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# APPRECIATIVE INQUIRY INTO IT PROJECT MANAGEMENT: UNDERSTANDING WIN-WIN CONTRACTS

*Investigation appréciative du management des projets TI : comprendre les contrats gagnant-gagnant*

*Completed Research Paper*

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## Abstract

*Traditional systems development research largely adopts a negative view and focuses on failures. In contrast, this study adopts a positive approach to improve current practices. We report from an action research project at a small software firm, TelSoft, in which we applied appreciative inquiry to develop information technology (IT) project management skills. The inquiry process offers two contributions. First, we demonstrate how appreciative principles and the four steps of initiating, inquiring, imagining, and innovating were used to learn about existing strengths and share visions of possible futures. Acknowledging that humans under these circumstances respond constructively to change, this led to a new development program for IT project managers. Second, we adapt 'win-win contracts' to develop generative metaphors for the core knowledge areas: scope, time, cost, and quality management. The resulting metaphors are grounded in the particular context at TelSoft and informed by Theory W. The paper presents the appreciative inquiry process in detail and discusses the results in relation to the IT project management literature.*

**Keywords:** Information systems development, project management, appreciative inquiry, action research

## Résumé

*Nous présentons les résultats obtenus dans le cadre d'un projet de recherche-action réalisé dans une petite entreprise de développement de logiciels, TelSoft, au cours duquel nous avons procédé à une investigation appréciative afin de développer des compétences en gestion de projets liés aux technologies de l'information (TI). Premièrement, nous montrons comment les principes appréciatifs et les quatre étapes (initialiser, investiguer, imaginer et innover) ont été utilisés afin de mieux connaître les forces existantes et partager des visions possibles du futur. Deuxièmement, nous adaptons les « contrats gagnant-gagnant » pour développer des métaphores génératives pour les champs de connaissance principaux : portée, temps, coût et gestion de la qualité. Les métaphores développées sont fondées sur le contexte particulier de TelSoft et éclairées par la Théorie W.*

## Introduction

Information technology (IT) projects pose unique challenges for the managers and organizations that undertake them. IT project management (PM) is particularly challenging because of the rapid pace of technological change, the invisible nature of software, the ever-present pressure to add new system features and functionality, and the

difficulty of managing organizational change during IT implementation (Ramesh, Pries-Heje and Baskerville, 2002). In addition, decision makers' initial support for a project may cause them to continue projects even in the face of negative information (Keil, 1995; Keil, Tan, Wei, Saarinen, Tuunainen and Wassenaar, 2000). Consequently, IT projects frequently fail to meet their targets for budget, time, or quality (The Standish Group, 2001). When considering how to improve IT PM practice, traditional systems development research largely adopts a negative view with recurring themes such as understanding failed IT projects, managing risks, and reducing project escalation (Cuellar, Keil and Johnson, 2006; Ewusi-Mensah, 2003; Ropponen and Lyytinen, 2000; Schmidt, Lyytinen, Keil and Cule, 2001; Wallace and Keil, 2004).

In contrast, this study adopts a positive approach to improve IT PM practices by sharing stories about successful IT projects (Petter, Mathiassen and Vaishnavi, 2007a; Petter and Vaishnavi, 2007b), focusing on the concept of win-win (Boehm and Ross, 1989; Frankl, 2008), and empowering team members (Byham and Cox, 1998). Because the project manager is key to the success of projects (Sauer, Gemino and Reich, 2007), we focus on professional development of practicing IT project managers. Specifically, we report from a three-year action research project (Mathiassen, 2002; Rapoport, 1970; Susman and Evered, 1978) at a small software firm, *TelSoft* (a pseudonym), in which we applied appreciative inquiry (Cooperrider, Sorensen, Yaeger and Whitney, 2004a; Cooperrider and Whitney, 2005) to improve PM practices. Appreciative inquiry is an approach to organizational transformation that focuses on positive change. When adopting a positive change perspective, the inquiry, analysis, and dialogue focuses on the organization's positive core (i.e., its strengths, achievements, best practices, and capabilities) (Cooperrider et al., 2005). Appreciative inquiry has the potential to transform practices across many different types of organizations in part through the creation of generative metaphors (Bright, Cooperrider and Galloway, 2006; Bushe and Kassam, 2005). The advantage of this approach is that it engages people actively and energizes the organization in creating successful change.

There has been a recent interest in the information systems field in adopting a positive lens when studying and designing organizations (Avital, Boland and Cooperrider, 2007; Avital, Lyytinen, Boland, Butler, Dougherty, Fineout, Jansen, Levina, Rifkin and Venable, 2006), including an upcoming special issue of *Information & Organization*. So far, however, there are few studies describing the challenges and practices of actually applying appreciative inquiry to organizations engaged in information systems development (Borjesson, Holmberg, Holmstrom and Nilsson, 2007). Therefore, our objective was to apply appreciative inquiry in practice and develop generative metaphors that provide an alternative understanding of PM practice. The research questions were:

*RQ1: How can appreciative inquiry help improve IT project management?*

*RQ2: How can generative metaphors help appreciate IT project management?*

In the following, we present background on appreciative inquiry and win-win theory, describe in detail how we designed the intervention based upon appreciative inquiry, and describe the resulting intervention organized around ten workshops and involving sixteen project managers. We conclude by discussing experiences and results from the intervention and the key lessons learned on how to improve IT PM from a positive and participatory stance.

## **Appreciative Inquiry**

There are a variety of methods for conducting appreciative inquiry into organizations (Whitney and Trosten-Bloom, 2003). No matter what specific technique is used, the five principles underlying appreciative inquiry remain the same: positive principle, anticipatory principle, constructivist principle, principle of simultaneity, and poetic principle, (Cooperrider et al., 2005). In this section, we first discuss each of these principles and how they impact organizational change processes. We then present the 4-I process model which embodies these principles as an approach to conducting appreciative inquiry within organizations.

The first two principles provide the rationale for focusing on the positive core. The positive principle states that positive thinking provides needed energy for the change process; and, the anticipatory principle states that thinking positively about the future will lead to positive actions. Appreciative inquiry attempts to be a process that is generative: "When successful, appreciative inquiry generates spontaneous, unsupervised, individual, group and organizational action toward a better future... It leads to new ideas, and it leads people to choose new actions" (Bushe, 2007).

The constructivist principle emphasizes that reality is constructed from the perceptions of a variety of stakeholders. Those perceptions can be detected through the language used to discuss organizational life as well as the things that

remain unsaid. There are two important implications of this principle. First, appreciative inquiry values processes with multiple stakeholders. For instance, the appreciative inquiry summit is an approach that values getting the “whole system in the room” over several days to creatively develop solutions and actions for change. Second, appreciative inquiry emphasizes the specific language used by participants and how changing this language can be a form of intervention. In fact, the use of generative metaphors is one such approach. In general, metaphors can facilitate learning through associating the unknown with the known (Kendall and Kendall, 1993; Madsen, 1994). In appreciative inquiry, generative metaphors are used as an indirect mechanism for inspiring change. By talking about and focusing on metaphors, actors exhibit less defensiveness than if they were directly discussing the problematic situation (Barrett and Cooperrider, 2001). Furthermore, the generative metaphor can serve as an overall guide for the desired outcome.

The principle of simultaneity recognizes that inquiry is itself an intervention. Rather than asking about what is wrong in an organization, appreciative inquiry asks questions about what currently “gives life” as well as what could or should be in the future (Avital et al., 2006). In addition to focusing on the positive, effective questions have some element of surprise, resonate emotionally, facilitate building relationships, or prompt looking at reality from an alternative perspective (Bushe, 2007). Sample questions include:

- Describe a peak experience in which you felt most alive and engaged (Cooperrider, Whitney and Stavros, 2004b)
- If your grandson was to work here in 5 years, what would you want it to be like for him? (Elliot, 1999)
- Imagine you just retired. What do you wish had been different for you or the people you worked with? What would make you feel that you accomplished something enduring? (Elliot, 1999)

The poetic principle views organizations as books to be read with a story that is collaboratively created over time. This means that the story can, in fact, be rewritten and that the reader can choose which part of the story to focus on. This principle has led some to make collecting organizational stories an important aspect of appreciative inquiry. Bushe (2001) describes a situation in which an appreciative inquiry into leadership was done. Through identifying and retelling stories about instances of great leadership, employees’ interpretation of those events changed from thinking that leaders were gutless and lacked integrity to a greater appreciation for leadership.

In the 4-I model, there are four steps for conducting appreciative inquiry: initiate, inquire, imagine, and innovate (Coghlan, Preskill and Tzavaras, 2003; Watkins and Mohr, 2001). During the initiate phase, the focus of the appreciative inquiry is selected, key stakeholders are educated about appreciative inquiry principles, and the project structure and plan are created. During the inquire phase, the protocol for the appreciative interview is developed and conducted with as many people within the organization as possible. During the imagine phase, the interview data is summarized to pull out themes of strengths and creative work is done to generate provocative statements that serve as visions for the future. It is important that these provocative statements are grounded in the context of the organization that was discovered through the interviews. These provocative statements can take the form of generative metaphors. During the innovate phase, individuals within the organization collectively and individually take actions toward the positive future envisioned through the provocative statements. Such actions can be coordinated from the top-down such as through the definition of action teams as with many action research or software process improvement (SPI) projects. However, Bushe and Kassam (2005) found appreciative inquiry was most transformational when the actions were bottom-up, that is people shared the vision of change, were motivated to participate, and were empowered to take the initiative to make change happen.

## **Theory W**

Based on the observation that most situations involved in IT PM are complex, multi-dimensional, and with overlapping interests between stakeholders, Boehm and Ross (1989) have introduced Theory W for IT PM. The theory holds that the primary job of the project manager is to make winners of each of the parties involved, despite their different and often conflicting interests. In general, the term win-win is used to describe approaches to everyday life, business, politics, and science in which the parties involved have certain overlapping interests and all parties can win (Fisher and Ury, 1991; Frankl, 2008; Henderson, 1996; Rosenzweig, 2003). To achieve this, Boehm and Ross suggest application of two principles: ‘plan the flight and fly the plan’ and ‘identify and manage your risks’. The first principle states that the project manager should commit stakeholders to a mutually acceptable plan and manage the project accordingly. The second principle recognizes the dynamic and partly unpredictable nature of

IT projects and states that project managers need to continually assess and address risks to ensure that agreed upon plans are managed to remain realistic.

The Spiral Model can be used as a framework to practice Theory W in IT PM (Boehm, Egyed, Kwan, Port, Shah and Madachy, 1998), and the practical application of the theory is documented in a number of case studies (Boehm et al., 1998; Boehm et al., 1989; In, Rodgers, Deutsch and Boehm, 2001). These case studies show how Theory W and its subsidiary principles can explain why IT projects encounter problems and prescribe how such problems can be avoided. While Theory W and appreciative inquiry rests on similar assumptions on management of organizations and change, there are, however, no studies that explore their relations in the context of IT PM. Also, the literature offers no applications of Theory W to the core areas of knowledge in PM (Project Management Institute, 2004; Schwalbe, 2005).

## **Research Method**

A three-year research collaboration between *TelSoft* and a University Innovation Center (UIC) provided the basis for this study. The collaboration occurred in two phases. During Phase 1 (October 2004 – December 2006), *TelSoft* implemented new software policies and streamlined the available portfolio of software processes (Napier, Kim and Mathiassen, forthcoming). During Phase 2 (November 2006-February 2008), appreciative inquiry was selected to help develop PM capabilities. This research paper reports from Phase 2.

### ***TelSoft***

The characteristics of the case organization help establish external validity, the domain to which findings can be generalized (Yin, 2003). Accordingly, we next provide more details about *TelSoft's* values, products, and employees.

*TelSoft* is a small software firm with approximately 50 employees who collaborate to provide geographic information systems (GIS) software and services. Like other small software firms (Horvat, Rozman and Györkös, 2000), *TelSoft* is oriented toward known customers in a niche market; it has high reliance on committed employees who perform many roles within the organization; and it has few resources devoted to innovation. Although not considered a market leader, *TelSoft* has a reliable customer base consisting of two large customers that drive innovation to their core software products and several hundred smaller customers that use *TelSoft's* standardized geographic mapping software. *TelSoft* employees have a tradition for emphasizing product quality and customer responsiveness. In fact, *TelSoft* management acknowledges that the company's biggest asset is its people: experienced software engineers with deep knowledge of its products, systems analysts with strong customer relationships, and project managers willing to adapt quickly to customer requests.

There are two major groups within *TelSoft*: Software Development and Map Services. Software Development includes systems analysts, project managers, software engineers, quality assurance analysts, and their managers. Their job is to create new functionality requested by clients and maintain the existing software products. Map Services uses *TelSoft's* software to convert paper maps into digital format and to translate electronic maps from one format to another. In both groups, work is divided into projects and a project manager is assigned to manage the triple constraint of scope, time, and cost. In addition, project managers are expected to serve as client account executives (Webber and Torti, 2004), interpreting client needs to other *TelSoft* employees and keeping clients informed of other services *TelSoft* could provide. As such, project managers play a critical role in the success of current projects and the ability to obtain future business.

### ***Industry-Research Collaboration***

To strengthen PM capabilities, *TelSoft's* management team initiated an improvement initiative for project managers from Software Development and Map Services. This professional development activity was conducted over a period of one year as a series of 10 workshops lasting 2 hours each.

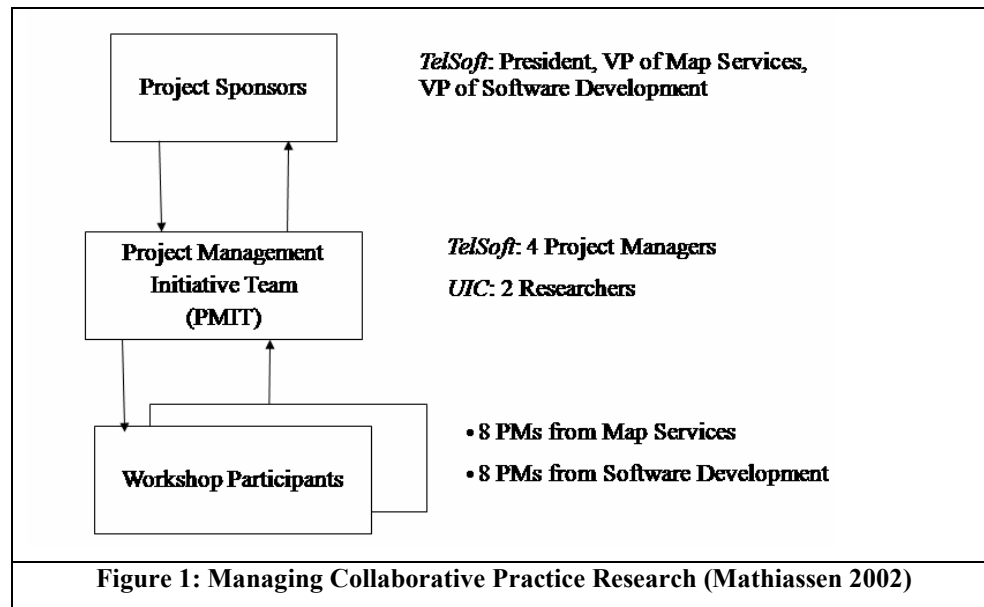
As with Phase 1, the initiative was organized as collaborative practice research (CPR) (Mathiassen, 2002). CPR is a pluralist IS research methodology which generates meaningful contributions about software practices through close collaboration between researchers and practitioners. In CPR, action research provides the overall structure for the

research collaboration while practice studies and design research (Hevner, March, Park and Ram, 2004; March and Smith, 1995) activities are incorporated as needed. The objective of action research is to “contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration” (Rapoport, 1970). Key characteristics of the adopted action research design can be summarized in terms of the primary goals (organizational development, system design, scientific knowledge, or training), involvement level (collaborative, facilitative, or experimental), selected process model (iterative, reflective, or linear), and structure type (rigorous or fluid) (Baskerville and Wood-Harper, 1998).

The *primary goals* of the research were organizational development (from the practitioners’ standpoint) and scientific knowledge (from the research team’s standpoint). The practice-oriented goals of the initiative were to appreciate the existing PM strengths of individuals and departments at *TelSoft*, develop shared visions of improved PM at *TelSoft*, share successful practices and new PM knowledge among participants through workshops, and apply workshop knowledge immediately to experiment with and enhance PM practices at *TelSoft*. The research-oriented goals focused on learning how appreciative inquiry could help improve IT PM. Based upon our experiences during Phase 1, we found *TelSoft* would be an interesting case for studying appreciative inquiry for several reasons:

- *TelSoft* had many experienced IT project managers with deep knowledge of client needs and a variety of successful approaches; however, project managers within Map Services and Software Development groups did not share information between groups. Through the appreciative inquiry process, these groups could be brought together to share best practices and create grounded solutions for improving PM practices at *TelSoft*.
- Phase 1 involved a limited number of *TelSoft* employees who focused on drafting organizational-level policy changes. Through appreciative inquiry, Phase 2 could engage a larger number of people in actively designing the future. These changes would be more focused on actions that could be taken at the individual and group levels which were in the project managers’ ability to influence.
- During Phase 1, the focus was primarily on problem-solving: identifying problems, analyzing cause, designing possible solutions, and action planning. In contrast, appreciative inquiry invites participants to appreciate the best of what is, envision what might be, debate what should be, and innovate what will be (Barrett et al., 2001). In this way, appreciative inquiry energizes the organization by focusing on current strengths and possible futures to create successful change.

The research team’s *involvement level* was facilitative: the expertise of the research team guided the effort; however, practitioners took primary responsibility for resolving the encountered problematic situations. Phase 2 was sponsored by *TelSoft*’s President, Vice President of Map Services, and Vice President of Software Development who provided high-level guidance on the PM initiative and selected the sixteen employees that participated in the workshops. A core team, the Project Management Improvement Team (PMIT), was formed to execute this improvement project. The PMIT met roughly every two weeks during the planning stages of the initiative and it consisted of the UIC researchers, two representatives from Map Services, and two representatives from Software Development.



The selected *process model* was iterative following the 4-I model reported in Watkins and Mohr (2001). The 4-I model advocates four phases in creating positive change: initiate, inquire, imagine, and innovate (as shown in Figure 2 and detailed in the Inquiry Process section).

Within the meta-structure of the 4-I model, the guidance was *fluid* with loosely defined activities. We allowed particular activities and specific improvement initiatives to emerge as the research process unfolded. This allowed more input from the practitioners involved and fitted the dynamic environment in which the industry partner operates.

### Data Collection and Analysis

The challenge of understanding how appreciative inquiry can help improve IT PM (RQ1) was an ongoing process. Early plans by the research team were made based upon the literature (e.g. 4-I model, typical appreciative inquiry questions). However, as the initiative progressed, we began to rely more on the insights from the PMIT and other workshop participants to shape activities that would work best in the *TelSoft* context. We collected data and feedback throughout the project in a variety of ways as summarized in **Table 1**. Data collected was discussed within the PMIT meetings and used to make any needed adjustments to the workshop format. Before any of the workshops were conducted, the PMIT developed an appreciative interview protocol (see Interview Protocol in Appendix), pilot-tested it internally, and then divided into two teams (one researcher and two project managers in each team) to interview each of the sixteen workshop participants. These interviews were all recorded and transcribed. Each interview team also created a summary document representing key points from each interview.

During the imagine phase, the PMIT met to consider how to synthesize the participants' responses into generative metaphors (RQ2) representing memorable, succinct lessons on project management. Through an iterative process that cycled between considering PM theory, the PM body of knowledge (Project Management Institute, 2004), and interview data, the research team arrived at the concept of win-win contracts previously used in PM theory (Boehm et al., 1989; Frankl, 2008). We adapted this to the core areas of the PM body of knowledge: scope, time, cost and quality management. We further reviewed the interview data for evidence of successful practices or lessons in each of these areas, identifying *TelSoft* employees that could give best practice presentations on how they addressed these areas.

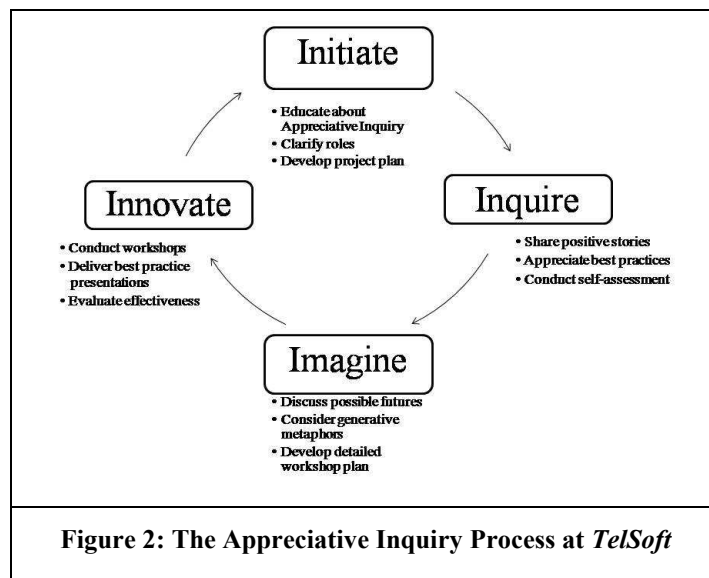
Additional data were collected during the innovation phase. All participants developed ideas for innovating PM practices and several participants developed best practice presentations. We documented the workshops by debriefing them in the PMIT and by collecting all material involved in the sessions. Finally, at the midpoint and end of the innovate phase, workshop participants completed a questionnaire assessing workshop effectiveness and the

impact of the generative metaphors. The survey instruments used for these two assessments are summarized in the Appendix.

<i>Data source</i>	<i>Phase(s)</i>	<i>Description</i>
Meeting notes and minutes	All	Notes and minutes from meetings with PMIT and project sponsors
Appreciative interview	Inquire	Transcribed interviews with workshop participants regarding successfully managed projects at <i>TelSoft</i> , their own individual strengths as a project manager, and specific PM techniques that might be used at <i>TelSoft</i> (see Interview Protocol in Appendix)
Questionnaires	Inquire, Imagine, Innovate	Assessments completed by workshop participants at the beginning to rate potential workshop topics and at the midpoint and end to assess workshop effectiveness (See Initial Survey and Final Survey in the Appendix)
Workshop documentation	Innovate	Workshop plans, presentations, and discussions
Participant innovation ideas	Innovate	Written summaries and critical responses to readings; Proposals for specific improvements for innovating PM practice at <i>TelSoft</i>
Best practice presentations	Innovate	Presentations by <i>TelSoft</i> employees that highlighted the organizations' strengths in PM as well as considered how information read could positively impact PM practice at <i>TelSoft</i>

## Inquiry Process

In this section, we describe our design and implementation of the 4-I model at *TelSoft*. This account shows how the overarching generative metaphor of the win-win contracts was created during the inquire phase, used to guide planning in the imagine phase, and further developed and discussed in the innovate phase.





## **Initiate**

The key activities during the *initiate* phase included clarifying stakeholders' roles and responsibilities, educating key stakeholders on appreciative inquiry, and developing an overall project plan (Coghlan et al., 2003; Watkins et al., 2001). As Phase 1 of the industry-research collaboration was coming to a close, the research team prepared a proposal for Phase 2 designed to address *TelSoft's* continuing needs. Using appreciative inquiry as the foundation, the Phase 2 proposal identified project objectives, structure, and process. The proposal was presented to the project sponsors on November 28, 2006 for discussion and consideration. The initiative was approved to begin January 2007.

The research team worked with the sponsors to identify key roles in appreciative inquiry of leadership, consultants, core team, and participants (Cooperrider et al., 2005). The project sponsors served in the leadership role; they were responsible for affirming the use of appreciative inquiry, supplying project resources, and assessing the PM workshop design and contribution to enhanced PM capabilities. The research team served as consultants; they introduced appreciative inquiry to the organization, facilitated the appreciative inquiry process, and provided state of the art PM knowledge. The PMIT served as the core team that organized and led activities in the 4-I process, conducted interviews, reviewed interview stories on best practices, made detailed project plans, and developed generative metaphors. PMIT consisted of the research team, two representatives from Map Services, and two representatives from Software Development. The PMIT was critical to the success of the initiative: they were champions for the initiative and played an active, visible role in workshop planning. Finally, the project managers attending the workshops were the participants; they provided information regarding current PM practices, debated generative metaphors on desired PM future, and participated in building new PM capabilities for themselves and *TelSoft*.

The PMIT formed in January 2007. Over the course of four meetings in January and February, the PMIT learned more about appreciative inquiry and selected workshop training materials. The textbook selected used the Project Management Institute's nine knowledge areas (Project Management Institute, 2004) as its foundation: management of scope, time, cost, quality, human resources, communications, risk, procurement, and project integration (Schwalbe, 2005). The PMIT also designed an interactive workshop format that would suit the participants from both Map Services and Software Development. To encourage interaction and active participation, the PMIT designed five course components: workshop roles, group discussion, best practice presentations, PM personal improvement plan, and PM competition.

1. *Workshop roles*: For each workshop session, three discussion leaders prepared a written response in bullet format (less than one page) and presented them to the group: the summarizer would describe the three most important takeaways for a project manager from the reading; the applier would describe the three most important ways *TelSoft* could improve PM based on the reading; and the devil's advocate would identify three major weaknesses in the reading from a practical point of view.
2. *Group discussion*: Each session included breakout group discussions of the readings guided by specific questions. A general template for group discussions was followed:
  - How does the reading apply to PM at *TelSoft*?
  - Which current practices should be discarded or changed in the light of the reading?
  - Which new practices should be implemented in the light of the reading?
3. *PM personal improvement plan (PIP)*: The objective of the PM personal improvement plan was to enhance individual competency in an area of project management. Each participant created customized improvement plans identifying a positive change they would like to see take place that would improve their competency as project manager. The PIP included a description of the change, the perceived impact of implementing the change, practical steps for implementation, and an evaluation method. After two months, a progress report was collected.
4. *Best practice presentations*: The inquire interviews were used to identify *TelSoft* employee with existing strengths in some area of PM capability. At each session, a project manager discussed specific practices at *TelSoft* that they already did well. This served to increase knowledge sharing across Map Services and Software Development as well as across the strengths each individual project manager had.

5. *PM competition*: The objective of the competition was to solicit suggestions for improving PM practices at *TelSoft*. The proposals identified a specific opportunity, identified the expected business benefit, and recommended a plan of attack. Each entry was carefully evaluated by the project sponsors for possible implementation. In addition, special recognition was given to the most outstanding proposals which were judged to make an immediate impact with minimal cost.

Finally, the PMIT prepared for the inquire phase by drafting the appreciative inquiry questions, forming interview teams, and piloting the interview questions. A questionnaire was also created for participants to prioritize workshop topics.

### ***Inquire***

The key activity during the *inquire* phase involved gathering data from workshop participants about best practices in PM at *TelSoft*, future possibilities for improving work practices, and a self-assessment of their initial knowledge level of PM topics. A kickoff meeting was conducted on February 13, 2007 to introduce the project plan to the workshop participants and prepare them for the upcoming phases. As described above, the six PMIT members were split into two interview teams consisting of one researcher, one Map Services project manager, and one Software Development project manager. Over the next three weeks, the two interview teams from the PMIT recorded and summarized appreciative interviews with the workshop participants. The PMIT met once during this time to discuss the process and consider common themes that appeared across interviews.

### ***Imagine***

During the *imagine* phase, the PMIT shared and analyzed interview data to identify successful PM capabilities at *TelSoft* to be shared, new PM capabilities to be implemented, and generative metaphors (Barrett et al., 2001) to guide learning about the desired PM future. From the interview sessions, the PMIT compiled many examples of prior successful projects at *TelSoft* for both Map Services and Software Development. There were also several strengths that project managers claimed led to success. A strength from the Map Services group was an extensive project methodology handbook that detailed the typical process for projects. This handbook had existed for over ten years and been refined over time, but the knowledge was not always known to new project managers:

“It covers project startup, estimating, what you do during a project, how you wrap up a project, kick off meetings....it’s there. ... When I became project manager, it was basically drilled in me: these are your rules and you don’t break them. But we, I won’t say we’ve forgot about them, but they’re not as used as much today as they were back then.” (Map Services Project Manager)

A strength from Software Development was *TelSoft*’s close relationships with customers:

“I think one of our really strong points is working with our customer understanding what they need, working to narrow down the requirements. I think that most of our PMs understand enough about what the people that they support do.” (Software Project Manager)

Projects were most successful when requirements were clearly documented upfront rather than later in the process, when client communication was encouraged, and when regular status meetings were frequently held. *TelSoft* was able to successfully navigate situations where requirements were stable; however, they were overanxious to adapt to client change requests without renegotiating schedules or costs.

The PMIT also administered a survey to all participants regarding the topics they most wanted to see addressed during the workshops (see Initial Survey in Appendix). The survey of training participants had a 93% response rate. With respect to developing PM-specific skills, participants were most concerned with improving cost, integration, and scope management. With respect to developing leadership and teamwork skills, participants most valued increasing negotiation skills and maximizing potential. The top ranked topics were:

1. Resolving conflict in a win-win manner
2. Gaining the support of people who will implement your decisions
3. Converting potential into performance
4. Promoting an environment of mutual trust and respect

Based upon this analysis, we developed the overarching generative metaphor of “win-win contracts” to focus attention of the project managers on effectively balancing their own interests with those of the clients, the team members, and *TelSoft* management. We also developed “win-win contracts” further into specific metaphors for the themes of the first workshops, see Table 2. The phrase “learn, learn, learn” was used as a second overarching metaphor to guide the last five workshops to emphasize the need to continuously improve. The rationale for and interpretation of the generative metaphors for the spring session are elaborated below in the Discussion section.

**Table 2: Course Overview**

<i>Spring Session with overarching Generative Metaphor: Win-win contracts</i>		
<b>ID</b>	<b>Workshop Focus</b>	<b>Specific Generative Metaphor</b>
1	Course Introduction	
2	Project scope management	Manage customer responsiveness
3	Project time management	Negotiate realistic schedules
4	Project cost management	Two-phase funding reduces uncertainty
5	Project quality management	Up-front discipline pays off
<i>Fall Session with overarching Generative Metaphor: Learn, learn, learn</i>		
<b>ID</b>	<b>Workshop Focus</b>	<b>Specific Generative Metaphor</b>
6	Project human resource management	Create empowering environments
7	Project risk management	Proactively consider the unexpected
8	Project communications management	Practice switch hitting
9	Project procurement management	The world is flat
10	Course closing	

Based upon this overall plan, the research team created a detailed training schedule that specified the four project managers giving best practice presentations, workshop roles for each week, reading schedule from the textbook, and deadlines for the entries from the PIP and PM competition.

### ***Innovate***

During the *innovate* phase, the PMIT implemented the training schedule through the workshop series to encourage development of project managers. All workshop sessions were conducted as planned with intermediate assessment after the first five workshops and subsequent adjustments and refinements to the plans for the final five workshops. The sponsors engaged very actively in evaluating PM competition entries, both after the first five workshops and after all ten workshops had been conducted. The initiative ended in December 2007 with subsequent evaluations by the PMIT in January 2008.

Thirteen out of sixteen project managers participated throughout the initiative (three had to drop out because of structural changes within *TelSoft*). Nine out of the final thirteen project managers responded to the final survey assessing outcomes. We attribute this response rate to two factors: one participant significantly reduced his work hours due to a chronic illness and management support for the initiative was reduced once the training was complete.

## Discussion

The reported collaborative action research (Mathiassen, 2002) into IT practices at *TelSoft* offered experiences and insights that can help us understand how appreciative inquiry (Cooperrider et al., 2004a; Cooperrider et al., 2005) in general and generative metaphors in particular apply to improving IT PM.

### *Applying Appreciative Inquiry to Improve IT Project Management*

The fundamental principles of appreciative inquiry effectively supported our intervention into PM practices at *TelSoft*. The constructivist principle (Cooperrider et al., 2005) helped the participants develop and share concepts and perceptions about PM at *TelSoft* through several streams of social construction. First, the best practice presentations revealed practices and concepts that had proven their worth within the firm; these practices were explicated, shared, and debated amongst all participants. Second, key concepts and practices related to the PM body of knowledge were studied and facilitated by the participants' active roles as summarizers, applicators, and devil's advocates. Third, all participants were challenged to construct new PM realities through personal improvement plans and the PM competition entries. In effect, the intervention allowed the participants to merge local knowledge about successful PM at *TelSoft* with general PM knowledge to form ideas about and plans for improved PM practices at *TelSoft*. The appreciative inquiry was supported by the poetic principle (Cooperrider et al., 2005). During the inquiry phase all participants told stories (Petter et al., 2007a; Petter et al., 2007b) about PM practices at *TelSoft*. These helped participants imagine how PM could be re-scripted through workshops and related activities. In the workshops, participants shared stories about current practices and experimented with building new scripts by confronting existing practices with possible new futures. The simultaneity principle (Cooperrider et al., 2005) was used to overcome the traditional barrier between inquiry and change. The sponsors and project managers were actively engaged in all phases of the appreciative inquiry and not merely subjected to an intervention planned and organized by the researchers. This highly participatory approach allowed the participants to learn from the initiation, inquiry, and imagining phases. Moreover, it helped expand the workshops from traditional teaching-learning sessions, to being the basis for the participants' ongoing inquiry into their own practices, the practices of colleague project managers, and possible new practices that could be developed by exploring general PM knowledge. Finally, the positive and anticipatory principles (Cooperrider et al., 2005) guided us to adopt a positive lens throughout all activities and to integrate reflections about future actions as integral parts of the process.

The 4-I model (Coghlan et al., 2003; Watkins et al., 2001) proved helpful as a framework for improving IT PM at *TelSoft* despite the relatively high complexity of the change processes involving multiple stakeholders. The progression through the phases appeared natural, the model helped us assign appropriate weight to each phase, and the various techniques were relevant and useful. Overall, with a background in action research (Mathiassen, 2002) and with extensive experiences with IT PM, it was relatively straightforward adopting appreciative inquiry as a framework for improvements at *TelSoft*. Moreover, the subsequent evaluations indicate that the participants were satisfied with the process. Several respondents appreciated the opportunity to learn from their peers in what one manager described as "an open and non-threatening atmosphere for debating processes that lead to business success." Eight of nine respondents on the final survey indicated "some development" in personal PM knowledge and skills, while one experienced "considerable development". They were more cautious about the impact of the training on practices at *TelSoft*: only four of the nine respondents thought the initiative brought some or considerable improvement in PM practices; four indicated they were not sure; while only one indicated "no improvement." The following response on the final survey presents an optimistic view of future benefits to *TelSoft*.

"We've derived some value in simply steeping all of us in basic PM principles... As we manage future projects we may consciously or subconsciously apply some of what we learned or at least recognize the value of some of what we learned and how it can be applied."

While the experiences from *TelSoft* in this way suggest that appreciative inquiry is very useful and relatively easy to adopt as a framework for improving IT PM, the experience also raises a number of important issues. First, the positive principles were experienced as being in stark contrast to the participants' experience during Phase 1 of the research collaboration. During this phase we adopted conventional approaches to SPI (Humphrey, 1989; McFeeley, 1996). These approaches are driven by inquiry into current software practices and focus on identifying problems and deviations from norms and on making processes more robust and repeatable. This mindset with its focus on problems and continuous problem solving was therefore an integral part of the participants' *weltanschauung*

(Checkland, 1990) and professional language. While the decision to adopt the positive principle was relatively straightforward, deconstructing the social network and belief system that was cultivated earlier at *TelSoft* was more challenging. So, one important issue related to adoption of appreciative inquiry is the relationship between the history and context of intervention and the approach suggested by appreciative inquiry: should one stop mentioning problems; could one imagine combining problem-oriented improvement paradigms with appreciative inquiry; and, how can appreciative principles survive in a context that embodies competing values and conceptions? Second, the anticipatory principle and the simultaneity principle suggest extensive participation by most, if not all, involved stakeholders. Applying these principles literally, all sixteen project managers, the sponsors, and also the software developers, should have been engaged throughout the process. Such level of participation was simply not feasible at *TelSoft*. As a small software firm, *TelSoft* was constantly challenged and key resources were in high demand for many purposes. In fact, having the PMIT formed with participation of four project managers, having strong commitment and active participation from the sponsors, and having sixteen project managers participate in the workshops and related learning activities was itself a stretch. Envisioning having the “whole system in the room” over an extending period of time (Cooperrider et al., 2005) at *TelSoft* to jointly inquire into PM practices would not be feasible. So, another important issue related to adoption of appreciative inquiry is how to practice the participatory dimension and negotiate a reasonable balance between the ideal and what is pragmatically possible.

### ***Applying Appreciative Inquiry to Appreciate IT Project Management***

The positive principle in appreciative inquiry energizes participants and activates current strengths in the organization. This powerful principle is complemented with a strong focus on possible shared futures. Combining current strengths with powerful visions for the future helps the organization move forward and thereby address the issues they might currently experience. One key to sharing possible futures is the development of generative metaphors (Barrett et al., 2001). At *TelSoft*, this approach turned out to be extremely useful and it helped us leverage insights from the inquiry phase into conceptions that effectively bridged local and general knowledge about IT PM (Boehm et al., 1989; Project Management Institute, 2004; Schwalbe, 2005). During the inquiry phase, we learned that project managers were very proud of their commitment to customers while at the same time serving the interests of *TelSoft*. Hence, they told stories about how they were constantly approached by customers and how they made great efforts to respond quickly and effectively. While this would be interpreted as problematic “chaotic” behavior in the traditional SPI literature, such behaviors were experienced as appropriate and necessary at *TelSoft* for the firm to stay competitive in the market. Moreover, this behavior was well in line with Theory W which states that “project managers will be fully successful if and only if they make winners of all the other participants in the software process: superiors, subordinates, customers, users, maintainers, etc.” (Boehm et al., 1989).

Adopting “win-win contracts” as the first overarching generative metaphor for IT PM at *TelSoft*, helped us build on current strengths while at the same time envisioning future practices related to the core bodies of PM knowledge (Project Management Institute, 2004; Schwalbe, 2005). Related to scope management, we adopted “manage customer responsiveness” as a more specific metaphor to express the vision that while a high level of responsiveness to customers was a strength it was important to manage these interactions so they did not jeopardize win-contracts with other stakeholders. Related to time management, the “negotiate realistic schedules” metaphor emphasized schedules as expressions of stakeholder relationships; as a consequence, project managers needed to balance different goals and constraints into a realistic proposition for how different expectations and requirements could eventually be met. This metaphor directly relates to the ‘plan the flight and fly the plan’ principle of Theory W. Related to cost management, “two-phase funding reduces uncertainty” captured that the overarching challenge was uncertainty about requirements and capabilities. A two-stage funding process would allow the stakeholders to first agree on how initial exploration should be funded, and once major uncertainties were resolved, subsequently negotiate funding of the remainder of the project (McConnell, 1998). Finally, in relation to quality management, the “up-front discipline pays off” metaphor envisioned early investment in assessing quality would help resolve issues with lower cost and also install into each project a proactive quality mindset (Boehm, 1983).

Hence, generative metaphors helped develop knowledge about IT PM that captured essential experiences at *TelSoft*, expressed essential insights from the general literature (Project Management Institute, 2004; Schwalbe, 2005), and was expressed in short form and as adaptations of Theory W (Boehm et al., 1989; Frankl, 2008). In the final survey, seven out of the nine respondents reported experiencing “some development” in resolving conflicts in a win-win manner. One participant said about the first five sessions: “the tie-ins of every lesson to the concept of a win-win contract were valuable to me. It reinforces what should always be the driver for PM decisions and actions.” The

specific generative metaphors related to managing scope, time, cost, and quality adds to Theory W by demonstrating how the theory applies directly to the core areas of the body of knowledge on PM. Our experiences using generative metaphors as part of appreciative inquiry are consistent with how metaphors have been successfully applied to stimulate learning and innovation in relation to software design (Carroll and Mack, 1985; Madsen, 1994) and it adds to the literature on metaphorical thinking within the information systems discipline (see Kendall et al., 1993). Our application of metaphorical thinking was pragmatic (Carroll, Mack and Kellogg, 1988) targeting complex real-world situations. The power of metaphorical thinking lies in the simplicity of the communicated content combined with the incompleteness of the metaphor and the likely mismatches between what it expresses and what is experienced. Metaphors communicate guidance towards possible new futures in a simple format, but they also invite reflections over and responses to current practices. Metaphorical thinking is hence one of the key characteristics of the reflective practitioner (Schon, 1983) as they apply generative metaphors as a particular form of 'seeing as' guided by powerful examples and situational awareness rather than procedures and rules.

## Conclusion

The presented study has obvious limitations. Most importantly, the qualitative, single case research design implies that the findings draw on the specific traditions and practices at *TelSoft*. Transfer of the presented approach to appreciative inquiry to improve IT PM practices would therefore require careful examination of differences in context. However, the study demonstrates that appreciative inquiry and generative metaphors applied well to improving IT PM practice at *TelSoft* and to develop new contributions to Theory W for IT PM (Boehm et al., 1989). In addition, the study adds to existing information systems literature that emphasizes the possible role of storytelling (Petter et al., 2007b) and metaphorical thinking (Kendall et al., 1993) in systems development practices. In conclusion, practitioners are encouraged to complement their current problem-oriented tool box with a positive lens on inquiry and intervention to more effectively improve IT project practices and deliverables. From a theoretical point of view, the study suggests that further appreciative inquiries into information systems development can help us move beyond the traditional negative perspectives and the focus on failures in main stream information systems research.

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## Appendix

### ***Interview Protocol***

1. Participant Background: Describe your role at *TelSoft*. How much project management experience do you have?
2. *TelSoft* existing work practices: Think back over all the projects you've participated in at *TelSoft* – either as a project manager or participant.
  - a) Pick a project that stands out as being well run. What were some things that made this a positive project experience?
  - b) Consider the different areas of project management and point at where practices at *TelSoft* are strongest?
  - c) Without being modest, what is about your own project management skills that you value most?
  - d) Imagine that you have just retired. As you review your project management experiences at *TelSoft*, what would you wish had been different—for yourself and those you worked with? And what memory makes you feel that you have accomplished something enduring at *TelSoft*?
3. *TelSoft* future work practices: Turn your attention now to future possibilities for improving *TelSoft* work practices.
  - a) Have you ever visited another company where you have seen things you would like to introduce at *TelSoft*?
  - b) Can you identify specific project management practices, techniques, or tools that *TelSoft* could benefit from adopting?

### ***Initial Survey***

1. Background: Name, current title, Length of tenure with company. Briefly describe other professional experience (Position and years).
2. Existing PM knowledge: Please describe your level of knowledge with the Project Management Body of Knowledge (PMBOK) from the Project Management Institute (None at all, exposed to concepts, development needed, proficient).
3. Logistics: What suggestions would you give to the planning committee regarding the upcoming workshops (e.g. topics, format, time of day, etc)?
4. Interest in Leadership topics: For each of the topics listed below, participants answered the following: “As a project manager, I am interested in further developing my skills in \_\_\_\_\_.” (Waste of time, No interest, No opinion, Some interest, Strong interest).

#### *Leadership: Achieving Teamwork*

Promoting an environment of mutual trust and respect  
Working with others as a team  
Soliciting ideas from others before implementing an idea  
Interacting comfortably and effectively with team members  
Welcoming conflicting opinions as a means to ensure complete information

Listening effectively  
Recognizing unique contributions of others  
Avoiding shooting the messenger  
Resolving conflict in a win-win manner  
Gaining the support of people who will implement your decisions

#### *Leadership: Developing Team*

Converting potential into performance  
Taking a personal interest in developing each team member  
Working with team members to develop individual career plans  
Encouraging and coaching others in self-development  
Facilitating career development with each individual in my projects

5. Interest in PMBOK topics: For each of the topics listed below, participants answered the following: “As a project manager, I am interested in further developing my skills in \_\_\_\_\_.” (Waste of time, No interest, No opinion, Some interest, Strong interest).

*Project Integration Management*

Creating project management plans  
Executing project management plans

*Project Time Management*

Developing schedules and assigning resources  
Controlling schedules

*Project Scope Management*

Managing project scope  
Managing business requirements  
Managing technical requirements

*Project Cost Management*

Estimating costs  
Controlling costs and staying within budget  
Measuring performance

*Project Procurement Management*

Managing and controlling outsourcing  
Managing, controlling, and closing contracts

*Project Risk Management*

Identifying and documenting risks  
Controlling risks

*Project Communications Management*

Distributing information about project to key stakeholders  
Reporting performance  
Tracking and managing To Dos and open issues

*Project Human Resource Management*

Acquiring staff for project  
Developing project team members  
Managing project team members

*Project Quality Management*

Planning for and controlling quality of project  
Providing project oversight

**Final Survey**

1. Open-ended questions
  - a) Describe a moment during the Project Management Initiative that you felt was a real high point experience, where you felt that you had learned something significant to your work or personal development.
  - b) What do you think the people at TelSoft have valued most? Over the past year, the Project Management Initiative has generated different kinds of value for various stakeholders.
  - c) What has the project brought to you as a person? Over the past year, the Project Management Initiative has generated different kinds of value for various stakeholders.
  - d) Often unexpected positive things happen that we have not planned for or anticipated. Can you think of some unexpected positive development during the Project Management Initiative?
  - e) Describe in what ways, if any, the Project Management Initiative will have a long-term impact on project management practices at *TelSoft*.
2. Rate metaphors: Select the top 5 metaphors that represent the most important practices and visions for project management at *TelSoft* (1-Highest, 5-Lowest).
3. Growth in PM Knowledge: For each of the topics listed below, participants answered the following: “Through the project management initiative, to what extent have you further developed skills in \_\_\_\_\_” (Made things worse, No development, Don’t know, Some development, Considerable development)

Resolving conflict in a win-win manner  
Promoting an environment of mutual trust and respect  
Working with others as a team  
Interacting comfortably and effectively with team members  
Welcoming conflicting opinions as a means to ensure complete information  
Listening effectively

Taking a personal interest in developing each team member  
Facilitating career development with each individual in my projects  
Controlling costs and staying within budget  
Measuring performance  
Estimating costs  
Providing project oversight  
Planning for and controlling quality of project  
Managing project scope

Managing business requirements  
Managing technical requirements  
Controlling schedules  
Developing schedules and assigning resources  
Tracking and managing To Dos and open issues  
Reporting performance  
Distributing information about project to key stakeholders

Managing project team members  
Developing project team members  
Acquiring staff for project  
Executing project management plans  
Creating project management plans  
Managing and controlling outsourcing  
Controlling risks  
Identifying and documenting risk

4. Other: Overall, how do you evaluate the impact of the Project Management Initiative on your personal project management knowledge and skills? On current and future project management practices at *TelSoft*?