

CHAPTER

5

OPTIMISING AGILE STAND-UP MEETING FOR TEAM PERFORMANCE

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5.1 INTRODUCTION

In the process of system development, software development companies usually face several problems. Companies must manage a high level of product complexity while also ensuring effective cross-functional collaboration. On the other hand, they must reduce the duration to develop software and respond swiftly to changing requirements (Gabriel et al., 2021). Physical distances and communication barriers, loss of “teamness”, racial diversity, strategic issues, process disparities, knowledge management, and technical difficulties are all present in today’s software development complex environments (Vallon et al., 2018).

New approaches are needed to meet these obstacles and ensure successful software development. Agile methods are a promising option for these issues in software development companies because they promote collaboration and flexibility, and they may be able to tackle the problems. For example, daily stand-up meetings are an agile practise in software development projects that is based on empowered and self-organizing teams with a strong emphasis on cooperation and communication (Stray et al., 2017). As a result, team management is

enhanced, reaction time is faster, changes are more adaptable, and the organisation is more transparent.

Some members may feel the daily stand-up meeting is an important space for team communication, while others may feel it is a waste of time. Despite clear guidelines for how to conduct a 15 minute meeting, adopting daily stand-up meetings in a way that benefits the entire team has been proven to be difficult (Stray et al., 2018). Therefore, a comprehensive study of the potential benefits of agile practises, such as daily stand-up meetings in software development organisations, is required.

This chapter aims to elaborate on daily stand-up meeting implementation, describe employee experience on daily stand-up meetings, and analyse their effects on employees and the IT department.

5.2 AGILE SOFTWARE DEVELOPMENT AND STAND-UP MEETING

Agile software development first began in the late 1990s as a response to conventional plan-based software development methodologies, such as Waterfall and Rational Unified Process, failing to match the extremely dynamic nature of software development requirements. According to Tanveer (2016), widespread criticism of these methodologies in the lifecycle of software delivery is significantly slower in speed of development.

Failure to assign a qualified person to a team might result in a drop in service quality and project deadlines that are impossible to meet. Agile software development approaches rely heavily on the capabilities of professionals to provide suitable methods for adjusting to changing markets and minimising delivery time (Vishnubhotla et al., 2021). Agile methods are distinguished by their adaptability and flexibility when developing software products. They evolved when traditional software engineering approaches were proving inadequate to deal with the software market's rapid change and unpredictability.

Moreover, agile software development is in high demand in the software industry to adapt more swiftly to changing needs and provide solutions to

customers for evaluation and integration on a more regular basis. Agile software development attempts to address this requirement for flexibility by emphasising micro co-located team members, shorter production and delivery periods, regular open interactions within software team members, as well as the exclusion of practises that do not probably add value to the end user, such as formal documentation (Islam & Storer, 2020). The daily stand-up meeting is a formal assessment for agile teams because it allows members to analyse and manage their performance, which is important for self-management and work progress.

5.2.1 Daily Stand-up Meeting

Conducting a daily stand-up meeting is an important technique in agile software development projects to improve communication. Members share their knowledge and become aware of what other members are doing at these meetings, with the expectation that their progress will match everyone. It is used to keep everyone on the same page about what's going on, identify obstacles and risks early on, and improve team collaboration and transparency (Dalton, 2018). This process is known as mutual adjustment. Through this stand-up meeting, employee empowerment is also boosted, and it encourages access to knowledge among employees.

The daily stand-up meetings are usually held in the morning for 15 minutes to share information that is meant to be significant to the team's progress (Stray et al., 2016). The meeting takes place every day, as the name implies, and members usually stand for the entirety of the meeting to keep it short and avoid long discussions. In daily stand-up meetings, members are expected to answer a variation of only three questions: "What did I do yesterday?", "What will I do today?", and "Do I identify any obstacles?" (Stray et al., 2018).

Conducting a daily stand-up meeting can be done in one of two ways. The first way is to hold a meeting where information is shared based on the current sprint's active user stories. The other method is the "round-robin", which is used to convey information about current work,

forecasts, and any obstructions that each team member may face (Dalton, 2018). In our case, our recruited software development teams use a round-robin approach in their daily stand-up meetings.

5.3 EVALUATING STAND-UPS THROUGH A TWO-PHASE APPROACH

A study about stand-up meetings has been done in a software development team (SDT) through two phases. In Phase 1, the survey was distributed to identify the basic idea and implementation of daily stand-up meetings in a SDT. Meanwhile, in Phase 2, the interview was conducted to the selected respondents to get an in-depth idea and highlight the comparison and effects of having daily stand-up meetings in different software development teams.

5.3.1 The Software Development Team

The SDT has to apply agile methodology for at least one year and deliver software applications to the client at least once to be eligible for this study. The SDT for this study was recruited from one of the research universities that implemented agile practise in their software development cycle, including daily stand-up meetings. For this study, the SDT consists of one project manager, 5 team leaders, and 20 team members.

For in-depth understanding in Phase 2, several new members and former members of the team were selected to share their SDT experience, and compare the working environment for agile and non-agile software development practises. Some of the selected team members may not aware that they implement agile in their software development, however, the SDT in this study is consider practising agile since (1) Based on observation of the team working process, they used agile practise and (2) The team leaders claimed that the teams were practising agile in their SDT.

5.3.2 Data Collection

Data collection for both phases of this study was carried out online, due to the pandemic and social distancing protocols during the collection period. For Phase 1, the respondents were asked to indicate their demographic information, team background, daily stand-up meetings practises, effects of daily stand-up meetings and agreement with the statement on a Likert's scale ranging from 1 (strongly disagree) to 5 (strongly agree) from their own point of view, rather than from what they thought the entire team's point of view about daily stand-up meetings might be. Meanwhile, for Phase 2, the questions were built with a focus on qualitative methods. The respondents were asked to give their opinions and answers for comparison between their previous and current SDT practises on the agile software development method specifically.

5.4 TEAM EXPERIENCES AND PERFORMANCE IMPACT

This section reviews the results of the study: Phase 1 examines the adaptation of daily stand-up meetings, while Phase 2 compares their implementation and effects across different software development teams. Additionally, this section also reviews work progress tracking, issues or difficulties, and benefits of daily stand-up meetings.

5.4.1 Adaptation of Daily Stand-up Meetings

The demographic distribution of the respondents is shown in Table 5.1, and it fairly represents the age, gender, and position in the software development team. All the respondents are full-time workers in the government sector, specifically at a public research university.

Each of the respondents claims that they work in teams and indicates that their teams implement daily stand-up meetings as part of their development process. Table 5.2 shows the team background, presenting the size of the team and development methods used. It is found that most of the respondents acknowledged that they are using agile methods in their work.

Table 5.1 Demographics of the respondents

Category	Type	No. of Respondents	Percentage (%)
Age	20–29	6	37.5
	30–39	10	62.5
Gender	Male	6	37.5
	Female	10	62.5
Position	Programmer	12	75.0
	System analyst	3	18.8
	Data analyst	1	6.3

Table 5.2 Team background and software development methods used

Category	Type	No. of Respondents	Percentage (%)
Size	Less than 20	4	25.0
	20–29	12	75.0
Development methods	Agile	13	81.3
	Prototype	1	6.3
	Rapid application development	1	6.3
	MVC	1	6.3

Table 5.3 shows daily stand-up meetings based on all respondents' preferences and knowledge. All the responses state that they attend stand-up meetings every day. Two of them said that sometimes they need to attend stand-up meetings on weekends due to ad-hoc tasks such as requirements changing on tight deadlines. In common daily stand-up practise, they did not use any specific type of equipment or tools during daily stand-up meetings. However, during the pandemic, some of them

mentioned Google Meet as one of the tools they used to conduct the daily stand-up meetings.

Table 5.3 Daily stand-up meeting based on respondents' preferences and knowledge

Category	Type	No. of Respondents	Percentage (%)
Time	Morning	2	12.5
	Midday	11	68.7
	Afternoon	3	18.8
Conducted during weekend	Yes	2	12.5
	No	14	87.5
Item discussed in the meeting	Three scrum questions	16	100
	Problem-focused communication	7	43.8
	Project management	4	25.0
	Coordination of tasks	7	43.8

Table 5.4 shows the effects of daily stand-up meetings. Results show that most respondents feel nervous sometimes. Most of them prefer morning stand-up meetings, and the development team gains most of the benefit from daily stand-up meetings.

Respondents stated that they prefer to conduct daily stand-up meetings in software development teams because the sharing sessions are able to solve work-related problems, as well as increase work performance. All team members can share problems or solutions, be able to track work progress, and may increase communication skills within the team. This response shows that positive feedback was gained from the implementation of daily stand-up meetings in the software development team. Meanwhile, several negative responses were also received regarding stand-up meetings, which are time-consuming, and works are interrupted at the moment during the meeting.

Table 5.4 Effects of daily stand-up meeting

Category	Type	No. of Respondents	Percentage (%)
Feel nervous	Most of the time	3	18.8
	Sometimes	10	62.5
	Never	3	18.8
Preferred time	Morning	8	50.0
	Midday	2	12.5
	Afternoon	2	12.5
	Does not matter	4	25.0
Who benefits the most	Development team	13	81.3
	Project manager	3	18.8
Like your job, if they conduct sum	Yes	11	68.8
	No	5	31.3

For the statement of opinion regarding the daily stand-up meetings, a stacked bar graph was created for each opinion stated by the respondent. This is shown in Figure 5.1. This figure displays all the preferences of team members about daily stand-up meetings. In the figure, blue represents “strongly disagree”, red represents “disagree”, yellow stands for “neither agree nor disagree”, green represents “agree”, while orange represents “strongly agree”. Based on Figure 5.1, only few respondents select either strongly disagree or disagree. Only the first five questions have about 12.5–25.0% of neutral opinion, while other questions have only 6.2–6.3%. In conclusion, all questions were agreed upon by most respondents. Based on these results, in terms of individual performance, daily stand-up meetings do improve work performance, increase progress, and increase self-confidence. In terms of team performance, daily stand-up meetings promote better teamwork development and improve the progress of the project.

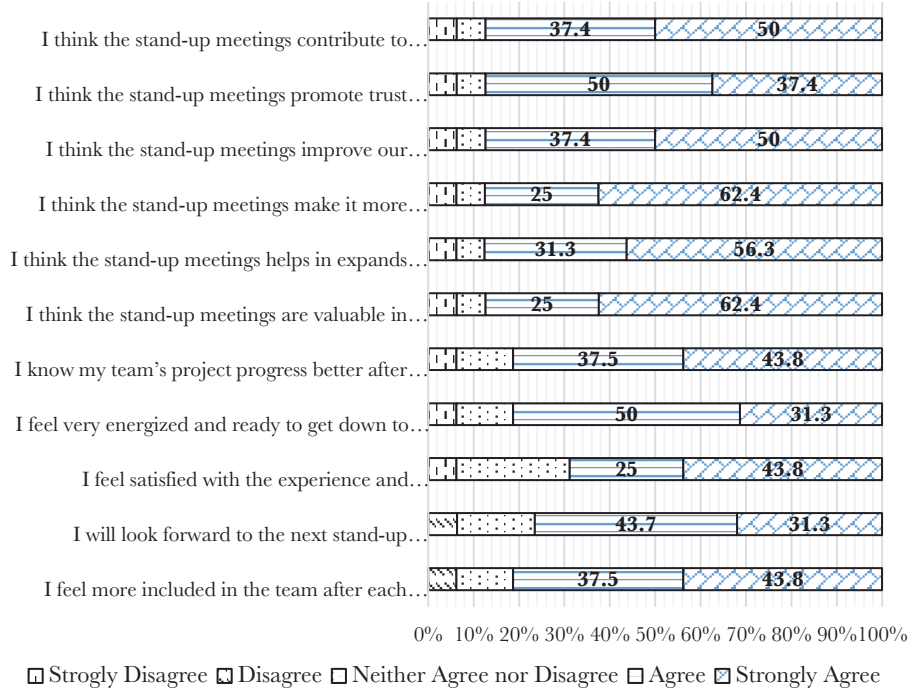


Figure 5.1 Statements of opinion

5.4.2 Effects of Daily Stand-up Meetings in Different Software Development Teams

The second study is to compare the experience of implementing the daily stand-up meetings in different SDT. The comparison includes the benefits and issues relating to the implementation of daily stand-up meetings in SDT. As shown in Table 5.5, the respondents come from two categories. The first category is the respondents with SDT experience in private company and research university (R1, R2, R3), meanwhile the second category is the respondents with SDT experience in research university only (R4, R5, R6).

Table 5.5 Respondent categories based on previous and current SDT experience

Previous SDT	Current SDT	Respondent
Private Company	Research University	R1, R2, and R3
Research University	Research University	R4, R5, and R6

Results for the implementation of stand-up meetings in different SDT is shown in Table 5.6. As mentioned earlier, there are two categories of respondents: One is staff with SDT experience from a Private Company to a Research University, and the other is staff who both previously and currently work in the Research University. This is to view in detail the transformation of stand-up meetings implementation in different SDT.

Table 5.6 Implementation of stand-up meeting in previous and current SDT

Category	Respondent	Previous SDT	Current SDT
Private Company to Research University	R1	Applied	Applied
	R2	Not Applied	Applied
	R3	Applied	Applied
Research University to Research University	R4	Applied	Applied
	R5	Applied	Applied
	R6	Applied	Not Applied

As this study focuses on a Research University, all target respondents are currently working in a Research University, and this study tends to seek their experience about stand-up meetings in both previous and current teams for comparison.

5.4.2.1 Work Progress

R1, R2, R3, and R5 state that there are differences in terms of work progress. For staff who transfer from a Private Company to a Research University, R2 explains that the current organisation, which applies stand-up meetings, makes work more productive, while R3 explains that there is no specific time to update any progress in the previous organisation, but in the current organisation, which also applied stand-up meeting insist their staff update progress every day.

For staff of both previous and current organisations is Research University, R4 states that previous organisations apply stand-up meetings every day, while the current organisation does not often, as the previous one shows that work progress will be assessed differently depending on their supervisor. This difference shows that research universities may apply stand-up meetings differently in terms of time or day depending on their working culture and environment. R5 which changed position from Assistant Research Officer to IT Officer states that work progress might be different as he changes job scope as well in the current company.

In summary, staff that work in organisations that applied stand-up meetings tend to become more productive in the delivery of work. Most respondents claimed that different organisations apply different styles of stand-up meetings. This difference can be seen in terms of time and day of the meeting. Work progress could vary depending on the quality of staff's work.

5.4.2.2 Issues or Difficulties

Most organisations cannot consistently maintain the performance of stand-up meetings; this question seeks the experience of respondents whenever stand-up meetings have been cancelled or not implemented for days. Two basic responses were received from all respondents. R2 and R6, which have experience applied and not applied stand-up meetings state no issues or difficulties in work performance.

R1, R3, R4, and R5, which experience stand-up meetings in both organisations, stated that there are issues or difficulties in work performance if stand-up meetings are not implemented. R3 and R4 explain that without stand-up meetings, it is hard to track progress and problems faced by team members, while R5 explains that it is hard to solve problems as they need to communicate with each other.

In summary of issues or difficulties, if the stand-up meeting is not implemented, respondents who experience both organisations that applied and not applied stand-up meeting show no issues because of the experience they receive in both organisations. This shows that the different cultures in each organisation lead to different quality of work produced.

5.4.2.3 Benefits

R1, R3, and R5 state that stand-up meetings implementation can solve work problems by helping each other with tasks given. Staff tend to express difficulties and problems during stand-up meetings, leading to the discovery of team members who have the knowledge and ability to solve the problem together. Next, stand-up meetings implementation is able to ensure track progress of the staff as stated by R3 and R4. R2, R4, and R6 highlight the impressive performance performed by staff, which all boost their work productivity as well as communication skills. Besides, stand-up meetings also tend to increase confidence levels, as mentioned by R4 and R5.

According to all responses regarding the benefits of stand-up meetings implementation above, it is discovered that some benefits mentioned by respondents are: Stand-up meetings could solve work problems, track the progress of staff, which leads to increased staff performance, and boost staff confidence.

5.5 CONCLUSION

The daily stand-up meeting is important approach for the software development team practicing agile methods, including SDT in the

Research University. The effects of stand-up meetings can be categorized into effects on individuals and effects on the team. Each positive performance of an individual generally will increase team performance, which can contribute to the success of the project. Table 5.7 summarises the general effects of daily stand-up meetings.

Table 5.7 Effect of daily stand-up meetings

Category	Effects
Individual	Share problem
	Solve problem
	Increase work performance
	Increase communication skill
	Increase confident
Team	Track team progress
	Improve teamwork

The results of the comparison between different SDT that applied the stand-up meetings are different according to the work culture and environment of the company. In general, it can be concluded that agile practises, especially daily stand-up meetings, are a good strategy to be implemented in the current software development environment.

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