

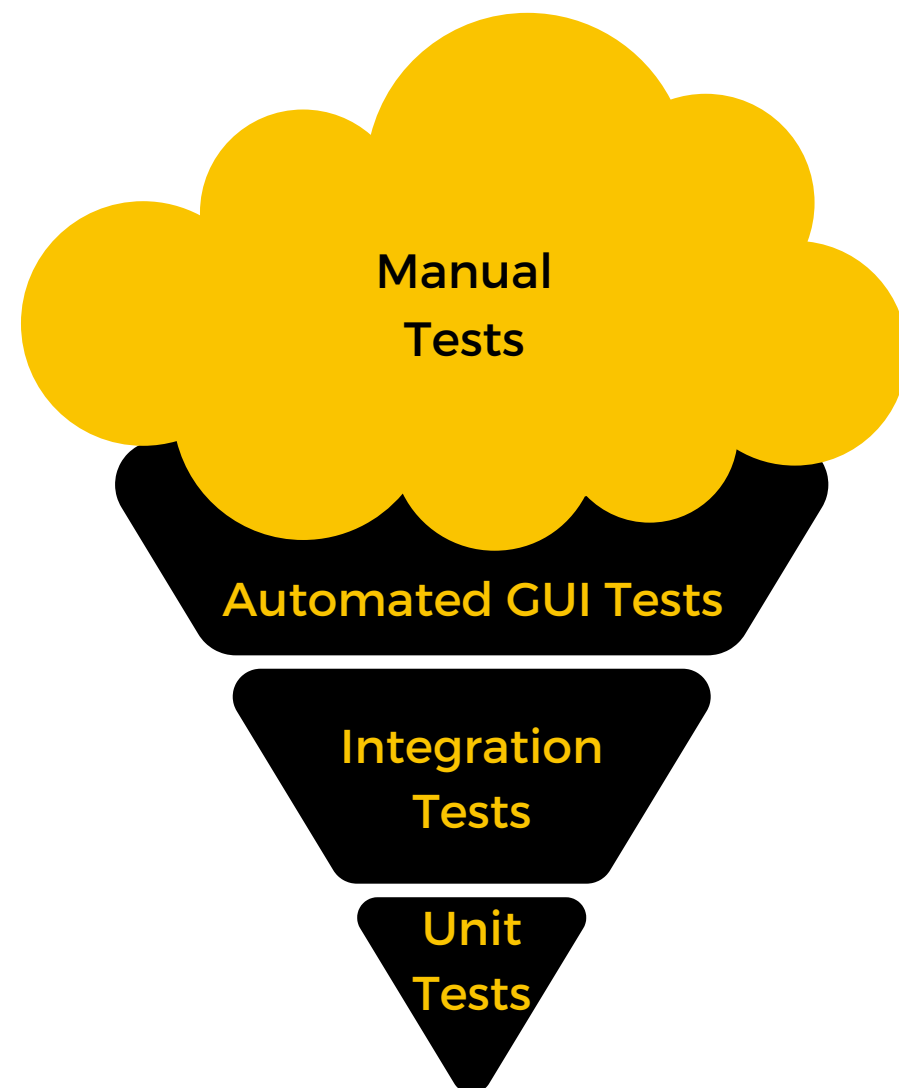
CASE STUDY

**FOR SUPPORT 64 ENGINEERING
TEAMS FOR QA ACTIVITIES
ACROSS DIFFERENT PRODUCT
AND APPLICATIONS**



PROBLEM STATEMENT

Support 64 Engineering teams for QA activities across different product and applications

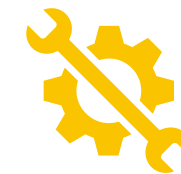


Software Testing Ice-Cream Cone Anti-Pattern



Quality

Maintaining the quality standards



Tools & Technologies

Decentralized and redundancy



Communication

No cross-team communication



Tracking

QA teams works in silos, without Realtime Test management tools or Tracking of work



Knowledge Sharing

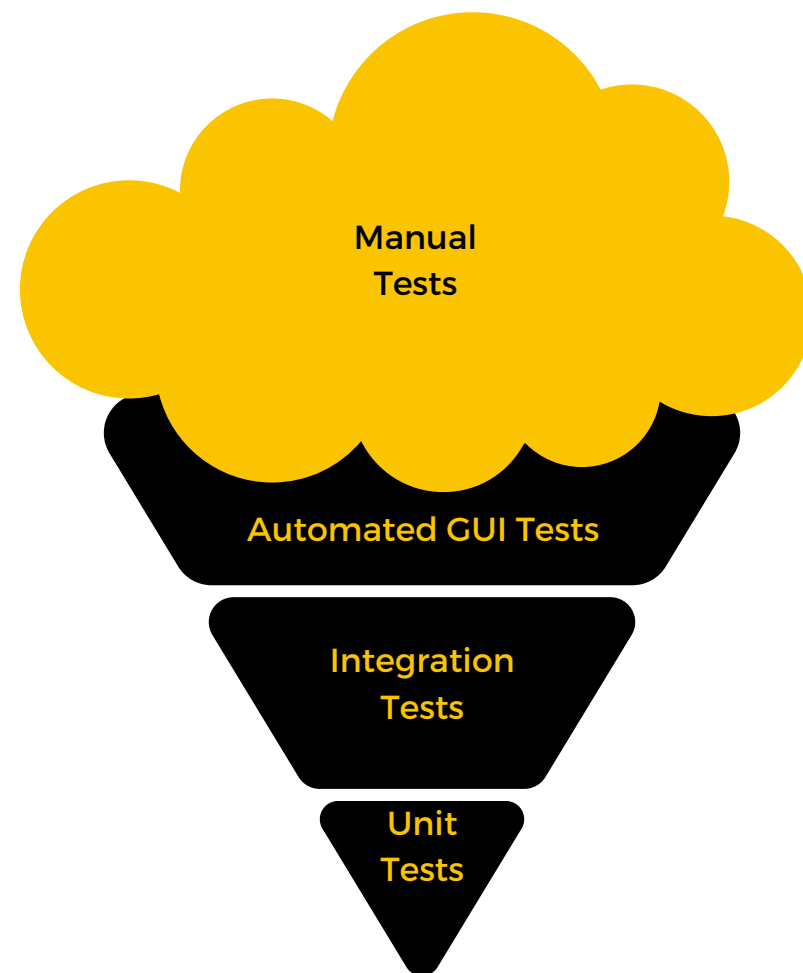
No Centralized place, all knowledge limited to different project teams



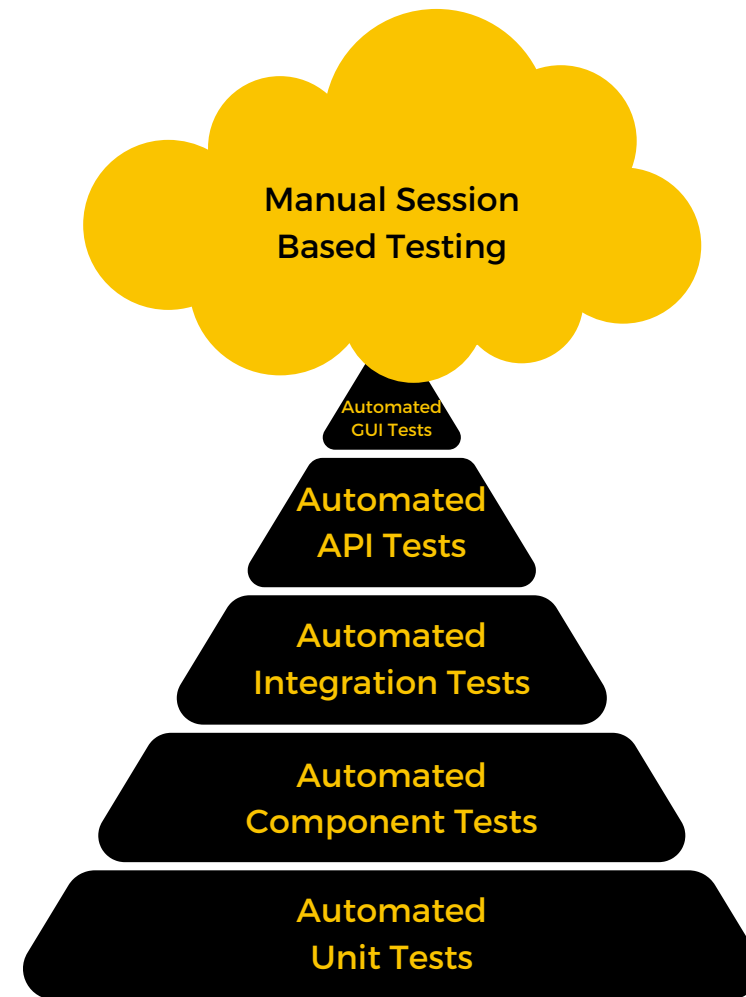
No Automation

No Automation in place and most of the activity was done manually only

SOLUTION



Software Testing Ice-Cream Cone Anti-Pattern

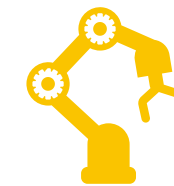


Ideal Software Testing Pyramid



PERFORMANCE HARNESS

Setup Centralized Performance test lab to test all applications



AUTOMATION FIRST

Progressive automation with minimal manual QA



LEFT SHIFT APPROACH

QA working closely with developers and DevOps



STANDARD TOOLS & TECHNOLOGIES

Selecting standard tools & Process across organization



TEST DATA

Centralize Test Data both static and dynamic



VIRTUAL ENVIRONMENT

Test against docker, kubernetes or mocked services

TCOE TEAM

ROLES & RESPONSIBILITIES



TEAM COMPOSITION

- Thumb Rule
- For every 7 team members (dev + BA) there will be additional 2 QA Engineers.
- For every 10 QA Engineer there will be 1 Automation Architect and 1 QA LEAD

Automation architect and QA Lead will have all skills of Automation engineer. They will have additional responsibilities.

AUTOMATION ENGINEER

- Part of agile team and write test cases from user stories.
- Automate test cases & run them in different environment
- QA Skills – Postman, RestAssured, Pact, Jmeter
- Basic Skills – Docker, Jenkins
- Automation tools

AUTOMATION ARCHITECT

- Work across multiple teams and create automation infra.
- Create infra blueprints to run component & e2e test.
- Create tools and setup performance and security tests
- Skills – Testcontainers, Wiremock, RestAssured etc.

QA LEAD

- Work across teams and know cross functional requirements
- Review test cases and maintain test quality
- Accountable for QA practices across services
- People management - Docker, Jenkins
- Automation tools

TOOLS & TECHNOLOGIES

01

JAVA/JS

PRIMARY SKILL

02

REST ASSURED

API TESTING
FRAMEWORK

03

ZEPHYR

TEST CASES
MANAGEMENT

04

JENKINS

CI & CD

05

TESTCONTAINERS

DOCKER &
KUBERNETES

06

WI REMO CK

SERVICE
VIRTULIZATION

07

JMETER

PERFORMANCE
TEST

08

PACT

CONTRACT
TEST

BENEFITS

- ✓ 34 engineering teams onboarded Zephyr to manage test case tracking from requirement->Testcase->Automation->Defect Tracking
- ✓ 12 teams started using automation as part of their release cycle
- ✓ Common frameworks across teams for Web, Mobile, Micro services
- ✓ Around 1000+ test cases automated in different teams
- ✓ Performance Harness was built to test each service individually as well as applications
- ✓ Backward Compatibility was solutioned for SOUP and Postman Test cases
- ✓ Component test and functional test were built for shift left approach
- ✓ Key transformation project was enabled with test automation for fluidity in development
- ✓ Audit and tracking of test case creation, execution and reporting was setup
- ✓ TCOE shared repository for documentation was setup for all knowledge sharing
- ✓ Centralization of test data repository this reduced test failure rate to 5%
- ✓ End to end testing across teams and its impact was covered as jobs were setup for each value stream through global Jenkins

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