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Scrum-An Agile Methodology of Software Development

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Abstract: *Software complexity is increasing day by day as requirement and kind of product increases. Therefore, the standard software development methodology (i.e., waterfall) isgetting backstage and agile methodology is seizing most of the corporate. Agile methodologies are enhancement in SDLC with the most aim to supply efficient wares. Most of the corporate moved to SCRUMmethodology from existing SDLC Model.Most of the corporate moved to SCRUMmethodology from existing SDLC Model.This paper deals with the comparative study of agile process. particularly the most aim ofthe agile process is to satisfy customer fasterdevelopment time with low defect rate. Scrum defines software development as aloose set of activities with the known, workable tools and best team to developed the system. SCRUM is essentially the enhancement of commonly used iterative andincremental model.*

Keywords: AGILE, SCRUM,Software Development, SDLC

I. INTRODUCTION

The Scrum based software development life cycleis majorly employed in most of the industry today, because it doesn't follow the hierarchy forthe method of software development. In Scrum the method of software development is going to be done iteratively by interacting with the team members. Scrum majorly target individual iteration, Customer collaboration and immediateresponding to changes.

Previously when Scrum wasn't introduced traditional SDLC models was getting utilized in the industries, but the SDLC models doesn't havethe potential the handle the new requirement thatcomes frequently as a result Agile methology comes in to the image and playing a significant role in software development within the It companies.

1.1 Software Development LifeCycle

Software development life cycle is that the sequence of process that are followed to developed a brand-new project. it's a clearly defined process for creating prime quality project. The lifecycle includes multiple stage thatgoes within the sequential order. SDLC specify the task that has to be performed at multiplestages by the teams. SDLC follows all the steps mentioned within the above diagram todeveloped a software. SDLC doesn't work well with the project that has higher requirement and frequent changes.

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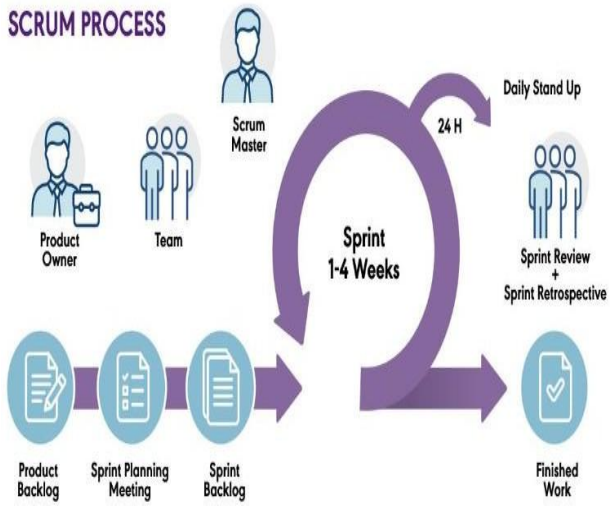
1.1 Agile Methodology

It is a testing method employed in the event of agile software. In these methodology development and testing activities are concurrent.Agile methodology is more rigid and there's no space for brand new changes that comes frequently. Product owner plays a really important role in Agile process. In Agile theplanning and execution of the software is majorlysimple. Agile involves face to face interaction between the team member and different cross functional team. Agile methodology delivers the product on regular basis for feedback

A. Scrum Methodology

In today world scrum methodology is employed in most of the IT companies. the most aim of those methodology is to break the project in to small pieces(iteration), time limited module, witheach iteration being approach as alittle mini project which last weeks. the most differencebetween traditional SDLC and AGILEmethodology is collaboration with the people andimmediate responding to the changes. TheSCRUM specialize in delivery the best business values in shortest time during which the whole development and testing team work together as aunit to reached the common goal as against traditional sequential approach. Scrum methodology is executed in small blocks called assprint which can last for two to 4 weeks depending upon the project. Each sprint is an entity in itself, it provides some a part of the workthat must be deliver to the client.

a) Scrum Process



- **Product Backlog**: Product backlog is completed by the product owner, it's basically the primarilylist of features, requirement and enhancement. Product backlog could be a reasonably to try to to list f or the team.Product backlog is consistently revisitedand maintained by product owner.
- **Sprint Planning:** Sprint planning is done by the Scrummaster at the beginning of the project andall the team member have to participate in the meeting. The duration of the sprintlasts only 2 weeks, but during that period entire team needs to cooperate. According to the features and requirement that needs to be developed the stories are created during sprint planning.
- **Sprint Backlog:** Sprint backlog is the list of stories, bug fixes, testcase writing that the development and testing team takes fromthe product backlog in the current sprint.
- **Daily Scrum Meeting (DSU):** The daily scrum meeting usually takeplace daily at the same time and all team member needs to attained the meeting.The scrum master takes the initiative tohost the meeting and it last 15 minutes. Inthese meeting each scrum member needsto tell what he /she did yesterday to meetthe sprint goal, what he /She will to dotoday to meet the sprint target, Is the teamfacing any issue to meet the sprint target
- **Sprint Review and SprintRetrospective:** At the end of the sprint, the members meet together to demonstrate the backlogitems to the stakeholders, teammates andproduct owner for getting the sprint feedback .IN sprint

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retrospective all teammember come together to share their experience that they gained during the entire sprint. What went well and what needs to be improved are the main topic discuss in sprint retrospective.

b) Scrum Roles

- **Product Owner:** The main role in the scrum team is that ofthe Product owner. Product owner is responsible for the success or failure of the project. Product owner acts as anintermediary between the requirement ofexternal customer to Scrum team. The PO has to develop, revise and manage theProduct backlog as per the stakeholder requirement. The product development team has to be updated about these inputsso as to design the product accordingly.
- **Scrum Master:** A Scrum Master is the person responsible for making sure a Scrum team is operating as effectively as possible with Scrum values. Scrum master is theperson who is responsible to take daily scrum call. Scrum Master conduct retrospective review to see want wentwell and what can be improved for the sprint.
- **Scrum Team:** The scrum team is a combination of Development and testing team**.** Thedevelopment team start coding on theproduct after getting the requirement from the Product owner. Simultaneouslythe testing team start testing the product in the unit as developed by the dev team

B. Kanban

Kanban is a visual system for managing work. It visualizes both the process and the actual work passing through that process. Kanban is less rigid as it can takechanges on the go. In Kanban the overallprogress of the team is documented by graph. There is no estimated duration in Kanban to complete the work. There are no roles assign so its flexible in terms ofindividual responsibilities. As in scrum there is commitment regarding the work that needs to be delivered on time, but inKanban there is no commitment. Kanbanencourage all team member is a leader and divide the work among themselves. The drastic changes in the project are notallowed by Kanban. It works with the small team so not suitable for large requirement project. If any member fromthe team leaves the team it hurt the entireproject development. Since the work is not divided correctly, the total cost of theproject will never be accurate.

II. METHODOLOGY

The research step starts with the development preparation and study different researcher literature review to gather maximize knowledge of Scrum Method. Besides the study of different literature review need to consult with the people who have been directly working or involved in Scrum to find information and obstacle during theOngoing process. The study also gives the knowledge about the Scrum framework and its implementation during software development project**.**

IV. OBJECTIVES

- Scrum Methodology helps to increase thecustomer loyalty.
- Scrum reduce the time and stress during development by dividing into smallstories.

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- Both testing and development takes simultaneously which helps to reducedefect during production of the project.
- Scrum works on the complex project requirement.
- Scrum ensures customer as well as employee satisfaction

IV. SCOPE

Scrum methodology is employed mainly for software development, but other sectors also are taking advantage of its benefits by implementingthis system in their organizational models like sales, HR and marketing

V. LITERATURE REVIEW

[1] In "Agile Methodology (SCRUM) Approachfor Web Application Testing Process to Reduce Time, Cost and Improve the Quality paper author
V. Vamsi Krishna, G. Gopinath suggested, how agile methodology has been proved beneficial than other traditional software development due to its feature such as minimal documentation, quick implementation and continues feedback from customer, but the agile methodology has some drawbacks has well like, Development of large project with implementation of agile approach is difficult. There are also various changes related to requirement engineering inagile development. Hence, we have to find out whether Scrum is the best option for the softwaredevelopment in the IT industry going forward.
[2] In **"**Quality Assurances practices in Agilemethodology**.**" paper author AlmustaphaAbdullahi wakli and Abubakar kamagata hamisu proposed that scrum is the best framework than traditional and it is transformingthe organization with the business by taking the responsibilities and accountability, by improvingcollaboration and self-organization between the team, but now it's time to deep dive in the scrummethodology, to check if scrum can work with AIand will that be beneficial

VI. CONCLUSION

Scrum methodology is been popularly used in most of the IT companies for, large IT companies are mostly moving to Scrum methodology which shows the increasing demand for this methodology. Scrum has high rate of successful software development. In these paper I discussed about how scrum methodology is been adapted by most of the software development companies and its process how scrum actually works for software development After reading all the paper mentioned below,I concluded that agile methodology is showing positive impact on the IT project where the requirement is dynamic. Agile methodology can be applied not only in IT industry but also in academics irrespective ofproject size where the requirements are dynamic.

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