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Extended Scrum method of Agile Practice for Small Scale Project Development

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Abstract -Agile denoting "The Quality of being Agile; Readiness for Motion; Nimbleness, Activity, Dexterity in Motion". This method of software development is attempting to offer an answer to the eager business community asking for light weight along with faster and nimbler software development processes. This is especially the case with the rapidly growing and volatile Internet software industry as well as for the emerging mobile application environment. The proposed new agile method in this paper has evoked a substantial amount of literature and debates.

I. INTRODUCTION

Agile methodology is a software development process framework that adopts the iterative approach, open collaboration, and process adaptability throughout the life-cycle of the project. This iterative agile approach is more flexible and its short time-span iterations seek improvement for the project in small release, with minimal planning, rather than plan at length. This helps to minimize the overall risk, and allows the project to adapt to changes more quickly. There is also an emphasis on stakeholder involvement. Meaning at the end of each iteration, the stakeholder is consulted about the product and comments are noted. Hence Introduced Extended Scrum method helps teams improve their Scrum methods and avoid patterns of Scrum failure. We now offer a coaching engagement specifically designed to help Scrum teams further improve on their methods.

Classical methods of software development have many disadvantages: Huge effort during the planning phase, Poor requirements conversion in a rapid changing environment, Treatment of staff as a factor of production.

Agile proponents believe Current software development processes are too heavyweight or cumbersome. Too many things are done that are not directly related to software product being produced. Current software development is too rigid, Difficulty with incomplete or changing requirements, Short development cycles (Internet applications) more active customer involvement needed CMM focuses on process. Agile methods are considered lightweight and People-based rather than Plan-based. Several agile methods are there, XP is most popular.

II. BACKGROUND

2.1. Agile Software Development

Agile software development is a conceptual Framework for software engineering that promotes development iterations throughout the life-cycle of the project. Software developed during one unit of time is referred to as an iteration, which may last from one to four weeks. Agile methods emphasize working software as the primary measure of progress. Characteristics of Agile Software Development are Light Weighted, Less mentors to medium sized teams, vague and/or changing requirements, vague and/or changing techniques, Simple design, Minimal system into production

2.2. Agile Manifesto

A Statement of Values

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

Some of the characteristics of Agile are Modularity, Iterative, Time-bound, Incremental, Convergent, People-oriented, Collaborative, Self-organizing teams, Product

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progresses in a series of month-long "sprints". Requirements are captured as items in a list of "product backlog", No specific engineering practices prescribed, Uses generative rules to create an agile environment for delivering projects.

2.3Perennial Management Objections on Agile

Agile was designed for experienced, smart, and high-achieving people like its creators, i.e. stars. You could give them any project, with any method, and they would succeed. Not every group can be motivated, experienced, and skilled enough to self-organize into an efficient team. Agile is fine for startups run. But in our firm, respecting the chain of command and job responsibility are keys to survival. It takes a couple of days just to go through the company's policy manual. The narrow responsibilities, and rigid policies, processes and one-size-fits-all methodologies of our firm don't fit the free-wheeling ways of Agile. Agile isn't going to work here.

It's true that Agile requires small teams. Agile emphasizes that face-to-face, spontaneous conversation is the best form of communication. In some organizations, this isn't possible. Moreover, work extends beyond the development team since other stakeholders such as business analysts also require interaction. Hence this limits the applicability of agile.

The lack of guidance for project managers of agile development projects has been a gaping hole in the software development community over the past several years. The contrast between the worlds of agile software development and traditional project management has left many managers wondering what their role should be. The most likely methods of the agile methodologies are the Extreme programming and the scrum methods. As a software developer he/ she could do project using agile methodology, but while programming or coding there are lots of problems arriving practically.

For example the project development team could consists at least five to ten members, but if the team members are less than three or two means it will leads to the project failure due to time sensing or quality sensing. Target duration is one month +/- a week or two, but, a constant duration leads to a better rhythm, product is designed, coded, and tested during the sprint. Because of the low members in team, the sprint planning, sprint review, sprint retrospective & daily scrum meeting takes careless and need less of them because of doing projects individually without any guidance. The sprints should be completed within a month but it is delayed due to careless time management. The meeting with the product owner failed because of improper communication, inefficient explanation of features of the product.

The scrum master represents management to the project, responsible for enacting scrum values and practices, and remove impediments, ensure that the team is fully functional and productive, and enable close cooperation across all roles and functions, and shields the team from external interferences. But the absent of scrum master leads to malfunctions the overall process of the team.

The main drawbacks of the methods are:

- Undisciplined hacking
- Violation of responsibility
- Current mainly carried by the inventors
- Scrum is not effective for small projects
- Training is required

Agile starts typically around a critical project with a lot of sponsorship," said IBM's Grama. "The SMB might have fewer of these projects, the enterprise more, but the challenges faced by both are the same". But in terms of the specifics of the Agile Manifesto - self-organizing teams, face-to-face meetings, very quick iterations and so on. It doesn't know of any company that "really follows that literally other than a 20- to 30-person company." But because bigger may have trouble conforming to that view, that "doesn't mean they can't be Agile.

2.4. Major Disadvantages

- In case of some software deliverables, especially the large ones, it is difficult to assess the effort required at the beginning of the software development life cycle.
- There is lack of emphasis on necessary designing and documentation.
- The project can easily get taken off track if the customer representative is not clear & what final outcome they want.
- Only senior programmers are capable of taking the kind of decisions required during the development process. Hence it has no place for newbie programmers, unless combined with experienced resources.

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III. PROPOSED WORK-EXTENDED SCRUM METHOD

Scrum is used as an Agile practice that delivers software to end users faster, better, and cooler, The Extended Scrum method is similar to scrum method but the functions and sprint are modified according to the small scale project development. For every Sprint of the new Extended Scrum methods contains the collaboration of the customer in their own place and make detailed study of the processes going on in the customer place and develop the project before the customer itself so that the communication develops and time consumption is reduced. According to the customer, they feel like the project is developed by them lively and they were satisfied. The chance of errors and difficulties are very less. Like this every sprint times are reduced and the quality of the software in increased according to the changes made in analysis from the customer and development of the project. This Extended scrum methods delivers software to end users very faster, even better and very cooler. The comparison chart between the classical method, Scrum and Extended scrum method are show below in the figure 1.

The comparison is based on the time of the sprint submission

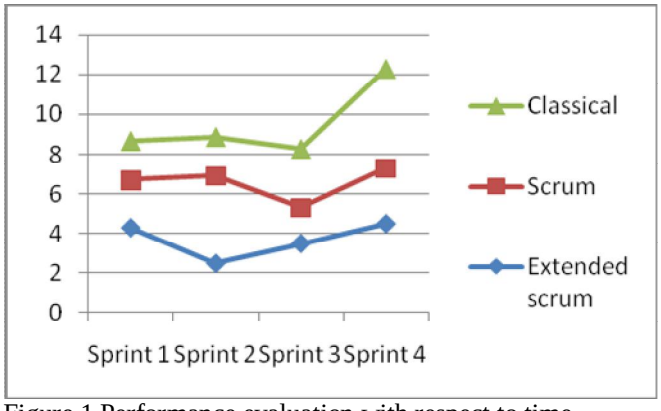

Figure.1 Performance evaluation with respect to time

Especially the Scrum method is used for small team consisting of 5 to 10 members but during small scale project development single person is enough to develop a project by using the extended scrum method. In Scrum method, if any of the team members leave during a development it can have a huge inverse effect on the project development. So that if that team consist of a single person, then it is enough to manage and schedule the work according to his or her ability. Scrum supports a creative approach to development of complex and innovative systems and it scales to large numbers of developers. It is used on some of the world's largest projects at companies like British Telecom or Siemens because of high productivity with large distributed and outsourced development teams. It is the only software development process that has demonstrated linearly scalable when adding resources to large projects. In a properly implemented Scrum, productivity per developer stays the same when adding resources, a phenomenon never seen before in software development.

The most profitable software product ever created (Google Adwords) is powered by Scrum and the most productive large project with over a million lines of code SirsiDynix used a distributed, outsourced Scrum implementation. CMMI Level 5 companies cut costs in half with Scrum while simultaneously improving quality, customer satisfaction, and the developer experience. At the same time, Scrum remains the process of choice in small entrepreneurial companies where it has its roots. Open View Venture Partners in Boston invest only in Agile organizations and Scrum is the core process used in their portfolio companies. Scrum is designed to add energy, focus, clarity, and transparency to project planning and implementation. It will consistently:

- Increase speed of development
- Align individual and corporate objectives
- Create a culture driven by performance
- Support shareholder value creation
- Achieve stable and consistent communication of performance at all levels
- Enhance individual development and quality of life

The global expansion of Scrum in both the largest and smallest software companies and across all cultures is a testimony to the fact that Scrum delivers on its promise. While it is often said that Scrum is not a silver bullet, Scrum can be like a heat seeking missile when pointed in the right direction. It's inspect and adapt approach to continuous quality improvement can do serious damage to outmoded business practices and many companies are now transforming entire organizations to take advantage of Scrum productivity, to delight customers, and to make the

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work environment better and more fun for development teams. It's focus on building communities of stakeholders, encouraging a better life for developers, and delivering extreme business value to customers, releases creativity and team spirit in practitioners and makes the world a better place to live and work.

3.1. Major Advantages

- Customer satisfaction by rapid, continuous delivery of useful software.
- People and interactions are emphasized rather than process and tools. Customers, developers and testers constantly interact with each other.
- Working software is delivered frequently (weeks rather than months).
- Face-to-face conversation is the best form of communication.
- Close daily cooperation between business people and developers.
- Continuous attention to technical excellence and good design.
- Regular adaptation to changing circumstances.
- Even late changes in requirements are welcomed

3.2. When to use Extended Scrum model?

- When new changes are needed to be implemented. The freedom agile is very important. New changes can be implemented at very little cost because of the frequency of new increments that are produced.
- To implement a new feature the developers need to lose only the work of a few days, or even only hours, to roll back and implement it.
- Unlike the waterfall model in agile model very limited planning is required to get started with the project. Agile assumes that the end users' needs are ever changing in a dynamic business and IT world. Changes can be discussed and features can be newly affected or removed based on feedback. This gives the customer the finished system they want.
- Both system developers and stakeholders alike, find they also get more freedom of time and options than if the software was developed in a more rigid sequential way. Having options gives them the ability to leave important decisions until more or better data or even entire hosting programs are available; meaning the project can continue to move forward without fear of reaching a sudden standstill.

IV. CONCLUSION

Agile software development stresses rapid iterations, small and frequent releases, and evolving requirements facilitated by direct user involvement in the development process.

Whereas the Extended Scrum method paves greater way to maintain and support the fast track project development with the help of changing scenario and development environment. Due to short sprints and constant feedback, it becomes easier to cope with the changes. Daily meetings make it possible to measure individual productivity. This leads to the improvement in the productivity of each of the team members. Issues are identified well in advance through the daily meetings and hence can be resolved in speedily.

The Extended Scrum can work with any technology/ programming language but is particularly useful for fast moving web 2.0 or new media projects. The overhead cost in terms of process and management is minimal leading to a quicker, cheaper result. Thus the Advantages are pointed out with explanations. Through this Extended agile methodology time and money is saved and the accuracy of the projects output is improved.

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