13 USE OF APPRECIATIVE INQUIRY IN SUCCESSFUL PROCESS IMPROVEMENT: An Action Research Study[1]

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Abstract *Traditionally, software processes improvement (SPI) has been approached from a problem-oriented perspective, focusing on diagnosing and solving problems using methods such as the IDEAL model and DMAIC. In contrast, appreciative inquiry is an approach that focuses on what is best in an organization in order to further develop this to create a better future. It is, therefore, interesting to explore if and how software organizations familiar with problem-solving approaches can benefit from using appreciative inquiry. In this paper,*

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we present an action research study conducted at the telecom company Ericsson in Sweden. Appreciative inquiry was used to facilitate an SPI initiative implementing a new process and tool for requirements and test case management. While the SPI initiative was considered successful, important lessons were learned regarding the application of appreciative inquiry. We conclude that the use of appreciative inquiry does not eliminate the dependence of other well-known key factors for SPI success. Also, the study indicates that the preference and satisfaction of problem-solving among individuals familiar with problem-oriented approaches may impede the use of appreciative inquiry.

Keywords Appreciative inquiry, software process improvement, action research

1 INTRODUCTION

It is widely recognized that software process improvement (SPI) initiatives are complex (see Börjesson and Mathiassen 2004; Dybå 2000; Grady 1997; Humphrey 1989). Traditionally, SPI initiatives have been approached from a problem-oriented perspective, which typically focuses on what problems an organization is experiencing in its current situation and how to solve these problems. Typical examples of commonly adopted problem-oriented approaches are the IDEAL model (McFeeley 1996), capability maturity model (CMM) (Paulk et al. 1995), and DMAIC (Breyfogle 2003; Pande et al. 2000). The strength-based appreciative inquiry approach is in stark contrast to the problem-oriented focus underlying the SPI paradigm. Instead of focusing on problems, it emphasizes what works, the continuum, as the foundation. Appreciative inquiry started as an action research effort at Case Western Reserve University (Cooperrider 1986) and has since been successfully adopted as an organizational development approach by many organizations.

Whereas SPI initiatives and the use of problem-oriented approaches have been extensively studied, our knowledge about the ways SPI unfolds when using alternative approaches such as appreciative inquiry is limited. This paper reports from an action research study concerning the use of appreciative inquiry in an SPI initiative at the telecom company Ericsson in Sweden. In our study, the aim is to explore a particular SPI initiative and how it unfolds when appreciative inquiry is used instead of the commonly employed problem-oriented approaches. More specifically, our research questions are

- How does the use of appreciative inquiry influence known key factors for success in an SPI initiative?
- How does the use of appreciative inquiry impact individuals familiar with problem-oriented approaches?

The paper is structured as follows: Section 2 contrasts the appreciative inquiry approach with commonly known problem-oriented approaches, and considers key factors for SPI failure and success. Section 3 outlines our action research approach. Section 4 presents our empirical findings using encounters and episodes (Newman and Robey 1992) as the organizing principle. Section 5 discusses the empirical findings as a basis for understanding what happens when appreciative inquiry is introduced in a problem-oriented organization. Section 6 concludes the argument of appreciative inquiry for SPI initiatives.

2 THEORETICAL CONTEXT

SPI is today dominated by problem-oriented approaches like the IDEAL model (McFeeley 1996), the DMAIC model (Breyfogle 2003; Pande et al. 2000) and the CMM (Paulk et al. 1995). In this study, we let the IDEAL model represent a typical problem-oriented approach. The IDEAL model consists of five phases and provides software organizations with knowledge about how to organize SPI work. While highlighting both problems and possibilities, all phases (see Figure 1) aim at identifying and solving problems.

In contrast, appreciative inquiry is a strength-based approach (Cooperrider et al. 1995) consisting of five phases. Figure 1 shows the correspondence between the different phases in the IDEAL and appreciative inquiry models. While the two models look relatively similar, there are fundamental differences. For example, appreciative inquiry includes techniques to bring out the best of peoples' experiences and appreciate "what is" to create a collective awareness of the positive core. Grounded in experiences of success, future images of what might be are formed into a "dream." Opposite this, the IDEAL model includes techniques that focus on finding out what problems to solve and the desired future state. Another example is the difference in how learning is viewed: as an ongoing process (appreciative inquiry) or as an end-product (the IDEAL model). Figure 1 presents the IDEAL model, the appreciative inquiry model, and a possible mapping of their phases.

Recently, appreciative inquiry has been explored in relation to information systems. Although the objective of the approach is the same as in problem-oriented approaches (i.e., successful change), its emphasis on strengths is in stark contrast to traditional SPI paradigms.

Independently of the SPI model, there are well-known key factors that need to be considered when analyzing different SPI approaches and their applicability in different contexts. Wiegers (1998) claims lack of adequate management commitment is the first trap to avoid when starting to improve software processes. In a similar vein, Abrahamsson (2000, 2001) emphasizes management commitment as crucial for successful change. Other key factors are reactions to change (Weinberg 1997), the use of opinion leaders (Rogers 2003), user participation (Barki and Hartwick 1989), and the assimilation gap (Fichman and Kemerer 1999). The assimilation gap represents the difference between acquired and deployed improvements. Börjesson (2006) argues that a first and necessary step is a successful SPI deployment. Therefore, it is of great importance to address challenges related to the assimilation gap when introducing a change process in an organization.

3 RESEARCH METHOD

This paper reports from an 8-month (March – October 2006) action research (AR) study with the dual goal of improving implementation and use of new processes and tools in practice and contributing to the body of knowledge on the same theme. Collaborative practice research (Mathiassen 2002) supports the realization of this dual goal and supports the insider/outsider perspective (Bartunek and Louis 1996) which was a beneficial aspect of this research. The insider role (one of the authors works at the company) assured

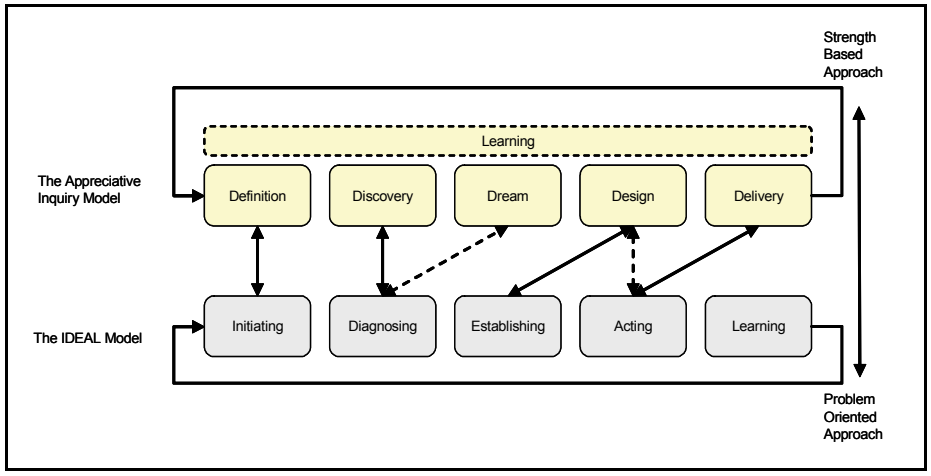

Figure 1. **The Appreciative Inquiry Versus the IDEAL Model**

primary access to data (Coghlan and Brannick 2001). The outsider role (represented by the other three authors) contributed with unbiased reflections.

AR has been introduced as a research method for solving practical problems while at the same time expanding scientific knowledge (Baskerville and Wood-Harper 1996; Susman and Evered 1978). We applied three characteristics of AR (Baskerville and Wood-Harper 1996): (1) the researchers were involved in solving practical problems, (2) the knowledge obtained was applicable in practice, and (3) the research was a cyclical process linking theory and practice. Action research is, however, also criticized and Baskerville and Wood-Harper (1996) summarize this critique as lack of impartiality of the researcher, lack of rigor, and consultancy masqueraded as research and results not being context free. In our study, we address this critique by using the insider/outsider role of researchers and by triangulation of data.

3.1 Research Site

This paper builds on an AR study conducted at the Swedish telecom company Ericsson. In particular, one product-developing unit was studied. The unit involves 65 skilled engineers, each with more than 15 years of experience working with the Japanese market. Traditionally, the engineers discuss SPI initiatives in terms of "problems" to solve. Over the years, problem-oriented approaches have shaped the mind-set among the engineers who appreciate the challenge of solving problems. The development unit comprise of a department with a department manager, a number of sections with section managers, and a development project with a development project manager (see Figure 2).

The aim of the SPI initiative was to enable all affected parts in the unit (shaded in Figure 2) to use the same tool (RequisitePro) and process for managing requirements and test cases. This was considered a challenge involving stakeholders with different interests. Moreover, instead of the commonly adopted problem-oriented approaches, this SPI initiative applied appreciate inquiry to facilitate the change process and to encourage a focus on strengths rather than problems in the units work practices.

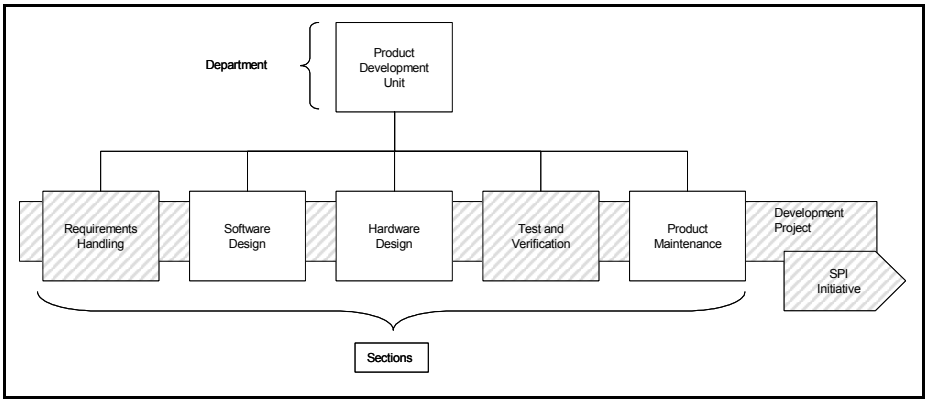

Figure 2. **The Structure of the Development Unit Involved in this Study**

3.2 Data Sources and Analysis

Several data sources were used (Patton 1987; Yin 1994) to increase rigor of the findings. Table 1 presents the data sources used in this study.

Table 1. **Data Sources**

Data Sources	Description
Direct involvement	The researchers were involved in workshops and meetings where the SPI initiative was initiated, planned, executed, analyzed, and evaluated.
Participatory observations	During workshops and meetings, three of the researchers took the outsider role (taking notes) while one of the researchers (the insider role) was directly involved in the activities.
Formal interviews	Six formal interviews were conducted. Each interview lasted for 30 minutes. During the interviews, two researchers asked questions while the two other researchers took notes.
Open-ended, semi-structured interviews	Due to the insider role, daily informal discussions concerning the SPI initiative were possible. These informal discussions allowed for insight in everyday practices at the company.
Project documentation	Due to the insider role, the research project had access to manager documentation, planning documents and progress reports.
Product documentation	Due to the insider role, the research project had access to the requirements and test product documentation.
Tool data	The research project had access to the RequisitePro tool, which was the tool implemented in the SPI initiative.

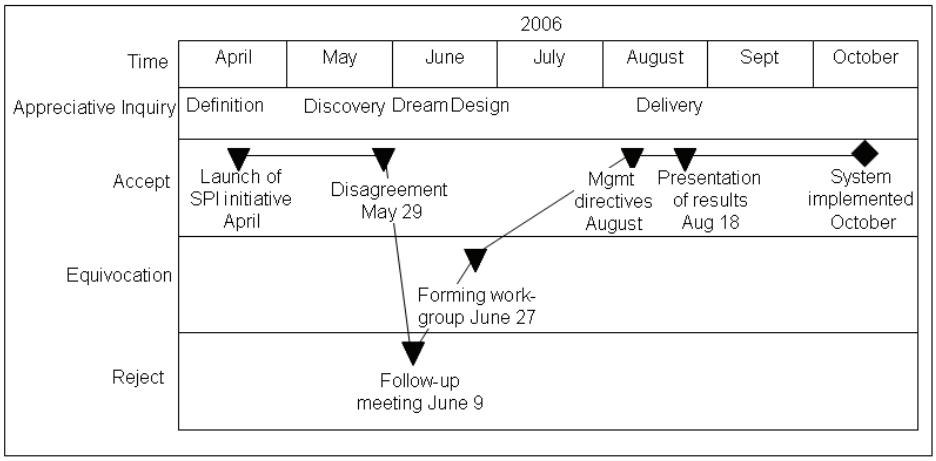

Figure 3. **Encounters and Episotes in the SPI Initiative (Episodes are illustrated as lines, which indicate the result of each encounter)**

We adopted Newman and Robey's (1992) social process model as a lens to organize and analyze our empirical findings. In this model, *antecedent conditions* are situations that existed before the change process. *Encounters* are events that mark the beginnings and ends of episodes. *Episodes* are longer periods wherein the pattern set within an earlier encounter plays out. Below, we present our findings using this model as the organizing principle.

4 THE SPI INITIATIVE

This section begins with describing the antecedent conditions (i.e., the situation and relationships between stakeholders before the initiation of the SPI initiative). Then we describe the encounters and episodes and how these led to the outcome of the SPI initiative (see Figure 3).

4.1 Antecedent Conditions

In March 2006, the management team of a product-developing unit at Ericsson made the decision to improve their requirements and test case management. To strengthen their operation excellence, the management team informally (with participation by one of the researchers in her role as the insider) analyzed possible improvement areas. The informal analysis revealed the following:

(1) Requirements were not managed by a known tool for requirements handling
(2) Test cases were managed by a high quality tool developed in-house, but only available for a limited number of engineers

(3) Requirements and test cases were not documented in a tool deployed by all engineers in the unit
(4) Managers and engineers working with requirements and test case had somewhat different views about how to accomplish the most efficient ways for handling requirements and test cases

4.2 Encounters and Episodes

Encounter 1: Launch of SPI Initiative. In early April 2006, the department manager started the SPI initiative through involving an experienced change agent who works with SPI at Ericsson and had been involved in several similar initiatives within different development units (previously referred to as the "insider"). The change agent was asked to commence the SPI initiative. The arrangement included an agreement to run the initiative using a new approach (i.e., appreciative inquiry), which had never previously been used in the company. Besides an interest in the SPI initiative and the success of this, the change agent and three associated researchers would also be able to explore how an organization familiar with problem-oriented approaches could benefit from this alternative approach. After an initial meeting, the understanding between the change agent and the department manager was that the definition phase (i.e., topic of choice) was decided in the development unit's management team. Consider this statement from the department manager:

> *We have now decided to improve our requirements and test case handling. It would be great if you could help us get started.*

This statement led to the (unconscious) assumption of the change agent that the first step in appreciative inquiry (i.e., the *definition* phase) was completed. According to the department manager, a decision to improve had been taken. Based on this decision, the change agent took it for granted that the engineers within the unit were aware of the decision and agreed on this. In her view, and according to the department manager, they could now plan the SPI initiative in detail.

Episode 1: Acceptance. The first episode represented a period of acceptance during which the change agent enthusiastically planned different activities. Since the aim was to introduce appreciative inquiry and to explore how the SPI initiative unfolded as a result of this approach, the change agent formed a team of researchers including herself and three researchers with different backgrounds. A meeting was arranged with one of the section managers and the research team. At this meeting, the purpose of the project was discussed and a workshop, which would involve all unit stakeholders, was planned. A main goal of the project was declared: "Clear and simple product life cycle requirement and test case handling." The meeting had a positive atmosphere and as a result, stakeholders were summoned to a workshop. The main interest from the section manager was, of course, the SPI initiative itself, but he also showed an interest for the appreciative inquiry approach.

> *Well, if it this new approach can help make this improvement happen faster- and better- that would be just fine.*

Encounter 2: Disagreement about "Determine What Should Be." Episode 1 led to the first workshop where all stakeholders attended, apart from the elsewhere-engaged department manager. Because the change agent took for granted that the first phase in appreciative inquiry (i.e., definition) was agreed upon, the workshop was arranged to proceed with the following phases. The goal of the workshop was to reach the result of a detailed plan of how the SPI initiative would continue towards implementation. At the workshop, during the second phase of appreciative inquiry (i.e., *discovery*), the participants enjoyed interviewing each other to discover positive experiences. In this phase, participants are expected to discuss and appreciate "what is." The participants seemed comfortable asking each other what they considered their strengths and their core competences. During the next phase (i.e., *dream*), the participants had a positive dialog about what they wanted to create. They all wanted to improve the requirements and test case management and they could all see the benefits of doing so. However, the participants sometimes found it difficult to express themselves in appreciative terms. For example, when asking the participants what they thought was the most positive aspect of an idea, many of them answered very briefly and one participant said

> *Why can't we tell what wasn't good? Why are we only allowed to tell what was positive?*

The discovery and dream phases were finished satisfactorily. The change agent (who was running the workshop) as well as the participants seemed to enjoy the opportunity of interaction between sections. However, when reaching the next step (i.e., *design*), it became apparent that people involved were in serious disagreement. In this phase, participants are expected to determine "what should be." In a discussion regarding generation and use of test case documents, some stakeholders expressed that they were not familiar with the referred material. Stakeholders from the section generating these documents did not agree on this and were quite irritated.

> *Yes, you are familiar with these documents—and you do read them!*

One of the section managers described the emotionally charged situation as follows:

> *Before the workshop it was assumed but not explicated that we should implement the RequisitePro tool to improve the requirements and test case management. In contrast, in previous project documents we were asked to provide suggestions of what to do about the requirements and test case management—as if we had actually a choice of what tool to use….Then we were summoned to the workshop, a rather large group of people from different units and with different interests….I felt irritated already before, and had decided that this was no good…and we had not had time do discuss or prepare beforehand how things should be done.*

At this point, it became clear to the change agent that the assumption that the definition was agreed upon was a mistake. Clearly, the participants did not fully share views. The definition had never been agreed upon and, therefore, participants could not

agree on dreams and design. What also became clear was that there were tensions between stakeholders due to differences in previous investments and efforts.

Because of the disagreements and the insight that the definition phase was not yet established, it was not fully possible to complete the goal of the workshop. Instead, the workshop left key stakeholders with different issues to clarify before the SPI initiative could continue according to plans.

Episode 2: Rejection. The result of the workshop was a period of rejection on the part of the stakeholders. There were different views of whether an SPI initiative should take place at all, and if so, how it should be done. However, the department manager stood by the decision and supported the change agent in proceeding with the SPI initiative. With the aim of resolving the rejection, the change agent started planning for a meeting between some of the key stakeholders that had been in disagreement at the workshop.

Encounter 3: Follow-Up Meeting. Episode 2 led to the arrangement of a follow-up meeting. The meeting was suggested by the change agent and involved the two section managers responsible for requirements and test cases. This meeting was held in June with the aim of finding a way forward and resolving the tensions that had occurred during the workshop. The two section managers' ability to reflect in an unbiased way on what had actually happened at the workshop greatly facilitated the process of moving forward. At the follow-up meeting, one of the section managers said

> *We should, of course, have been more prepared—should have had a common agenda…it was stupid to even think that we could come to the workshop without having had discussions beforehand.*

At the follow-up meeting, the section managers agreed on the importance of proceeding with the SPI initiative, and agreed on the decision to arrange a second workshop. This workshop would emphasize the importance of the SPI initiative and the aim would be to get participants to proceed with the interrupted design phase and agree on "what should be."

Episode 3: Equivocation. After the follow-up meeting, the section managers conveyed the outcome of the discussions they had with each other and with the change agent to the rest of the group. There were no particular reactions in the group and most participants seemed to take a more neutral position waiting for the second workshop at which the design phase would continue.

Encounter 4: Forming the Work Group. Episode 3 led to the arrangement of the second workshop with all main stakeholders attending, except for the department manager. While most of the stakeholders had remained passive during the episode of equivocation, the department manager had reestablished the focus of the SPI initiative (i.e., he completed the definition phase). Stakeholders now agreed to implement RequisitePro and the SPI initiative could continue. Because of this basic agreement, workshop participants were able to discuss how to design and implement RequisitePro and its related processes. By focusing on the positive core and "what should be,"

workshop participants were able to agree on a concrete time plan based on the needs from the development project that was responsible for implementing the RequisitePro tool. At the workshop, it was clear that the attention from the project manager helped make a concrete time plan. Also, the workshop rendered in the creation of a work group that would manage the ongoing SPI initiative and deal with the details of design and delivery.

Episode 4: Acceptance. The stakeholders agreed on the work group and a period of acceptance came as a result. During this period, stakeholders were scheduled to leave for summer holidays, which put additional pressure on the work. At this time, the SPI initiative got assistance from another change agent specialized on the RequisitePro tool. The formal interviews, conducted after the SPI initiative was completed, show the importance of this additional change agent.

> *Without the help from our change agent we would never have been able to complete the transformation into RequisitePro in time…he helped us with all kinds of things from explaining to people how the tool works to help us with the actual work in RequisitePro.*

> *Our change agent made a great effort when one section experienced problems with transferring data and existing structures into RequisitePro.*

However, at this time, the SPI initiative was already running late and the change agent could not, on his own, bring it back on track before people returned from holidays. While tremendous progress had been made in some areas, there were still areas in which progress was slow.

Encounter 5: Management Directives. According to the time plan, the SPI initiative was supposed to be ready for demonstration in August. However, when returning from summer holidays, the project manager soon identified a lack of progress. Despite considerable help from the additional change agent, not all sections were performing according to the plan and the assigned working group had trouble managing this. During this period, the differences between the sections in terms of existing structures became apparent. Stakeholders realized that if this situation continued, they would fail to keep up with the time plan. Due to these difficulties, the project manager identified the risk of the project running late if resources were not reprioritized.

At this point, the project manager took an active role and, with support from the department manager, resources were reprioritized. In discussions with the section managers, it was emphasized how important the SPI initiative was and that high prioritization was necessary in the sections' everyday work.

> *We discussed what needed to be done and how we could solve the issue with requirements elicitation for the unit experiencing problems. This was very important for getting the process going again.*

Because of the project manager's early discovery of problems and management directives as a response to this, they could maintain the time plan and work could continue according to the plan.

Episode 5: Acceptance. Following the management directives, the SPI initiative continued smoothly. During this episode, the software developers and the delayed section worked together with the change agent to accomplish the transition to the RequisitePro tool. In addition, they made preparations for a first presentation of the system.

Encounter 6: Presentation of Results from the SPI Initiative. In August the first presentation of the result from the SPI initiative was held. This was the first time the full potential of the SPI initiative result was evaluated. The presentation was very successful and the overall feeling after the event was positive.

> *At this meeting I think we all got the feeling that "this will indeed work—we will manage and the system will improve our situation." This resulted in a very positive atmosphere within the whole project group.*

> *At this meeting all people were very positive! It felt like a springboard.*

Clearly, the presentation was appreciated and for the first time the different stakeholders got a shared view of the potential of RequisitePro. From an appreciative inquiry perspective, this was the time for delivery (i.e., the first time that stakeholders got a feeling for "what will be").

Episode 6: Acceptance. Following the presentation, RequisitePro was implemented and the sections had to use the same system for requirement and test case management. According to one of the software engineers, the idea of having one common system was important.

> *I think that having the sections using the same system is crucial. Now all people can see what is happening and more people can be involved in the process. Before it was only very few people that were aware of this process…. Also, the development of the system has made the sections to consider their test processes—the attributes involved—which is good for the common knowledge within and between the groups.*

Still, the RequisitePro tool has only been in use for a very short time and therefore it can be difficult to evaluate the full potential of the system, although most stakeholders seem to find the SPI initiative very successful.

> *I am very happy with the initiative. Of course, it has not been without struggle and disagreement—but why should it? Not only did we succeed in implementing a new tool, but we did it using a new approach, which nobody at the company had experienced before. Overall, the project has involved many people and we have learned a lot. After the demonstration of the system, I think we were all convinced that this is indeed an improvement and that the system will definitely serve its purpose. To me, this is what you can expect in an SPI initiative like this.*

It remains to be seen whether this project will be a success. We will know only when it is fully tested and when all people actually use it in their everyday work. But it looks very promising.

I think the project is a success. Even though we haven't had the chance to work with the system for very long I think it looks good. There is always a little resistance but after a while people start to realize the benefits with the system… also, we learned a lot from the process.

I think the result is very promising even though the process could have been better—but it was new to us all.

Overall, the SPI initiative was considered very successful. Despite limited use so far, benefits can already be seen and stakeholders are convinced that the implementation of RequisitePro will result in more efficient ways of working.

Outcome: Successful SPI Initiative. At the end of October 2006, a monthly steering committee meeting was held where one of the section managers involved in the SPI initiative was invited to report progress and outcome. In the presentation, it was made clear that the SPI initiative was considered very successful and that the new RequisitePro tool and its related processes would mean an increase in efficiency, quality, and visibility. According to the report, this increase in efficiency meant an estimated cost saving of approximately €80,000/year, which the steering committee considered a very good achievement.

5 DISCUSSION

In our study, the aim was to explore a particular SPI initiative and how it unfolded when a strength-based approach was used instead of the commonly employed problem-oriented approaches. More specifically we asked (1) how did the use of appreciative inquiry influence known key factors for success in an SPI initiative, and (2) how did the use of appreciative inquiry impact individuals familiar with problem-oriented approaches? The analysis provided us with a range of findings related to the use of appreciative inquiry in problem-oriented organizations. This section presents the findings, structured according to the two research questions. We conclude the section by suggesting further research in the area.

5.1 Appreciative Inquiry and Key Factors for Improvement Success

As can be seen in our study, the SPI initiative struggled with the same challenges as most SPI initiatives. When analyzing encounters and episodes, we see that traditional key factors such as management commitment, reactions to change, use of opinion leaders, and attention to deployment all had an impact on this SPI initiative. First, the commitment

from management (Abrahamsson 2000, 2001) was an obvious key factor for the success of this SPI initiative. As Figure 2 shows, the established organizational structure clarifies who constitutes top management is (i.e., the department manager). The department manager was involved twice to sort out conflicts, make prioritizations, and give directives in favor of the SPI initiative. It is very likely that the SPI initiative would have failed without this effort from management. In addition, it is likely that attendance from the department manager at the two workshops would have facilitated progress of the SPI initiative. As recommended in appreciative inquiry, the whole system (i.e., all stakeholders) should ideally be present when engaging in activities such as workshops. This was indeed the ambition in this project, although due to unfortunate circumstances, the department manager was elsewhere engaged during both workshops.

Second, our study shows, in line with research on the topic, that negative reactions to change are natural (Weinberg 1997) and that these reactions can actually make an SPI initiative fail. In our study, negative reactions to change were apparent when stakeholders realized that they had very different perceptions of the current situation and that there had never been an agreement in relation to the definition of the project. In this, we discern unwillingness from stakeholders to fully comprehend the current situation, if this situation would lead to change. Despite a clear focus on strengths, in accord with appreciative inquiry, stakeholders struggled to negotiate and resolve unwillingness to promote change. This unwillingness can also be explained, if we choose to interpret going from problem-oriented to strength-based approaches as a major change, in terms of *radical change* (Weick and Quinn 1999).

Third, as in most SPI initiatives, opinion leaders proved crucial in this SPI initiative. Opinion leaders are individuals who provide information and advice to other individuals (Rogers 2003) and they are well known as key success factors for SPI implementation. In our study, the change agent introducing the SPI initiative as well as the appreciative inquiry approach was critical. In many encounters, the change agent had to moderate discussions to make progress when the stakeholders were in conflict. In addition, the change agent specialized in RequisitePro was highly appreciated among stakeholders. This change agent provided competence, advice, and a contribution to practical work. The final interviews revealed that this effort was of great assistance for progress in the SPI initiative. From this, we conclude that strong opinion leaders play an important role also when using appreciative inquiry as the approach for change.

Fourth, we see that acquired technology is not the same thing as deployed technology (Fichman and Kemerer 1999). While the development unit had access to RequisitePro for a long period, nothing happened until people actually started using it. As in other SPI initiatives, conscious deployment proved critical in this project.

Based on experience from our study, the SPI initiative struggled with the same challenges as most SPI initiatives. When analyzing encounters and episodes, we learned that traditional key factors such as management commitment, reactions to change, use of opinion leaders, and attention to deployment all influenced this SPI initiative. These key factors need to be considered when analyzing different SPI approaches and their applicability in different contexts. This means that there was no indication that the importance of traditional key factors diminished when appreciative inquiry was used. Hence, we conclude that the use of appreciative inquiry does not eliminate the dependence on other well-known key factors for SPI success.

5.2 Appreciative Inquiry Versus Problem-Oriented Approaches

In the development unit being studied, all of the engineers were familiar with problem-oriented approaches and felt comfortable starting change processes based on problems to solve. As we see in many problem-oriented methods—for example, the IDEAL model (McFeeley 1996) or the DMAIC model (Breyfogle 2003)—phases are conducted to identify and find solutions to problems. The engineers in our study were accustomed to use these methods and enjoyed the challenges related to solving problems. It became apparent at the workshops that the majority of the engineers were less enthusiastic regarding the activity to "imagine what might be" or "determine what should be" while effortlessly engaged in identifying and solving problems.

While appreciative inquiry focuses on creating a collective awareness of the positive core, problem-oriented approaches do not seem to appreciate to collectively explore hopes and dreams. It was noticeable that there was a tension between the problem-oriented mind-set and the appreciative inquiry approach, which was an interesting feature of the study that became clear very early in the process.

Already in the beginning of the SPI initiative, there was unwillingness among stakeholders to emphasize positive experiences and talk in terms of opportunities rather than problems. Our attempt to shift the engineers' mind-set from solving problems to creating dreams proved a great challenge. Looking back at our attempt, it is plausible that we tried to implement a new approach without fully considering the basis of the problem-oriented mind-set. While appreciative inquiry has been successfully used in many organizations (Bushe 1995; Cooperrider et al. 2004), we conclude that the preference and satisfaction of problem-solving among individuals familiar with problem-oriented approaches may impede the use of appreciative inquiry.

Hence, there is the need of careful training and guidance to benefit fully from the approach and its strengths. It should be acknowledged that relatively little time was spent on introducing appreciative inquiry in this SPI initiative in order to adjust to the ordinary allocated resources of an SPI initiative at the company. It is therefore possible that the use of appreciative inquiry would have been more beneficial if the involved stakeholders had the opportunity to learn more about the approach in the early phases of the SPI initiative, or even before the process started.

5.3 Suggestions of Further Research

Accepting the potential of appreciative inquiry, one could imagine that comprehensive use of the approach could positively influence SPI initiatives, and perhaps influence key factors such as lack of management commitment and negative reactions of change.

To further develop our understanding whether *unified dreams* can overcome negative reactions to change, we suggest additional research. Our study indicates that appreciative inquiry needs to be introduced carefully to stakeholders. We recommend that future research attempts devote sufficient time and resources to communicate the identified need (i.e., the focus of the initiative), and to address the need firmly, focusing on positive possibilities. Our study indicates that it is important to avoid a problem-solving mode so that the SPI initiative is not led into the wrong mind-set from the start. It would also be interesting to investigate if and how training and guidance could help overcome the tension between appreciative inquiry and problem-oriented approaches.

6 CONCLUSION

This paper reports on an action research study at the Swedish telecom company Ericsson. The dual aim of the study was to improve implementation and use of new processes and tools in practice and to contribute to the body of knowledge about the use of appreciative inquiry. The focus of the study was to understand what happens when introducing appreciative inquiry in an organization familiar with problem-oriented approaches to conduct an SPI initiative. Whereas the SPI initiative was successfully implemented in the company, important lessons were learned regarding the use of appreciative inquiry.

- The use of appreciative inquiry does not eliminate the dependence on other well-known key factors for SPI success.
- The preference and satisfaction of problem solving among individuals familiar with problem-oriented approaches may impede the use of appreciative inquiry.

The study extends and complements current approaches to SPI by proposing appreciative inquiry with its strength-based characteristics. This approach translates insights from organizational development into specific knowledge about SPI initiatives by its stark contrast to the problem-oriented focus underlying the SPI paradigm.

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