

Agile Testing

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Abstract- In this paper, basic principles of agile testing, advantages & disadvantages of agile testing is discussed.

Index Terms- Software Development Life Cycle (SDLC)

1 Introduction

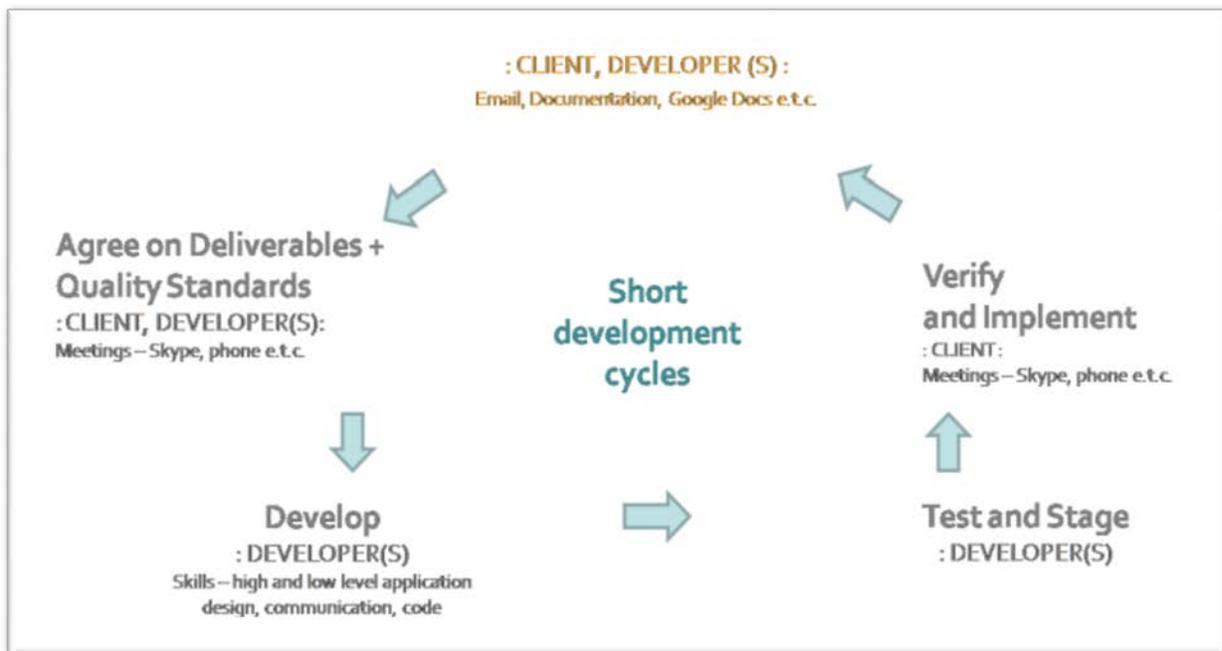
Before moving to the topic in context of testing, first understand “**Agile**”!!!

So as per normal goggling & self explanatory word - Agile means “**Able to move easily and quickly**”

Now days, Agile methodology is very eye catching terminology in software industry. Most of us already aware about know how’s of Agile. But intention of this white paper is “*To make readers correlate the practical aspects to their theoretical knowledge and to fetch relevant information about Agile Testing in single piece of document*”.

The Agile methodology works on the principle of evolvement of requirements and solutions with collaboration of customers and self-organizing team (*both Development and test*). Here self organizing team could be cross functional team which has special expertise of tester to contribute and to provide customer needs in terms of project milestone to the customer at regular intervals.

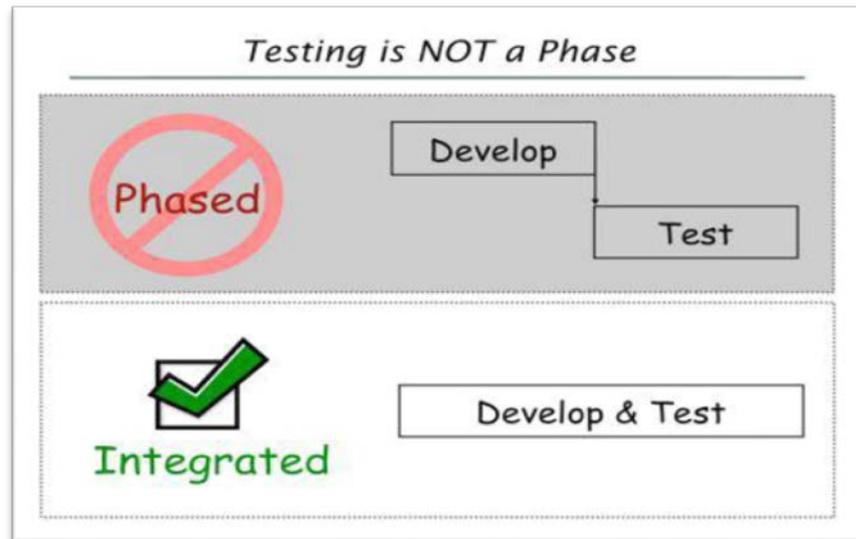
While talking about the Agile, it is also important to refer Scrum. Scrum is a repetitious and incremental approach which defines adoptable and flexible strategy, where team works to achieve common goal. In the ongoing project, scrum’s key feature is to recognize the change in the requirement from the customer, due to evolvement of customer requirements. Using the traditional way (water-fall approach), these unpredictable changes are not easy to handle. By using Scrum, it gives focus on maximizing the way to deliver quickly and respond to the changed/emerging requirements.



Now going into more details of Agile testing, one of the important factors is, Testers in team use their expertise to draw example of customer expected behavior and with collaboration with developers, prepare the specification for coding. The beauty of agile methodology is, testing and coding are done in parallel and iteratively. This way leads to the value where each feature/requirement tends to the maturity of production. The highlight of agile testing is that it covers all types of testing. Understanding the testing in the Agile model makes usage of basic principles which are used widely.

Basic Principles considered for Agile Testing:

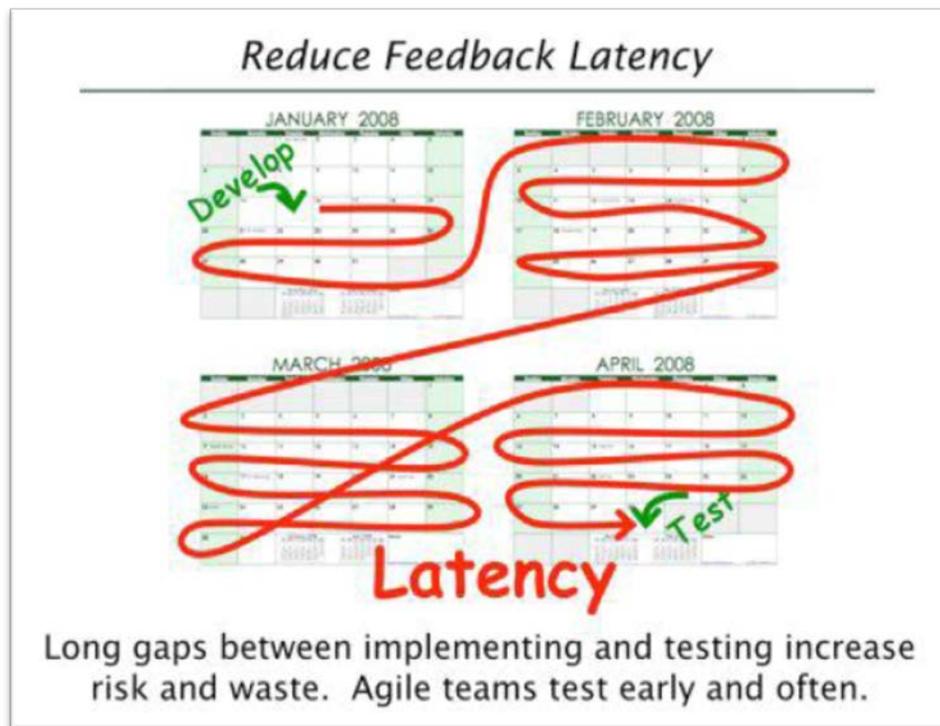
- **Testing is not a different Phase:** Here we encounter that testing is not a phase instead it is a way of life in agile team. By this way, we can ensure that requirements implemented during the iteration are actually correct. In another way, continuous testing is the only way to ensure continuous progress which is an asset of the Agile methodology.



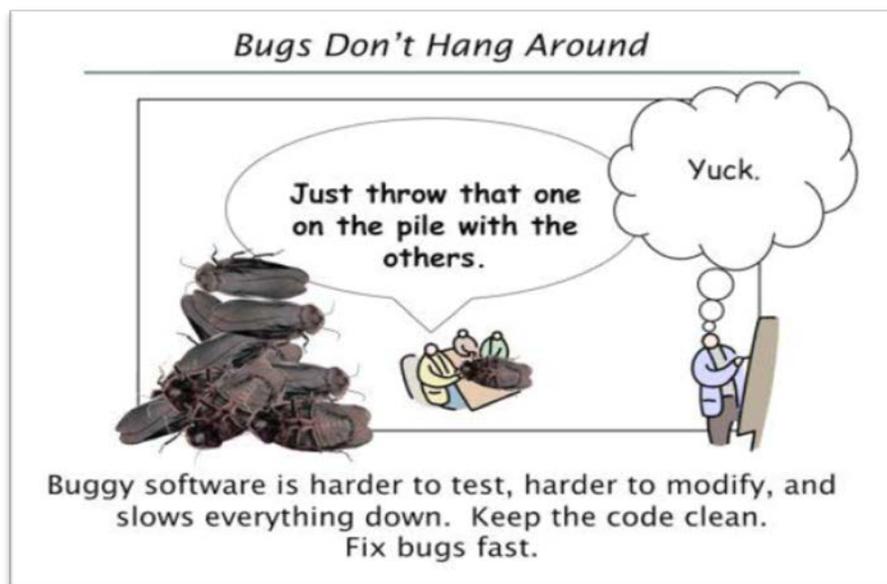
- **Every one test:** In traditional software development life cycle, there is a defined testing team which is only responsible for testing the deliverables & features. However in agile team, developers and business analyst also test to meet the team delivery. This is how agile team ensures the tested iterative delivery.



- **Testing moves the project forward:** While using conventional SDLC, testing is considered as quality gate and QA and testers are like quality gatekeepers. But here agile team provides feedback on regular basis. Which itself call product to meet business requirements. In this methodology, developers and testers mindset/relationship must be replaced with spirit of collaboration. This is completely different practice of mindset and behavior.
- **Shortening feedback loops:** A feedback loop can be considered as measure of time when a programmer writes a line of code and when someone or something executes that code and provide how it works/behaves. So in conventional way, this feedback loop is very high and can be measured in months. That is way long. Shorter feedback loops increase agility. In Agile project, software can be tested on early basis. Agile team works on several testing methodology to uncover the different types of information from the software.

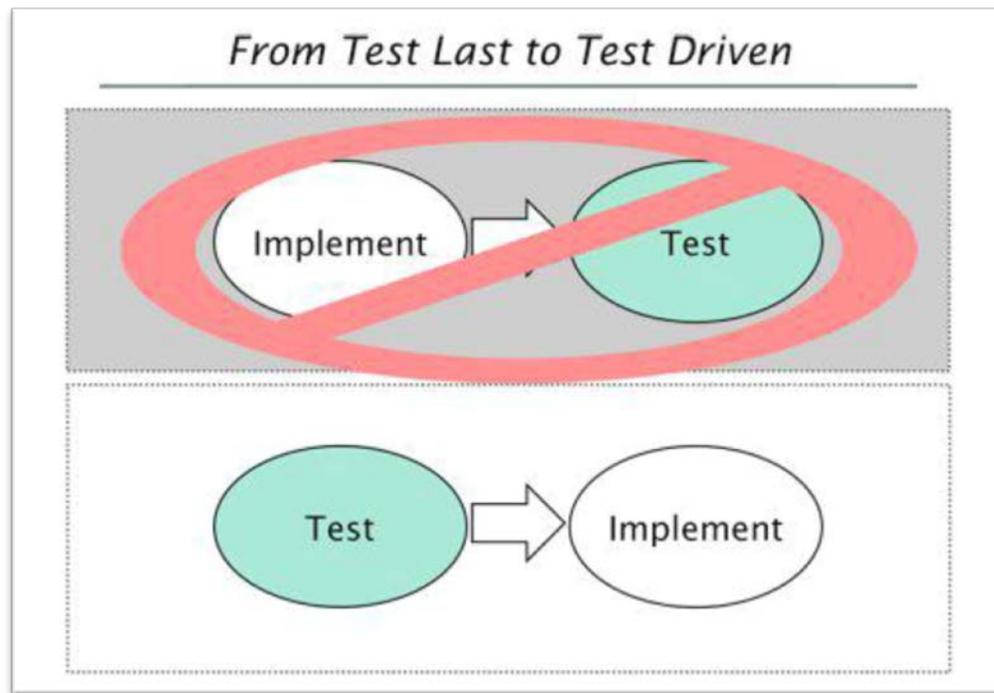


- **Clean Code:** Defects raised are fixed within the same iteration and thus keeping the code clean. This is also an example of agile team discipline that they have. This can also be explained by example; if a bug is retained in the code, it's like cooking in a dirty and scattered kitchen, it takes longer to wade through the mess to do the cooking and finally food may or may not be edible.



- **Lightweight Documentation:** Agile testers use following instead of lengthy documentation:
 - a) Reusable checklist for test suggestion
 - b) Focus on essence of test rather incidental details
 - c) Use lightweight documentation tool
 - d) Leveraging document for multiple usage
- **Test Driven Development:** In the conventional way, test is developed from the requirement documents. Design and requirement documents come first then after test. So in this way, testing is performed at the end. This is called test-last approach. Talking in agile, tests are defined with the requirement rather than after and using those test for driving the

development efforts. This tends to clear focus on the goal. This test first approach can be seen through test driven development.



3 Advantages of Agile Methodology

With the collaborative approach, we have following advantages of using the Agile Methodology:

- a) Changes and enhancement in the requirement adheres easily in between the project without any budget constraint.
- b) Working software is delivered on regular basis caused customer satisfaction.
- c) If we talk about agile testing, it saves time and money.
- d) Less documentation is required.
- e) Quality control by taking regular feedback from the customer.
- f) Using the collaborative way of daily meetings, helps in identifying the issues in advance.

4 Disadvantages of Agile Methodology

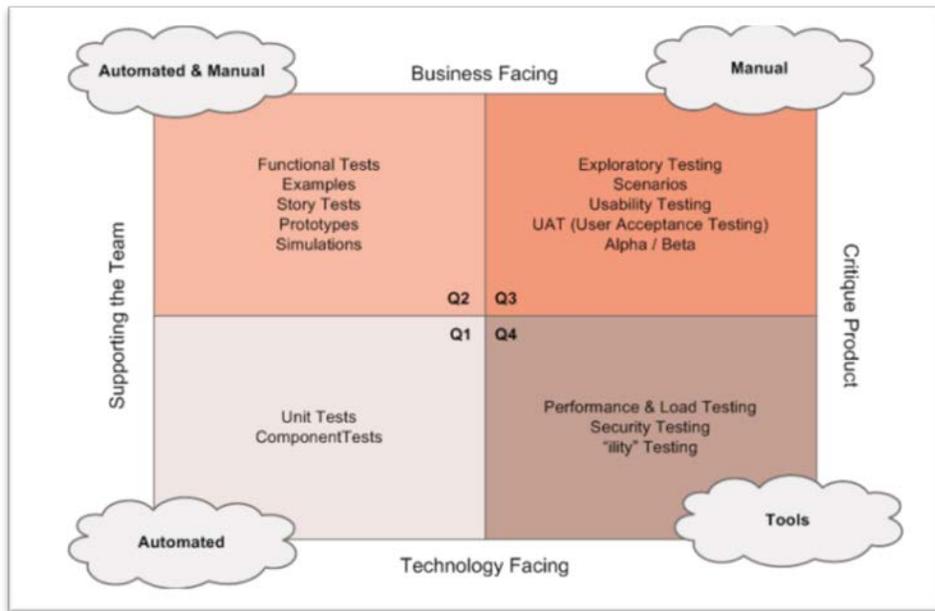
However there are some considerable disadvantages as well.

- a) Low emphasis on designing and documentation part.
- b) If the customer requirements are not clear then it is easy to get taken off the track for project.
- c) One disadvantage is, only senior developer/testers are capable of taking decision on the basis of requirements. New comers will not be the effective part for the project unless combine with experience one.
- d) Difficulties in the assessing the efforts for large software deliverables at the beginning of the project.

5 Conclusion

Now considering the best practices for Agile testing, following points are important which can be linked from Agile testing quadrants.

- a) Automated unit/integration test of components
- b) Automated system level regression test
- c) Test/acceptance test driven development
- d) Exploratory testing
- e) Collaborative testing



6 Acknowledgement

I would like to acknowledge my co-workers for supporting and encouraging me throughout the course work.

7 References

[1] Multiple Testing Websites, [2] ISTQB Advanced Testing, [3] Scrum Master Web links

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