Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 11, November-2019

An Agile Methodology: One of the superior Approach for Software Development

Megha V. Polishwala
Research Scholar
Calorx Teachers' University
Navarangpura, Ahmedabad.

Dr. Pravin H. Bhathawala
Research Guide
Calorx Teachers' University
Navarangpura, Ahmedabad.

***Abstract*:- Agility is intensity of programming to select and react expeditiously and fittingly to different changes in its encompass. Organizations are able to adopt 'Agile' development methods by purchasing the agile platforms & agile network. Agile procedure causes teams respond to the unpredictability of building software by following incremental , iterative work cadences, known as sprints. Agile techniques for programming improvement have acquired consideration late years. Scrum and XP are most prominent among these. The result of this research contributes better knowledge of agile software system and ought to be valuable to engineer firms that need to receive agile systems.**

Key Words:- Agile software development overview, extreme programming, scrum, crystal, feature-driven-development, benefits and problems of using agile methodology, conclusion

1. INTRODUCTION

An interesting and challenging procedure pursues two differentiating approaches in programming advancement : 1. Traditional approach "water fall model" and 2. Iterative evolutionary "agile method" . Agile programming advancement is an improvement of the iterative and steady approach of programming improvement [6]. Before named "agile", agile methodology was named as "Light weight Methodology" . According to Swati (2014), " With the expansion in number of types of Agile Methodologies, the challenge to find the most appropriate methodology for a given situation also increased " [3]. Agile programming means cut down the entire picture into puzzle size bits, combine them together at the correct time, e.g. design , coding and testing bits [5]. Agile is software product development method to assemble a software product incrementally using short emphases of 1 to 4 weeks so that the development is aligned with the changing industry demands. The agile manifesto was introduce in 2001 with all its values, principles, tools, methods, practitioners, philosophies, has changed the landscape of modern software engineering and commercial software development. Agile manifesto published for Agile software development methodology is shown in figure 1.

We are giving a better methods for developing programming, by doing it helping others do it. From this work, our conclution is :
persons and communications over processes and tools
Working demo over widespread documentation
Customers mutual understanding for negotiating in the contract
Giving response In plan updations
Hence, in case of value of right, we also values more over the left.

Fig. 1: Policy for Agile software development [4][9].

The Agile software development consists of characteristics like iterative, modularity, people oriented , time bound, no managers, open to change, satisfaction of customer and adaptive. Agile development contains different methods like programming at extreme level, scrum, crystal, (FDD) feature-driven-development.

2. AGILE METHODS

2.1 Extreme Programming

Extreme Programming (XP) is a methodology for making software under very ambiguous environment [4]. To reduce the cost of change in software requirement is the main goal of XP. In traditional development methodologies, such as waterfall methodology, the requirement for the system is "frigid" at starting of project development. It means that the late changes in the requirements during the project become regular in real scenario and it can be really high in it. In agile methodology, it is based on principles such as the small releases, planning process, simple design, testing, metaphor, refactoring, pair programming, continuous integration, collective ownership.

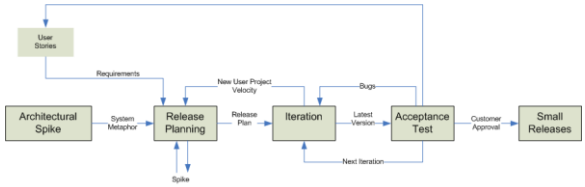

Figure 2: Extreme Programming.

2.2 Scrum

Another lightweight method for the development of software is Scrum. It works on principle which is small team working cross functionally to produce good results. As it is lightweight; it can adopt changing in needs and delivers the software in small deliver cycles called sprints. It works in three aspects: scrum master, product owner and team member. Agile scrum play important role in learn about ceremonies, including the daily scrum, sprint and release planning. Scrum helps in understand the artifacts including the product and sprint backlogs, deliverables and definition of done, understand how to monitor and track a scrum project.

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 11, November-2019

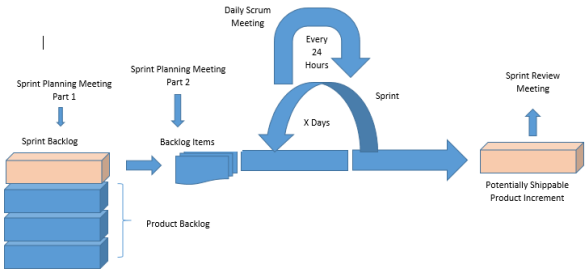

Figure 3: Scrum.

2.3 Crystal

Compliant way for developing the software is crystal methodology which One of the most lightweight way. It is indeed consists of a agile methodologies family likewise crystal yellow, crystal clear, crystal orange, crystal orange web, crystal red, crystal maroon and others, whose exclusive features are guided by certain aspects like as size of team, system critically and project priorities [4]. Crystal focuses on primary aspects like people, interaction, community, communications, skills, and talent. Secondary aspects is process. This family is divided into various colors. Five colors are used to represents crystal methodologies which are adopted based on the project size.

Clear–upto 6 people
Yellow–upto 20 people
Orange–up to 40 people
Red–up to 80 people
Maroon–up to 200 people
Crystal's strength allow team to work the way to deem most effective, in changing requirement, adoptive approach give good response to team.

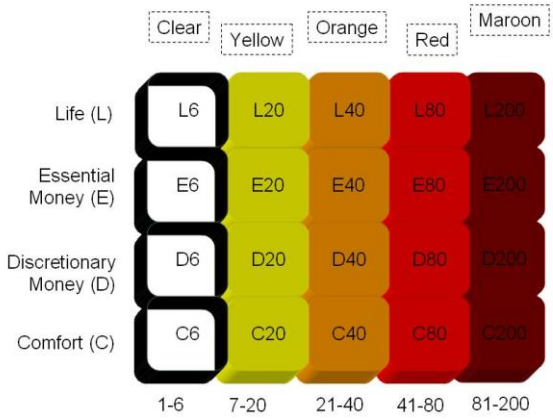

Figure 4: Crystal Methodology[11].

2.4 Features Driven Development (FDD)

The name suggests, features are main part of feature driven development. It is a short, function valued by client which is expressed in the form <action> <result> <object> [10]. During project starting, one should focus and figure out the fundamental of the domain that the system has. Further next step is to find out the features of your system and make list of it, organizing them into associated sets and subject areas. Basic 6 role of FDD are Project manager, Chief programmer, Class owner, Chief architect, Development manager and Domain expert [10]. FDD play a supporting roles in domain manager, release manager, toolsmith, tester, deployer, technical writer.

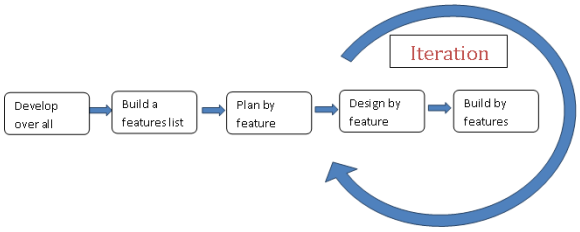

Figure 5 : Feature Driven Development

3. BENEFITS OF USING AGILE METHODOLOGIES

1. Agile makes groups increasingly productive at completing their work. A agile groups work in a community oriented culture, efficiencies produce a progressively outstretching influence.
2. The characteristics of agile group are interconnected due to the relationship among productivity, coordinated effort, and consistency and each characteristic feeds into the next one which forms a holistic set of habits that can be called agile.
3. Guidance of project manager at every step of product development helps a team adopt to changes whenever require.
4. Agile development is iterative, it means that development is fast and early, a few iterations ensure a functional "ready to market" product.
5. The real-time tracking of progress and ability to adjust future forecasts based on real data are supported by process, Agile methodologies are more changing and incur less atop[4].

4. COMPLICATION WITH AGILE METHODOLOGIES

1. It not works for large complex projects, only suitable for small co-located teams. It can be tough for bigger teams to be as compatible as smaller teams in concern with design and architectural changes [4].
2. Scrum gathering include all individuals from a group and regularly happen everyday. It can be regularly wasteful of particularly when they ineffectively kept running by a scrum master who wasn't taught a concentrated adequate to run the gathering rapidly.
3. Another problem is planning with different groups. This is particularly troubling in bigger tasks where just a couple of gatherings are agile and remaining are utilizing waterfall model. Issues rising during scheduling of deliverables among dependent projects.

5. CONCLUSION

Agile software development contain various methods which weights over rapid iterations, smaller frequent releases and emerging needs facilitated by direct involvement of user. It clearly provide betterments in software development. Effectively project delivery requires diligent work with understanding potential pitfalls. Today most project would like to be more agile. Agile modeling characterized a collection of values, standards, and practice which defines how to streamline modeling and documentation efforts. For all kind of project, Agile

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 8 Issue 11, November-2019

methodologies are not suitable. Agile methodologies can not give best results in case of when communication between developer and customer is difficult , and developer team does not have experienced developers.

REFERENCES

[1] Prakash.VSenthilAnand.NBhavani.R, "Agile-Fall Process Flow Model – A Right Candidate for Implementation in Software Development and Testing Processes for Software Organizations", IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 1, May 2012,pp. 457-461, ISSN (Online): 1694-0814

[2] Sunaina," Analysis of User Requirements Gathering Practices in Agile and Non-Agile Software Development Teams", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 2, Issue 9, September 2012, pp. 461-465, ISSN: 2277 128X

[3] Swati Chawla, Prof. Sanjeev Thakur, "International Journal of Advanced Research in Computer Science and Software Engineering", Volume 4, Issue 4, April 2014, pp. 1320-1325, ISSN: 2277 128X

[4] Gurleen Singh, Tamanna, "An Agile Methodology Based Model for Software development", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 6, June 2014, pp. 597-602,ISSN: 2277 128X

[5] DeepanshuThakral, Mahesh Singh, "Study on Agile Methodology: A New Line Towards Business Applications", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 5, May 2014, pp. 570-577,ISSN: 2277 128X

[6] Abhishek Sharma, Prof (Dr) Ajay Rana, "Agile Agile", International Journal of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 5, May 2014, pp. 1318-1321, ISSN: 2277 128X

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

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

[9] https://www.tutorialspoint.com/agile/agile_manifesto.htm

[10] http://www.agilemodeling.com/essays/fdd.htm

[11] https://en.wikiversity.org/wiki/Crystal_Methods