International Journal of Advance Research in Science and Engineering
Volume No.07, Special Issue No.01, April 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

AGILE PROJECT MANAGEMENT

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ABSTRACT

In today's world because of the rapid advancement in the field of technology and business, the requirements are not clear, and they are changing continuously in the development process. Due to those changes in the requirements,the software development becomes very difficult. Use of traditional project management methods such as waterfall method is not a good option, as the traditional project management methods are not flexible to requirements and the software can be late and over budget. For developing high quality software that satisfies the customer, we useagile methods which are flexible to change requirements at any stage in the development process. The agile methods are iterative and incremental methods that can accelerate the delivery of the initial business values through the continuous planning and feedback, and there is close communication between the customer and developers.

The main purpose of research is to find out the problems in traditional software development and to show how agile methods reduced those problems in software development.

Keywords: - AgileMethods,Traditional project management, Agile project management, Waterfall, Scrum.

I.INTRODUCTION

Nowadays in any field like business, education, sports etc. the success depend on the software being used, due to the fast development in technology we needs its software updated. Traditional project management method (Waterfall) are not flexible to requirements and the software can be late and over budget.We use agile method which is flexible to change requirements at any stage in the development process.

1.1 OBJECTIVES

Objectives of my research are to point out the problems in the traditional software development methods like waterfall etc. Due to which the software become over budget and late and also focus on how agile methods reduce the problems in software development.

II.TRADITIONAL PROJECT MANAGEMENT METHODOLOGY

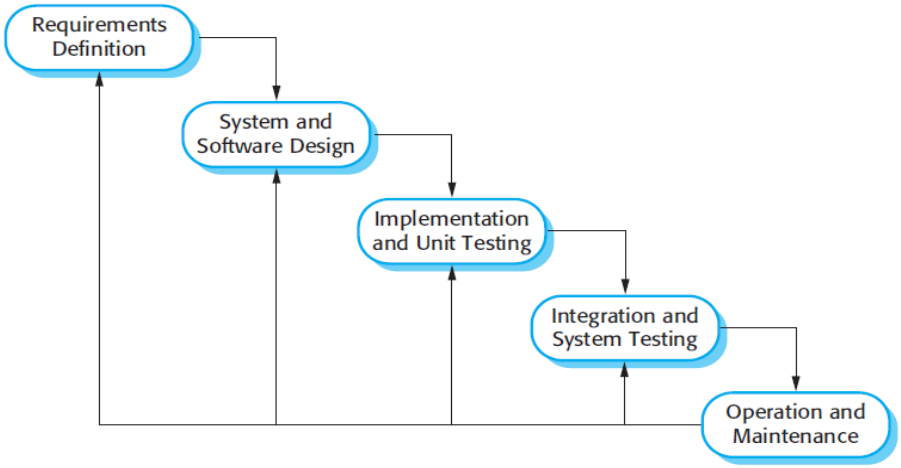
In Traditional Project Management everything is planned out into details up front. This is called a plan-driven approach**.**

Plan driven of heavyweight methods are considered to be the traditional way of managing software projects. These models are followed of step by step flow, such as feasibility study, gathering requirements, building the solution, validating &deployment. This method believes on upfront documentation & complete design plan. There are many different heavyweight methodologies but the well-known is Waterfall model.

2.1. Waterfall model

According to Royce (1970) the waterfall SDLC is a sequential model for software engineering in which the software development phases are in a sequence, when one phase completed then it is documented and the same completed phase becomes the input for the next phase.

Waterfall methodology is sequential model which follows the steps by step execution of the modules. There are various modules like Requirement Analysis, Design, Code, Integration, Test and deployment is the last. The methodology managing software projects through the five stages shown in Figure



"Fig". Waterfall model

A manifesto for waterfall software development described as below: We can manage the software development projects by:-

- Writing specifications and knowledge gathering that define how the software will look and what it will do.
- Do the design work and depth analysis to get development costs.
- Ensuring software developers obey the specifications.
- Testing the software and make sure it works as per the requirement after implementation.
- Delivering the final product to the client.

If these specifications are fulfilled then we can say the software will satisfy the customer, will be in budget, and will be delivered on time.

Waterfall works like it is possible to have perfect knowledge gathering of the requirements from the start. But in software development, clients often don't know what they want and can't pronounce their requirements. With waterfall, development rarely got what the customer wants even if it is what the customer asked for.

Problems:

1- All works and developments are steps by steps which is not realistic.

2- However, testing comes at the end and may leads to the problems in the initial design.

This modelis not flexible to changed requirements resulting in delay of the software and also the software become over budget because any change in the requirements at the later stage of software development which is very expensive.

III. AGILE PROJECT MANAGEMENT METHODOLOGY

Agile methodologies follow iterative and incremental style of development that dynamically adjusts to changing requirements and enables better risk management.

Agile method is used to reduce the problem of waterfall model. Agile methods are very simple and deliver the software in short time by focusing on the most important functions first deliver those functions quickly, collect feedback from them and react to that feedback. In agile methods the requirements are very flexible and canaccommodate changes in the requirements at any stage of the development phase. Agile method regarded as set of practices and techniques which have specific principles and values. They share the property of iterative incremental development that tackles requirement changes quickly, satisfy customer and produce quality products.

3.1. The Manifesto for Agile Software Development

Agile software development methods, according to Agile Software Manifesto prepared by a team of fieldpractitioners in 2001, emphasis on:-

a) - Individuals and Interactions over processes and tools

b)-Working Software over comprehensive documentation

C)-Customer Collaboration over contract negotiation

d)-Responding to Change over following a plan.

3.2.Agile software development principles

The Manifesto for Agile Software Development is based on twelve principles:-

1) Customer satisfaction by early and continuous delivery of valuable software

2) Welcome changing requirements, even in late development

3) Working software is delivered frequently (weeks rather than months)

4) Close, daily cooperation between business people and developers

5) Projects are built around motivated individuals, who should be trusted

6) Face-to-face conversation is the best form of communication (co-location)

7) Working software is the primary measure of progress

8) Sustainable development, able to maintain a constant pace

9) Continuous attention to technical excellence and good design

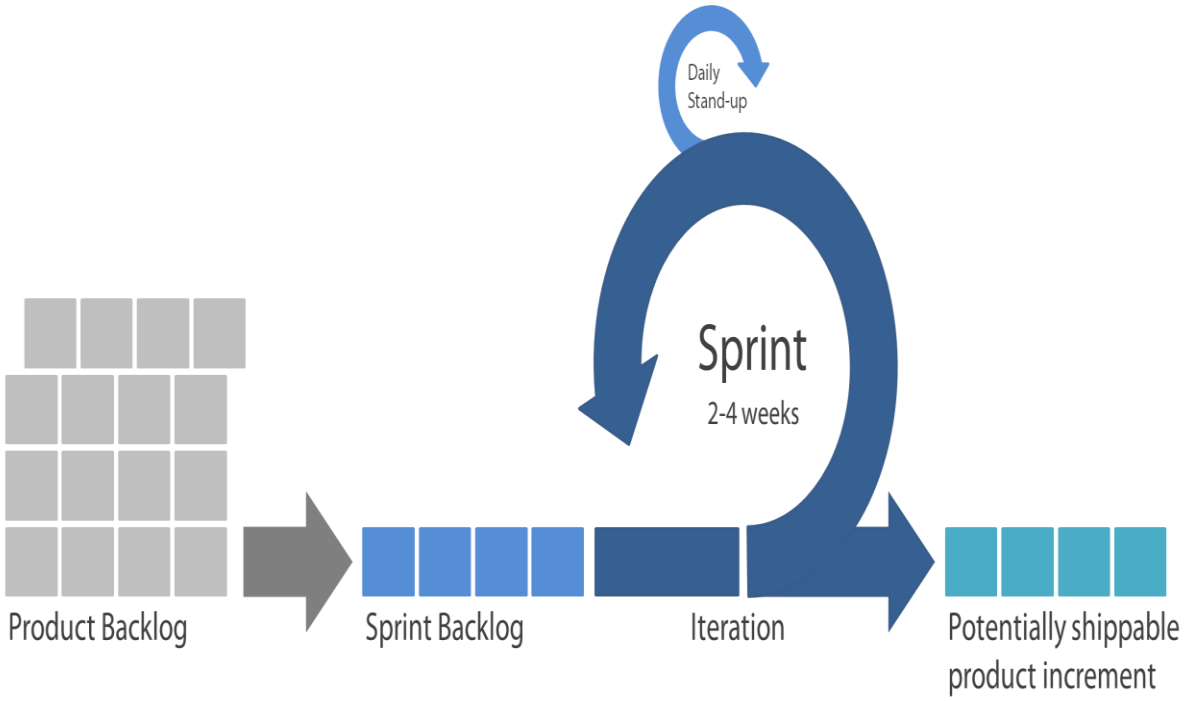
10) Simplicity—the art of maximizing the amount of work not done—is essential

11) Best architectures, requirements, and designs emerge from self-organizing teams

12) Regularly, the team reflects on how to become more effective, and adjusts accordingly

3.3. SCRUM

Scrum is an iterative and incremental process. The requirement that is being developed known as the product backlog is described and discussed among the developer members. The product backlog is divided into smaller requirements that are assigned to the team members. The set of tasks that the team works on during a sprint is called the sprint backlog. A physical board called the scrum board is used to keep track of all these tasks and assignments In Scrum all requirements are divided in specific blocks, called Sprints, which are generally take two weeks or 30 days to develop. Scrum teams adhere the rules of method and developed the product requirements in each iteration.



"Fig". scrum

IV.IMPLEMENTATION

We use agile project managementtool. Requirement for creating website. We use agile project management method (scrum)and create list of user story. collection of user story is called product backlog. New story can be introduce into product backlog at any time development lifecycle of project. We have to estimate user story and also prioritize these stories. Show in fig below-

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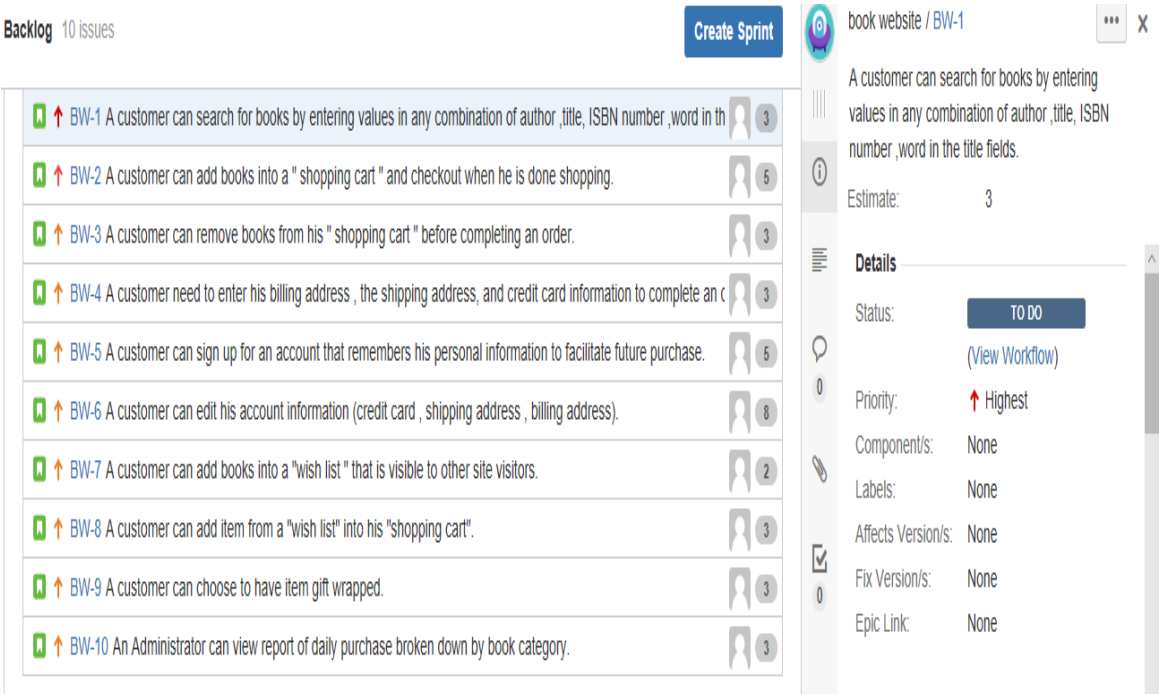

After prioritize user story now we play a role as development team to select number of story to be completed within that sprint. It is decide how many story we like to select. Weselect 4 story to complete first sprint, and 2 stories for second sprint and 4 stories for third sprint. Total story point is known as velocity.

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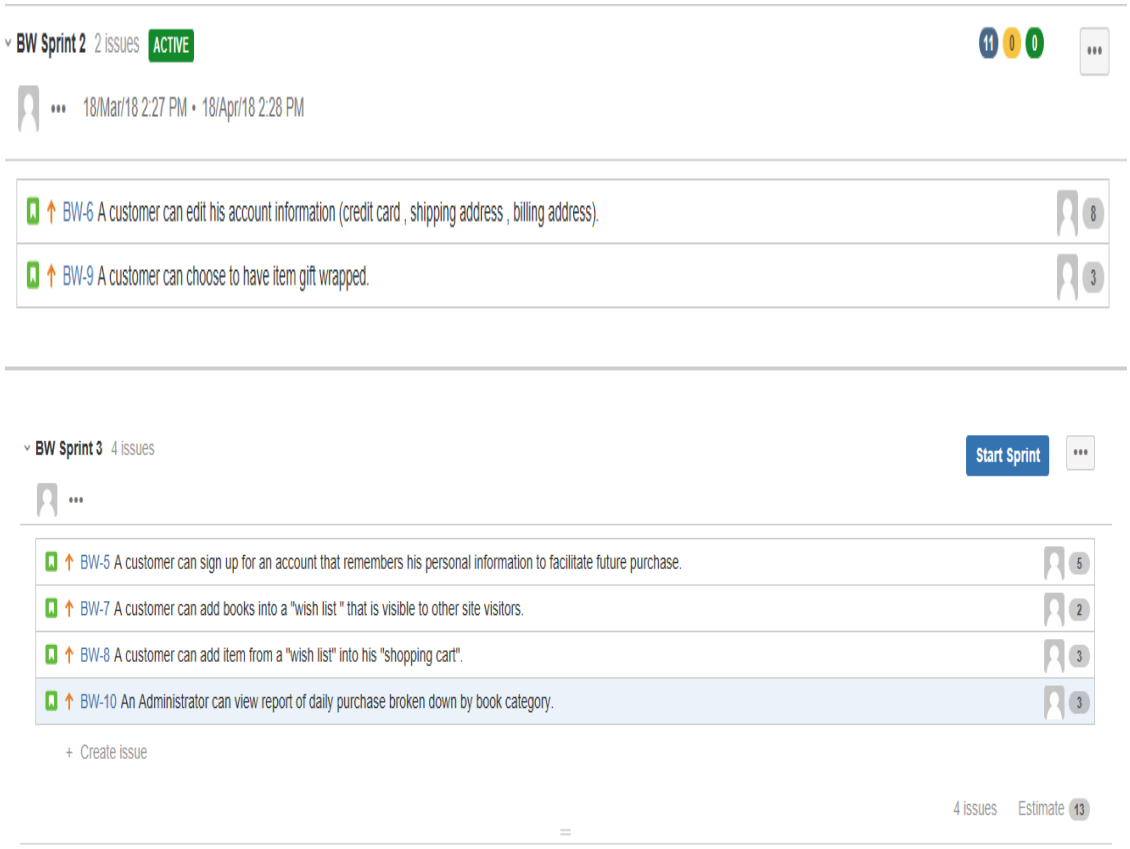
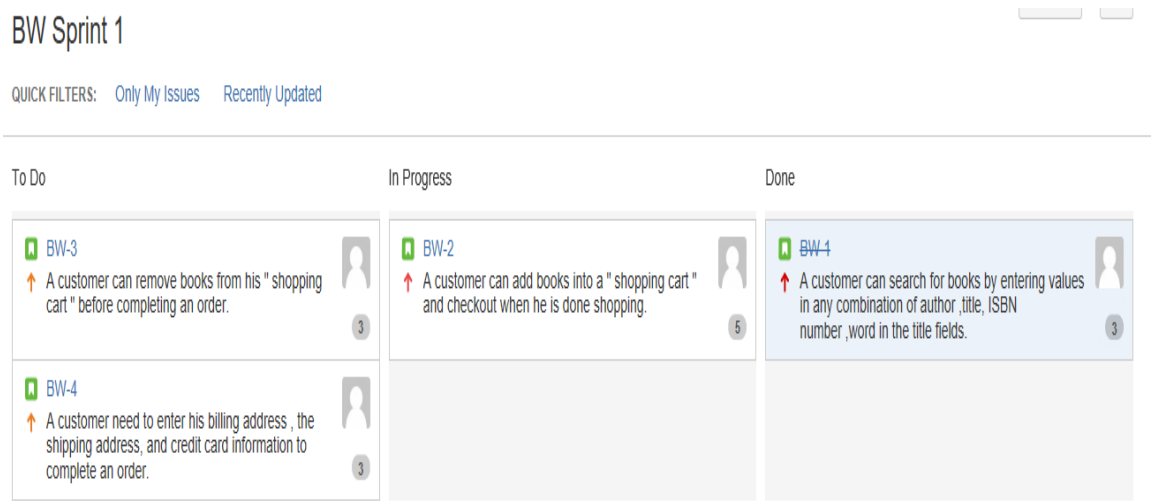
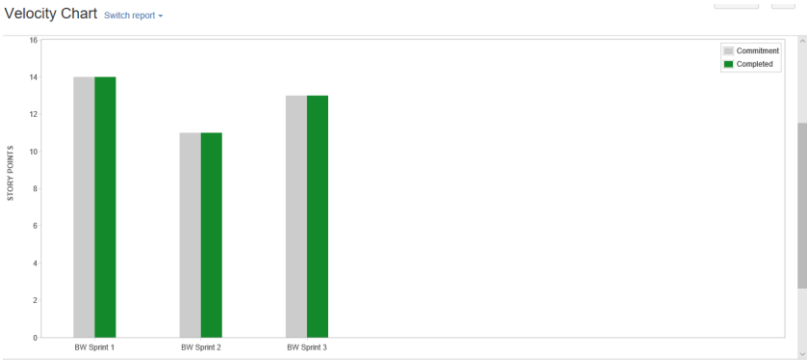


Workflow for firstsprint is shown in fig:-



And completed first sprint similarly completed second and third sprint.

V.RESULT



Track the amount of work completed from sprint to sprint. This helps us to determine team's velocity and estimate the work that we can realistically achieve in future sprints, So we can reduce cost of project .Thus Agile project management (APM) has emerged as a new approach to managing high-risk and time-sensitive projects as it has proven to provide better productivity, higher quality, and more efficient decision making. In addition, APM has proven to result in lower overall project costs and faster time to market, due to its framework that is based on frequent customer interaction and frequent and quick delivery cycles.

VI.CONCLUSION

Using agile method we can increase efficiency of our project. Projects progress via a series of iterations called sprints; at the end of each sprint weproduce a potentially deliverable product incrementally. Waterfall model is defined by a series of linear events in which the product is planned, developed, tested, etc., with no step started until the preceding step is complete. our aims to develop smaller pieces of a release faster rather than focusing on all the steps taking place within those smaller iterations, or sprints.

We prioritize the work that matters most and break it down into manageable chunks. Agile method is about collaborating and communicating both with the people who are doing the work and the people who need the work done. It's about delivering often and responding to feedback, increasing business value by ensuring that customers get what they actually want.

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