ITC INFOTECH

Business-friendly Solutions

ROBOT LED SOLUTION FOR FASTER, BETTER AND COST-EFFECTIVE AUTOMATION TESTING

Introduction

While automation testing is almost mandatory these days, often there are multiple test scenarios where brute automation does not work. For example, automating an end-to-end regression scenario that comprises of complex processes cutting across multiple applications – like SAP desktop, mobile apps, APIs, data warehouse jobs, database validation, document validation etc. – would be impossible in Selenium. Also, the time and cost to integrate a combination of open source and commercial tools and building an overarching framework to orchestrate these automation tools would be a herculean task.

At ITC Infotech, we have completed some very challenging and compelling use cases where we have leveraged RPA tools and testing bots to achieve end-to-end regression test suite for many complex application landscapes.

We adopted UiPath to transform testing practices/COEs within organizations from 'cost' to a 'value' center, offering up to 30% cost benefits and 40% improvement in productivity. Owing to the production grade quality, the test automation scripts are reused for process automation thereby offering time and cost benefits to our customers than having to reinvent the wheel by automating the same processes again.

RPA – A game changer for automation testing

Test cases are processes which mimic a real user behavior when combined with test data. With the need for testing being more frequent, continuous and on-demand test automation seems to be pivotal in the software development lifecycle. Automating testing makes it possible to run tests quickly and repeatedly and the software involved can also provide reports and compare results. Test automation helps deal with problems resulting from manual testing, including missed deadlines, quality issues and human error.

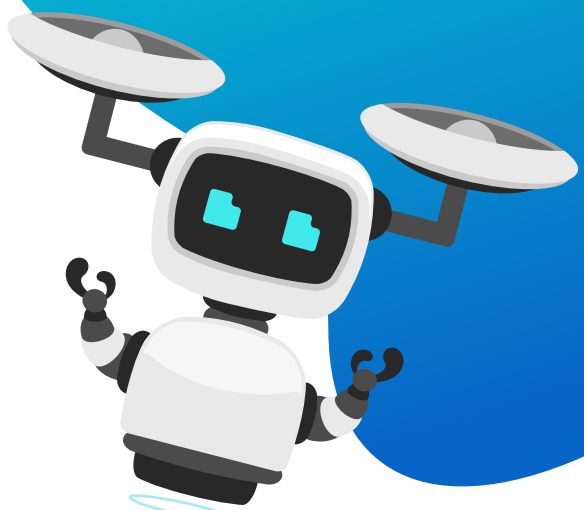
Given the complex landscape of applications with varied underlying technologies – such as Mainframes, SAP, SDFC, custom apps, mobile apps, APIs, DWH jobs, invoice documents processing to OCR functionalities – the idea to automate end-to-end processes remains theoretical.

A robust automation framework comprising of various test automation tools ranging from open sources to commercial and a multi skilled team of SDETs (Software Development Engineer in Test) is the minimum requirement to be able to achieve the desired automation coverage and the return on investment. Despite a huge investment in multiple Test Automation tools, and multiple skills with reference to Automation Testers, many organizations are unable to achieve the desired end-to-end test automation coverage or even realize the value and benefits.

RPA tools are a game changer. They allow low code automation of a wide variety of applications from User Interface to backend. They also allow for both scheduled and on demand execution of automation scripts. RPA is thus suited for automating a portfolio of applications, that too with reduced skill intensiveness.

Automating the business process has long been a vision of many testing tools but they never caught on owing to various reasons such as:

- Traditional test automation tools offer a broad range of techniques based on keyword search, data-driven events, process completion, UI interaction, API testing, and record and replay. Unlike RPA, test automation supports a wide range of devices including mobile, desktop, mainframe, kiosks, Citrix, OCR, chatbot channels, and even Internet of Things (IoT)-enabled devices
- Test automation scripts from traditional test automation tools are most suitable to test or pre-prod environments whereas automation scripts from RPA tools are of production grade quality with features such as encrypted vaults for credentials, control towers, and audit trails for governance
- Traditional test automation requires automation testers/SDETs with strong programming skills. On the other side RPA tools have made it easier for business analysts/testers to prepare and run their testing in an automated way with minimal programming skills
- RPA tools also enable business-focused UI automation both on-demand and scheduled in nightly builds, especially for standard solutions like Dynamics 365, SAP where implementation vendors seldom have the need look at the code below the GUI. Unlike traditional test automation where an understanding of the underlying technology is pivotal to choose the right test automation framework and scripting language



Below is a comparison of RPA Led Test Automation vs Traditional Test Automation:

Traditional Test Automation	VS	Ui Path Test Suite
Multiple tools, framework, programming languages and integrations	Complex large-scale E2E Test Automation	One tool and framework for automation of wide range of applications
Varied Skills – Java, Python, Selenium, Appium, API Automation etc.	Programming Knowledge	Minimal to Nil - Has prebuilt framework, activities & packages
Restricted to Test Environment	Level of Automation	Production Grade Automation Scripts
Complicated, higher effort & cost	Ease of Scale and Maintenance	Centralized Automation enables higher reusability & easy maintenance

Cost Center → Value Center

Benefits of RPA Led Automation Testing

ITC Infotech's Robot Led Automation Testing Solution offers the following 3 key benefits

30%

FASTER

- 30% faster in Time to market
- 50% increase in the number of releases

40%

BETTER

- 3X Accelerated through put and 75% Improved Automation Coverage
- 40% lesser Maintenance Effort

30%

COST EFFECTIVE

- Up to 30% Cost Savings owing to Unified tool, Framework , Skills – One Stop Shop for All Automation Needs
- Reuse Test Automation for Process Automation

Robot Led Automation Testing

Shift Left Test + Process Automation

Scaling automation is pivotal to a successful digital transformation. Whether they are software robots that perform business processes or tests that evaluate quality, both contribute to sustainable business growth and help improve operational efficiency. Shift Left Testing + Process Automation is an approach that enables early test automation, in-sprint automation thereby avoiding multiple rounds of manual testing before test automation starts, plus reusing test automation script for process automation.

Consider the following scenario:

- During User Story walkthrough session, the product owner walks you through a requirement related to campaign creation and deletion of campaign in SFDC
- Testers design the manual test cases and run them manually. For regression testing, for every release the campaign creation and deletion flows are automated
- Once the application goes in production, you have the sales planning team manually creating weekly/monthly campaigns and deleting them once the campaign cycle ends. This being a manual repetitive activity you think of automating it using RPA
- RPA business analysts from automation team get started with process discovery, process mining, followed by RPA developers who work on bot development, bot testing, bot deployment, monitoring and maintenance

WHAT IF:

- There was a centralized team for all the automation requirements say "Intelligent Automation COE?
- The Intelligent automation COE team automated the processes during the testing cycle using an RPA tool?
- Process discovery and process mining was done during User Story walkthrough by the Intelligent automation COE team?
- Robots were designed to handle different sets of data (one for test environment, one for production environment)?

Using these principles, at ITC Infotech, we have developed the RPA led test automation solution that brings about a true Shift Left of Test and Process Automation. Adopting UiPath Test Suite for application testing, we create a world-class intelligent automation Center of Excellence for our customers that accelerates scaling by:

- Centralizing the vision of automation using a common automation platform and approach
- Sharing automation assets between test and RPA teams
- Ensuring every automation deployed is resilient, compliant, and high performing
- Sharing skills, experience, and automation resources across the organization

Automation Framework – Key Tenets

Test Data Generation, Service Virtualization, Intelligent Document processing, OCR features, etc. - Ensures E2e Complex Automation Coverage

Built in Test Management (UiPath Test Manager) and features to provide html reports – detailed & summary

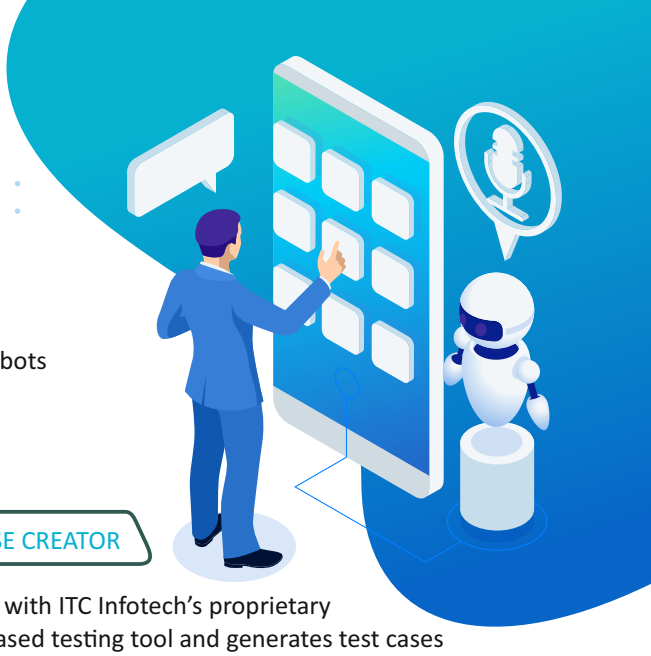
Deployable to DevOps Pipeline – DevOps Agent can trigger .bat file with updates to DevOps Dashboard

Built-in features to batch and sequence Test Scripts and to ensure modularized approach for Test Script Design

Reusable Test Scripts for Process Automation with exceptions & screenshots captured for every key validation point step

Personal to Assist Test Management & Manual Activities such as Defect Retest, Quick Runs, Environment checks, etc.

Automation Packages Built leveraging this Framework



Our RPA led test automation framework combined with our Tester Persona bots enable faster, better and economical ways of testing and building test and process automation bots.

3 IN 1 BENEFITS
1 Hyper Automation Framework

Driving Agile DevOps Leverage
Enables Process Discovery & Requirement Analysis

New Age - Early Test Automation
In Sprint Test Automation with Better Coverage, Reusability & Maintenance

Enabling Process Automation
Re-usable Process Bots, Future Proofing

TEST CASE CREATOR

Interacts with ITC Infotech's proprietary model-based testing tool and generates test cases

LOCATORS IDENTIFIER

Locating identifiers across all web applications needed for automated quick test step designs

DEFECTS RETESTER

Selection of test cases marked for Defect Re-Testing and triggering the same for retests

ENVIRONMENT READINESS CHECKER

Automated sanity checking of environments covering all applications to be tested

QUICK AUTOMATION RUNNER

Triggers execution of automated test scripts based on user input vs triggering from an automation tool/ DevOps

REGRESSION ANALYSER

Identifies new and modified cases for regression testing

DEFECT TO DO LIST CREATOR

Identifies defects that need attention and sends them to the respective to do lists

TEST DATA COMBINATION GENERATOR

Generation of all combinations and orthogonal array combinations for test data needs of a project

Today, RPA driven test automation is taking center stage with RPA platforms getting more mature and testing becoming more complex and distributed. While most RPA platforms are catching up to service this demand, we see UiPath leading the curve and evolving the Test Suite to service the customers' requirement. ITC Infotech has built a first-of-its-kind test framework on UiPath and the results are really encouraging. We expect to see significant developments with other RPA platforms too in the coming days.

Reference Links

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Author Profile

Subashini Damodaran is our Global Head for Automation Delivery Practice and has over 17+ years of experience across Business and IT roles. Subashini has led engagements across multiple domains for many of the fortune companies in the area of Test Automation and Process Automation. As an automation evangelist , Subashini has been pivotal in building the RPA Led Automation Testing Solution that has helped to develop new client base ,extend existing engagements and help create long term business value. She also works on the Go To Market initiatives for Automation with our Sales Leader, clients and RPA platform vendors.

About ITC Infotech

ITC Infotech is a leading global technology services and solutions provider, led by Business and Technology Consulting. ITC Infotech provides Business-friendly Solutions to help clients succeed and be future-ready, by seamlessly bringing together digital expertise, strong industry specific alliances and the unique ability to leverage deep domain expertise from ITC Group businesses. The company provides technology solutions and services to enterprises across industries such as Banking & Financial Services, Healthcare, Manufacturing, Consumer Goods, Travel and Hospitality, through a combination of traditional and newer business models, as a long-term sustainable partner.

ITC Infotech is a fully-owned subsidiary of ITC Ltd, one of India's foremost private sector companies and a leading multi-business conglomerate.

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