

## Evolving Trends that is proving the validity of SQA and Test Automation

IT organizations are moving towards deploying software products in a fast-paced cost effective environment. They are focused on providing a complete end-to-end testing methodology that begins from the initial concept to the execution phase, as the software delivered should align with the financial impacts, business outcomes, customer user experience along with the hygiene factors of compliance, control, and quality.

Software Quality Assurance (SQA) process can help achieve this objective. It enables project teams to pre-empt future development issues or bugs through corrective measures and reduce the time, effort and cost further down the line.

Functional testing is one of the key processes in software development. The requirement to support multiple browsers and devices is driving the demand to automate the testing process of the applications. As more companies embrace agile testing methodologies, the need to deliver to market in record time is driving automated testing. Added to this, the huge data generated from various connected devices, big data, and the tremendous potential to leverage the hidden insights for business value is driving the automated testing process.

Mobile testing, big data testing, cloud testing, and everything agile is in the spotlight for test automation and trending in the enterprise corridors.

The current IT trends that test automation are influencing the business decisions are:

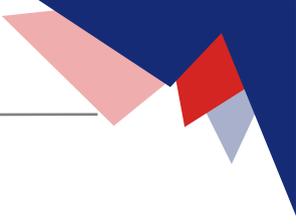
### ***Innovation becoming the norm for test automation***

Enterprises are now increasingly taking steps to ensure faster time to market and enhanced ROI from product launches through significant innovations in regression, iterative release management, and testing through automation. Automation extends not just to functional testing but also to security, data related, compliance and performance testing.

While challenges due to niche tools and frameworks further delay or complicate the automation process, Selenium is one test framework that automates the web browser for web applications. It is a cross-platform automation toolkit that is agnostic to the various automation tools and product platform with reusability of test automation components taking prominence.

Efforts are being put to build specialized functions and wrappers to address various architectures and technology needs. These automation tools will use the Selenium wrapper by integrating Selenium Web Driver to the backend architecture. The time taken for a release is purely dependent on the amount of automation of the regression suite

In the future, all tool vendors must support Selenium as it will no longer be just an open-source tool. It's going to be a W3C standard.



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## ***Mobile testing continues to forge ahead***

The remarkable adoption of mobile devices and technology in businesses ensures that mobile automation testing will remain on top of the current trends. It comprises of functional, usability, UI, security and performance testing as the major areas. As long as, DevOps, cloud and open source frameworks continue to evolve, mobile test automation will also expand.

## ***Big Data testing & predictive analytics***

Applications, connected devices, and networks generate a huge volume of unstructured and structured data. Applying analytics without maintaining data quality will result in costly and bad decisions. Automated testing of the data ensures quality data is available for analytics tools on time resulting in faster models for utilization by the business leaders.

## ***Cloud-based testing along with environment as a service***

Companies strive to bring high-quality software faster and cost-efficiently to the market. The competition for limited IT and human resources are driving cloud-based testing solutions. It allows them to test various test automation scenarios without having to build their own testing infrastructure. High scalability, flexibility, availability and different test environments are pushing enterprises towards cloud based testing.

## ***Configuration Management Automation through DevOps***

DevOps concept encompasses the idea of development, testing and operations together to deliver quality product through continuous integration. For this to succeed, high level of test automation needs to be incorporated throughout the SDLC from the beginning to ensure efficiency.

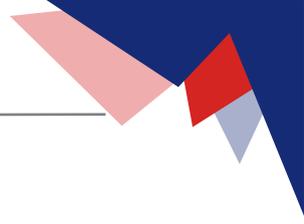
A big part of the product lifecycle is configuration management which ensures that the software, code, operations, and deliverables are manageable, testable and version controlled. Many of the configuration testing tools can automate their testing to control performance, reduce the risk of the software and improve their maintainability.

Release management is no longer a separate function. It is integrated with either the application development phases or operational phases. Here the primary automation and innovation are around the area of development with the availability of both off the shelf and home ground platforms.

## ***Shift Left testing with TDD & BDD***

Organizations are encouraging shift left testing that ensures lesser bugs in the final software. It is about beginning the testing process early in the development cycle, rather than waiting until the end of the development process. The organization saves on time and cost as the longer it takes to find bugs, the costlier it is to fix them.

Customers get their applications without any defects or delay when enterprises opt for test automation using the test-driven or behavior-driven approach for delivery.



## ***Virtualization & Containerization***

The biggest challenges of automated testing are to deliver a quality product on time, while maintaining their update and software environment. While shift left testing will ensure there are less number of bugs in the overall software development lifecycle, virtualization and containerization will ensure speed.

Using virtualization and containerization, the software code is isolated for automated testing. This allows the testing process to find bugs quickly and develop the appropriate fixes.

## ***Agile & collaboration tools***

The pressure to be agile and deliver fast, has enabled merger of the developers, operators and QA roles leading to better collaboration between them. Previously the teams used to utilize different tools as per their roles. Now, they are using the same IDEs and tools for delivering quality product and increase their effectiveness. This promotes transparency, better feedback and communication to achieve their common goals.

## ***Automation and micro services architecture***

Current web applications are moving away from the huge monolithic architecture, towards a micro service architecture. This offers a completely isolated codebase which can be deployed independently. Automation testing of the individual micro service facilitates better testing among them and their integration with each other.

## ***IOT and hardware testing***

Increased dominance of IoT, Cloud and DevOps is putting security on top priority. Ensuring that data is not compromised, stolen, or hacked is the growing trend of test automation. It is not only about testing the software but also the hardware associated with it.

Test automation is a recent innovation that both SMBs and enterprises are leveraging to get their product out in the market quickly. It facilitates a way for quality software to be delivered to get better ROI for the businesses.

GAVS has a proven and tested SQA mechanism and offers test automation to maximize your business value.

For more information on how GAVS can help solve your business problems, write to [inquiry@gavstech.com](mailto:inquiry@gavstech.com)