



Magic FinServ QA

Engineering Services

Agenda

Our Offerings

QA Transformation

QA Ideal state

Magic Automation Framework

Automation Strategy - Smoke UI and Bespoke Frontend Automation

Automation Strategy - API Automation

API Automation Accelerator

Non - functional QA Capabilities - 1

Non - functional QA Capabilities - 2

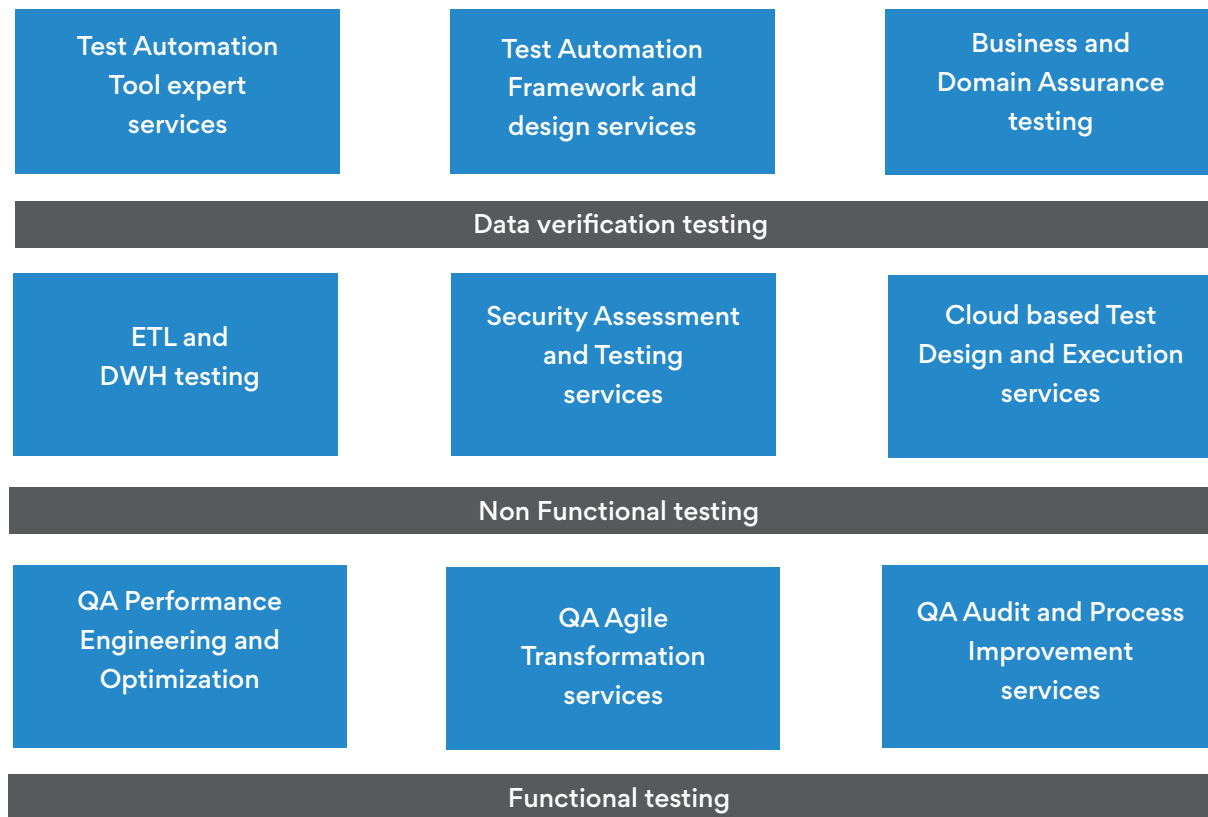
Case Study - A leading Investment Solutions provider

Case Study - A leading Asset Management firm

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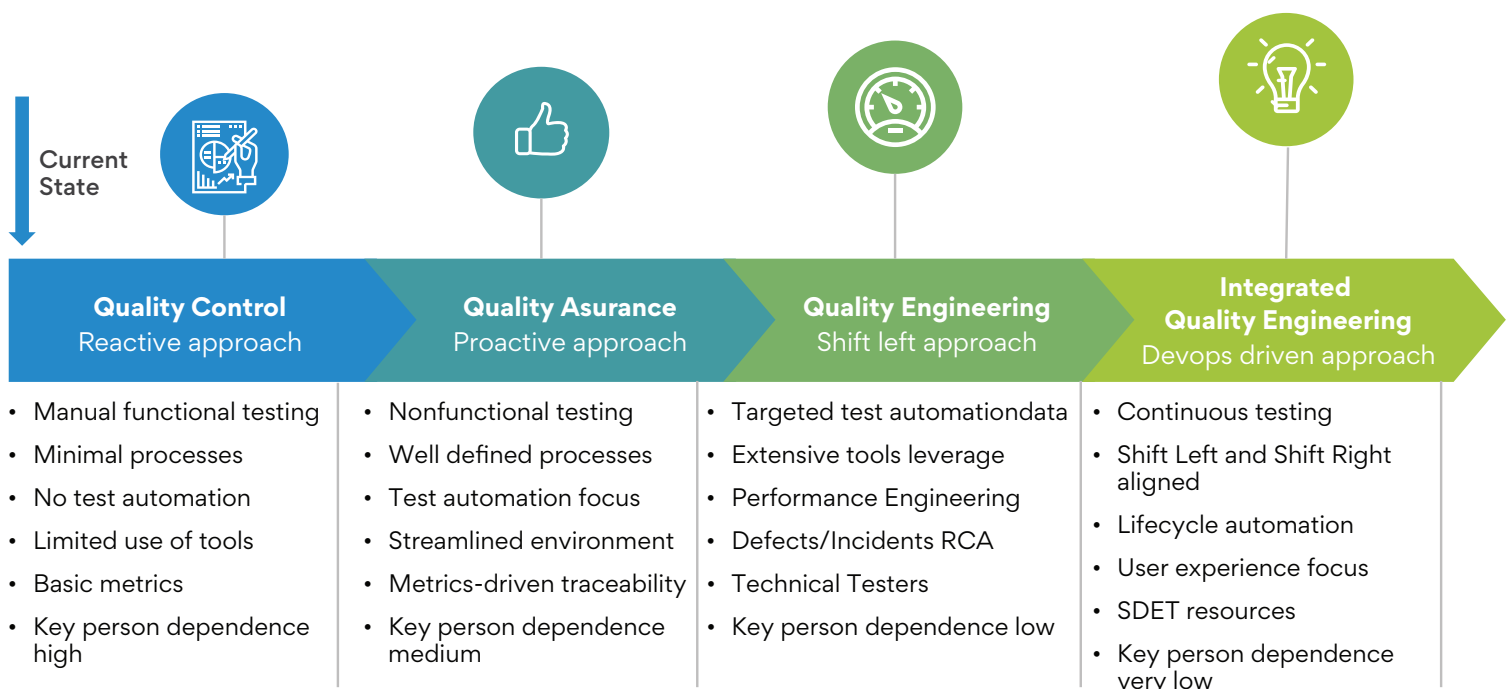
Our Capabilities

Overview



QA Transformation

From a Manual Current state to a Scalable and Automation led QA Organization



QA Ideal State

Typical benefits realized upon putting Automation led CoE to practice



Defects Management and Reliability

- The defect leakage should be less than 5%
- Rejected defects ratio should be less than 5%
- Time takes to fix an issue and provide QA a new build (for High Severity defects) should be less than 1 day



Functional Planning and Execution

- Requirement Coverage should be more than 90%
- Test effectiveness should be more than 90%
- Negative test cases should be at least 10% of the total cases
Peer review mechanism



Automation

- Test duration of Automated Tests should be < 4 hours
- Unit test coverage should be > 90%
In Sprint Automation
- Automation stability should be > 90%



Rate of Delivery

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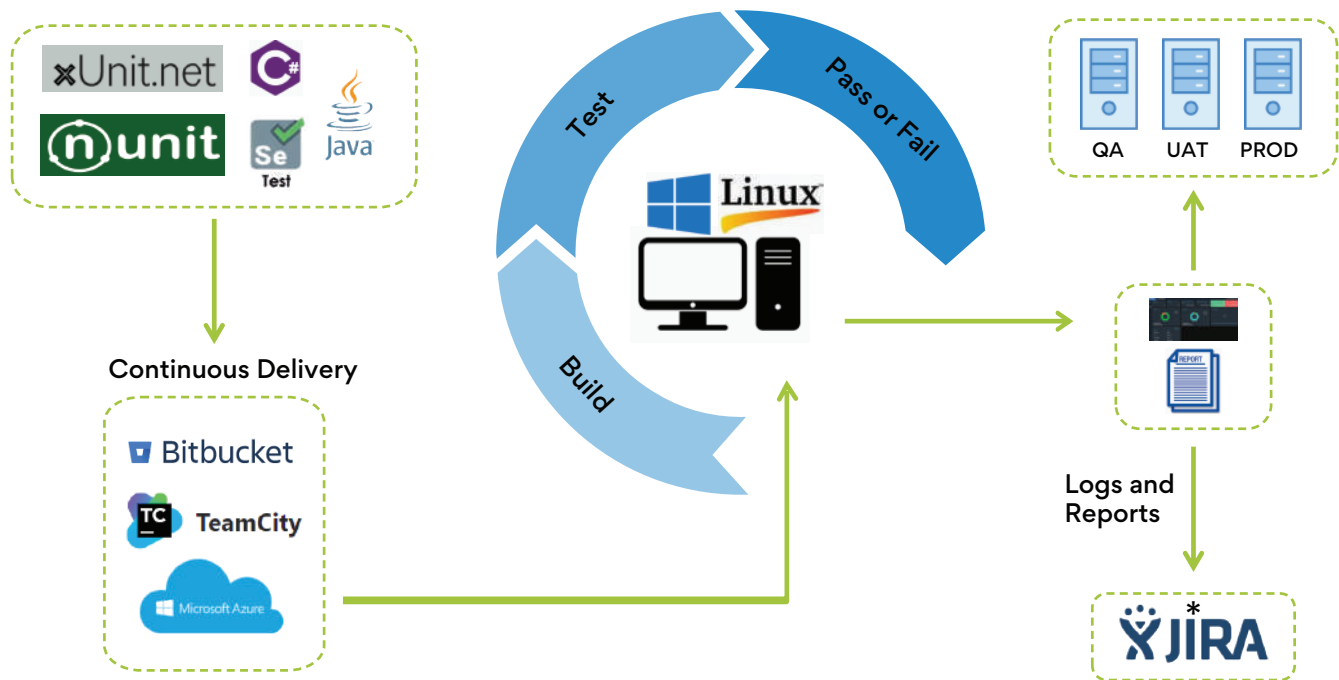


Reporting and Quality Culture

- QA Summary Report - Monthly
- QA Sprint Report - Sprint wise
- QA Automation Report - on each run
Risk and Mitigation Report
- Impact Analysis Report - for each change request

Magic Automation Framework

How does Magic Implement Automation in the environment : Flow Diagram



*any management tool can be used to save the artifacts, reports and log issues. For example - JIRA

** highly customized framework to incorporate any OS/Browser combinations, modernize applications or tool migration

Automation Strategy

Smoke UI and Bespoke Frontend Automation

PAIN AREAS



- Too much manual and monotonous work involved
- Test case execution takes a lot of time
- Can't be 100% error free, coverage of all test cases close to impossible

OPERATIONAL CHALLENGES



- Dedicated team of people required to run the same test cases repeatedly
- Time sensitive because of many other down-stream systems are dependent
- UI updates are frequent and the end-end regression can't be skipped even for smaller changes

BENEFITS



- Automation can be started Day 1 even if the manual test cases are not available
- Increases the efficiency of the team by reducing the manual operational effort
- Can be integrated with the existing CI/CD pipeline to get automatic test execution
- A lot more coverage and accuracy can be achieved
Scheduling helps generate automatic defect reports to remediate the production ready builds
- Can be done for both Desktop and Web Applications
- Tools
 - Open Source - Selenium webdriver, Rest Assured, Cucumber, Appium, Postman
 - Licensed - UFT, RFT, Katalon Studio, SoapUI



Leverages Magic Automation Framework

Automation Strategy

API Automation

PAIN AREAS



- Technical skill barrier as testers are usually poor developers
- Multi-layered validations – Response Data Structure, Functional, Status etc.
- Complexity of Nested API Testing

OPERATIONAL CHALLENGES



- Continuous change management of test scripts due to schema evolution
- Poor coverage due to permutations & combinations of many parameters in the API

BENEFITS



- Automation can be started Day 1
Increases the efficiency of the team by reducing the manual operational effort
Can be integrated with the existing CI/CD pipeline to get automatic test execution
- Extensive coverage starting from Schema and data validation to Integration, Load, Functional and secured API Testing

Magic proposes to build an **API Automation Accelerator** to automate the API automation testing.

It will significantly reduce the effort in test automation by up to 70%.
It will enable the business users to:

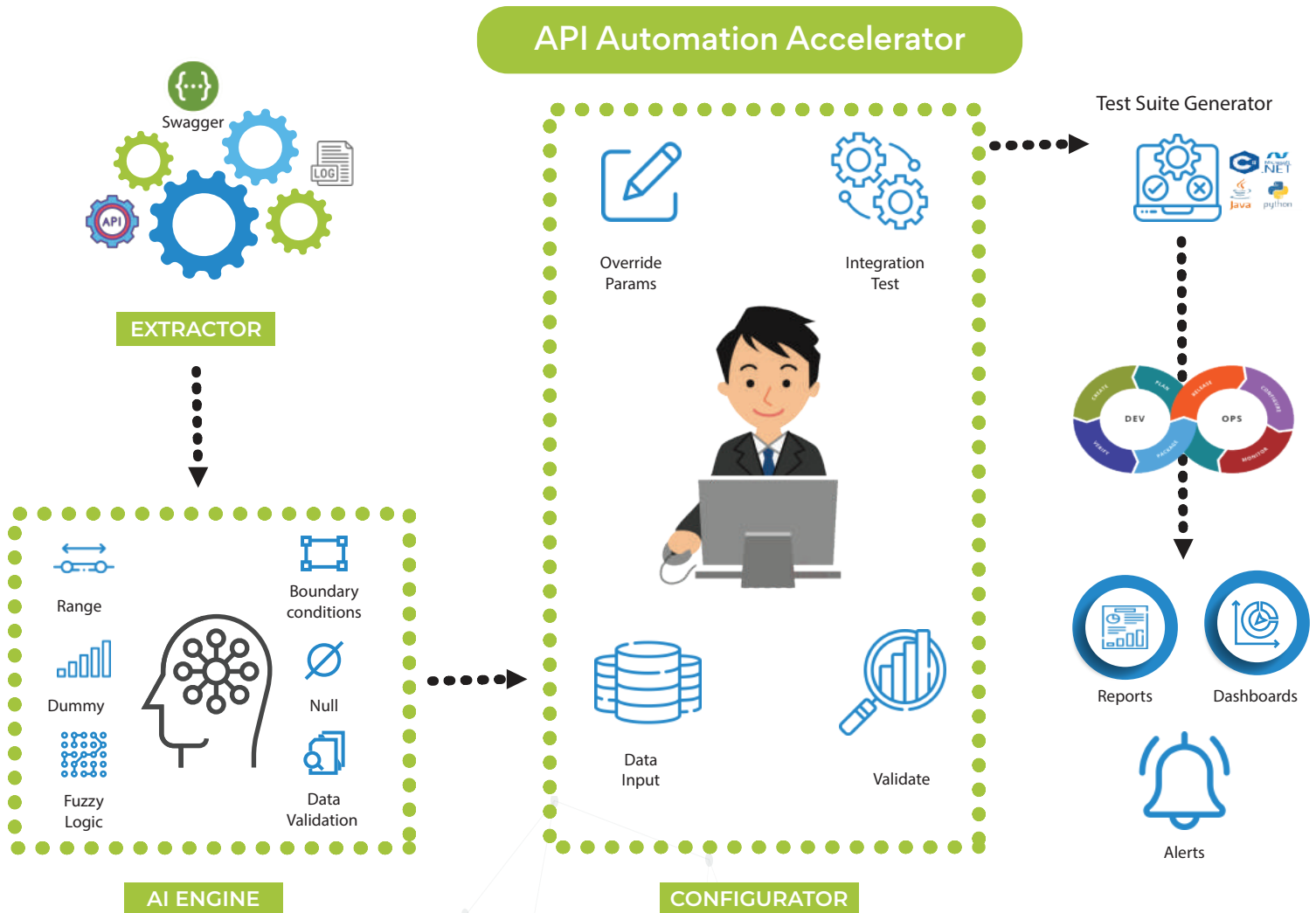
- Auto generate test cases from API logs and specifications. E.g. Swagger
- Auto-Create, Manage and Configure tests using an Interface



Leverages Magic Automation Framework

API Automation Accelerator

Architecture



Non - functional QA Capabilities - 1



Performance Optimization

- Performance Testing
- Load Testing
- Endurance Testing
- Stress Testing



Magic Experience

For a multi-fund Fintech:

- Scope out areas of performance risk, performance goals and requirements to identify potential performance bottlenecks early in the software development life cycle.
- Performance tuning recommendations to improve response times and avoid resource bottlenecks.
- Expertise in both licenced and open-source tools like JMeter, Blazemeter, etc.



Security Assessment

- Penetration Testing
- Vulnerability and Risk Assessment



Magic Experience

For a leading Asset Manager:

- Shift Left - Identifying problems in the design of the product or service as early as possible.
- Capability across many devices, operating systems, and multiple focus groups.
- Assessment and discovery services for implementing the best practices.

Non - functional QA Capabilities - 2



Cloud Specific Testing

- Failover Testing
- Disaster Recovery Testing
- Availability Testing
- Multi tenancy Testing



Magic Experience

For a multi-fund Fintech:

- Verifying system can handle the day-to-day operations and problems without downtime.
- Robust testing for Disaster Conditions.

For a Leading Compliance Solutions provider:

- Ensuring Data Integrity, Data confidentiality and Data availability.
- Expertise in 3 major cloud providers
- AWS, Azure, GCP.



Other Need Based Testing

- Usability Testing
- Accessibility Testing



Magic Experience

For a leading Asset Manager:

- Shift Left - Identifying problems in the design of the product or service as early as possible.
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Case Study - A leading Investment Solutions provider



Business Challenges/Requirements

- Startup culture with Zero Documentation
- Setting up the QA, Agile process from scratch including R&D on tool selection
- Test Automation from Day 1, keeping in mind the frequent changes in the application, integrating it with CI/CD
- Scaling up the team for Cloud, Performance, Security and Usability testing

Technology Landscape

- JIRA for Issue and task management | XRAY for Test management
- Test Automation using Java, Selenium webdriver, TestNG, GitHub, Maven
- Reporting using Extent Reports | CI/CD using GitLab
- Performance Testing using Blazemeter, Jmeter

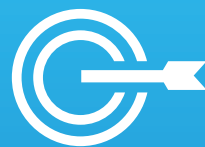


Solution Highlights

- Implemented various best practices, processes to streamline the SDLC cycle - setting up workflows and defining Scrum guidelines
- Improved documentation by helping the POs/BAs, and defining goals/acceptance criteria
- Automated Tests, CI/CD branching strategy for faster go to market
Cloud testing to help achieve High availability, DR testing, Failover testing
- Performance testing to improve user experience, Load, Stress testing for benchmarking

Outcomes

- Automated end to end scenarios along with Smoke/Sanity suites thereby reducing 75% of the execution time.
- Performance testing helped improve the overall response time of the web services by 80%
- Cross Browser, Usability testing helped client gain confidence on application with multiple browser/OS versions.
- Cloud specific testing - Disaster Recovery, Failover, Scalability, High availability
- Security assessment helped to identify and fix the security flaws



Case Study - A Leading Wealth Management Company

Client's mission is to empower wealth managers and private bank's by combining their investment solution with state-of-the-art technology and analytics, to fundamentally transform their business model and investment offering.

Challenge (90 days)

Creation of Test Scenarios based on web application to validate the existing portals, To validate the existing portals, their interoperability creating reusable Automation components.

Solution

Created High level scenarios which helped ensure quality of the application
Created reusable Automation Framework using Java enabling quick Smoke and Regression tests, Performance Tests conducted to check the Infra, Code and Application's behavior

TEST CASES

With only application as the base and zero Documentation, our team developed high level flows using Xmind and created 500+ Test Cases

500+

Automated Tests

Our Automation team worked on detailing and automated 100+ Test cases using highly robust and flexible automation framework

100+

DEFECTS

Our highly experienced QA team raised 200+ defects in JIRA with best practices which helped quick resolution

200+

PERFORMANCE SCENARIOS TESTED

Identified the ideal tools for testing the performance of the application and tested 30+ scenarios with multiple DB load and infrastructure configuration

30+

CI CD PIPELINES

Automated Smoke test were run using the GITLab CI CD pipelines and based on the test results the automated deployments were done

20+

Case Study - A leading Asset Management firm



Business Challenges/Requirements

- The Client had no prior QA testing in place and needed subject experts who would help them in executing quality assurance activities on their project.
- In consideration to Client's need for a QA testing service provider, Magic FinServ got engaged with the client to Start QA testing (Manual and automation testing) for their Web UI Project along with Implementing QA processes & best practices.

Technology Landscape

Robust UI automation pack and framework using •

- Selenium
- C#
- Specflow

Highly customizable framework to perform UI, Web services, Database validation with a fully integrated framework

Set of checklists for frameworks, processes, methodologies, processes and best practices to ensure effective and efficient validations.

Setting up schedulers, CI/CD using Azure DevOps •



Outcomes

- Increased the Functional and Automation test coverage
Priority based Automation approach helped create a suite that can run anytime to test the crucial tests
- Automated Regression suite for P1 test cases, ran twice a week automatically, thereby saving 60% of the overall manual efforts
- Detailed Automation report led to faster detection and fixing of bugs
Conducting regular automation demos and deep dive Sessions with Client. This has uplifted the confidence level of the client
- Technically sound QA team, helped good collaboration between Developers and QA team.
- Our Manual testing solution was appreciated and elevated the confidence level of client where it had functional improvements, efforts and accuracy.
- Automated testing and the fact that we inspected their software after each, and every build gave them peace of mind. which in turn increased Magic FinServ's goodwill

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