RPA led Testing

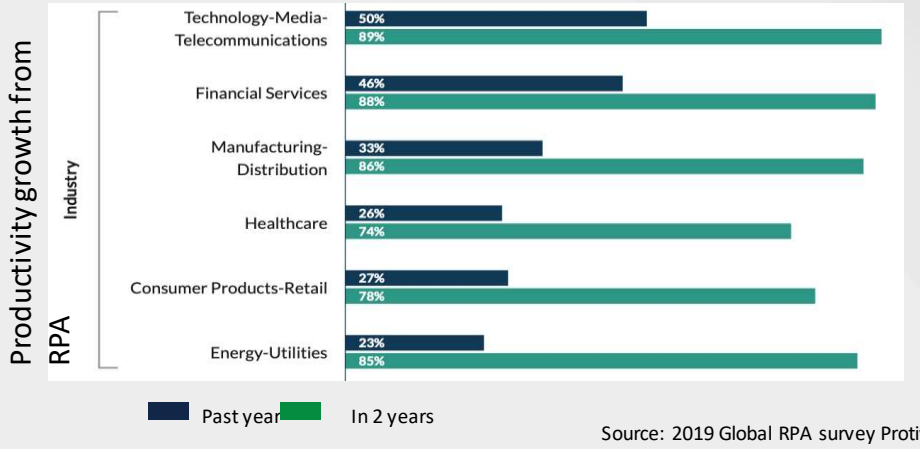
A Playbook

What are the biggest benefits of RPA use? (by Industry)

	Financial Services	Technology-Media-Telecommunications	Healthcare	Energy-Utilities	Manufacturing-Distribution	Consumer Products-Retail
Increased productivity	19%	19%	22%	24%	23%	23%
Better quality	11%	21%	16%	13%	18%	15%
Stronger competitive market position	18%	15%	13%	16%	14%	15%
Higher customer satisfaction	12%	12%	14%	10%	10%	12%
Greater speed	8%	10%	9%	11%	14%	10%
Greater employee satisfaction from elimination of mundane tasks	11%	5%	6%	5%	8%	8%
Improved compliance	6%	6%	5%	6%	4%	6%
Fewer errors	6%	5%	6%	6%	5%	4%
Higher revenue generation	5%	4%	6%	5%	3%	4%
Reduced costs	4%	3%	3%	4%	1%	3%

Weighted average for importance of RPA benefits by industry. The average was derived by assigning a weight of 3 to the top benefit, 2 to the second most important benefit, and 1 to the third most important benefit, then dividing by the number of weights (6) and multiplying by 100.

	Beginners	Intermediates	Leaders
Increased productivity	24%	23%	18%
Better quality	12%	17%	17%
Stronger competitive market position	10%	16%	18%
Higher customer satisfaction	10%	14%	10%
Greater speed	10%	11%	11%
Greater employee satisfaction from elimination of mundane tasks	4%	6%	12%
Improved compliance	8%	6%	4%
Fewer errors	5%	3%	8%
Higher revenue generation	9%	3%	1%
Reduced costs	8%	1%	1%



Source: 2019 Global RPA survey Protiviti

Top 6 Factors for RPA

Compatibility & Coverage

- Process "agnostic"
- Shift-Right enablement
- Connects to apps already used by the business

Control

- Processes & Virtual Workers
- Single point of control
- Clear exceptions handling
- Scheduling/prioritisation

Audit

- Customisable full audit trail
- MI reporting/monitoring

Security

- Non-invasive interaction
- Securely manage processes
- Sensitive data protected

Virtual Worker Concept

- Runs automated process
- Available 24/7
- Quick reassignment
- Immediately Scalable

Development Speed

- Fast deployment of solutions
- E2E coverage of heterogeneous systems
- Shift-Right enablement

Our View - Traditional Automation (vs) RPA Testing

Description	Traditional Automation	RPA
Primary Usage	Tools are used for one specific environments like Web or Desktop Automation; mostly limited to pre-UAT	Not a Testing tool, but a platform independent Solution. Its works across systems in the Eco System; **Enables Shift-Right**
Working Layer	Works on UI & data layer, does not mimic user actions; it only executes the programmatic instructions given	Can mimic user actions & can cognitively take decisions to perform actions.
Development of Scripts	User needs to have programming skills to automate the functionality and is different for every tool	Automation is as simple as creating flowchart diagram. Engineer have to focus on functionality under automation.
Process / Domain Knowledge	User or tester requires to understand the process flow of the functionality; need help from BAs / domain testers	Business Analyst / domain tester can also do RPA of business functionality and it's a simple process flow.
Complex Systems	Cannot automate all Complex Systems	Has lesser dependency on architecture of system under test.
Design Time – Test / Process	Feasibility study and test designing takes longer time, Scripting takes Moderate time	Define Process and Possibility of drawing a simple flowchart and Build scripts.
Test Execution	Heterogeneous Technologies and Scripting models to be collaborated to achieve one Automation	Simple scheduling and Script Trigger is enough to executing across Heterogeneous Systems and Machines.

Our Suggestions

Short Term Adaptability - To Current Situation

Test BOTS

BOT's auto Trigger Applications and provide Test Data Inputs', based on Test / Customer Journey Configurations

BOT's Just validates the Outcomes from segment / modules within the process

Various Customer journey with combinations of Data, Environment can be repeated like performing settlements and sending out deal confirmations etc

Features

- Helps to on-Board RPA functionality immediately to the system.
- **Mostly limited to performing settlements and sending out deal confirmations, Audit & AML etc data intensive processes**
- Human Touchpoints needs to be handled independently.
- Most of the traditional automation Limitations are still applicable.
- Intelligence and handling the Test Outcomes are enabled.

Long Term - For Organizational Benefit

Integrated RPA within Organization Environment (Dev+Ops support)

Multiple BOT's created for all Major Process across Ecosystem

BOT's speaks to each Other and passes on Data / Info needed fo next Process

Validates the Data as per the customer / configurations and executes Next Process Defined

Multiple Iterations can be performed based on

1) Environment changes like Desktop / Mobile
2) Various Test Data Configuratio ns

Features

- **Absolute Dev+Ops support through automation of both processes and software tests**
- Apps / Core Functionality is first created, followed by RPA Bots
- Integrated Ecosystem / Apps with BOTS
- Reduced / No Human Effort or Touch Points
- Easy to Maintain on functional and process upgrades
- Easy to integrate Validation / Testing
- Easy to have DevOps or TDD approach for newer modules

RPA based Automation Solution

Planning

Business Team Interactions

Test Plan and Strategy

- Initiation
- Aligning testing according to the implementation plan.
- Defining test objective, goals & Strategies
- Consolidate pre UAT and UAT scenarios
- Defining test processes
- Resource planning
- Risk management
- Understanding Business processes
- Priotise Business process

Robotic Components Library

Application Objects Store

RPA Processors

RPA Execution Data

RPA Automation

Run Configuration

Software Robots

Synthetic & Masked Data

Progressive and Incremental

Business Process Focused

End to End Transaction

RPA Test Suite

Platform and Browser Validation

Build validation Test

RPA Analytics

RPA Execution Logs

Performance Testing

Synthetic & Masked Data

Design & Build

Execution

Perf PACK

Performance monitoring & Profiling

RPA Implementation in a Agile mode

Daily Scrum

Sprint 1-4 Weeks

Develop Robotic Process

- Build Ref implementation
- Implement High Priority Components of Automation
- Integrate with external Libraries and Components for interactions
- Implements smaller BOTS

Monitor

- Identify Process Changes
- Use Predictive Analytics to Retain Robots for any changes in Systems
- Use Adaptive Analytics for better insights.
- Update Test Results in TM tool

Inputs from Stake Holders

- Identify Requirements for Automation Orchestration & Management Platform
- Identify Key Layers for Automation
- Prioritize Required Components
- Evaluate Third Party Plugins and Interfaces

Design and Create RPA Process List

- Crate a list of Automation API's to interact with components & Layers
- Design Components & Size Effort

Finished Work

Spring Planning **Meeting**

Product **Backlog**

Product Increment

Spring **Backlog**

Sprint Backlog

- Pick top process, evaluate and implement
- Improve & Deploy
- Measure the effectiveness
- Crate libraries for extensions and new interfaces

Inputs from Market

- Identify retuning needs for Automation Orchestration & Management Platform
- Prioritize Required Components

Our Approach

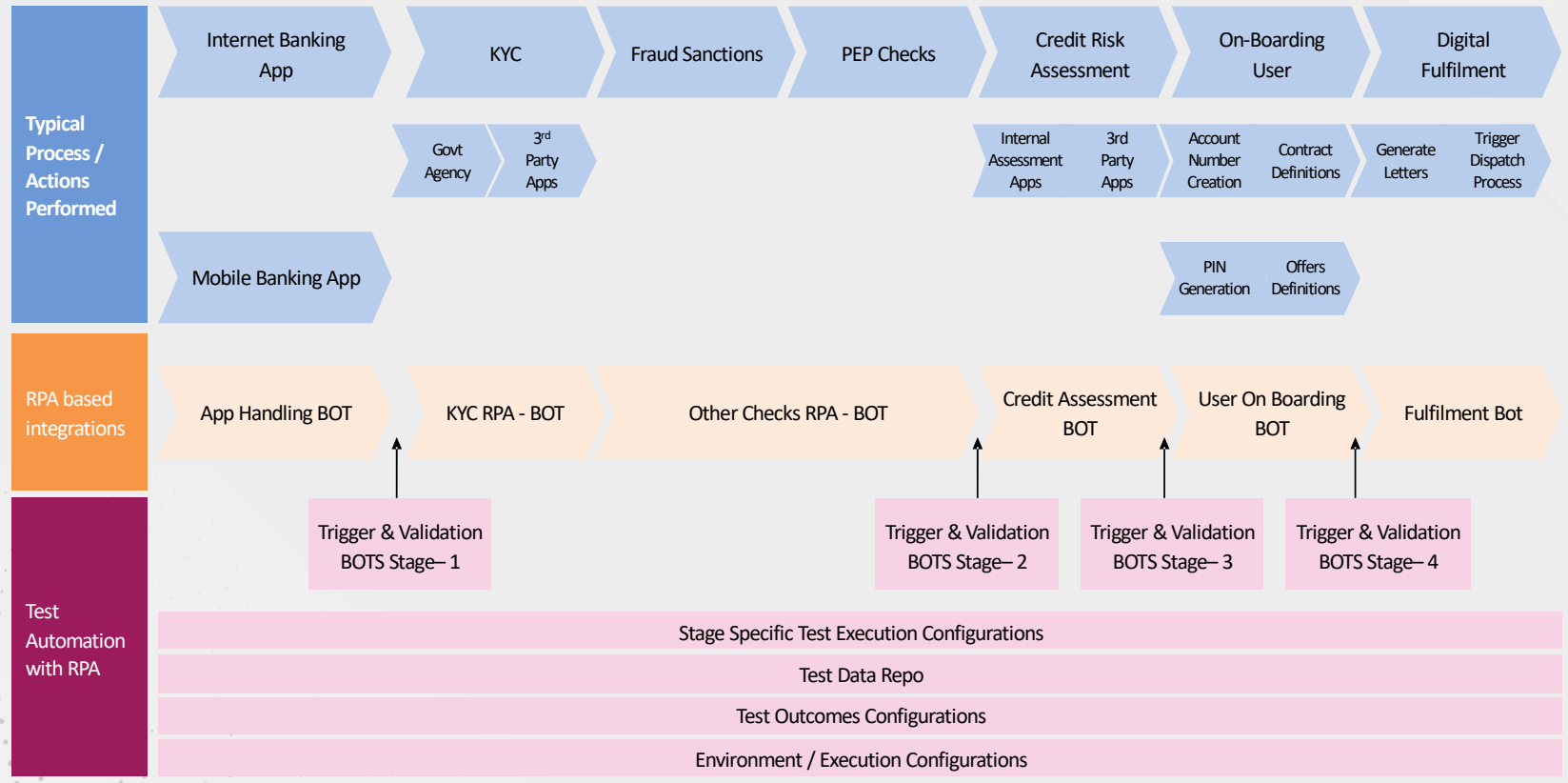
	Assess	Measure	Identify	Evaluate	Prove	Build	Launch	Monitor	Repeat
Actions	▪ List all available Scenarios to be Tested ▪ Categorize & consolidate Scenarios & Business Process for their need and complexity	▪ Measure components and its complexity ▪ Time taken today for its manual or semi automated execution	▪ Identify the Scenarios / Process components for its repetitiveness. ▪ Components that are reliable ▪ Verify for possible Automation ▪ Dependencies of Upstream and Downstream Systems.	▪ Estimate time needed for Manual and Automation. ▪ Calculate the Role for Automation ▪ Pick the most needy for further scripting.	▪ Perform PoC on the selected process. ▪ Make sure the complicated Ecosystems are able to be connected. ▪ Verify for Automating the Human touch areas specifically like Handwriting modules etc.	▪ Start building the Scripts. ▪ Create loggers for future traceability	▪ Start executing the complete Ecosystem. ▪ Tweak the Scripts as needed	▪ Monitor the E2E execution. ▪ Verify if critical paths are getting logged and verified.	▪ Execute as needed repeatedly. ▪ Schedule if necessary for automatic Triggering
Deliverables	▪ Comprehensive list of process across Systems ▪ Classified list based on complexity, repetitiveness and more	▪ Report on detailed time taken for necessary executions.	▪ List of possible Process with Reliability marking.	▪ Need and possibility for Automation. ▪ Possible time taken for complete Automation	▪ Dependency list of components ▪ Final List of process that can be automated. ▪ Execution Plan	▪ Automated Scripts with Loggers and Traceability Matrix	▪ Execution Report ▪ Logs if any	▪ E2E success logs	▪ Transaction Results ▪ Issues Analysis and reports ▪ SLA Compliances Report

Tools for Consideration

#	FEATURES	AUTOMATION ANYWHERE	UIPATH	BLUEPRISM	TRICENTIS	LEAPWORK
1	Learning	Basic developer	Visual design	Ability to develop and control	Visual Design	Visual Design
2	Re – usability	Yes	Yes	Yes	Yes	Yes
3	Cognitive Capability	Medium	Medium	Medium	High	High
4	Accuracy	Reasonable accuracy across mediums	Shines in citrix automation designed for bpo automation	Desktop, web and citrix automation available	Reasonable accuracy across mediums	Reasonable accuracy across mediums
5	Robots	Front office & Back office robots	Front office & Back office robots	Back office automation only	Front office & Back office robots	Front office & Back office robots
6	Operational Scalability	Large scale robot deployment is limited	Frequently fail/crash in medium project.	Good & Execution speed is very high.	Good & Execution speed is high.	Good & Execution speed is high.
7	Macro Recorders	Yes (faster process mapping).	Yes (faster process mapping).	No (does not exist).	Yes	Yes
8	Architecture	Client server architecture	Web based orchestrator	Client server architecture	Client server architecture	Client server architecture
9	Access	App based access only	Browser and/or mobile access	App based access only	App based access only	App based access only
10	Process Designer	Script based	Visual process designer	Visual process designer	Visual process designer	Visual process designer
11	Reliability	High	Moderate	Very high	High	High
12	Pricing	Higher cost of deployment	Aggressive, attractive entry level pricing	The high cost of acquisition limited training available	Higher cost of deployment	Aggressive, attractive entry level pricing
13	Training & Certification	Recently launched	Free online training and certification programs available	Certification program available.	Paid online training & Certification programs available.	Free online training and certification programs available

Why did we go for LEAPWORK?
Automating both processes and software tests with LEAPWORK significantly increases speed of delivery. This is a game changer and perfectly blends the QUALITY needs on both Dev side and Ops side.

An use case of Challenger Bank



Challenge

- Newly setup Neo / Challenger bank with Credit card origination need from multiple channels
- Provide a strategy that aligns with country specific governance
- Lack of training and documentation of Credit card origination processes

Solution

- Entire Origination process is split in to 6 key areas and built BOTs for the same
- For initial few runs, we went through manual verification - KYC and other checks, Credit scoring, Decisioning; once successful, rolled out full-time BOTs
- 24x7 support/engagement model with stringent SLAs
- Business Process Driven Approach to minimize the implementation risk

Results

- QA Cycle time reduction (CTR) by ~30% with significantly improved accuracy.
- Increased productivity by 20% with 32% cost savings
- Early Defect Detection through Enhanced Data Quality

GLOBAL LOCATİONS

INDIA

SINGAPORE

UK

US

DUBAI

RIYADH

MALAYSIA

MEXICO

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