1. Introduction: "Adopting Extreme Programming as a Framework for Software Development"

The current world is completely under influence of Software and technologies. Using the Software and technologies on daily basis has become the necessity of almost every human being. Nowadays after emergence of extensively useful Mobiles, almost every individual is connected to technology; directly or indirectly. In the Public, Private and Government Sectors technology is spread like web of neurons in the brain. We are not able assume and face the world without the technology, without it we feel disabled.

By observing the above situation we come to conclusion that, there are large number of users for software. As the number of users increases definitely the requirement of new and quality software also increases. Software development is a series of resource limited, good pointed, collective efforts of new creation. So the development of new software and changes in the existing ones is mandatory to attract the users towards technology. It is the business need of the industry.

Because of this high demand and eagerness shown by the users and the clients; software industry is facing pressure to deliver quality products within short time span. Even a small delay in the release may cause a big impact on reputation and business of the company.

The reason behind this situation is that companies are still stuck to the traditional approach of Software development. Currently maximum development in industry is going on with Waterfall model approach which is a sequential model for project development. As considering current situation we found following lacking in this model.

1. It takes long time for project making with Waterfall approach.
2. Very few real projects follow the flow mention in this model.
3. With this approach it is difficult to get clear understanding of customers need especially in case where client is not aware about IT.
4. It very confusing model in regards with form design.
5. This models sticks to hardware and software that is not feasible in current changing software development environment.
6. If the project is in progress and some change found in previous work, then it is difficult in this model to accommodate and resolve it, also may cause increase in cost.

Waterfall development model can be used for following types of projects.

1. For purely data oriented commercial software.
2. For E-com websites or portals.
3. For network protocol seaware. Etc.
Developers who are backbones of software industry are following similar approach because they learned to follow it from their academics. The industries are following customer specific approach in product development that results in negligence towards programmers which causes the indiscipline’s among them. In current stressful environment the industry should take care of the social aspects towards the developers to achieve more productivity.

If we consider the currently expected demand and change ratio by the user and clients; the traditional development approaches are not satisfactorily delivering the results. Definitely to eliminate this problem we need to think about new, flexible, fast track software development approach with quality deliverables.

1.1 Agile Methodologies:

It is a term used in project management to describe new innovative methodologies. This methodology was introduced in 1990’s, as alternative to traditional waterfall methods. When traditional models are failed in fulfilling the requirements then industry come up with agile development solution. These models are to empower stakeholders to work together and make collective judgments for planning, testing and integration continuously.

According to manifesto of agile models, it is the ways that brings the simplicity in the process and help others to understand it. There are 12 guidelines that emphasis on the communication, speed of delivery, priority based work team building and focusing on involvement of every stakeholder. There are various agile techniques used today as kanban, Scrum and XP etc. The research shows following Pros and Cons of agile methods.

Advantages:

1. Flexible compare to Waterfall model.
2. Countering Change is very easy.
3. All the stake holders are involved in project development.
4. Better communication in the team.
5. Testing is thoroughly and continuously done throughout the project life cycle.
6. Fewer defects in final product.

Disadvantages:

1. Less documentation.
2. They aren’t yet perfect and not approved by industry.
3. Communication and coordination is more complicated.
4. Skilled members are needed in development team.
1.2 Extreme Programming:

XP is currently trending agile software development approach. It is developed and suggested by programmer Kent Beck in 1999. Extreme Programming (XP) is one more new agile software development paradigm, and has become a very popular one because of its low implementation cost, better productivity, better quality, developer centric approach and better business satisfaction. It is a disciplined software development approach. The Extreme Programming can become a good solution to produce fast track, quality products in this new changing era if understood and modified slightly in controlled environment.

The Extreme Programming Approach poses following values.

- Communication: between all stakeholders.
- Simplicity: Work by making the task as easy as possible.
- Feedback: Collect continuous feedback about work from related entity.
- Courage: If needed, ready to discard the code.
- Respect: Prepare the positive work environment.

XP approach is carried using Economics, Mortality, Mutual Benefit, Self-Similarity, Reproduction, Diversity, Drift, Chance, Redundancy, Upgrading, Failure, Excellence, Small Steps, Accepted Responsibility principles.

On the basis of values and principles such as Sit Together, Whole Team, Revealing Workspace, Energized Work, Pair Programming, Stories, Weekly Cycle, Quarterly Cycle, Slack, Ten-Minute Build, Continuous Integration, Test-First Programming, Incremental Design practices are carried for the software development.

I propose “Adopting eXtreme Programming as a framework for Software development” which can easily deal with above said challenges, if carefully observed and implemented with some changes in practicing approaches in controlled environment.

Still few myths, misconceptions, issues and challenges are there about Extreme Programming (XP) in the minds of Software developers.

Many researches are carried out in pass few years about XP methodology and its implications. Some of the research shows that XP is not a useful solution. But the investigation of these researches shows that, the experiments carried out in these researches are not following the all practices suggested by the XP model. Some the experiments are carried out only for the sake of name. Some of the research doesn’t take care about quality assurance.
Many other researches showed positive results of the XP practices but still they are also missing the core idea of XP. Some the good results are produced with small database size projects. Few projects are carried out with very small size of team. So that is not enough to establish XP as core development practice. Some of the experiments didn’t follow the management perspectives.

I propose to carry out the research on XP’s efficiency test of average size project along with moderated team size with controlled experiment. This research is intended to address the research challenges, issues and to find better prospects of this approach while adopting it as a software development framework.

This research is concentrated on finding a flexible way to adopt the XP practices in the academics as well as in the in the software industry. This will achieved by trying to resolving the issues, finding the challenges and solutions to that challenges and also finding and stating the better prospects, if adopted as Software development framework.