Agile Methodology: A new Approach over Traditional Methodology

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Abstract: ***Software has been part of current culture for more than 50 years. In this era, interest is growing in application of Global Software Development (GSD) project. In project the main focus on the software quality now days. There are many methodologies in the developing the software among that there are most common are heavyweight and lightweight methodologies .Both have pros and cons. we examine the quality assurance techniques of traditional and agile approaches have described the characteristics of some traditional and agile methodologies that are widely used in software development have discussed strength and weakness between the two opposing methodologies and provided the challenges associated with implementing agile process in software industry. The trend is development industry is to move towards the Global Software Development. The characteristics of software projects the lead to challenges in applying traditional project management approaches are examine and agile alternatives introduced. This anecdotal for evidence is rising regarding the effectiveness of agile methodologies in certain environment; but there have not been much collection and analysis of empirical evidence for agile projects. The concept of agility which emphasizes human role in software development process, is revolutionizing the system analysis and design field as well as the software engineering field. However, to support my dissertation I conducted a questionnaires, soliciting feedback from software industry practitioners to evaluate which methodology has a better success rate for different sizes of software development. According to our findings agile methodologies can provide good benefits for small scaled and medium scaled projects but for large scaled projects traditional methods seem dominant.***

1. INTRODUCTION

The software development methodology are used in developing a software projects that process is known as software development life cycle .In the software engineering ,software development work is divided in chunks in distinct phase or stages which contains activities to give the better planning and management. Traditional methodologies are heavyweight they require defining and documenting a stable set of requirements in the starting of the project. In agile methods the primary measure of progress is considered is the working software .Short written document development in the short time boxes are called iteration in agile methodology. The major objectives of our research paper to be comparing the quality pledge the traditional and agile methodology. Similarities and differences are determined on the basis of software quality pledge techniques of agile and traditional methodologies. In this we investigate whether agile methods join together to support for software quality within their life cycle. The traditional methodology is also known as engineering approach, they are defined at the incredibly establishment of the software science. Software development needs a way to control the project development. Traditional methods are applying well restricted approach of their stages of preparation and build over and above predictable. The stages of construct software the analysis and design are in detailed. Well documented and rather complex to be appropriate these methodologies. The main disadvantages of traditional approach are very bureaucratic. High level detailed in an approach leads to a high level of complexity. In fact

the work of supervision the approaches itself is more than the work on the software product.

2. LITERATURE

Some software development approaches have used as the starting point of information technology in two major categories. To develop the software or development team or management has to choose the approach or a combination of approaches. Accepting any approach to develop the software all software development methodologies are open for all as organization struggled to profit from new computer related technologies. As the company learned more about developing software, certain techniques for supervision and predicting the cost of software development projects come into utilize. The methodologies that has conquered software development projects for decades is called heavyweight. Traditional methodologies comprise of different phases known as Software Development Life Cycle (SDLC). There are few traditional methods.

- Waterfall development approach
- Prototyping approach
- Incremental development approach
- Iterative and incremental development approach
- Spiral development
- Rapid application development approach

Agile methodology is a alternative of traditional methodology which is typically used in software development. In this there are sprints which mean incremental, iterative work cadences which helps teams respond to unpredictability. Agile software development approaches is a group of software development methods in which solutions changes during partnership between self organizing, cross functional teams. It promotes adaptive preparation evolutionary development, before time release and nonstop upgrading and encourages speedy and flexible reply to modify. “Decide whether the iteration scope should be changed (i.e. reprioritize tasks, accept new tasks)”, and “Decide whether to add/remove/or change acceptance criteria”. “Decide whether the iteration scope should be changed (i.e. reprioritize tasks, accept new tasks)”, and “Decide whether to add/remove/or change acceptance criteria”. Agile processes support process "management-in-the small" in that the coordination, control, and communication mechanisms used are applicable to small to medium sized teams.
There are few agile methods

- Adaptive software development (ASD)
- Agile modeling.
- Agile unified process (AUP)
- Business analyst designer method (BADM)
- Crystal clear methods
- Disciplined agile delivery
- Dynamic systems development methods (DSDM)
- Extreme programming (XP)
- Feature-driven development (FDD)
- Lean software development
- kanban development
- Scrum
- Scrumban

2.1 Dynamic Systems Development Method (DSDM)

DSDM is an agile project release structure, first and foremost used as a software development method. DSDM is an iterative and incremental approach that embraces values of agile development, together with nonstop user involvement. The main aspect of DSDM is that the users are required to be involved dynamically, and the teams are given the power to make decisions. Frequent delivery of product becomes the vigorous focus with DSDM.

Advantages

- Energetic user contribution during the life of the project and iterative environment of increase improves quality of the product.
- DSDM ensures speedy deliveries.
- Together of the above factors outcome in reduced project overheads.

Disadvantages

- It is a reasonably new model. It is not very ordinary. So it is very complex to appreciate.

2.2 Extreme programming (XP)

Extreme programming is a one of the part of agile methodology, and which is enhancing the software quality and responsiveness. It releases some iterative

parts in short time of period. In order to support the five fundamental principles of XP namely rapid feedback, simplicity, incremental changes, embracing change, and quality work. It also called a short development cycle which is enhancing to improve productivity and initiate the checkpoints at which new client necessities can be less than constant. *In this method* expending and easily changing in our system according to user requirement, at a time of passes and the crisis are better to understand, and friendly environment between users and *organization*. The methodology takes its name from to enhance the feature of traditional methods and so what this methodology name is "Extreme programming" and other reason is the extreme feature of traditional methods. And it's increasing the level of software development methods.

Advantages

- Robustness
- Resilience
- Cost Savings
- Risk is less

Disadvantages

- It assumes the stable participation of the customer.
- Its achievement depends on data gathering.
- A lot's of customer might not be presented, and many others might dislike such stable participation.

2.3 Kanban

Kanban is method of for administration information job with explain on just in time release while not overloading the panel members. In this method, the process of description of a job to its release to the client is displayed for participants to see panel in a queue. Kanban in the perspective to do software development can stand for a visual process-management system that tells what to you construct, when to construct it, and how much to construct by our company.

Advantages

- Continuous development. No sprints.
- Visualized workflow: To-do, In Progress (Development), Testing, Deploying.
- WIP (work in progress) for every column

Disadvantage

- Communication problems when 5 people work on same story
- Ineffective resource consumption
- No defined time for stabilization/regression

2.4 Scrum

Scrum is part of Agile Software Development Process. Scrum is a lightweight method for organize and controlling software and product development in very rapid shifting environments. Scrum is an agile process that allows us to spotlight on delivering the maximum production cost in extremely less time. Scrum is an iterative and incremental agile software development methodology for running product development. It defines "a flexible, holistic product development process where a development team works as a group with unity to reach a ordinary goal", challenges assumptions of the "traditional, sequential process" to product development, and enables teams to self-organizing by encouraging substantial co-location or secure online teamwork of all team members, as well as daily face-to-face communication between all team members and disciplines in the project work ,and it's a one of the best attribute of scrum which is to make a dissimilar process to another process.

Advantages

- Totally developed and tested features in undersized iterations
- Plainness of the procedure
- clearly defined policy
- Growing productivity
- Self-organizing
- Each team member carries a lot of tasks
- Enhanced communication

Disadvantages

- Scrum is not successful for small projects
- Expensive to execute
- Preparation is require

3. Differences between traditional approaches and agile approaches

	Traditional approach	Agile approach
Fundamental theory	System carefully specifiable, pre editable and are developed through extended and detailed planning.	High quality adaptive software is covered by small teams that use the opinion & of continuous improvement of design and testing based on fast judgment and change
Administration style	Rule and organize	Guidance and partnership
Information management	Explicit	Implicit
Communication	Formal	Informal
Model for Development	Life cycle model	Evolutionary-delivery model
Structure of Organization'	Mechanic{bure aucratic, high formalization), targeting large organization	Organic (flexible and participative, encourages social cooperation),targeting small and medium organizations
Quality control	Hard planning and harsh control. tricky and behind testing	Permanent organize or necessities, plan and solutions. enduring testing
Requirement of a user	Full and clear earlier	Interactive effort
Cost ofrestart,	High	Low
Development direction	Permanent	Simply variable
Testing	Behind code is done	All iteration
Customer connection	Small	Tall
Extra ability compulsory as of developers	Nil	Interpersonal abilities and fundamental data ofthe business
Suitable level of the job	Huge level	Small and middle level
Developers	Leaning on preparation, with sufficient abilities, contact to outside information	Agile, with highly developed data, co-located and supportive
Customers	With access to knowledge, supportive, delegate and empowered	Dedicated, knowledgeable, cooperative, representative and empowered
necessity	Extremely constant, recognized in advance	Developing with fast changes
structural design	plan for existing and expected requirements	plan for existing requirements
Remodeling	Luxurious	Not luxurious
Size	Large teams and projects	Small teams and projects
Main objectives	High security	Rapid worth

4. Conclusion

Agile software growth stresses speedy iterations, small and everyday releases, and developing requirements, facilitated by straight client taking division in the development process. In agile methods are described in terms of progression, roles, tasks, practices, acceptance and experience. In this current era scrumban is the mostly used method in agile methodology in organizations. In agile methodology the methods have high degree of elasticity. Agile methodology methods give a high probability of success. They have an anticipating culture which helps in developing the project on time. In our paper we differentiate between agile methodology and traditional methodology and we conclude that agile methodology is superior to traditional methodology for the reason that following tools are self-organizing, iterative, incremental, daily report, communication is easier between user and organization, and many more. So organizations are using agile methodology.

5. References

[1] Meghann Drury-Grogan, Kieran Conboy, Ken Power JUNE 2012 Obstacles to decision making in Agile software development teams journal of system and software

[2] Ass umptions under lying Agile Software Development Processes, agile 2014.

[3] Dan Turk, Robert France, Bernhard Rumpe Limitations of Agile Software Processes, limitation agile 2002

[4] http://www.stoimen.com/blog/2011/04/15/traditional -software-development-methodologies

[5] http://www.revistaie.ase.ro/content/68/06%20-%20Stoica,%20Mircea,%20Ghilic.pdf

[6] http://agilemethodology.org/

[7] http://www.brighthubpm.com/methods-strategies/87839-ad vantages-of-extreme-programming/

[8] http://www.freetutes.Com/systemanalysis/sa2-dynamic-system-development-method.html

[9] http://www.codeproject.com/Articles/604417IAgile-software-development-methodologies-and-how-t