TALE OF TWO WORLDS

ROLE OF iSAFE/iMobi IN SEAMLESS INTEGRATION OF THE DEVOPS ENVIRONMENT

IP-led test automation framework supported by blueprint for product development in Devops environment can ensure automation in true sense.

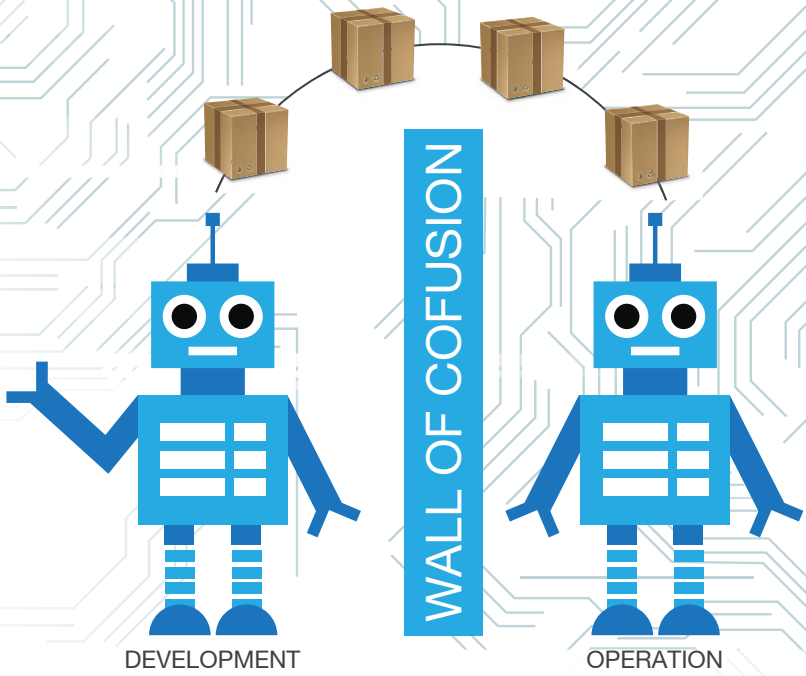
ABSTRACT

DevOps is fast becoming adopted as the environment for product development. It facilitates closer integration of development and operations teams, reducing the time needed to develop and deploy a product. However, it is still in its early stages and the teams continue to work in silos due to the different kinds of tools they need suited to their needs.

An IP-driven testing framework like iSAFE can be the bulwark on which the development, testing and operations teams can integrate more seamlessly, as it provides one key feature needed when handling such a comprehensive environment – traceability. The other advantages, of course, are reusability, automated alerts and shorter testing periods, thus aiding in the quick time-to-market needs of the organisations.

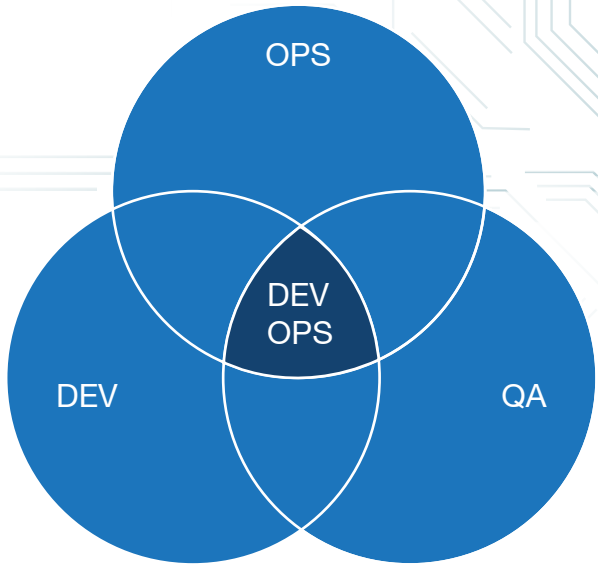
1. THE GREAT WALL OF SDC

Development and operations teams may belong to the same company, but reside in two different worlds. While the former is constantly introducing improvements and new features, the latter has the unenviable task of maintaining stability in an environment of constant change. To synergise their goals and improve the transition from development to operations, process methodologies such as Extreme Programming, Agile, Lean and Six Sigma have improved time to market while assuring quality.



1.1 DevOps – Crumbling Differences

DevOps – which seamlessly integrates development and operations – for quick turnaround of features and their deployment- has become possible due to CI or Continuous Integration.



It creates an environment that encourages:

- Collaborative Development, bringing together development and operations teams
- Continuous Integration and Testing, encouraging seamless integration between the three aspects of application lifecycle
- Quick Release and Deployment, due to shorter and integrated application lifecycle
- Constant Monitoring at every stage right from development to deployment

1.2 MARKET PERSPECTIVE

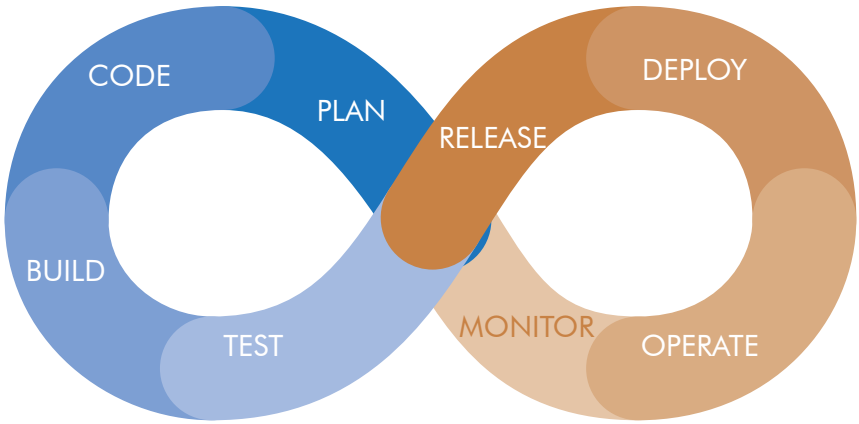
Given its impact on shortening development time, aiding in faster releases of new features, analysts Research and Markets peg the growth of global DevOps platform market at a CAGR of 19.42 per cent during the period 2016-2020.

According to a survey by RightScale, of 1060 technology professionals at large and small enterprises across a broad cross-section of industries, DevOps adoption grew 66 per cent in 2015 to 74 per cent in 2016 in the enterprise segment. Enterprise adoption of DevOps is higher at 81 per cent compared to that of SMBs at 70 per cent.

Some of the other findings include the bottom up approach of enterprises in adopting DevOps, driven by projects or teams, which accounted for 29 per cent, and business units or divisions, at 31 per cent. Only in 21 per cent did top-down adoption occur.

However, the environment is still in its nascent stages. While 'DevOps' aspires to break the wall, Development and Operations still work in silos due to using different tools that may or may not talk to each other. This is especially in legacy organisations where the mindset needs to change, as well as processes and tools that integrate the entire process.

In this scenario, test automation framework has a critical role to play in helping the two integrate better.



"DEVOPS CAN CREATE AN INFINITE LOOP OF RELEASE AND FEEDBACK SEAMLESSLY INTEGRATING ALL YOUR CODE AND DEVELOPMENT TARGETS."

2. QA IN DEVOPS

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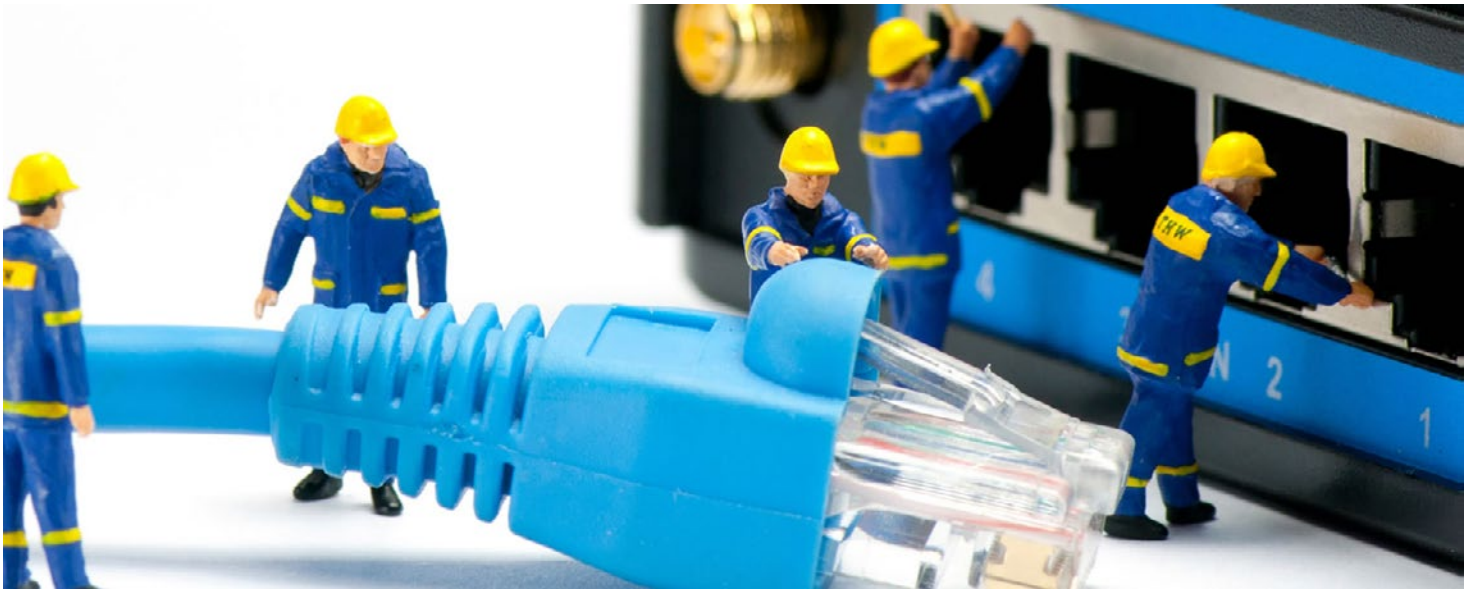
Traditionally, Development and Operations implemented their own set of tests based on their individual needs. In an automated DevOps environment, the role of QA has become even more critical.



2.1 The Foundation Block

Some of the responsibilities that rest on QA include:

2.1.1 Change Management

Given change is the only constant in the development environment, managing the changes, improvements and new features and testing them at development and deployment stages is crucial.

2.1.2 Release Approvals

Traceability of change processes right from requirement stage to release to avoid any disruption.

2.1.3 Continuous Integration

As Continuous Integration requires developers to integrate code into a shared repository several times a day, it has to be verified to detect problems early.

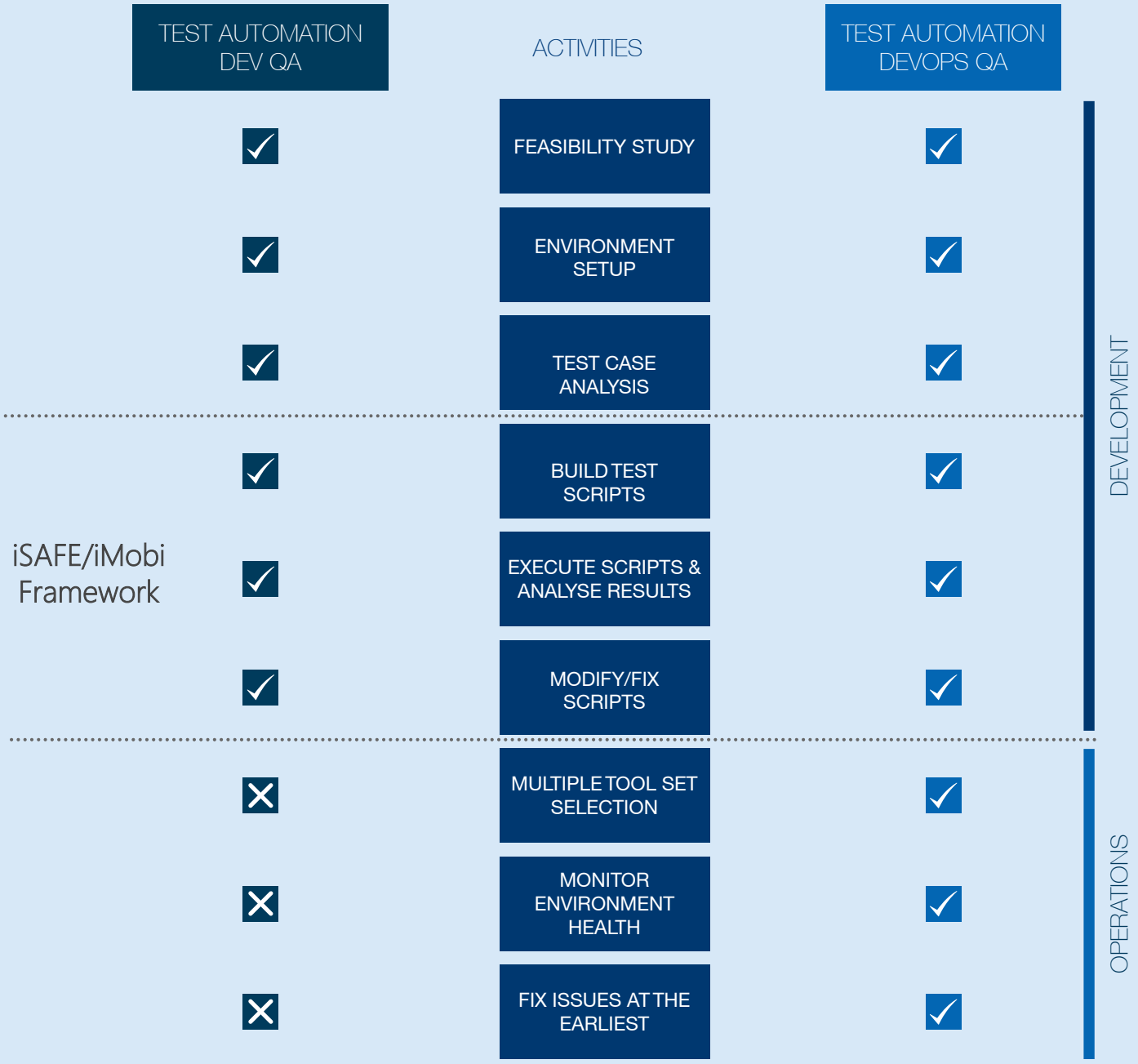
2.1.4 Health Check

Short checks need to be run post deployment to ensure services are running

2.1.5 Defect Management

Any bugs at any stage in the software development lifecycle needs to be reported accurately for quick fixing.

DEV QA TO DEVOPS QA



3 MANUAL TESTING VS AUTOMATED TESTING

Traditional manual testing, which was part of development and operations, runs counter to the needs of the DevOps environment to be fast and ensure shorter development lifecycles.

In this scenario, it has become imperative to automate the testing process as well. Some of the advantages include:

- Repetitive and monotonous manual tasks can be eliminated
- 8x more frequent production deployments
- 50% lower change failure rates
- 3x reduction in cost
- 12x faster service restoration times when something went wrong
- Entire automation is version controlled
- Eliminate human errors
- Most of the activities in Dev Ops can be automated

As a result of automation:

- Jumpstart the testing process
- Free up resources to focus on explorative and context-based testing
- Communicate bugs accurately

4 AUTOMATION TOOL VS FRAMEWORK

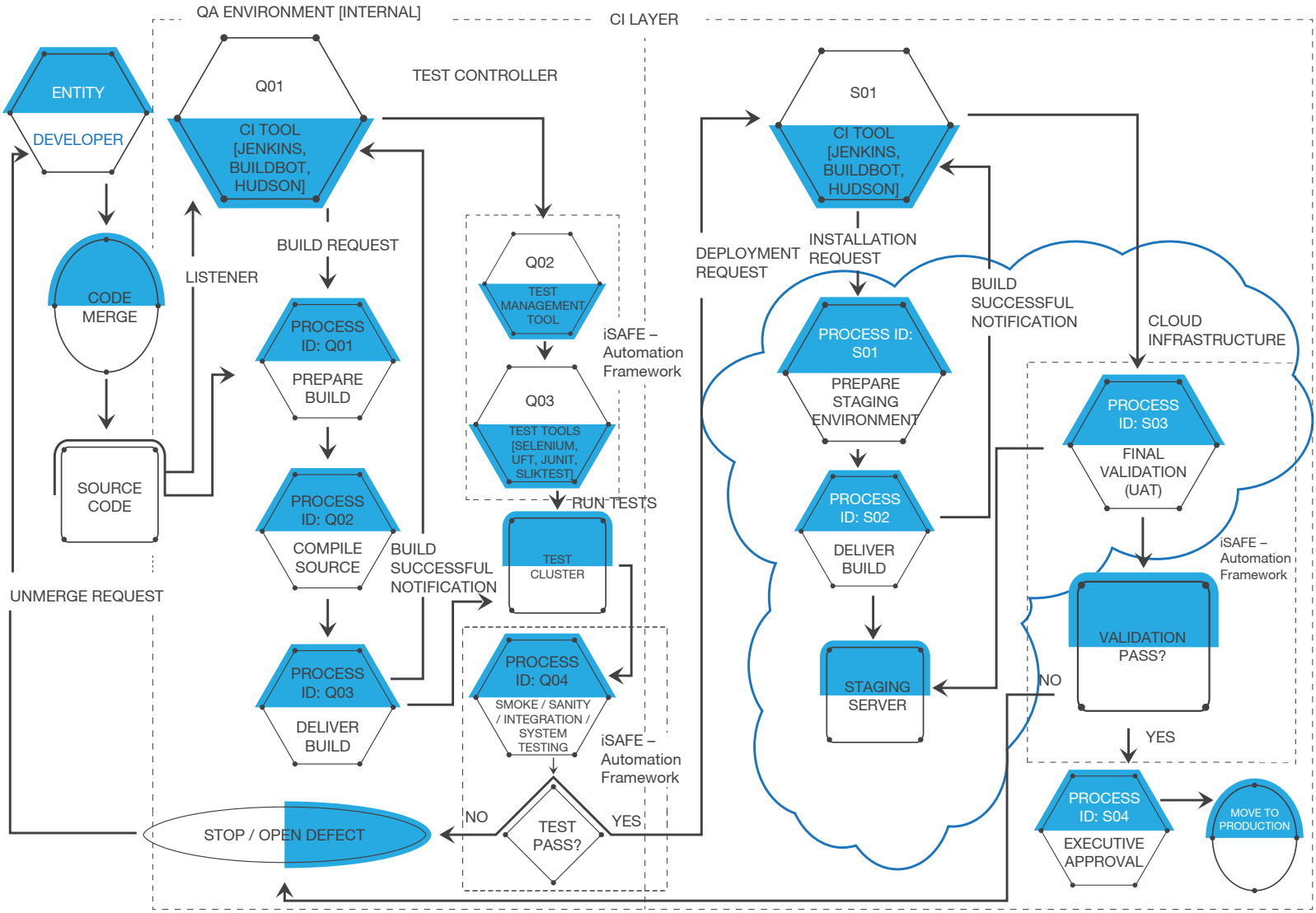
4.1 Automation Tool Challenges

With several automation tools available in the market, it may seem like testing is a plug and play process. However, testing is more than that. It needs:

- Skilled resources – Even to create the correct test cases, domain as well technical expertise is needed. The tool is a mere facilitator
- *Tools Management* – Product development is a continuous process, with new features being created to suit customer demands. A tool cannot anticipate all needs and reusability is compromised as fresh set of test cases need to be written every time. This brings down efficiency and defeats the purpose of automation.
- *Legacy to Cloud migration* – This creates its own set of requirements, making manual intervention mandatory. This again runs counter to the automation philosophy and greatly hinders quick time to market.
- *Collaboration within teams* – The DevOps environment is meant for collaborative development. Be it development, testing or operations, every team has to work seamlessly with the other two for it to succeed. Human resource management in itself is a great challenge.
- *Consistently passing Smoke and Sanity checks* – Smoke test ensures all key features are operational, without any defects blocking their performance. Sanity is a cursory test to ensure the product is performing as required.

Creating a blueprint of the product before the actual development can prove to be an effective guide at every stage of the development lifecycle, giving development, testing and operations teams a quick referral to ensure it is as planned and on schedule.

A WORKING MODEL



4.2 Automation Framework

4.2.1 Reusability

An test automation framework such as iSAFE, which is part of Indium's suite of IP-driven accelerators – branded as iAccelerate - offers reusable features that do not require new scripts to be written every time. The reusable test cases are stored in a library that can recalled as and when needed, thus enabling quick tests and retests.

4.2.2 Jumpstart Testing

It is key/action driven, and does not need testers to know coding, making it easy for them to write scripts only for new features quickly. It also has in-built intelligence that helps testers understand how much automation is needed for an app.

Since DevOps involves multiple builds even in a single day, the framework can handle 7-8 builds per day.

4.2.3 Traceability

The traceability feature in the framework ensures easy identification of features that are affected due to any changes easily, thus reducing bug fixing time.

4.2.4 Smoke and Sanity Tests

The IP-driven framework does smoke and screen test, as well as health check to ensure the app is functioning as planned.

4.2.5 Automated Communication

Any time the test runs into a bug or a feature is not working, an alert is automatically generated and sent by mail, message and any other specified methods. This ensure quick response and bug fixing.

In addition to these, iAccelerator's iFACT and iMobi frameworks ensure cross-browser and cross-device compatibility as needed, ensuring the product/app's performance check comprehensively.

IACCELERATE-IP Frameworks

- iSAFE - For automated regression testing
- iFACT - For all combinations of OSs and internet browsers testing; supports multiple tools
- iMobi - For all types of mobile applications & devices

Check out our Customizable & Portable Software Testing Framework

iSAFE

THE BENEFITS OF TEST AUTOMATION FRAMEWORK

- Faster time to market
- Constant additional enhancements
- Reduced regression run time
- Enhanced test coverage

4.3 PROPRIETARY TOOLS

Proprietary test accelerators plug into every stage of the SDLC to bring in the best-in-class enablers for reducing the TCO and delivering tangible RoI. Open-source/licensed solutions that are tool agnostic ideally meet this requirement.

Key differentiators

- IP-led testing frameworks are:
- Customizable
- Portable
- Re-usable
- Assure quick ROI on test automation

They are capable of enhancing test coverage, running target based parallel execution and efficiently analyse the root-cause.

Check out our Robust Mobile Automated Software Testing Framework

iMobi

INDIUM SOFTWARE – OVERVIEW

Established in 1999, Indium Software is a global Independent Software Testing Services Company with multi-domain focus, fosteredby IP-led innovation. Indium has offices in California, New Jersey & Georgia, USA; Kuala Lumpur, Malaysia and Global Delivery Centers in Chennai & Bengaluru, India. Our 450+ career testers work with a mix of enterprise and ISV clients ranging from fortune 100 to 5000 companies in the US, Canada, India, Malaysia, Singapore, Middle East, UK, Netherlands and Turkey.

Critical to Indium's strategy for accelerated testing is its frameworks, which are branded under 'iAccelerate' suite of frameworks & tools. It is built based on best practices delivered over many years to clients globally. Indium has strong competency in Banking, Technology, Healthcare, Lifesciences, Retail, Education and Gaming industries.

Indium is aggressively pursuing the social, mobile and cloud agenda to position strongly for the emerging paradigms.

Testing is a critical part of the work we do. But that is just one part. At Indium, being a partner, understanding our customers' needs and providing solutions that can help them roll out their quality assured product earlier forms the bulwark on which the framework is developed and run. Continuous improvement as part of our endeavour to achieve this gaol, and innovate for optimum results, our strategy.

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