Different Agile Methodology Processes for Implementing SDLC System

1 CH.V Krishna Mohan, 2 Dr. GV.S Raj Kumar

1 CSE Dept., MRCEW, Hyderabad, India
2 CE/IT Dept, GITAM University, Vizag, India

Abstract - This paper gives the complete information regarding software process development life cycle (SDLC) by implementing the AGILE METHODOLOGIES. In AGILE more concentration will be on the customer satisfaction with fast delivery of the product/Application. 70% of the developers claim that they were using agile methods.

Keyword - Agile Methodologies, Xp, Sdlc, Scrum.

1. Introduction

Even though the industry follows the SDLC process parallelly it works with different process with the upcoming changes and challenges to meet the industry requirements. In the present trend the customer satisfaction & fast delivery of the product is important where in the customer keep’s on changing the requirement. Such problems can be overcome by doing the changes/modifications to the existing software development process to increase the productivity. This paper explains the background in section I and details about the Process Methodologies in section II Advantages & disadvantages in section III & finally in section IV conclusion.

2. Background

In Late 1990’S, a majority of the software development process that had been developed in the 1980’s & 1990’s were being considered as bureaucratic, slow, and overly regimented.

In the mid-1990’s, the reaction to those old software methods, there was a small contingent of industry thought – leaders promoting innovative approaches to software, enabling development organizations to quickly react and adapt to changing requirements and technologies. They realized the change, and executing in a manner that not only accommodated these changes, but it would result in a much more successful development plan.

The Different methodologies of software creation have the common ground of recalibrating themselves and their result; the code will be craftier to the user’s desire by asking for input on each stage of project evolution. These recalibrations occur after the user evaluates the product, creates a feedback and sets the next iteration goals. This is also known as sprint or iterations. The sprint basically consists of three parts. Creation of code user review and setting new goals. At the end of every sprint, the team presents a functional module or piece of software to the user responsible with this for review. This emphasis is on creating a shippable product and also ensures that the software engineers from that team don’t get overwhelmed with a huge amount requirements. The sprint has a specific length and this can either be set in the first place or can be adjusted later, depending on the team member’s skills or the load with tasks[8].

3. Process Methodologies

Among the different types of process methodologies available SCRUM and XP plays very important role for the development of software projects. Scrum is one of Agile process that use incremental framework for developing complex software or managing new products. So in scrums we follow a process in series of iteration called sprint to reach at the end. Therefore each sprint is an iteration of work which is typical two to four weeks in duration. At the end of every sprint there a potentially product delivered to client. Scrum is a framework in which you can encourage different process and techniques[10]. Its role is to provide a framework on which complex products can be developed. A key
The main goal of XP is to reduce the cost of changes in the product using short development cycles. XP is different, there are different small pieces where individually all these pieces make no sense, but when combined together a good result can be seen. The XP most surprising aspect is its four simple rules and practices. They seem awkward but soon become a welcome change because customer likes to be partner in software process and developers actively contribute regardless of experience level. So the rules and practices must support each to form a development methodology.

In XP four basic activities which are to be performed are

- Coding
- Testing
- Listening
- Designing

Coding:

The important role of XP System is coding. But in XP code should be written in agreed standards which are decided before developments process. In XP, initially unit test are done & then start coding also code must be integrated frequently to avoid the changes in the product later. The code is based in trial and error programming. But errors must solve once it comes and then move forward. Without tests and refactoring, it is not workable at all. So design must be always first. then write tests to that design , then program, test , perform re-factoring and iterate. So in XP coding is done with frequent increment.

Testing:

Testing plays a major role in XP. We have to know when finished development on that release and only test tells you. So test are written first so that you know the instant you have done the phase right. So after coding phase, is done test cases are run so that the software
product developed will meet the customer requirements. So initially code should be unit tested before it is released or integrated[7].

Listening:

In XP customer involves in the beginning of the coding. The development team interacts with the customer to determine how the system will work. Those interactions are combined or split into a story that can be described as a whole and pair of programmer during one release complete it. So you have to learn what the problem is and then you have to prioritize the list on the basis of client requirements, for that you have to be good in listening the clients-user, manager, and business people etc. After listening, Schedule for release are planned, After each release customer has a system that work accordingly to the stories completed so far. They will not wait for the whole thing to be done to start using the initial functionally. So it is the work of development team to identify the critical task first and complete first.

Designing:

Testing and listening is what required but even if those activities are performed well, the result will not always be a system that works. So product can move forward without designing but system will become too complex and dependencies within the system cease to be clear. So one have looked after what program tells about how it wants to be structured and then feed it back into the program. Else it is Difficult to avoid the lot of dependencies with in a system. Dependencies should remove with a better design and removing those will ensure that more changes will not affect rest of system.

4. Advantages & Disadvantage’s

The major advantage between SCRUM & XP are both are form agile framework but have small different in practices and implementation. XP is more toward rapid programming and scrum is more of team work. While Toyota production system is organized manufacturing and logistics for the manufacture and builds only what is required. All systems are good to be used in different situations.

Xp is a type of agile software development which is slightly different from scrum. XP is used for fast software development in short time. It has five values (communications ,Feedback, Courage and Respect) and then 12 common practices . Practices are focus on things that a team can do day to day, while values are the fundamental knowledge and understanding of the approach. In Xp teams work in the order of features of features priorities by the customer. So the teams have to work in a strict priority order. XP teams typically work in iterations that are one or two weeks long. In XP teams welcome the changes during the development cycles[10].

Coming to Scrum it concentrates on the management aspects of software development. It divide the development process into 2 weeks to 4 weeks called sprints but its closely monitor and control with daily scrum meetings. Also it places less emphasis on engineering practices and didn’t allow changes into their sprint. A best thing of scrum is that you can start development even if you are uncertain about what the clients want and improve the product by day to day communication. Also a good behavior of scrum is that you combine it with XP. But mostly people combine the power of scrum with XP to develop speed programming with management aspects of developers. It ca be used for any products other than development.

5. Conclusion

Process can be build by our own with best practices from it like Scrum of XP. All such methods will have less documentation and much focus towards the output. Scrum is more for independent of software development while XP is for rapid development, Scrum is to refine the management process and handle number of changes in the product. XP is more for rapid development for software industry. As XP and Scrum are different types of agile programming where these are used for project management and also in software development.

References


