



POINT OF VIEW

# Role of Automation in the World of Agile

by **Nilesh Dubey**

Two terms namely **“Agile”** and **“Automation”** have gained significant popularity in the recent years and have become household names in the software fraternity. Nowadays, almost every software development team is practicing agile and making their processes more efficient by introducing automation. There is however a strong correlation between agile and automation. Let us find out how they are complementary to each other.



# Contradiction in the Concept of Origin

In the field of software development, agile has been around for a while now. We have seen more and more organizations and development teams embracing the concept of agile and reaping the benefits out of it. The software development community is focused on giving value to the customer and increasing their efficiency by removing the inefficiencies from their processes. A continued thrust on improving efficiency has led to the need of automation in almost all the processes of software development and processes which are part of the lifecycle of a software product.

However, we have witnessed that these two concepts "**Agile**" and "**Automation**" usually never reside in the same box though they almost cater the same purpose of improving the

efficiencies. Agile focuses on the continuously changing requirements and thereby delivering the value in regular and small intervals whereas automation focuses on removing redundant or repetitive processes. If a business requirement is continuously changing, then probably agile is the best possible tool available to handle such requirements. However, if a business requirement is unchanged, then it can turn out to be a good candidate for automation.

# Embracing Agile is embracing Automation too

Let us discuss about how leading agile methodologies advocate automation and encourage us to embrace it as part of agile practice.

Revisiting the principles of agile which forms the foundation for all the agile methodologies and frameworks, we come across one of the twelve agile principles “Continuous attention to technical excellence and good design enhances agility”. This principle clearly focuses on the technical excellence of the product and addressing the technical debt which arises due to need of maintaining the balance between feature development and keeping a check on complexities.

Code refactoring is one such method which comes first in the mind when we talk about the technical excellence of the product. Probably, considering the

need of automation in refactoring, almost all the modern-day IDEs like Eclipse, IntelliJ, RAD, Visual Studio Code have automatic code refactoring facility. JSparrow and many such plugins provide auto code refactoring mechanism.

Automation testing is another such practice which is an integral part of almost all the agile methodologies which helps in making the most important value “feedback” easily achievable in those short lived and time boxed iterations. Automation test cases make the life of tester easy and saves time, effort and cost. Automation test cases also give the confidence to the developer on his code and provide a quick feedback on his code.

# An overview of leading Agile methodologies

Let's have a quick walkthrough of leading agile methodologies and try to understand the role of automation in them.

**1 Extreme Programming (XP)** focuses on rapid feedback which is usually achieved by continuous and automated build and integration process like Jenkins Pipeline, automated test case suites using various automation testing tools such as Selenium, TOSCA, Cucumber etc. Automated code refactoring and automated test cases which speeds up the process of refactoring and enable quick feedback are integral practices of XP values and practices.

**2** One of the simple yet powerful six principles of Kanban say about "managing the workflow" to avoid the rework. To avoid rework, **Kanban** teams focus on the quality from the start and employ the practices like test-driven development, pair programming and test automation. Kanban is a much-suited methodology and automation testing plays a vital role in maintaining high quality and avoiding rework.

**3** **Crystal** practice clearly says, “Sound technology practices and an environment that supports automation of testing, version control and continuous and automated build process”. Automated build process and automated testing is an important aspect of Crystal practices.

**4** “**Optimise the whole**” and “**Deliver as fast as possible**” principles of **Lean** methodology focus on automation. In the context of software development, automated build process helps in rapid development and automated test cases provide the faster feedback which helps in further optimising the process.

## Need of Automation in Agile Practices

Agile focuses on incremental and iterative delivery in time boxed sprints. This requires the fairly high level of automation in testing, build and integration processes. Without the automated test cases, it will not be possible for agile teams to continuously test their product and deliver a high-quality incremental value at the end of sprint or iteration. Also, automated test cases help the agile teams to make sure that enough testing has been done before the value is delivered. It also ensures that the propagated defect is addressed before it moves on to the next sprint, which helps in maintaining the product backlog.

## Automation makes the Agile process complete

A 30,000 feet high view on agile and automation together creates impression that both these fancy terms are contradictory in nature. However, a close inspection asserts that almost every agile framework and methodology employs automation to ensure efficiency and quality in software development.

Automated testing makes life easier for development and quality assurance teams in a fast-paced agile development environment. It is safe to conclude that automation resides inside the heart of agile practices which helps to make agile process effective and complete. Automation and agile focus to solve the same big problem and help in delivering the value and improved efficiency. We cannot embrace and implement agile completely without embracing and practising automation.

## About the Author



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Nilesh is Project Manager for AI/ML platform Deployment & Support. He has 15 years of experience with expertise in Java/J2EE, Service Oriented Architecture (SOA) and Microservice Architecture solutions. He is an agile practitioner with experience on methodologies such as Scrum, Kanban, Extreme Programming (XP) using Test Driven Development (TDD), pair programming practices and SAFe framework. He is a Certified Scrum Master.