERAGE PART	**1,8 (stable negative)**	**2 (stable negative)**

Man: Betrokkenheid is neutraal positief met het FB; nu de spionmodellen tot concrete inzet gaan leiden wordt het zakelijk contact meer centraal gesteld.

ONDERHOUD	Door de verschillende inzichten die DrawBridge54 mij biedt, voel ik mij persoonlijk sterker verbonden met het Facilitair Bedrijf.	Door DrawBridge54 voelt het alsof de problemen en knelpunten van mijn afdeling en het Facilitair Bedrijf ook mijn problemen zijn.
Manager	**1**	**1**
Participant 1	3	3
Participant 2	3	3
Participant 3	3	3
AVERAGE PART	**3 (stable neutral)**	**3 (stable neutral)**

Part3: antwoorden zijn neutraal de uitwerking moet nog komen

FEZ	Door de verschillende inzichten die DrawBridge54 mij biedt, voel ik mij persoonlijk sterker verbonden met het Facilitair Bedrijf.	Door DrawBridge54 voelt het alsof de problemen en knelpunten van mijn afdeling en het Facilitair Bedrijf ook mijn problemen zijn.
Manager	**3**	**1**
Participant 1	2	2
Participant 2	3	3
AVERAGE PART	**2,5 (stable slightly negative)**	**2,5 (stable slightly negative)**

13.4.8 P6

TRANSPOST/LOGISTIEK	De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.
Manager	**4**
Participant 1	4
Participant 2	4
Participant 3	4
Participant 4	3
AVERAGE PART	**3,75 (stable slightly positive)**

INKOOP	De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.
Manager	**4**
Participant 1	2
Participant 2	1
Participant 3	4
Participant 4	3
Participant 5	3
Participant 6	3
Participant 7	4
Participant 8	4
Participant 9	3
AVERAGE PART	**3,0 (differing neutral)**

ONDERHOUD	De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.
Manager	**5**
Participant 1	3
Participant 2	5
Participant 3	4
AVERAGE PART	**4 (stable positive)**

FEZ	De SPION modellen van DrawBridge54 bieden ons een mogelijkheid om een oplossing voor een knelpunt goed te kunnen uitleggen, structuren, en uitvoeren.
Manager	**5**
Participant 1	3
Participant 2	3
AVERAGE PART	**3 (stable neutral)**

13.4.9 P1

TRANSPOST	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van mij en mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.
Manager	**4**	**5**	**3**	**3**	**4**
Participant 1	3	3	3	3	3
Participant 2	5	5	5	5	5
Participant 3	4	4	3	3	3
Participant 4	3	5	3	3	3
AVERAGE PART	**3,75 (stable slightly positive)**	**4,25 (stable positive)**	**3,5 (stable slightly positive)**	**3,5 (stable slightly positive)**	**3,5 (stable slightly positive)**

Man: ik vind het jammer dat niet alle afdelingen binnen FB gelijk begonnen zijn aan DB54. waardoor de inzichten van knelpunten van andere afdelingen nog niet inzichtelijk zijn gemaakt.

INKOOP	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van mij en mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van andere afdelingen van het Facilitair Bedrijf. (n)	Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.
Manager	**4**	**4**	**3**	**3**	**4**
Participant 1	1	1	2	2	1
Participant 2	**2**	**2**	**1**	**1**	**1**
Participant 3	**1**	**1**	**1**	**1**	**1**
Participant 4	**3**	**3**	**3**	**3**	**3**
Participant 5	**2**	**2**	**2**	**2**	**2**
Participant 6	**2**	**2**	**2**	**2**	**2**
Participant 7	**2**	**4**	**2**	**2**	**1**
Participant 8	**5**	**4**	**1**	**1**	**1**
Participant 9	**3**	**3**	**3**	**3**	**3**
AVERAGE PART	**2,3 (unstable slightly negative)**	**2,4 (differing slightly negative)**	**1,9 (stable negative)**	**1,9 (stable negative)**	**1,7 (stable negative)**

Man: De echte interactie tussen afdelingen moet nog \'op stoom\' komen. Trekkersrol is belangrijk, maar tevens van tijdelijke aard.
Part8: Zoals inmiddels wel duidelijk is,zijn wij (afd Inkoop) sinds kort pas goed van start gegaan met DB54, waardoor het moeilijk voor mij was deze enquete in te vullen.Hopelijk kun je er wat mee.\r\nVeel succes met je afstudeerscriptie.

ONDERHOUD	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van mij en mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.
Manager	**4**	**3**	**4**	**4**	**2**
Participant 1	3	3	3	3	3
Participant 2	3	4	3	4	3
Participant 3	3	3	3	3	3
AVERAGE PART	**3 (stable neutral)**	**3,3 (stable slightly positive)**	**3 (stable neutral)**	**3,3 (stable slightly positive)**	**3 (stable neutral)**

Part3: antwoorden zijn neutraal de uitwerking moet nog komen

FEZ	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van mij en mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van mijn afdeling.	Door DrawBridge54 heb ik een beter inzicht gekregen in de taken en verantwoordelijkheden van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 heb ik een beter inzicht gekregen in de knelpunten van andere afdelingen van het Facilitair Bedrijf.	Door DrawBridge54 begrijpen we elkaar binnen de afdeling nu beter als we het hebben over ons werk.
Manager	**5**	**5**	**5**	**5**	**3**
Participant 1	3	4	2	2	2
Participant 2	3	3	3	3	3
AVERAGE PART	**3 (stable neutral)**	**3,5 (stable slightly positive)**	**2,5 (stable slightly negative)**	**2,5 (stable slightly negative)**	**2,5 (stable slightly negative)**