

Review of Agile Development Ceremonies and Analysis of Its Various 4 Development Stages

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Abstract: - Agile methodology is the process in project management or software development which helps the business and organisations to deliver the product faster to the end user with higher performance rate and with great efficiency. Agile development focuses on providing solutions in incremental approach which means that it focuses on converting few requirements into functional software and then give it to the user to provide feedback after which again the same process is repeated to achieve satisfaction from consumer's side. The advantage of using this approach is that if there are any changes to be made than that can be made easily without much efforts, since it is incremental model. An agile ceremony is an occasion when the team members conduct a meeting to decide on the tasks to be performed once few milestones are achieved. There are four main types of ceremonies of agile development which will be discussed in detail in this paper. The focus of each ceremony of agile is to verify the key achievements made in a project life cycle and to discuss the consistent check points in the cycle. The paper will also discuss the benefits and limitations of agile ceremony software development.

Keywords: - Introduction to Agile development, Four ceremonies of Agile development, Advantages of Agile ceremony, Disadvantages of Agile ceremony, Requirements for conducting agile ceremony.

Introduction: - [1]

Agile methodology is the process or providing business solutions to the end user in delivery of small components of the software or a product. This approach uses the concept of incremental model where there is iteration of the whole process of software development life cycle in increments where each increment will add new features to the product. This methodology is in great use these days in almost all the companies as it makes it easy for the developers and testers to make modifications to the code based upon every new requirement of the end user. There were many models which follows various stages and use to deliver the final product as a complete project and then given to the end user to provide feedback. Once the project is finished and given to the user then it was very difficult to make changes or fix the issues in the project. If the user also would like to add few more features after the project is completed then it uses to get difficult to modify it as the whole process need to be repeated and fresh code use to be added for each new requirement. Hence, researchers moved to agile development process where iteration model and incremental model was used to deliver the project. First of all, based upon the requirement analysis document small component of the project is developed following all the stages of the software development life cycle and that small part or small module of the project is delivered to the end user. Once the user agrees to it and is satisfied then another iteration of the cycle is completed including new features. So, number of iterations is

executed till the time all the features are added and at each incremental step the developed module is given to the end user to use to check if they are satisfied or not. Hence, the end result will be delivered faster and with complete user satisfaction. Agile methodology focuses on dividing the complete project into small modules which is developed using incremental and iteration methods to deliver the end product to the customer. All the developers and testers as well as stake holders collaborate and work together as a team to deliver and complete the project. The other important part of making agile development successful is proper and efficient communication within the team working on that particular project. For this to happen, there are four major agile ceremonies which helps the team to communicate and decide on improving the process so that the project can be delivered faster and with great efficiency. Agile ceremonies are the ceremonies which celebrates each milestone achieved during the development of the project and also to plan and organise the meetings who have common goals and objectives.

Agile Ceremonies: - [2], [3]

- Agile ceremony is the process defined in an agile framework where all the team members conduct meeting and decide what will be the next task to be performed. It is used to discuss about the milestones achieved during the development of the system or application. This provides a platform to all the team members present in a team who are working together

to deliver the project. It is basically to arrange a meeting and helps to understand whether everybody present in the team is on the same page. These meeting are organised by the product manager or the scrum master. Following are the points which everybody in the team should be aware of before initialising or attending the agile ceremony or agile meeting: -

- a. Knowledge of who all are involved in the ceremony or meeting?
- b. When will this ceremony take place?
- c. Who will conduct the ceremony?
- d. The duration of the ceremony?
- e. What is the agenda of the ceremony/meeting?
- f. What will be the result of the meeting?

Once everybody is clear on the above points, they proceed to attend the agile ceremony/meeting and also would like to add their view points or discuss the areas of improvement or suggestions to improve the process of development of the project.

Ceremonies of Agile Development: -

The agile ceremonies are classified into following categories:

1. The sprint planning meeting.
2. The daily stand up meeting.
3. The sprint review meeting.
4. The sprint retrospective meeting.

Sprint definition/meaning: -

A run is a proper timeframe when a group makes progress toward explicit expectations. Runs normally most recent two weeks and are a center part of Agile venture the executives structures, which are generally utilized result, designing, or programming improvement groups. Working in runs offers groups a chance to repeat and constantly work on their cycles — on the grounds that when a run closes, the group records and integrates their learnings into the following run.

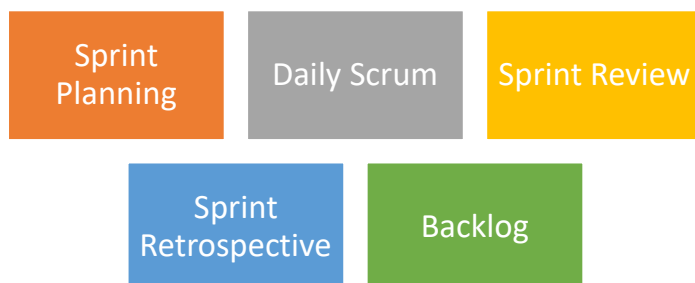


Figure 1 Various Ceremonies of Agile development.

1. Sprint Planning: -

- The goal of this ceremony is to plan the actions to be taken for the upcoming sprint. The required information and data will be gathered and proper

planning for the tasks to be completed for the next sprint will be discussed in this meeting.

- The people involved in this ceremony will be the development team, product manager, scrum master.
- This is important ceremony which will take place at the start of each sprint to be performed.
- It is important to conduct this meeting for one hour each week for each sprint. If in few organisations, if sprint is of two weeks then the time spend on the sprint meeting should be 2 hours per week.
- The people involved in this ceremony like product owner etc will sit with the development team and focus on the items that will be required for achieving the objective of the current print.
- The items are taken from the product backlog and then it is estimated that how long will it take for the backlog item to be completed.
- The output of this ceremony is that it is identified that which sprint is going in the back log and what are the goals of the sprint.
- Sprint backlog is the list which consists of items and tasks which will be done during the sprint. It also describes that who will perform which tasks.

2. Daily Scrum: -

- This is also known as daily stand-up meeting also. The goal of this meeting is to update all the team members about the tasks which they are conducting and performing on a daily basis.
- The people involved in this meeting is the development team, scrum master, product owner.
- The daily stand up meeting does not take long time as it is conducted to just give an update about who is performing which task on a daily basis. It could be as short as 15 minutes or ten minutes.
- It usually should take place on a daily basis at start of the day before everybody in the team starts working on their daily list of tasks.
- The objective of this ceremony is that they will focus on following three things: -
 - a. What they have worked yesterday?
 - b. What they will be working today?
 - c. Any challenges which they are having while working on the tasks assigned?
- This meeting is conducted to know what all are doing on a daily basis and if anybody is having a challenge to complete their task. If yes than the product owner will sit with that developer and help him resolve the issue.
- This step is usually done after the stand up meeting once everybody has given update about their daily activities.

3. The sprint Review Meeting: -

- The sprint review meeting is conducted to know the feedback from the stakeholder. If there are any modifications to be made then the sprint backlog is updated for the next sprint cycle.
- The people involved in this sprint review meeting are development team, product manager, scrum master, stakeholders, clients who will be present to provide the feedback.
- This ceremony takes place when the sprint is completed and all the tasks are completed and but one should make sure that this takes place before the retrospection.
- The duration of this meeting is as long as one hour which depends upon the sprint cycle which is one week. It will be of two hours if the sprint cycle is of two weeks.
- The aim of this meeting is to receive feedback from the client about the work and tasks performed by the team on this particular sprint. The product owner conducts this meeting to present the work done by the team members to the client for the particular sprint.
- The result or advantage of having this meeting is that the end user can provide feedback and also can question about the final product to clear their doubts if any. It also focuses on the product backlog if there are any adjustments to be made.

4. Retrospective meeting: -

- This meeting is conducted to identify the positives happened in the previous sprint and to discuss about what went wrong and how to improve it in next sprint.
- All the members who have worked in this sprint should attend the meeting along with the development team, scrum master and the product owner.
- This meeting takes place whenever the sprint is completed and once the sprint review meeting is also conducted.
- The duration of this sprint meeting is about 45 minutes per one week sprint. If the sprint is two weeks then the duration of this meeting should be 1.5 hours.
- The objective of this sprint is that it helps the development team to understand the shortcomings of the sprint and to learn from it and perform better in the next sprint cycle.
- This is basically a ceremony which is a continuous improvement process which takes place to identify the key areas which needs improvement and can be done in next iterative sprint cycle.

Advantages of Agile Ceremonies: - [4]

Agile ceremonies plays a very important role in delivering efficient products to the end user. Following are the advantages of the Agile ceremonies: -

1. Better communication and clarity of the project:
Each agile ceremony is conducted in an organised way and is a better way of communication among various team members of the project. This makes sure that everybody is on the same page and helps to perform the tasks faster.
2. Satisfied end user: -
Since the agile ceremony has review meeting which involves the end users also which in turn helps the end users to provide feedback and they are satisfied with the process of providing feedback and are sure that it will be implemented in the next sprint.
3. Deliver efficient products: -
Agile ceremony helps the organisations to deliver efficient products. The meeting involves daily stand up which makes it clear who is performing what task which helps to estimate the delivery time of the sprint.
4. Helps developers to find solutions: -
The daily stand up ceremony of agile development ceremony helps the developers to discuss their challenges and they find it easy to get solutions from the product owners which will simplify their work.

Challenges of Agile Ceremony: -

There are following challenges of the agile ceremonies: -

1. Difficult to form team of right people: -
Each agile ceremony has specific goals which can only be met if right people are attending the ceremony. This also means that the people who are not intended for that particular ceremony should not attend the meeting.
2. Not implementing and improving mistakes:
The goal of retrospective meeting is to identify the mistakes made in the last sprint and to make sure that it is being worked upon in the next sprint. There are few people in the team who never agree to their mistakes and repeats the same in the next sprint.
3. Improper implementation does not provide good results: -
If the organisation is new to the agile ceremony practices and if the ceremonies are not conducted in a way they should take place then the outcome will not be of great use.

Points to remember to use agile ceremony: -

1. All the items in the sprint backlog should be assigned stories.
2. Each sprint should have the agile ceremony at the same time and there should not be much deviation in the sprint meetings.

3. Also it is important that the people who are supposed to be present in the particular sprint meeting should be present and nobody other than them should be present.

Conclusion: - Nimble function is the cycle characterized in a lithe system where all the colleagues lead meeting and conclude what will be the following undertaking to be performed. It is utilized to examine about the achievements accomplished during the advancement of the framework or application. This gives a stage to all the colleagues a cooperating present in a group to convey the venture. It is fundamentally to orchestrate a gathering and assists with understanding whether everyone present in the group is in total agreement. These gathering are coordinated by the item director or the scrum ace. All the ceremonies of agile ceremony are important to be conducted for each sprint of the development of the project. Each ceremony should be performed with the people those are meant to attend this meeting. All the points should be discussed properly so that effective outcome should be achieved at the end of each sprint. The important ceremony is the retrospection which should be attended by everybody involved in the development of the sprint as it will help to understand the mistakes and help to improve them in the next sprint.

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