Daily Stand-Up Meetings

Start Breaking the Rules!

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// Daily stand-up meetings are commonly used for software teams to collaborate and exchange information, but conducting them in a way that benefits the whole team can be challenging. We describe factors that can affect meetings and propose recommendations for improving them. //

IF YOU WORK on an agile project, you are probably familiar with some format of the daily stand-up meeting because it is a popular practice.[1,2] Some staff may see the meeting as a necessary venue for communication with the team while others consider it a waste of time. We have researched daily stand-up meetings for almost a decade and helped software engineering companies find ways to improve them. In this article, we share our findings and provide recommendations on how to conduct effective daily stand-up meetings.

Agile business methods introduced the practice of daily stand-ups to improve communication in software development teams. In these meetings, team members share information and thus become aware of what other members are doing, with the hope that team members will then align their actions to fit the actions of the others, i.e., mutual adjustment.[3] Furthermore, meetings that improve access to information foster employee empowerment.[4]

Despite clear guidelines for how the 15-min meeting should be conducted,[5] through our visits to more than 40 companies and several hundred teams, we have found that implementing daily stand-ups in a way that benefits the whole team is quite challenging. So, how can we adjust the practice to boost team performance? Understanding how to conduct these meetings for self-managing software development teams requires more than just examining the group's inner workings; we must also understand the organizational context surrounding them. Therefore, we have conducted a multiple-case study in four software companies to identify positive and negative aspects of daily stand-up meetings and provide recommendations on how to make them more valuable.

Research Background

The four companies we studied belong to different application domains. ITConsult is a Norwegian IT consulting company, TelSoft is an international telecommunications software company, GlobEng is a global software company that provides services for the engineering industry, and NorBank is a Nordic bank and insurance company. Data collection and analysis took place from 2010 to 2018.

To gather different perspectives on the meeting, we interviewed 60 project members with roles at all levels in 15 different teams (see Table 1). The overall discussion topic was teamwork and meetings, with a particular

focus on daily stand-up meetings. More details on the interview guide and research context are available.[6,7] We observed and documented 102 daily stand-up meetings. Eight of the meetings from TelSoft and NorBank were audiotaped, transcribed, and coded based on a validated coding scheme for team meeting processes.[8] Figure 1 shows the proportion of words stated in each of the six categories we identified. The number of words can be considered to be a proxy for the time spent.

Daily Stand-Ups: What, How, When, and for Whom?

The interviewees expressed that discussions other than answering the three Scrum questions were most valuable. Furthermore, the value of the stand-ups was affected by meeting facilitation behavior, the dependencies among tasks, and the time of day the meetings were held. In addition, we found that junior team members were more satisfied with the meetings than senior team members. See Table 2 for a summary of the main benefits of and difficulties for conducting daily stand-ups.

What Is Discussed in the Meetings?

Participants in daily stand-ups are traditionally supposed to answer a variant of only the following three questions: "What did I do yesterday?" (Q1), "What will I do today?" (Q2), and "Do I see any impediments?" (Q3). We found that the teams addressed far more than the three questions within the 15 min. Analysis of the transcribed meetings showed that, on average, only 34% of the meeting was spent on answering the three questions (see Figure 1). The teams spent almost as much time (31%) on elaborating on problem issues, discussing possible solutions, and making decisions, which is also known as *problem-focused communication*.[8]

According to Scrum, the daily stand-up should not be used to discuss the solutions to obstacles raised. However, in the interviews, problem-focused communication was the most frequently mentioned positive aspect of these meetings. The teams highly valued having an arena for quick problem solving, even if the problem-solving sessions were as short as 1 min.

Because the daily stand-up is characterized by limited time, uncertainty, and incomplete information, it is reasonable to question whether spending this time on making decisions is worthwhile. A thorough definition and analysis of the problem characterizes a successful problem-solving process, which may be time-consuming.

To understand decision making in this context, we use the theory of naturalistic decision making,[9] which postulates that experts can make correct decisions under challenging conditions, such as time pressure, uncertainty, and vague goals, without having to perform extensive analyses and compare options. They can use their experience to recognize problems that they have encountered previously. They form mental simulations of the current problem, which they use to quickly suggest appropriate solutions. Because problem-focused communication is essential for problem solving,[8] and the stand-up is the only daily coordination arena for the whole team, we argue that the meeting is necessary for effective decision making in agile teams.

Both meeting transcripts and observations showed that the problem-focused communication usually happened after the team members had

| Company	ITConsult	TelSoft	GlobEng	NorBank	Total/average
Locations visited	Poland, Norway	Malaysia, Norway	China, Poland, Norway, United Kingdom	Norway	Nine sites
Number of teams studied	2	3	7	3	15
Average team size (minimum/maximum)	9.5 (9/10)	9.3 (9/10)	8.3 (5/13)	14 (13/14)	10.3 (5/14)
Number of interviews	15	20	13	12	60
Number of stand-up meetings observed	19	39	13	31	102
Average stand-up meeting duration in minutes (minimum/maximum)	10.8 (4/18)	15.5 (7/24)	11.6 (4/18)	8.9 (4/13)	11.7 (4/24)

Table 1. The data sources.
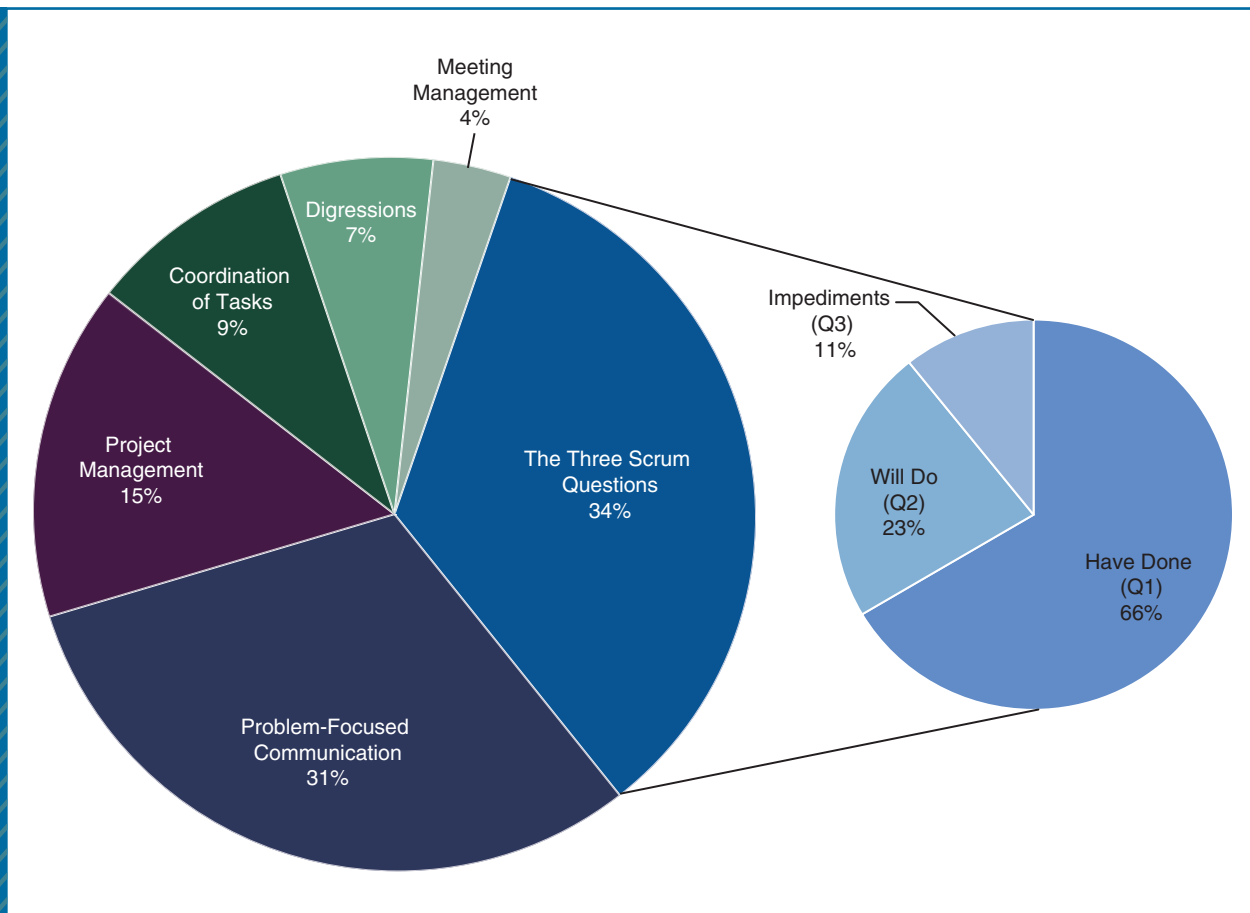
FIGURE 1. The proportion of topics discussed in daily stand-up meetings.

Table 2. The benefits and problems of daily stand-up meetings.

Main benefits

- Problems are identified, discussed, and resolved quickly.
- The team's cohesion and shared commitment improve.
- There is a greater awareness of what other team members are doing.
- Interactions are better coordinated through mutual adjustment.
- The decision-making process becomes more effective.

Main problems

- The information shared is not perceived to be relevant, particularly due to the diversity in roles, tasks, and seniority.
- Managers or Scrum masters use the meeting primarily to receive status information.
- Productivity decreases because the day is broken into slots.

described what they were going to do (Q2) or had mentioned an obstacle (Q3). Just relaying what they had been doing (Q1) rarely triggered problem-focused communication. Therefore, Q2 and Q3 are clearly most important for making quick decisions. While the interviewees expressed they were least happy to spend time on Q1, the teams actually spent the most time on that question, mainly because talking about what had been done often ended up as cumbersome reporting with superfluous details.

The challenge of knowing what others need to know tended to result in team members trying to include

everything they had worked on, independent of its relevance to others. In one team that did not spend much time on Q1, the Scrum master explained, "We don't want to know the details of what you did yesterday, but something that is useful for the whole team. We had to change the mind-set and find out what to say in the meeting. We practiced a lot and improved."

How Are the Meetings Facilitated?

If the behavior of the meeting facilitator made team members address the facilitator, we observed that the stand-up often became a status-reporting meeting. If the facilitator managed to make team members talk to each other, it tended to become a discussion meeting. To illustrate the two types of meetings, we show conversation charts from two observations in TelSoft (Figures 2 and 3). The lines represent an interaction between two participants.

Figure 2 shows a reporting meeting in which the facilitator controlled the conversation by allocating turns for speaking. In this way, team members naturally directed their responses to her and had fewer interactions with each other. Figure 3 shows a discussion meeting in which team members engaged in what the other members were saying. The facilitators who managed to get people to talk to each other were usually involved in the day-to-day work and solved team tasks, so therefore had less need for status information.

Team members who practiced daily stand-ups as reporting meetings expressed negative attitudes. One member said it felt like having oral exams every day and another said, "No one in the team really wants to be at the status meeting." When the regular facilitator of such meetings was absent, the team
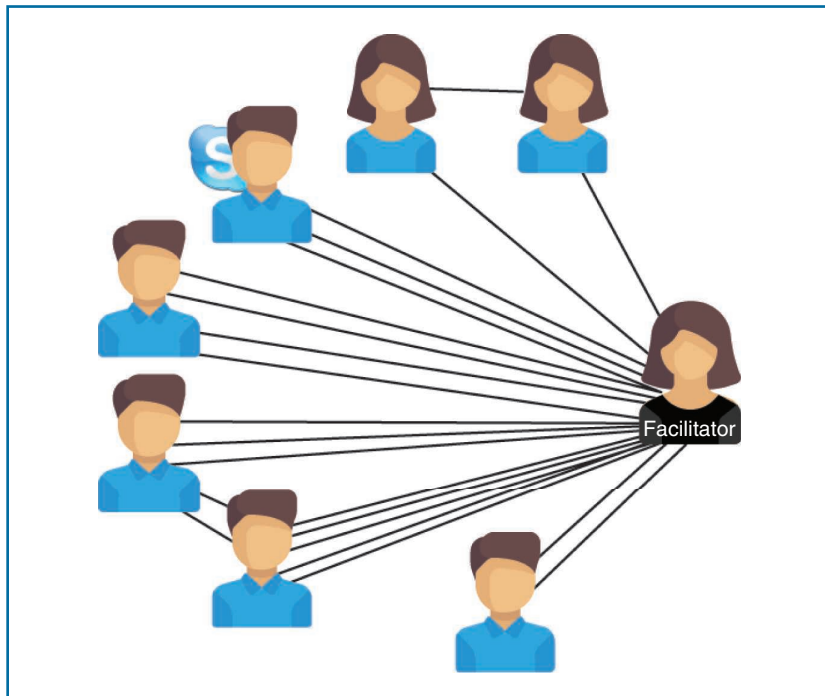
FIGURE 2. A conversation chart for a reporting meeting.

usually either dropped the meeting that day or they conducted a discussion meeting instead.

One developer explained, "Today the Scrum master was not there, and we probably had our best daily meeting. Because usually, the meetings are focused on information useful to the Scrum master, but not for us. He is also more interested in what we have done than what we are going to do." Other research has found that poor meetings may have a negative effect beyond the meetings themselves, such as reduced job satisfaction, coworker trust, and well-being.[4,11]

When the facilitator had a personal interest in the status of specific tasks, they often gave team members working on these tasks more attention, leading to an unbalanced contribution. One team member said, "The Scrum master chooses the next

person to talk based on the tasks that are important to her." We observed that people who spoke early were given the time they wanted, while the Scrum master cut short those who spoke last, because the meeting was approaching its time limit. It is negative for a team if, for example, developers are given more time to speak than testers. To make the team productive, everyone in the team should speak roughly the same amount of time.[10]

Facilitating the meeting can be even more challenging when the team members are distributed beyond the physical location of the meeting, which was the case in many of the teams we studied. The teams with facilitators who used video instead of only audio had more discussion meetings. One developer explained, "Use of video changed our meetings because if you see
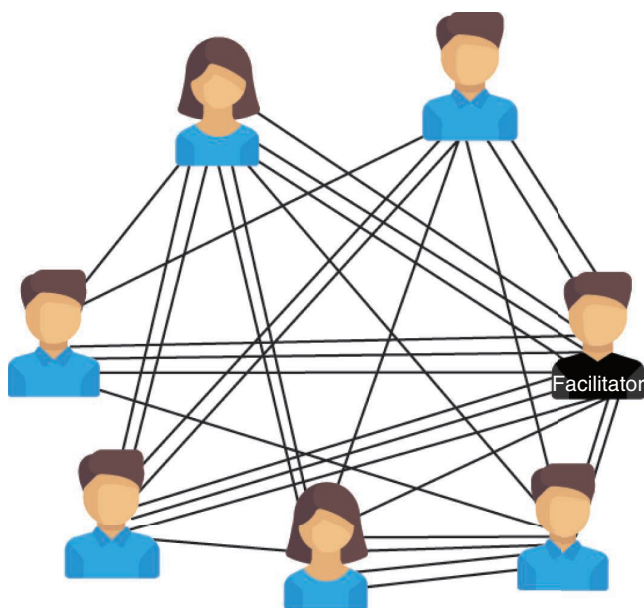
FIGURE 3. A conversation chart for a discussion meeting.

people's reactions and their gestures, you immediately know whether they are listening or are bored, and whether they don't understand what you said." Additionally, using a large video screen at the right height for standing helped team members to acquire the feeling that everyone was a part of the same standing circle, which further increased team spirit and improved the communication.

When Are the Meetings Held?

Most agile teams conduct their daily stand-ups in the morning. A few team members told us that it is good to start the day by gathering the team, to hear what people will be working on and whether it will face any obstacles. Nevertheless, in many cases, we found that an early start time reduced the perceived value of the meeting and the effectiveness of the team. We observed that early

meetings were often delayed by a few minutes because some participants arrived late for work, which made the time spent in the meeting more than 15 min for those who arrived on time.

More importantly, many team members considered the meeting to be a disruptive interruption, particularly during programming activities. One developer said, "I find the meeting useful, but the interruption it causes is disturbing. I have to detach myself from what I am working on, and when I get back it takes some time to start again where I left off." Therefore, even when arriving early, some team members waited until after the meeting to start working on challenging issues, and instead spent their time before the meeting on tasks that did not require concentration. This behavior is natural because other research has found

that most developers need more than 15 min to resume work after an interruption.[12] Starting early in the morning (e.g., 8:30 a.m.) or late in the afternoon (e.g., 3:30 p.m.) was also seen as undermining the much-valued flexibility regarding work hours in the companies.

Participants said that starting later in the day (e.g., 10:00 a.m.) was also problematic because there was not enough time between the daily meeting and lunch to do anything useful. Many staff members felt that starting right before lunch was a better option because then there was no added interruption and the team could go and eat lunch together.

Who Benefits Most From the Meetings?

The way work was assigned and coordinated affected the dynamics of the stand-ups. In some teams, there were few interdependencies between different members' tasks, mainly because they had specialized roles and low knowledge redundancy; that is, team members had expertise in different technical areas and worked on separate modules. Therefore, what one team member worked on was often uninteresting or irrelevant for members other than the Scrum master or technical lead, so staff usually did not pay attention when others were talking.

When there is little interdependence among team members, there is less need for mutual adjustment and problem-focused communication and, as a result, most of the time is instead spent on reporting. Particularly, there is less interdependence in larger teams because everyone's work depends on only a fraction of others' work. Accordingly, we observed that larger teams had more reporting meetings. NorBank had

the largest teams, partly as a consequence of having BizDevOps teams, which include people from business, development, and operations. Discussing problems among such a variety of roles would have required too much time and would not have been relevant for all attendees.

When more people attend a meeting, there is less time available for each person to be active, so team members are generally less satisfied with large meetings. Consistent with what we found in a recent survey of stand-ups, there was a significant decrease in meeting satisfaction when the team comprised more than 12 members.[2] Furthermore, we found that experience played an important role with respect to who benefitted from the meeting. Junior team members were generally more positive than senior ones. These senior team members often perceived the daily stand-ups as having little personal value because they already knew what was going on and did not receive any new information in the meeting.

Moreover, the positive attitude toward problem-solving discussions is more relevant to junior staff because the problems they encounter are easier to solve in a daily stand-up format. Senior team members often work on more complex tasks in which the problems require more expertise and time to resolve than a daily stand-up allows. Also, when an experienced team member works on a complex task, there might be little progress for some days, and team members do not see repeating what is said in the previous meeting as valuable. One senior developer said, "The intervals are too short to report on; often you feel that you did not have much progress from the day before."

We have also seen that senior team members attend more meetings, both internal to the team and external, in addition to the daily stand-ups. The daily meeting is then considered to be an additional daily interruption, which may reduce the well-being of senior team members because a higher meeting load negatively affects fatigue levels and subjective workload.[11]

Recommendations

In our longitudinal study, we made a set of initial recommendations on the basis of our early interviews and observations. Several teams then tried these guidelines. While there is no clear recipe for conducting a successful daily stand-up that fits all companies, we make the following recommendations based on all our data collection and analysis.

Omit Question 1

To avoid the daily stand-up becoming a status-reporting meeting that does not realize its potential benefits, we suggest that team members do not report what has been accomplished since the last meeting (Q1). Eliminating this question will reduce status-reporting and self-justification, in which participants explain in detail what they have done and why they have not achieved as much as expected. More time will then be available to discuss and solve problems.

While it is valuable for team members to know the status and progress of the other team members' tasks, such information can be shared more efficiently by other means. For example, some teams display their status on a visual board, and some use a chatbot in Slack (an electronic communication tool) to collect status information from everyone, which is later posted to the whole team.

Share Facilitation Responsibility

Facilitators need to consciously allot equal time to all participants. It is easy (often unconsciously) to allow some people to talk more than others because the information from these people may be of particular interest to the facilitators. Furthermore, facilitators must be aware of how the allocation of who speaks during the meeting affects the conversation flow. Try both an approach in which the tasks on the board are discussed and a round-robin approach in which the team members know, without interruptions, who will speak next.

An alternative to having one appointed facilitator is to circulate the facilitator role among a set of team members, which is what some of the observed teams did. Leadership that is broadly distributed instead of centralized in the hands of a single individual is known as *shared leadership*. This form of leadership can empower a team and foster both the task-related and social dimensions of a group's function, such as trust, cohesion, and commitment. Because new facilitators may influence how the meeting is carried out, sharing the facilitator role will give the team opportunities to reflect upon different ways to conduct the daily stand-ups. If the facilitator is not the same person as the team leader, it is less likely that the daily stand-up becomes a status-reporting meeting.

Meet Right Before Lunch

If a team decides to conduct daily stand-ups, the meetings must fit the rhythm of the team members' days and weeks. It is important to find the least disruptive time to reduce the potential for fragmented work. In many cases, conducting the meeting early in the morning has some drawbacks. Right

Table 3. Recommendations for daily stand-up meetings.

Stop asking, "What did you do yesterday?"

- Reduce the time spent on status reporting and self-justification.
- Focus on future work, particularly considering dependencies and obstacles.
- Spend time discussing and solving problems as well as making quick decisions.

Optimize the communication pattern.

- Share the leadership to increase joint responsibility, such as by rotating the facilitator role.
- Team members should communicate with each other and not report to the facilitator.

Find the least disruptive time.

- Consider scheduling the meeting right before lunch to decrease the number of interruptions.

Find the frequency that offers the most value.

- In a team that communicates well, stop meeting daily if three or four times a week is sufficient.
- In a large team, some members do not need to meet as frequently as others, depending on the interdependencies among tasks and members.

before lunch may be a better time, as it will merge two interruptions. Many teams tried this, and one respondent commented on not having the meeting in the morning: "There are many advantages with the new time; one is that people have different preferences when it comes to what time to arrive at work. When having the stand-up late, all of us are able to have moments of flow before the meeting. It is also much easier to remember what you are working on. I know the trend has spread to other teams."

Furthermore, hungry team members are more prone to end the meeting on time and, in addition, they are more likely to have lunch together, which will stimulate team cohesion. They can also continue discussions on their way to lunch and during lunch, if needed.

Adapt the Frequency

The daily stand-up meeting is, as the name indicates, intended to be conducted daily. However, we found that not all teams benefit from

meeting five times a week. For example, small, collocated teams that have a high degree of informal communication may not need a daily meeting. Furthermore, in a large team there will be less need for mutual adjustment among all of the team members. Therefore, it might be better to split the team into smaller groups and hold separate meetings for staff that works together on a daily basis, with less frequent meetings for the whole team. Alternatively, team members may post answers to the three Scrum questions electronically on a daily basis, and then have a less frequent physical meeting in which they can concentrate on problem-focused communication.

We have worked with many teams in different companies who have experimented with our recommendations (Table 3). They have stopped asking Q1 ("What did you do yesterday?") and instead started sharing the

facilitation responsibility to optimize communication patterns and changed the frequency and time of meetings. In particular, setting the correct meeting time (right before lunch) has been widely adopted and appreciated. Furthermore, we have yet to meet any teams who have reinstated Q1 after a trial period without it. Members appreciate focusing on the work that is ahead of them and being allowed to discuss problems and solutions. One recommendation that has been adopted less frequently is sharing the facilitator role, probably because Scrum masters and team leaders feel that it is their responsibility to facilitate the meetings.

When we help companies, we always advise them to collect information about the daily meeting, to gain insights regarding their team and how to enhance its productivity. Having a person from another team draw a conversation chart (see Figure 2) is a technique that may provide insight as well as a valuable basis for discussions about daily stand-ups. Relevant questions to discuss are as follows.

- "How can all team members benefit from the meeting?"
- "Are people talking to each other or to the facilitator?"
- "Is it a reporting or discussion meeting?"
- "Who should facilitate the meeting?"
- "Is every team member talking approximately the same amount of time?"
- "Should the meeting focus on people or tasks?"

We advise all agile teams to try to improve their meetings by experimenting with breaking the rules that they follow. Taking responsibility for improving the meetings will make the

team more self-managed. An agile software team should continuously inspect and adapt the daily stand-up meeting to fulfil the team's needs. Some of the adjustments might be about challenging the old mindset, such as conducting the meetings daily and in the morning, and discussing only the three Scrum questions. Teams that make appropriate adjustments become more productive. 🔟

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