SELF-SERVICE TESTING: THE ANTIDOTE FOR STRESSED TESTING TEAMS

Abstract

Testing is a key element in the software development lifecycle that ensures the delivery of quality products. As it has matured over the years in terms of processes and tools, a recent trend from clients is the need for 'self-service testing.'

This point of view provides insights into client expectations and the manner in which testing is being transformed from 'process and tools' to 'self-service' mode.

Today, organizations and testing partners prefer one-time investments to build self-service platforms, and expect them to be operational throughout the IT journey at the lowest possible maintenance cost.
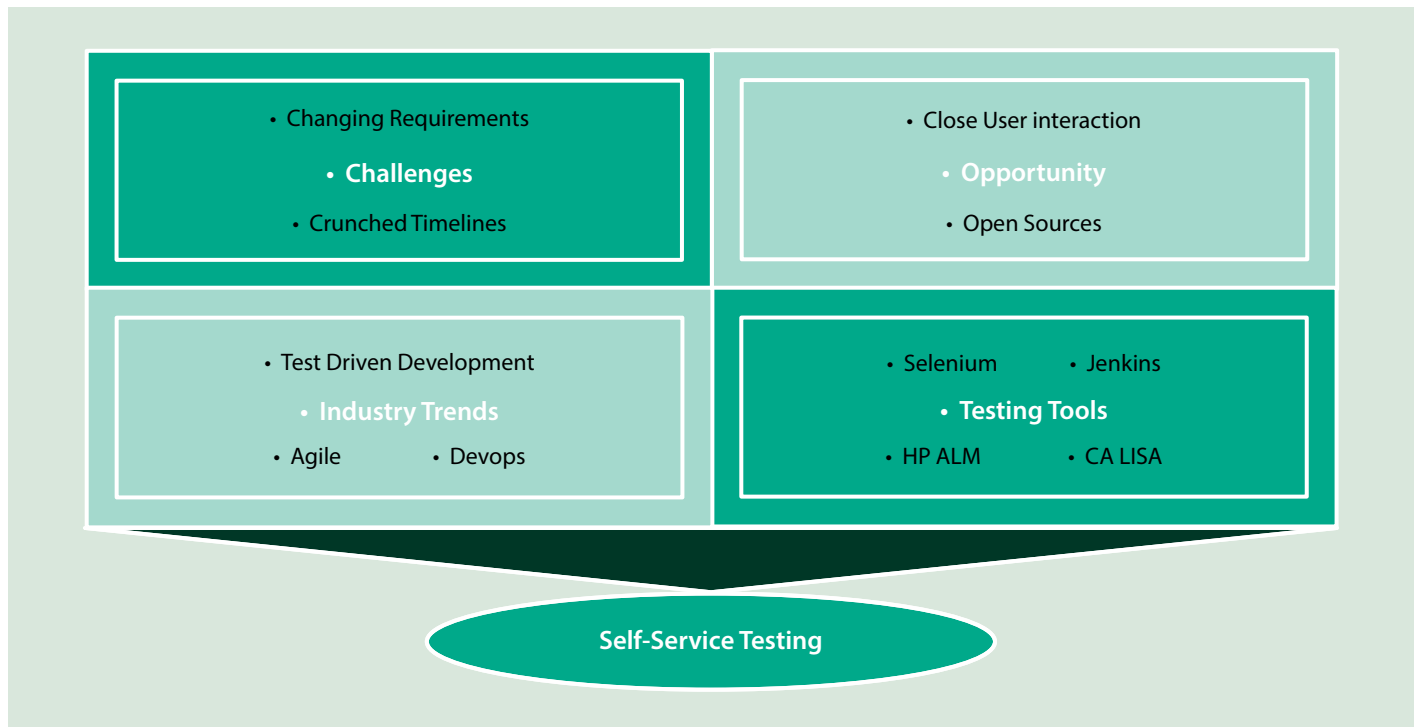
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Introduction

New testing processes and tools are developed continuously to improve the quality of software. Today, the IT industry is gaining momentum in agile deliveries and development and operations (DevOps), which is creating new possibilities by integrating development, test, and operations teams. To keep pace with these changes, testing processes and tools need transformation such that testing platforms can be accessible to all stakeholders and made simple.

Factors driving self-service testing

The diagram below highlights the challenges, opportunities, industry trends, and testing tools that are key to self-service testing.

• Changing Requirements • **Challenges** • Crunched Timelines	• Close User interaction • **Opportunity** • Open Sources
• Test Driven Development • **Industry Trends** • Agile • Devops	• Selenium • Jenkins • **Testing Tools** • HP ALM • CA LISA

Self-Service Testing

Challenges

Organizations view testing as an integrated activity of product development and they tend to shorten the entire development and deployment duration. This puts pressure on testing teams to work in parallel with design, development, and deployment. At the same time, constant 'requirement changes' bring significant amount of risk and rework before products go live.

Opportunities

Agile methodologies and DevOps drive synergies across business, development, test, and deployment teams. They provide good opportunities to enhance testing processes ensuring that there is no information gap and reduced lead times. Open source tools and technologies are other opportunities providing more options to build automation frameworks.

Industry trends

Agile software development

Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. Scrum is the most popular agile methodology.

DevOps

DevOps involves coordinating software development, technology operations, and quality assurance to make these three, sometimes disparate entities, work together seamlessly. It can streamline business processes and add value by eliminating redundancies.
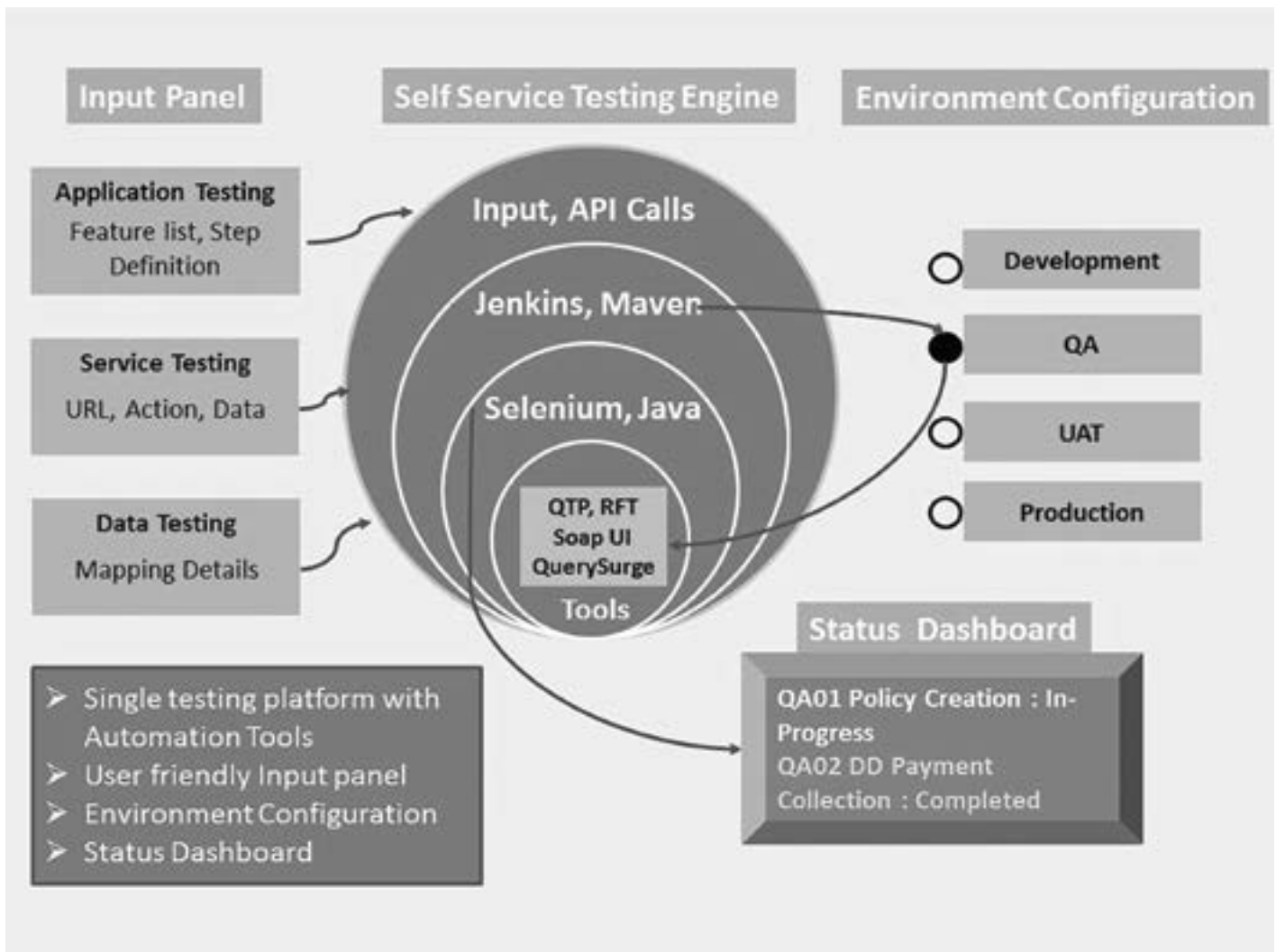
Testing tools

JavaScript, selenium combined with vendor tools are part of the **"12 Test Automation Trends for 2016"** published in https://www.joecolantonio.com/ that are driving the test automation and will continue to do so.

Self-service testing platform

Testing challenges, opportunities, and industry trends explained above are encouraging test practitioners to find innovation in automation. As a result, the industry is headed towards building a platform comprising of testing tools, custom frameworks, scripts to connect various applications, and environments.

The below diagram illustrates the concept of **self-service testing.**

Common platform for unit, system integration, and acceptance testing

The platform will provide an interface for developers, business, and test teams to provide input data. The input data can be steps or controls that navigate through the user interface (UI) to complete transactions, simple actions, and data for a Web service call, or a mapping sheet to verify the transformation.

The core part of the platform comprises of an engine with various automation tools, custom scripts based on the projects needs Selenium / Java frame work to expose them through UI (or) as API services. This can be further integrated with mechanisms like Jenkins and Maven to automate code deployment and invoke automated test scripts.

It comes with an additional environment configuration panel to perform testing in DevOps, quality assurance (QA) and AT environments. A user-friendly dashboard is provided to verify the status and results of the requests raised.

Benefits

Self-service testing brings the following benefits in software delivery:

Ready to use platform: Minimal technical knowledge is required. Business knowledge is sufficient. Simple input to perform the business transactions, data transformation, and validation.

Single framework to cater to all testing needs: Self-service testing platform can be used, reused by business, development team, and for post Go-Live testing as well. Different environments can be configured and selected during the execution.

Workflow automation: Workflow automation to execute batch jobs, perform the outcome validation, and create reports.

Continuous integration: Continuous integration and development to invoke the validation process as soon as the code is checked-in in an environment.

Success Stories

A self-service testing tool implemented for major retailers:

A Selenium framework was used to integrate reports, download data, extract data from the database, and perform validation. The navigation steps in the predefined reports were saved as reused test scripts.

Custom SOA Testing Framework –

User-friendly excel to write down the actions as test steps to form the central test case repository along with a data dictionary sheet to key-in the input data. Check box option to execute the selected test cases only.

Conclusion

As various stakeholders are working together to deliver business value within a reasonable time, this single, common testing platform becomes essential to cater to all phases of testing. This should prevent the duplication of the various types of testing and its phases. A self-service testing platform will provide flexibility to adapt to changes and enhancements and it will fulfill the testing needs across the software lifecycles while maintaining the uniqueness of testing.

About the Author

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Sri Rama Krishnamurthi is a Senior Project Manager with Infosys, having 16 years of software testing experience in various domains like geographic information system (GIS), finance, retail, and product testing. He has been practicing business intelligence (BI) testing for more than nine years now. Test data management (TDM) and master data management (MDM) testing are other areas of his expertise.

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