Agile Agile

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Abstract- It has been a continuous challenge for the people related to Software Development to select the appropriate software development methodology for a given project. The general trend in software development methodologies since the early 1990s has been to change from plan-driven approaches to more iterative incremental development approaches. This change has led to the birth of a group of methodologies called "agile methodologies", whose values and principles are becoming more and more prevalent in the software development industry.
Since 2004, the initial focus of selecting a specific agile methodology has been shifted to selecting the most appropriate practices from the agile family. This research aims at developing a framework for selecting the most appropriate set of agile practices for a given project instead of selecting a specific agile methodology.
The results of this research contribute towards greater understanding of agile software development issues and should be useful to developer firms that want to adopt agile methodologies as a generic development culture without worrying about specific agile methodologies.

Keywords: agile, software development methodology, specifications, requirements.

I. AGILE INTRODUCTION

Agile is an attitude describing the nature. Agile by dictionary means flexible. Generally agile is also related to the quickness. Since agile means flexible and quickness, it can also be used to determine the well co-ordinated movement of the task.

Agile approach is also used in Computer Software and Applications. Agile software development is an improvement of the iterative and incremental approach of software development. The use of the word agile in this context derives from the agile manifesto [1]. A group of 17 people came together in the year 2001 to discuss their feelings that the traditional approach of managing software development projects. This group came up with the agile manifesto, which describes 4 important values which is as follows:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

The main features of Agile Software Development are:

- **Modularity**: Modularity evolves in breaking up the tasks in smaller components called activities.
- **Iterative**: Agile software development is iterative. The focus of agile software development always remains on the short cycles. With each cycle, some set of tasks are completed. The cycle is generally of few weeks.
- **Time-Bound**: In Agile Software development, each activity is time-bounded. Because of this feature of Agile Software Development process, the deliveries made to the customers are quite fast. The software is delivered frequently. In Agile software development model, each activity like delivery, release and meetings: all are time-boxed [2].
- **People-Oriented**: Agile Software development is favors people over process and technology.
- **Adaptive**: Agile Software development process is adaptive. It remains open for all types of risk mitigation activities. Once the risk is identified, certain measures are taken to secure the activity decided for that iteration.
- **Satisfaction of customer**: In Agile Software development model, the satisfaction of customer is kept as the priority and it is achieved through a rapid delivery of the software.
- **Open to change**: Agile Software Development process is open to any kind of change either requested by the customer or suggested by the actors working on the software.
- **No Managers**: In Agile Software Development model: there are no mangers. For this type of model the team required should be highly motivated. The team should be self-organized to meet the deadlines for the tasks assigned for that time-boxed activity [3].
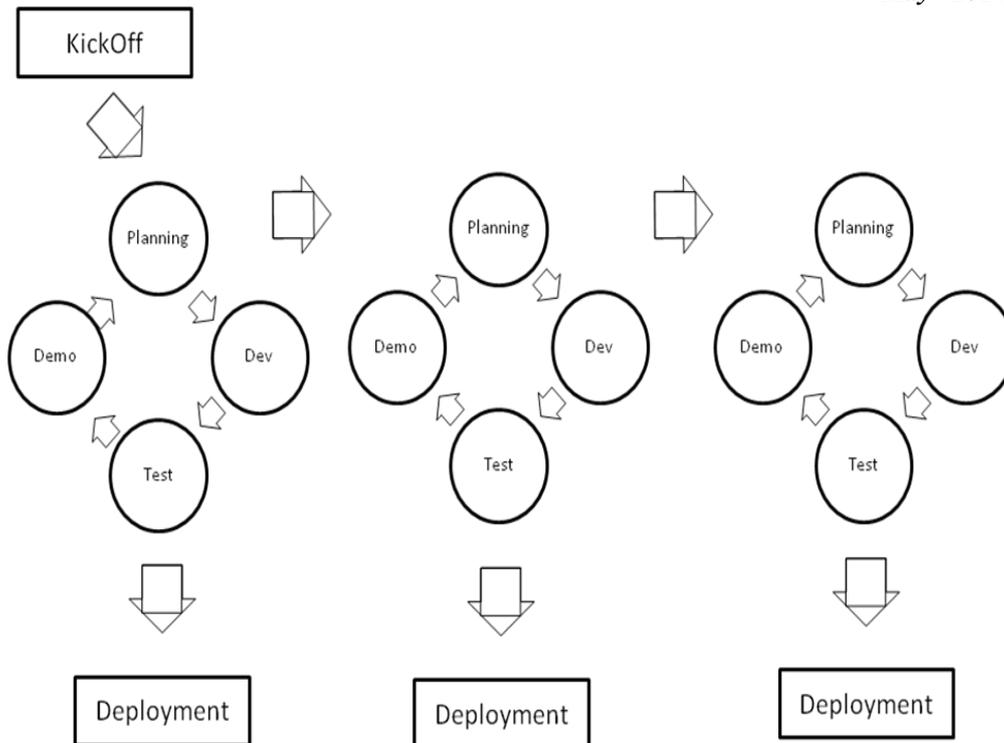
Fig 1: Diagrammatic representation of Agile Software Development Process

II. DISADVANTAGES OF AGILE

As every coin have 2 sides: Agile Software Development Process also has certain advantages and disadvantages. In this section, we would discuss about the disadvantages of Agile Software Development Process.

- **No documentation**: This accounts to one the major disadvantage of Agile Development Process as compared to the iterative models that were earlier being implemented in the industry. In Agile Development Process, no emphasis is put on the designing and documentation. In case of earlier methodologies of development that were being used, proper documentation were done to track all the changes that were done in implementation of any request by the customer. This documentation was very helpful to backtrack all the changes that were done in the past. Also, keeping in mind the iteration rate of the industry, these documents were also very helpful for the knowledge transfer about the project to all the newly joined team members. In agile software development process, no documentation is done for the implementation done. In this manner, the information about the project only remains to the current team and it becomes very difficult to transfer the knowledge in case when any new member joins in the project.
- **Wrong estimation**: In cases when the requirements are big, since no documentation is done to properly define a proper architecture or an appropriate design is created for the requirement, it always becomes a chance that the estimation that has been given for that particular requirement can go wrong. The deliverables are planned for weeks, so this type of miss can also result in failure of meeting the commitment.
- **Loss of time**: Since the user requirements are not tracked anywhere, if in any demo, the customer doesn't validate the development done the developers, and then the developers have to re-do it. This eventually results in the loss of time spend in the earlier development. A fresh development needs to be done
- **Exhaustive regression testing needs to be done**: Since the requirements are coded and is to be delivered in a short span of time, each time some functionality would be added, deleted or modified. To check that the new requirement change does not impact the existing functionality, exhaustive regression testing is need to be done each time a delivery is made.

III. LET'S MAKE AGILE PROCESS MORE AGILE

Agile software development process has lesser disadvantages and more advantages over the traditional Software development processes. For all the software projects in the industry that are still working on the traditional Software development processes should keep the following points before switching from traditional Software development process to Agile Software development process.

- **New definition of success**: In traditional software development process, the procedure followed is: a complete breakdown for the work is done. A single, complete and detailed plan is created. At each step, the plan needs to be followed. Different processes like reviews, document creation needs to be done.

In Agile Software Development process, the main aim is to deliver the running code within the time specified. The implementation is done on prioritized basis. The planning done is always flexible.

- **Different culture of management**: In the traditional Software, the management used to define the dates, of the delivery of any task. It was the management that used to define the design for implementation. The working of the code was checked at the end of the release and the status of the work that has been done on the weekly basis. In agile Software Development system, the team is the main entity. The team decides which work would be delivered first. The tea is responsible for giving the estimation of the work that is requested by the stakeholder. The team protects and projects the delivery dates. The status is followed up daily.

For all the projects that are already following agile processes, the primary aim should be the **Heart Beat of Agile: Working code in short time.** Keeping in line with this objective, one should always keep in mind that the there is no fixed pattern to select an agile methodology for any project. There is no single methodology that would fit any single type of project. The nature of each project is different. The organization should freely choose which all methodologies to choose.

The agility to choose an agile development model depends on the professionals of this industry [4]. The process of selecting the right set of agile development model begins with evaluating the type of project on which he/she is working.

The different aspects that could be noted down for a project could be as follows:

- **Requirement Stability**
- **Project Size**
- **Project Complexity**
- **Nature of team**
- **Nature of organization**
- **Nature of stake holders**
- **Risks on project**
- **Knowledge of different team members**

After the retrospection of the above mentioned aspects and some other that is project specific, the professional needs to collect points on the different methodologies of agile [5]. For some methodology some aspects would be well suited for the project and for some different methodology some other aspect would suit. Next step is to list down all the different aspects of the different agile methodologies.

- **Philosophy of the methodology**
- **Process of the methodology being followed**
- **Tools and techniques used by the methodology**
- **Scope of the methodology**
- **Outputs of the methodology**
- **Experience of methodology**
- **Adaptation capability of the methodology**
- **Product**
- **Roles and responsibilities**

Based on the above mentioned different aspects, the next step is to map the type of your project with the features of agile methodology. Once all the aspects relevant to you and your project are selected, one can start working with that type of a customized methodology.

This is a simple way of making "Agile Agile".

IV. CONCLUSION

The thesis states that for the adoption of any agile software development methodology deals with the selection of any set of practices that are relevant to the project. This ad hoc selection of the features of the agile methodology not only let the professionals to work as they want to but also multiplies the end result as the team is motivated and practices all the aspects of the methodology that are relevant for them and their project.

REFERENCES

[1] Beck, Kent; et al. (2001). "Manifesto for Agile Software Development". Agile Alliance. Retrieved 14 June 2010.

[2] Ambler, S.W. (2002a), Introduction to Agile Model Driven Development, Agile Modeling Essays, *Ronin International Inc.* [online]. Available from: http://www.agilemodeling.com/essays.

[3] Mikael Lindvall, Vic Basili, Barry Boehm, Patricia Costa, Kathleen Dangle, Forrest Shull1, Roseanne Tesoriero, Laurie Williams, and Marvin Zelkowitz "Empirical Findings in Agile Methods"

[4] Cockburn, 2000; Ambler, 2004; Ambler, Nalbone, and Vizdos, 2005 and Glass and Vessey, 1995).

[5] Bradley, P. (2003), *Agile as Evolution and Exploration,* FDD Website, [online]. Available from: http://www.featuredrivendevelopment.com/node/view/592, [last accessed 10 June 2006].

[6]   Beck, K. (1999), Extreme Programming Explained: Embrace Change, Addison–Wesley, Reading, Mass, pp. 10–70.