

Continuous Integration of Software Management

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ABSTRACT

Continuous Integration, A practice where developers integrate frequently[5] is considered an integral part of Agile development. CI is often thought to be a safety net that prevents developers from deploying broken code to production.

A similar process and ideology of continual improvement and integration can be applied to Software Management, The art and science of planning and leading software projects. [6]

This paper attempts to explore the process of creating such an integration practice within an Organisation.

Keywords: Software Management, Agile development, Continuous Integration

INTRODUCTION

Martin Fowler in his seminal article[1] on Continuous Integration describes it as a practice where members of a team integrate their work frequently and each integration is verified by an automated build to detect problems quickly.

In the context described above integration is the process of combining the work of all the developers of a project into a cohesive software. On the other hand if considered generically, Integration can be thought of as a practice of combining the work of multiple people and verifying its correctness. Using a similar collective, Continuous integration could be the process if integrating the work of multiple people after specific events or set periods of time.

CONTINUOUS IMPROVEMENT

The need for continuous integration arises from the fact that software systems in real life are inherently complex[2] and attempts to understand the complete system are usually an exercise in futility. Continuous integration in this context provides a way detect many problems early in the development process.

It can thus be concluded that Continuous integration has arisen as a possible solution to the chaos introduced by continuous improvement.

SOFTWARE MANAGEMENT AND CONTINUOUS IMPROVEMENT

The inherent complexity in software management is best described by the law of leaky abstractions[4] which states that all non-trivial abstractions leak to some degree.

Software management is in essence a process which tries to abstract away the chaos of managing an inherently complex task with the help of developers in an ever-evolving

environment. So naturally Software Management tends to be a complex task which needs to be continually improved to adapt to changes in the environment such as new labour laws, new technologies and a new generation of customers and developers.

CI AND AN EVOLVING ENVIRONMENT

Evolving Customer

The previous generation of customers were primarily using a desktop computer with a reliable internet connection and a large display. This customer base is quickly moving towards mobile devices as their primary computing device where displays are much smaller, internet connection is spotty and there are restrictions on power consumption.

These changes require the developers to adapt to the environment which inherently needs an overhaul of the software management process.

TODO: New technologies

TODO: Labour laws

TODO: Next Gen Developers

IMPLEMENTING CI IN SOFTWARE MANAGEMENT

Adoption

The initial adoption process of any new Software management model would be significantly different from integrating new team members into an existing model. For example, some the factors which affect the success of adopting Agile methodologies in an organisation are Customer collaboration, satisfaction and commitment, Communication and negotiation skills of the team and Cultural factors [3].

These are not the factors which affect

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