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Research on Agile based Project Lifecycle Management System

[1] Arjun G, [2] Pandiaraj
[1] B. Tech. Student, Dept. of ECE, Kalasalingam Academy of Research and Education, Krishanankoil, Tamilnadu
[2] Faculty, Dept. of ECE, Kalasalingam Academy of Research and Education, Krishanankoil, Tamilnadu.

Abstract: ***Now-a-days, agile methodology based project lifecycle management system is getting popular among the software developers as its development takes a shorter term of period compared to other technologies. Document based traditional approaches does not fit the agile methodology in terms of quality and progress. Hence, a new project life cycle management system has been developed based on a new communication criteria. This methodology concentrates on the correlation between the communication process and the project development stages. The main theme of this model is to maintain a better communication that brings out a high quality products progress in projects. With respect to the communication ratio over the time chart, this model is considered useful in the calculation of the project iteration stages. Based on the outputs from the test runs, it is assured that a strong From results of test experiments, we assured that a strong relationship could be built between the communication ratios and quality of the products. Also this model was tested with some projects and its features were ensured on the communication basis.***

Keywords — Management agile, scrum, spring framework, angular, feature driven development.

I. INTRODUCTION

AGile is a software development methodology. The ultimate focus of agile is to satisfy clients through continuous delivery over time. Moreover, Agile limits the project scope. This project makes considerably least amount of requirements converts them into applicable products. Agile methodology outdated the waterfall model which is a traditional way of approach. see Fig. 1.It generally concentrates on the first phase which is the determination of requirements which needs to be completely accurate. This leads to problems where the client is unable to provide the entire information in the detailed and accurate manner.

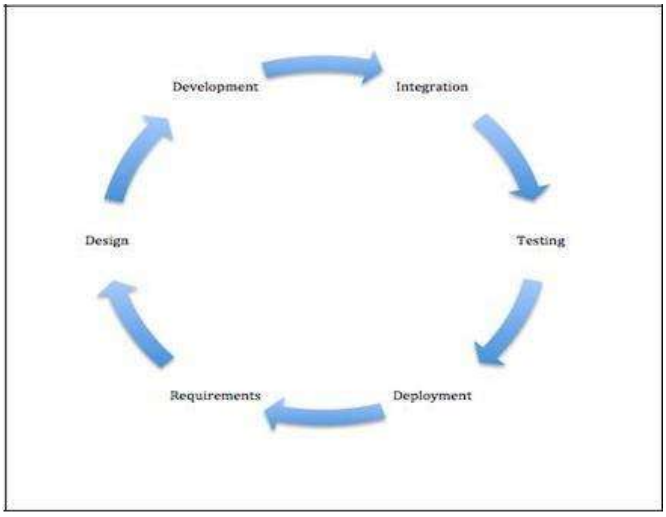

Fig. 1. Traditional approach.

Many companies depend on agile based development method because of the fact that it helps in managing the projects to proceed quickly toward the version releases.

II. BENEFITS OF AGILE

There are many advantages in using agile on project development:

- Helps manger in understanding the plan of the organization
- Look into the progress done and how it reacts when a problem strikes during the execution of the project.
- Manager gets a clear view on the progress of the project in making decisions.
- Reduces the chances of sudden changes in the project
- Management of risk and ability to change requirements put forth by the project.
- The work of source code gets a long-term support.
- Making aware the project manager of the time and budget and the tasks been completed.
- Low cost

TABLE I: DIFFERENCE BETWEEN TRADTIONAL AND AGILE METHODOLOGY

Traditional	Agile
Depend on tools and process.	Depends on the cooperation of the team and the people.
Work documents measuring each activity.	Software is used to measure the progress of the project and more interested in the design code.
The client is not constantly participation.	Participation the client constantly.
Not allowed to change during the project.	Allowed to change during the project.
Does not permit the extradition continuously working for the client.	Permit the extradition continuously working for the client.

The above table illustrates the basic differences between traditional software and agile approaches for project management.

III. CHALLENGES OF AGILE

Agile methodology faces many of challenges
which are most commonly as follows:

- Makes changes to the environment that occurs at wrong time.

Allows change in requirement.

- Customer requirements remain not known since it makes communication with stakeholder in every state.
- Keeps in pace with the evolution of technology and progress quickly.

IV. METHODS

This section provides different methods which

focuses on some agile methods to manage some projects practices like Scrum, FDD. We will review some of the most popular methods and most commonly used methods.

A. Extreme Programming(XP)

XP life cycle is divided into three phases namely based on the problems that have emerged in the traditional development.

Exploration: Description of the features that the customer desires in the program. Also puts together the tools, techniques that will be used in the program. Then building initial model by team work which takes several weeks of time.

Planning: Prioritizing the tasks, which will be performed and the developed as per the schedule on which the project is on. The task of planning may involve some days.

Iteration release: The scheduled tasks in the planning stage are divided towards the establishment through particular number of iterations. Upon iteration the established features are tested by the client. At the end of all iterations the system gets ready to be sent for production.

Productionizing: The performance of the product at this stage is tested by a system before handing it to the customer.

Maintain: Maintenance of the system during its run production of the system Also at this stage production of new iterations may be required to put some newer people in the team.

Death: This stage comes into effect under the circumstances where the system failed to provide the expected output or if the cost of development exceeds the expected development cost. On these conditions the system is put to death.

Ultimately, the aim of Extreme Programming in the development of the software is successful, despite some changes being made in the ongoing systems' requirements Also the Participation of the client in the project adds up to the success. As the process involves Characterization of the product in short iterations and earlier releases in every month, creates a well established communication, integration and coordination among those who are involved in the project.

B. Scrum

This method focuses on the work developed b the team members inside a dynamic environment for the production system. This method consists of three subsequent stages.

Pregame: The first phase broadly classifies into two parts namely, the planning part and the architecture part. The planning part will have the system which will be developed. The backlog for the product is created which leads to the knowledge about the requirements of the final product. The requirements include the requirements of the sales, customers, software developers and marketing. It becomes easier to conclude with a estimation of effort and prioritizing the tasks. A clear assumption can be built on the project team formation, tools involved for the development and risk management. The architectural phase contains system of extremely high level design and includes items based structure mentioned in the product backlog.

Development: Agile plays a vital role in this part of scrum method. Prediction cannot be made which is the reason for it being called as a black box. Has control over the different environments and techniques which include time, resources and technology that has ability to withstand any changes made through the project. Thus, a developed Sprint has repeated cycles which intend towards the development that consecutively increases the improvement of new production. Each and every Sprint contains analysis of requirements, design formation, development and delivery.

Postgame: This phase will be implemented only after the completion of the requirements. Preparations are made for the release of the system and this stage contains the integration functions, testing and document works.

Many car manufacturing companies have undertaken this system in sales as the efficiency can be effectively improved. It also allows the users to view the results at the earliest. This method greatly increases the efficiency of teamwork, team harmony and apparently reduces the error occurrence. It creates an interdependence and hence the quality and delivery of the project can be beneficially seen.

These are some benefits in scrum project which helps in incrementing production which

ensures a simple operation for certain complicated projects. This method completes the addition of new requirements, updates automatically to varying requirements delivery of tasks. The completion of the project according to the priorities and delivery can be viewed by the project manager. This allows the director to have a compare the price and estimated time to complete the project within the expected date and budget estimation specifically at the end of the project.

Compared to XP method, the rules in scrum are simple and hence easy to use containing enormous advantages.

Develop an overall model: In this stage, the scope and requirements of the system are to be ensured. Certain experts in this domain offers a brief which gives an idea on high-level description of the process for the team members and chief engineers. The entire domain divide may be divided into various domains which gives the members of the domain a detailed view towards the work. On commencement of this process ,the development team is set to work in small groups for creating an object model in their own area.

Build a feature list: The requirements for the model and documentation are provided by giving a list of model and documents by a review thorough the process. The sample values from the client are provided to the system by the development team. Every area is assigned a particular function to perform. The functions are exposed in every area and the functional group's area will be composed of a set of general features. The key feature splits into a collection of features. It represents a specific area in many activities. The clients and sponsors work to get a list of the features for the system to ensure the correctness and completion of the process. Plan by feature: Only in this stage high level establishment is planned and development of a set of features in a sequence which is based on the given priority. The key functionalities are determined and scheduled in this part.

Design by feature and build by feature: From a list of features a little group is selected which will be developed by a team of members. Each feature is an iterative process by which specific features are produced. Every iteration involves from one or two days to two weeks. Based upon the features of the work the work may be assigned to more than one team concurrent to the design. In every iteration the design is inspected, the code is tested and inspected. Once the feature gets completed, successful iteration promotes the building of main tasks by taking a set of features from the feature set.

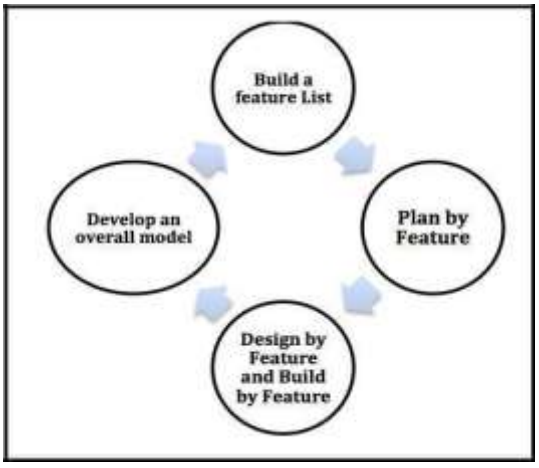

Fig. 2. Stages feature driven development.

V. DRAWBACK OF AGILE MANGMENT

In spite of the benefits, still agile methodology has some defects. The agile methodology cannot be used in larger firms as it does not include any documents. It becomes a difficult task to capital the budget and the load of efforts in the beginning of the project as no informative details are provided for the project scope. Only highly efficient and experienced developers are able to work with agile. Freshers find it difficult to work with it while compared to the experienced. Agile method of developing a project involves meetings with stakeholders very often. Continuous development of the project is limited because of the lack of limitation of the projects' scope.

VI. CONCLUSION

This research paper makes a review on the methodologies and processes of agile, some of the challenges faced by it and the benefits of using agile in developing a project which clearly is far better than the traditional methods. The main theme of the paper is to get a quick view on the agile based software developments' approach and clarifies the traditional approach from agile approach. The fact that the traditional approach fails to make changes during the processing of the project, makes agile to score over the traditional methods in the areas of ability to manage risk, estimating the scope and budget to produce more valuable successful products.

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