

Appreciating Lessons Learned

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4ALL, a new lessons-learned method, facilitates learning through attentive moderating and careful timing, radically increasing the identification of excellence and learning from what went right.

The IT industry has a widespread tradition of reviewing projects to learn from mistakes, a process called lessons learned or postmortem evaluations (PMEs). Several arguments support conducting PMEs—for example, making knowledge explicit, developing knowledge, increasing knowledge sharing within and across projects, increasing job satisfaction, improving participants' working relationships, and contributing to learning.¹⁻⁴ However, although lessons-learned theory proposes that we should learn from what went right as well as what went wrong,⁵

the IT Industry tends to focus on the latter.³ Consequently, few IT organizations conduct PMEs adequately. Instead, the activity often turns negative, hindering adequate learning. Vijay Kasi and his colleagues try to explain this by identifying 19 barriers for conducting PMEs.³ These include, for example, inadequate reflection time, blindness toward work practices, and a lack of commitment and incentives.

In contrast, our work is inspired by the appreciative inquiry approach, a strengths-based approach focusing on positive change (see the sidebar "Related Work on Positive Approaches").⁶ By building on organizations' strengths, achievements, best practices, and capabilities, this approach actively engages people and energizes organizations to create successful change.⁶ Appreciative inquiry has five underlying principles:

- The *positive principle* implies that positive thinking provides needed energy for future change.
- The *anticipatory principle* implies that think-

ing positively about the future will lead to positive actions.

- The *constructivist principle* emphasizes that reality is constructed from the perceptions of multiple individuals.
- The *simultaneity principle* implies that inquiry itself affects the process through making participants see reality from alternative perspectives.
- The *poetic principle* implies that organizations are viewed as a book that's created over time through individuals telling their story.

Guided by these principles, we developed a new lessons-learned method that promotes a balance between what went wrong and what went right. We call this method 4ALL, which is short for Appreciative Lessons Learned—A Lessons-Learned Method for All. This method balances positive and negative experiences by focusing on both *excellences* (that is, achievements and positive experiences) and *challenges* (problems and negative experiences). It facilitates learning and generates constructive lessons learned over the course of a half-day workshop. In

our study, we used a collaborative practice research method⁷ and applied 4ALL in four project evaluation workshops at Ericsson. We then compared these with nine project evaluation workshops using traditional PME methods. Our results show that 4ALL increases the identification and management of excellences, supports a balance between excellences and challenges, and addresses the barriers to conducting PMEs.³

The Ericsson Lessons-Learned Experience

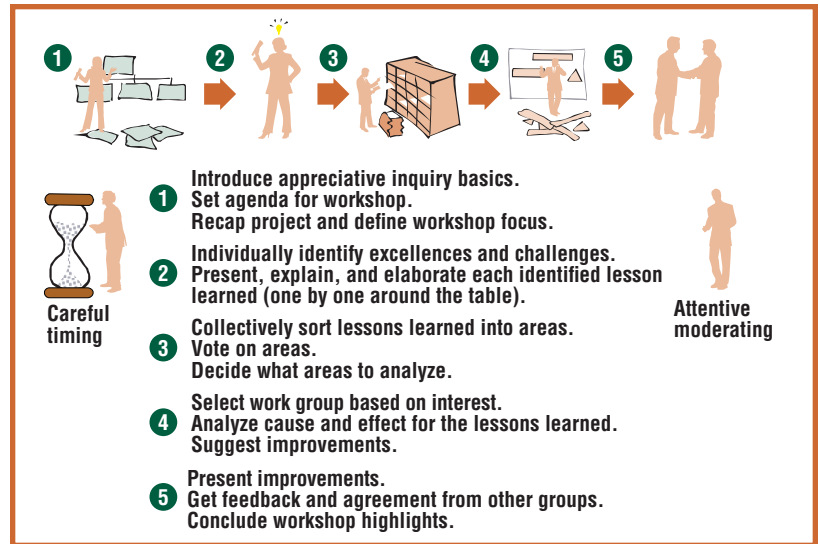
Ericsson is a global company that develops state-of-the-art telecom products. The company aims for operational excellence to facilitate efficiency, quality, and productivity. One important way to increase operational excellence is to learn from and further improve current ways of working. Ericsson has a strong tradition of conducting lessons learned. For example, before concluding a development project, the company requires approved documentation of a lessons-learned workshop. However, such workshops often are seen as problematic. Participants often lack time for reflection, taking action, and really learning, so they criticize such workshops as an excuse for whining and grumbling, and they usually only focus on the problems they've experienced (such as what went wrong during a project). Even the most successful projects tend to focus on problems when being evaluated in a lessons-learned workshop.

We conducted a collaborative research project to improve lessons-learned workshops,⁷ which was partially inspired by a previous Ericsson improvement project that used appreciative inquiry.⁸ We believed that by building on something that people were familiar with, we would facilitate both acceptance and diffusion of the new method. Four requirements guided us when we developed 4ALL:

- Reuse the existing lessons-learned method's good qualities.
- Handle known barriers as presented in literature.
- Encourage a balance between excellences and challenges.
- Suggest improvements and create commitment.

The guiding requirements led us to revise the existing lessons-learned method and develop it into five new steps (see Figure 1).

The steps depend on careful timing and attentive moderating to assure the workshop will end with improvements agreed upon and all par-



ticipants being heard. Each step includes vital activities to assure that the four requirements are fulfilled.

One important feature of the 4ALL method is its emphasis on balancing positive and negative experiences—that is, the importance of learning from excellences as well as from challenges. Identifying excellences and working with improvements based on strengths comprise a new perspective for people used to problem-oriented methods, in which identifying problems is the focus. Enhancing the importance of identifying excellences was vital to achieving a balance between excellences and challenges. In 4ALL, participants still address problems, but from a perspective that equally values learning from strengths. Additionally, the method drives the collective thinking process one step further by not only identifying and analyzing participants' experiences, but also making the participants suggest concrete actions for improvements.

The Workshop Experience

4ALL includes several minor but vital activities that promote positive thinking and allow participants to identify strengths. The moderator used the following example during the workshops to introduce the method (step 1):

When playing golf, if you're good at striking fairway shots and bad at bunker shots, you could either address the challenge and practice bunker shots, or you could expand your excellence and focus on fairway shots. Expanding your excellence is probably more fun—and maybe, by becoming even better at fairway shots, you might not find your

Figure 1. The five steps for the 4ALL method.

Step 1: Introduce method basics and recap project.
Step 2: Identify excellences and challenges.
Step 3: Sort and decide on major areas.
Step 4: Analyze and formulate suggestions.
Step 5: Agree on improvements and conclude.

Related Work on Positive Approaches

Recently, IT organizations have shown increased interest in organizational change using a positive lens.¹ Similarly, practitioners and researchers have combined traditional software process improvement approaches with appreciative-inquiry-inspired best practices.^{2,3} Esther Derby and Diana Larsen use the term agile retrospectives and focus on frequent iterative reviews in ongoing work in development teams.² Another important source for project reviews and software process improvement best practices is Norman Kerth.⁴ Kerth uses the term project retrospectives and focuses on three-day-long project reviews.

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golf ball in the bunker anymore. You could of course still improve your golf by addressing the bunker challenge—but, keeping the balance between practicing fairway shots and bunker shots is probably the best way forward to lower your overall score.

With this introduction, the participants gained an understanding of the strengths-based approach and how they can improve by identifying and managing excellences as well as challenges. It was important to establish this understanding at the beginning of the workshop to move us away from traditional PMEs' problem-oriented focus.

During step 2, we distributed green and red Post-it notes to all participants. We encouraged each person to write positive experiences or excellences on green Post-its and negative experiences or challenges on red Post-its, from their experience during the project. We encouraged each person to write at least one green note—that is, to identify at least one excellence. One by one, the participants then read a Post-it note and explained the excellence or challenge that they identified, until all the notes had been read. If several people had written the same excellence or challenge, the moderator collected just one of the notes and put it on the whiteboard. Then, everyone who identified that excellence or challenge waved their notes so the others would see that the item was common. This helped all participants feel that they contributed even though we collected only one of the notes.

In step 3, we asked participants to collectively

sort all experiences (that is, all excellences written on green notes and challenges written on red notes) into areas. The moderator assisted in this process to ensure a consistent sorting. For example, common areas from software development projects were organization, processes, and tools. For each area, participants grouped both green and red notes together. Through individual, democratic voting, participants agreed on several prioritized areas and performed a more detailed analysis of the areas with the most votes.

In step 4, participants selected an area they wanted to analyze, and the facilitator made sure all areas were covered. The groups had to analyze cause and effect for the identified excellences and challenges in their chosen area and, most importantly, suggest improvements.

Finally, in step 5, all groups shared their suggestions for improvements. The participants gave feedback on the improvements as well as their overall impression of the presentations. We then concluded the workshop by letting all participants highlight what they appreciated most about the workshop. This contributed to a positive atmosphere, encouraged the participants to act on the suggested improvements, and helped us evaluate the workshop.

We applied 4ALL at four lessons-learned workshops at Ericsson. We compared that data (from February to March 2008) with data we collected from nine lessons-learned workshops (from October 2006 to January 2008) that used the traditional PME approach. Table 1 presents the data from all 13 workshops. Seven to 11 people participated in the traditional PME workshops (rows A through I), guided by a PME moderator. Each workshop lasted about four hours and followed a well-structured PME process. Eight to 16 people participated in the 4ALL workshops (rows J through M). At each 4ALL workshop, one of us acted as moderator and the others observed and documented the workshop activities. Each workshop lasted about four hours and followed the 4ALL method's five steps.

Table 1 highlights the positive experiences (that is, what went right) and negative experiences (what went wrong)—which we refer to in the table as "identified excellences" and "identified challenges." The identified-excellence ratio is the number of identified excellences out of the total number of identified experiences (both excellences and challenges). This ratio indicates the balance between excellences and challenges for all experiences the workshop documented. Suggested improvements are counted for the major areas analyzed (that is, the areas participants prioritized to discuss and analyze during the workshop). The

Table 1**An overview of the lessons-learned workshops included in this study**

Workshop	Project or subproject area	Approach or method	Identified excellences	Identified challenges	Identified-excellence ratio	Suggested improvements	Managed-excellence ratio
A	Developing an antenna	PME*	11	47	19%	7	Unbalanced (6%)
B	Developing system functionality for a radio base station	PME*	1	7	13%	9	Unbalanced (13%)
C	Developing system functionality for a radio base station	PME*	4	36	10%	28	Unbalanced (10%)
D	Developing a radio base station	PME*	32	80	29%	9	Unbalanced (37%)
E	Developing a radio base station	PME*	14	32	30%	20	Unbalanced (32%)
F	Developing a radio base station	PME*	2	13	13%	12	Unbalanced (13%)
G	Developing a control unit for an antenna	PME*	14	30	32%	16	Unbalanced (26%)
H	Developing a baseband functionality for a radio base station	PME*	9	52	15%	11	Unbalanced (0%)
I	Developing a power unit for a radio base station	PME*	10	23	30%	16	Unbalanced (23%)
J	Introducing agile development techniques	4ALL**	13	17	43%	8	Balanced (43%)
K	Developing a radio base station	4ALL**	23	33	41%	10	Balanced (47%)
L	Introducing a new requirements handling tool	4ALL**	16	29	36%	Not part of workshop scope	Not part of workshop scope
M	Developing system functionality for a radio base station	4ALL**	19	17	53%	8	Balanced (54%)

* PME: Postmortem evaluation. ** 4ALL: Appreciative Lessons Learned—A Lessons-Learned Method for All.

managed-excellence ratio is the number of identified excellences out of the total number of identified experiences (excellences and challenges) for these suggested improvements. This ratio indicates the balance between excellences and challenges for the improvements participants agreed on. We argue that a managed-excellence ratio of 40 to 60 percent is balanced and one less than 40 percent is unbalanced.

Lessons Learned on Lessons Learned

Table 1 reveals interesting results. First, while the traditional PME approach always has identified

excellences, the new method identifies more (see the “identified-excellence ratio” column). The identified-excellence ratio has increased from an average of 21 percent with traditional PMEs to 43 percent when using the 4ALL method (see Figure 2). This is owing to 4ALL’s strengths-based focus and encouragement of identifying excellences to improve practice.

Second, while all lessons-learned workshops identified excellences, participants using traditional PMEs didn’t prioritize them further (see Table 1, “managed-excellence ratio” column). When using 4ALL, the managed-excellence ratio increased to an average of 48 percent compared to an average

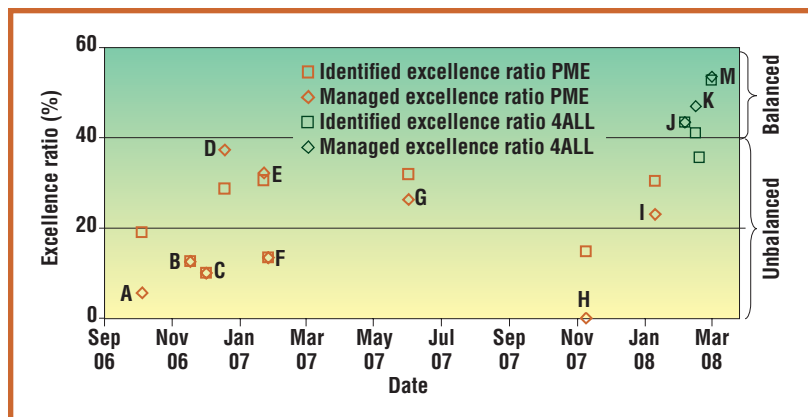


Figure 2. Identified-excellence ratio and managed-excellence ratio for each lessons-learned workshop. PME stands for postmortem evaluation; 4ALL stands for Appreciative Lessons Learned—A Lessons-Learned Method for All.

of 18 percent when using PME (see Figure 1). This implies that balancing managed excellences and challenges can be achieved when using 4ALL (that is, more actions are based on excellences, thus providing energy for future improvement).

Table 2 presents the barriers to lessons-learned workshops using the traditional PME approach.³ We summarize how our method addresses these barriers, providing quotes from the workshops and interviews. Although the method's design builds on appreciative inquiry principles, some activities might not be exclusive to appreciative inquiry but rather reflect well-known shortcomings that most processes seek to manage. For example, 4ALL addresses barrier 3 (lack of mechanisms to encourage exploitation) by combining the activities "introduce appreciative inquiry basics" and "individually identify excellences and challenges." This helps participants understand the underlying principles of appreciative inquiry, change their mindset, and realize their strengths. In accord with the positive principle and anticipatory principle,⁶ focusing on positive thinking provides energy, which leads to positive actions and thereby encourages and motivates software process improvement. 4ALL addresses barrier 15 (insufficient integration with existing learning systems) by combining the activities "present improvements" and "get feedback and agreement from other groups." This helped the participants bring forward good experiences and ideas, receive useful feedback, and reach consensus about suggestions. This method is in line with appreciative inquiry's positive and anticipatory principles (by focusing on positive thinking to provide energy and lead to positive actions) and the constructivist principle (by openly discussing all participants' perceptions).⁶ The method's structured process—in which the moderator pays attention to the workshop agenda and expected outcomes—addresses other examples, such as barrier 6 (bad planning) and barrier 19 (lack of procedure),

which reflect more general shortcomings in process management.

Several interviewees and workshop participants found the method useful because it let them identify strengths in their work practices. Their feelings of pride and joy helped them perform even better and address challenges that the lessons-learned workshops identified. Previously, whining and grumbling had often been the focus, and improvements were seldom realized because people lacked motivation (see Table 2, quotes for barriers 4, 12, and 19). Our method can address the barriers, and people can successfully use it to balance between excellences and challenges—thus improving the IT industry's lessons-learned practices (see Table 2, quotes for barrier 8, 11, and 19).

Other organizations can benefit from our experience. The 4ALL method demonstrated increased participant enthusiasm, more constructive discussions, and more frequent implementation of suggested improvements. We conclude our experiences by summarizing appreciative inquiry's five underlying principles as follows: "Multiple individuals telling their stories with a constructive mindset will lead to positive actions, which creates energy to make something out of them."

To successfully use and benefit from an appreciative-inquiry-inspired, lessons-learned method, we recommend that managers and moderators consider the following recommendations:

- *Appreciate appreciative inquiry.* Understanding and explaining the basics of appreciative inquiry is a precondition for success. The positive principle implying that positive thinking provides the energy needed for future change is vital.
- *Clarify procedure.* The method is structured and time efficient. Step 1 indeed is important to successfully conduct the workshop. The democratic method encourages all participants to share and develop knowledge, as the simultaneity principle implies, so they can transfer knowledge to other projects and units.
- *Keep the balance.* Step 2 discusses the importance of balancing between excellences and challenges. Keep this focus throughout the process to show problem-oriented individuals that their views will be considered, but also that the workshop goes beyond grumbling and whining to stay positive and action oriented.
- *Make everybody storytellers.* To construct re-

Table 2**Postmortem evaluation barriers and how the 4ALL* method addresses them**

Barrier	4ALL addressing barrier	4ALL workshop/interview quotes	Role
1. Getting lost in current business	<ul style="list-style-type: none"> ■ Recap project and define workshop focus. ■ Individually identify excellences and challenges. 	"We're proud of ourselves and our success—we're a tight group! This workshop made me remember this."	Developer
		"Often, we pay attention to people who 'rescue' a situation at the last minute. What we're bad at is noticing those who manage everyday activities—those things we never notice. In using this method with lessons learned, we could give credit to our colleagues in a way we don't often do!"	Process engineer
2. No culture for interproject learning	<ul style="list-style-type: none"> ■ Present improvements. ■ Get feedback and agreement from other groups. 	"We need to learn from each other—between projects in the same organization. Lessons learned can help by establishing and maintaining contact between people."	Process engineer
3. Lack of mechanisms to encourage exploitation	<ul style="list-style-type: none"> ■ Introduce appreciative inquiry basics. ■ Individually identify excellences and challenges. 	"The balance between addressing excellences and challenges was good—not to just emphasize challenges but contribute to a more positive working environment."	Project manager
4. Lack of commitment and incentives	<ul style="list-style-type: none"> ■ Present, explain, and elaborate on each identified lesson learned. ■ Conclude workshop highlights. 	"This method helped me lose my negative attitude toward the project. That felt good."	Developer
		"Often, lessons-learned activities don't motivate us because we just focus on problems. It can be overwhelming to people. This time it felt as if the problems we identified were manageable—as if they could actually be addressed! I think this was because of the positive, constructive way of phrasing problems."	Quality manager
5. Impractical to include all stakeholders	<ul style="list-style-type: none"> ■ Collectively group lessons learned into areas. ■ Select work group based on interest. 	"This method helps you focus on the problems you can actually deal with. You don't end up discussing other peoples' problems—for example, what the product management didn't do. The discussion is focused. We discuss things we can influence instead of things that are outside our control."	Quality manager
6. Bad planning	<ul style="list-style-type: none"> ■ Set agenda for workshop. ■ Suggest improvements. 	"There was a good process—all activities were focused and led to a specific outcome."	Product manager
7. Lack of time for reflection	<ul style="list-style-type: none"> ■ Analyze cause and effect for the lessons learned. ■ Present improvements. 	"This method offered more time for elaborating and explaining the content on each Post-it note. This was positive, and it means a lot to people to be able to really explain what they mean."	Quality manager
8. Time lag between decision, action, and outcome	<ul style="list-style-type: none"> ■ Suggest improvements. ■ Get feedback and agreement from other groups. 	"The process was good in that it helped us identify things we could actually do something about—things that we could deal with directly in the next project."	Line manager
		"All the people participated and seemed to enjoy it. The whole procedure is structured, and new things are happening all the time—you reflect, write Post-it notes, engage in group discussions, and so on. You keep focused because you have to participate. This will help people remember and also to share experiences and results."	Quality manager
9. Blindness toward own work practice	<ul style="list-style-type: none"> ■ Individually identify excellences and challenges. ■ Present, explain, and elaborate on each identified lesson learned. ■ Vote on areas. 	"The lessons-learned workshop made us realize that we're doing a good job and that we'll continue doing this if we focus on our strengths."	Developer
		"We're too quick to focus on what we don't do—or what we have problems doing. We tend to get stuck in discussions about problems. This method helped us broaden our views and listen to others."	Project manager
10. Perceived high cost of information retrieval	<ul style="list-style-type: none"> ■ Set agenda for workshop. ■ Recap project and define workshop focus. 	"These kinds of activities are always a bit slow in the beginning. Things that we discuss are usually a while back in time. ... To have a facilitator and a clear presentation of the activity really helped in getting started."	Project manager
11. Situated knowledge	<ul style="list-style-type: none"> ■ Analyze cause and effect for the lessons learned. ■ Get feedback and agreement from other groups. 	"The method includes a next step that makes people feel that we're taking care of the action points."	Project manager

* 4ALL: Appreciative Lessons Learned—A Lessons-Learned Method for All.

Table 2 cont'd

Postmortem evaluation barriers and how the 4ALL method addresses them

Barrier	4ALL addressing barrier	4ALL workshop/interview quotes	Role
12. Perceived low benefit	<ul style="list-style-type: none"> ■ Present, explain, and elaborate on each identified lesson learned. ■ Suggest improvements. ■ Present improvements. 	"I liked the focus on constructive comments instead of the usual grumbling."	Developer
		"From one workshop, we got a tangible result—we started a new team leader forum. This was something that we discussed at the lessons-learned workshop and that the team leaders thought would be good for sharing knowledge. The forum now meets once a month, and all the team leaders think it's beneficial."	Process engineer
13. Tacit knowledge	<ul style="list-style-type: none"> ■ Individually present, explain, and elaborate on each identified lesson learned. ■ Collectively group lessons learned into areas. 	"All things on the whiteboard (all green and red Post-it notes) were things that I've been thinking of ... they were all in my head."	Tester
		"I realized that we had actually done many good things in the project. Often, we take these things for granted and don't enjoy them as much as we should. The method helped us identify things we do well, which we would like other parts of the organization to know about and learn from. I think we know these things we do well—but we tend to forget them and don't pass them on to others. The entire organization should benefit from making these explicit."	Developer
14. Insufficient funding	<ul style="list-style-type: none"> ■ Set agenda for workshop. ■ Decide what areas to analyze. 	"A group activity like this can be difficult and time-consuming. This method was efficient in that the guidelines were clear and all steps were introduced and managed. We got important results after spending only a few hours on this."	Process engineer
15. Insufficient integration with existing learning systems	<ul style="list-style-type: none"> ■ Present improvements. ■ Get feedback and agreement from other groups. 	"People listened to me and the things I had to say. I could share my feelings, experiences, and opinions."	Tester
		"Many things were brought forward that could help the organization as a whole. It would be good if more people could learn from us and the things we do well. This method helped us identify these strengths and talk about them proudly."	Developer
16. Lack of awareness	<ul style="list-style-type: none"> ■ Recap project and define workshop focus. ■ Conclude workshop highlights. 	"It's a way of getting together after the project is finished and people move to new things and projects. In that way, it's a rewarding feedback session where you get the time to discuss things you never have time for during the project."	Tester
17. Weakly supported recommendations	<ul style="list-style-type: none"> ■ Suggest improvements. ■ Get feedback and agreement from other groups. 	"This is an efficient method for getting a good atmosphere among people and for bringing forward detailed suggestions of what to improve in the future."	Tester
18. Unclear or conflicting purposes	<ul style="list-style-type: none"> ■ Introduce appreciative inquiry basics. ■ Set agenda for workshop. 	"I liked the way that the session was run. The facilitator was clear and clearly communicated the goal to all participants."	Developer
19. Lack of procedure	<ul style="list-style-type: none"> ■ Set agenda for workshop. ■ Conclude workshop highlights. 	"This was a positive surprise. I had heard about these lessons-learned workshops but had never been part of one. I like the way the workshop was structured—it has the possibility to produce a valuable result."	Line manager
		"The method offered a structured way of finding both excellences and challenges. It showed clearly how we can reach the goal with the lessons-learned activity and where the outcome would lead."	Project manager

ality, encourage all participants to contribute their experiences from a project. Despite time limitations for the workshop, give all participants opportunities to tell their stories and provide examples as the poetic principle suggests.

- *Boost pride and joy.* Let participants express pride and joy in their accomplishments by giving as much importance to describing excellences as to challenges. This positive boost creates a willingness to attend and prioritize these

workshops, which is a fundamental basis for creating a context and culture for learning.

- *Resolve frustration.* Let participants recognize problems and discuss why things went wrong. To resolve possible frustration, emphasize the importance of action—that is, don't stop once you've identified problems, but encourage participants to suggest improvements. This helps them channel negative energy constructively.
- *Create individual commitment.* Expect par-

ticipants to actively engage in all workshop activities. This empowers the participants and increases the likelihood of knowledge transfer and learning. The structured process drives participants to focus on a few prioritized improvements, which generates a high level of commitment, rather than focusing on many suggested improvements that nobody feels obligated to address.

- **Manage improvements.** Ensure that participants can easily transform their experiences into concrete actions. Help them ask the right questions, focus on cause and effect, and stay balanced between excellences and challenges. In this way, you support the anticipatory principle, which implies that thinking positively about the future will lead to positive actions.

A final but important point is that we should replace “postmortem evaluations” with a more constructive, attractive, and forward-focusing name for project review activities. This is why Kerth,⁹ Derby, and Larsen¹⁰ use the term “retrospectives.” We chose the name 4ALL because the method invites people to a joyful, constructive activity that uses positive thinking to learn from excellences and challenges.

News of our lessons-learned method has started to spread at Ericsson, and more people are showing interest in it. We have conducted additional workshops and planned new workshops to facilitate software process improvement. Natural diffusion often signals a successful method, which provides an excellent basis for future IT industry adoption. ☺

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