RPA Testing COE Capability Overview

APPS NA Testing
Innovation Practice

Manojkumar Nagaraj
Vani Reddappa

Capgemini

RPA Features and Capabilities

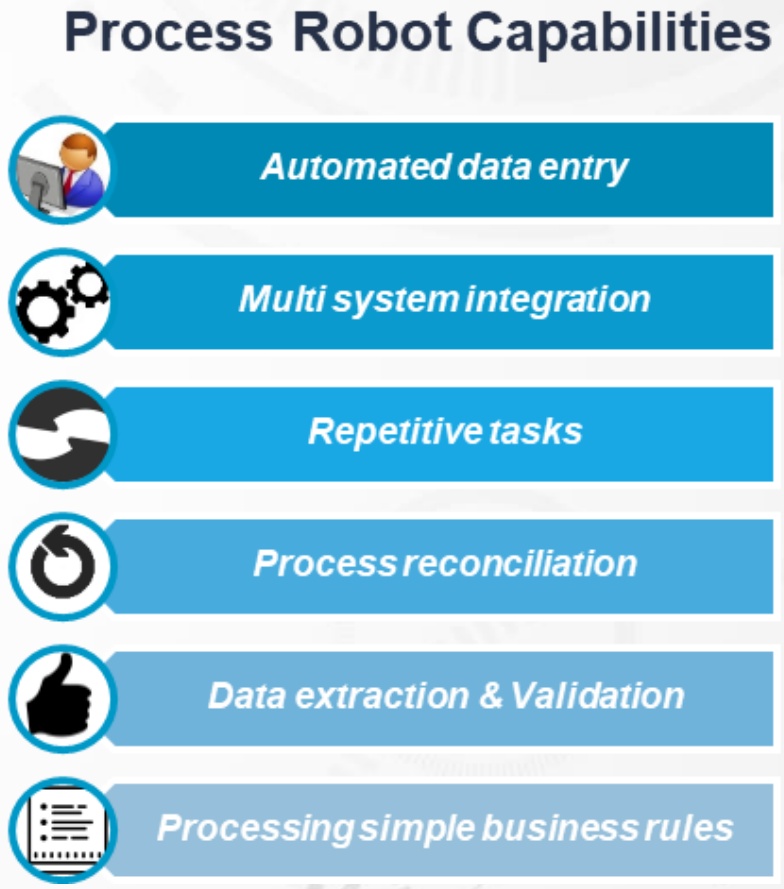
What is Robotic Automation?

Robotic Automation is a set of technologies that use software as a 'virtual FTE' to manipulate existing application software (e.g. ERPs, CRMs, claims applications) in the same way that a person completes a process. This helps **eliminate or reduce human intervention** in the execution of tasks and decision making.

Robotic process automation (RPA) is the application of technology that automates workflow processes, primarily for administrative work. RPA software can help automate large volumes of digital manual-processing work."

Key functionality:

- **Non-intrusive business system integration**, primarily through the user interface.
- **Data aggregation** that presents consolidated view from different back-end systems.
- **Business rule execution** based on defined logic or self-learning.
- **Work item and exception queuing** to be processed by a robot or adviser.
- **Activity monitoring** that captures and analyse data on an adviser's desktop application usage



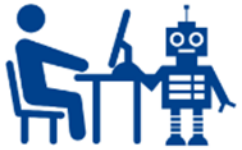
Copyright © 2017 Capgemini. All rights reserved.

Types of RPA - Bots

Robotic Process Automation

Brief guide to the Types of Bots

Attended Bot



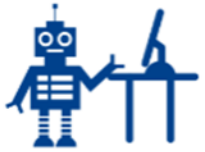
Description:
Automated process triggered by human agents across multiple applications using a desktop interface.

Benefits:
Complex process can be replaced with single mouse clicks, reducing the time it takes to train an agent.

Average handling times can be reduced, resulting in saving and improved customer experience.

Drawbacks:
Inconsistency of desktop environments can slow down completion times.

Unattended Bot



Description:
Automated processes that run on machines without needing human control.

Benefits:
Robots can operate 24 hours a day, 7 days a week, only alerting a employee when something goes wrong.

Any applications can be automated to perform on par with specially tailored business systems.

Drawbacks:
Structured, digital information and clearly defined rules are required to minimize human intervention.

Copyright © 2017 Capgemini. All rights reserved.

The spectrum of smart automation

RPA is the latest wave of automation software reaching maturity

Potential Value

Evolution

Desktop Automation

Simple tools to record and repeat tasks. 'Macros'

Robotic Process Automation

Software that acts as a 'virtual person', operating existing applications and systems. Rapid but scalable task automation.

UiPath Robotic Process Automation

blueprism

Pega ROBOTIC AUTOMATION

AUTOMATION ANYWHERE Go be great.

openspan where people and technology meet

WorkFusion

NICE

Cognitive Automation

Software that uses pattern recognition and machine learning, potentially combined with natural language / 'human' interface

Celaton inSTREAM

NUANCE

R

EXPERT SYSTEM SEMANTIC INTELLIGENCE

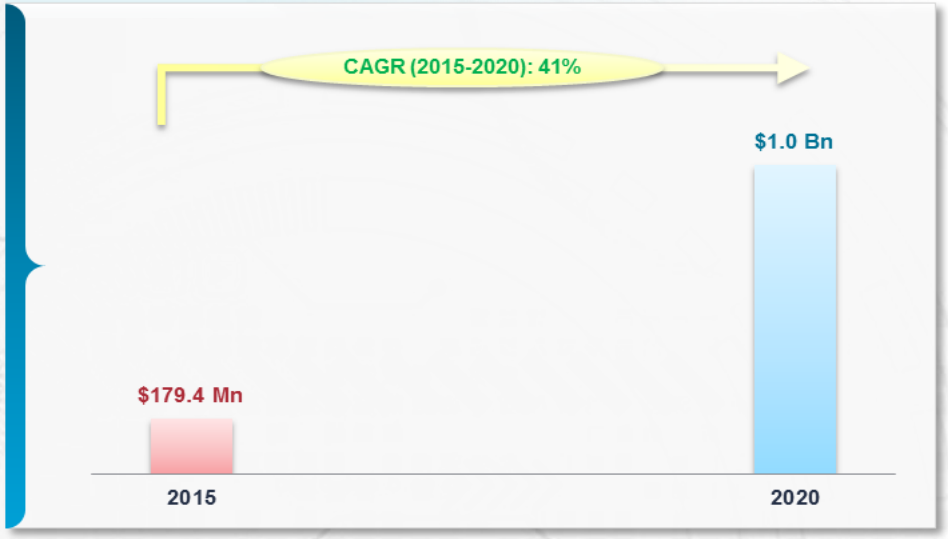
TensorFlow™

NOTE: illustrative Automation Vendors

Copyright © 2017 Capgemini. All rights reserved.

RPA technology vendors market impact and vision & capability

Gartner's View of Global RPA Software Enterprise Spend (2015-20)
(December 2016)



Automation of potential manual tasks

10% of potential manual tasks to be automated will have been automated by an RPA tool by 2020, up from 2% in 2016

Spending on RPA will come from business buyers who are outside the IT organization, and major growth will come from expansion across silos within the existing customer base

Buyer Dynamics

RPA adoption is being fueled by the promise of fast ROI, subject to the applicability and deployment policies of RPA in each individual organization

Vendor Dynamics

Vendors are expected to increasingly incorporate or integrate expert systems and AI types of technology into their offerings in order to deliver more types of automation

According to Gartner

- The current organizational adoption rate of RPA is less than 10% of organizations that employ more than 10,000 people
- By the year 2020:
  - End-user spending on RPA software will reach $1 Bn, growing at a CAGR of 41% from 2015 through 2020
  - 25% of organizations using RPA will have two or more RPA software tool types deployed and multiple AI tools
  - RPA tools will have evolved to include more types of functionality, such as AI software, but will experience strong downward pricing pressure
  - 40% of very large global organizations will have adopted an RPA software tool, up from an estimated less than 10% today

Source: Robotic Process Automation, Worldwide, 2016, Gartner, 30 December 2016

The information contained in this document is proprietary. Copyright © 2017 Capgemini. All rights reserved.

RPA Vendors - Ecosystem

	RPA Strategy & Initiatives	Key Partnerships
blueprism Strength: LOW MEDIUM HIGH <DETAILS>	• Blue Prism ***offers an end-to-end process view that results in work distribution and queue management strength*** • Blue Prism's ***go to market approach is indirect*** – it has a strong partner focus and dependency, with 80% of revenue from license fees	accenture, KPMG, IBM, Atos, CGI, Cognizant, Capgemini, EXL, WIPRO
UiPath Robotic Process Automation Strength: LOW MEDIUM HIGH <DETAILS>	• UiPath ***provides an open platform well suited for complex automation*** • The vendor ***does not do direct implementations rather its success is based on appeal to integration partners and end users*** who like to extend robotic automation using standard scripting and programming environments	Cognizant, EY, CGI, Atos, EXL, WIPRO, Capgemini
AUTOMATION ANYWHERE Strength: LOW MEDIUM HIGH <DETAILS>	• Automation Anywhere ***delivers an enterprise-grade digital workforce platform*** • Automation Anywhere's ***primary targets are shared services*** like procure-to-pay, quote-to-cash, human resources administration, claims processing, and other back-office processes • ***Most of their work is 90% back office and 10% front office***. It has the largest trained ecosystem, approaching 10,000 certified RPA implementers globally with over 150 in R&D and is the largest RPA provider from a revenue standpoint	CGI, accenture, EY, EXL, KPMG, WIPRO, Capgemini, Cognizant

Copyright © 2017 Capgemini. All rights reserved.

RPA Testing COE Overview

Consulting

- Feasibility Analysis
- Tooling Strategy
- Transformation Roadmap
- Solution Consulting

Training

- Delivery enablement
- Internal training
- Support workforce transformation

Innovation

- Solution development
- Creating IP / Collaterals
- Joint Solutions with Partners

Alliance Support

- Product pricing / Quotes
- Partner Training
- POC licenses
- Presales Support

UiPath Robotic Process Automation
blueprism
AUTOMATION ANYWHERE Go be great.

Sales Support

- Customer Presentation
- Sales / Collaterals
- Support : POC delivery, Proposal response

Delivery Support

- Delivery enablement on Partner solutions.
- Associate training on vendor products.
- Technical support : Product installation, Configurations and Deployment.
- Tool strategy, Selection and implementation approach.
- Technology and RPA feasibility analysis for RPA implementation.

Copyright © 2017 Capgemini. All rights reserved.

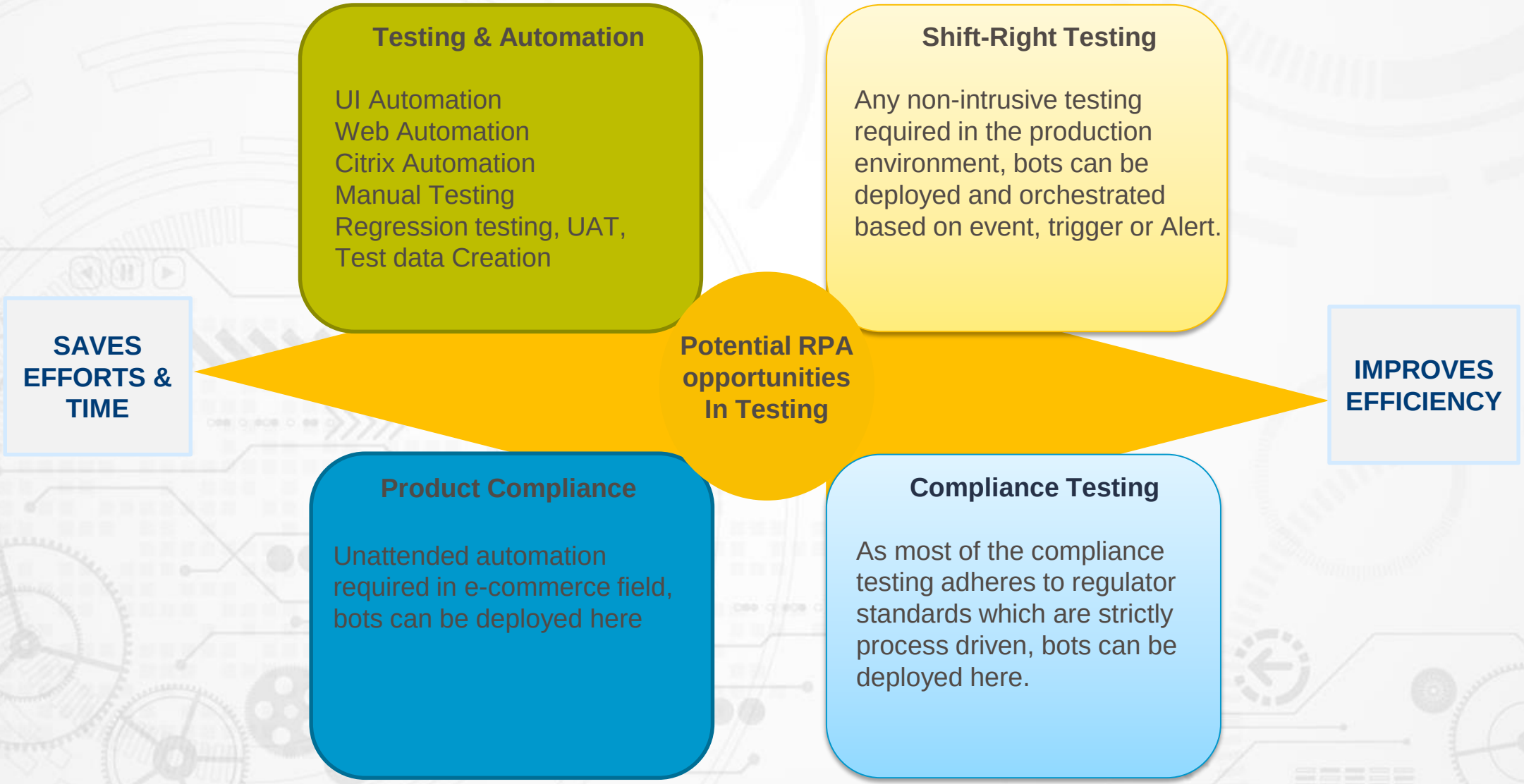
Test Automation Vs. RPA

Test Automation
Applied to Product
Technology or platform specific
Change in requirements required scripts changes and requires more efforts for change management
Dependency on the target environment
Programming skills are required
Need trained resource to work on Automation with domain knowledge
Works on programmable instructions and does not mimic the user actions
Scalability and parallel execution is limited due to dependency on physical resource

Robotic Process Automation
Applied to product and process
Technology or platform agnostic
Less efforts in change management as it deals with correcting the process flows
Non intrusive feature and no dependency on the target environment/platform
No programming skills are required. Simple drag and drop of flow charts will drive the automation requirements
Business analyst with no coding skills can work on automation with domain knowledge
Mimic the user actions and work on process layer
Scalability and parallel execution is easy as scale up and down the bots to parallel process using queues

The information contained in this document is proprietary. Copyright © 2017 Capgemini. All rights reserved.

RPA in Software Testing Use cases



The information contained in this document is proprietary. Copyright © 2017 Capgemini. All rights reserved.

RPA Testing Capability Overview

RPA Capability

UiPath Robotic Process Automation

blueprism

AUTOMATION ANYWHERE Go be great.

Platform Automation	▪ SFDC ▪ SAP ▪ Oracle
Legacy Automation	▪ AS400 ▪ Mainframe
Shift Right Testing	▪ Compliance ▪ Synthetic Monitoring ▪ Security Testing
DevOps Automation	▪ Continuous Testing ▪ Continuous Monitoring ▪ Continuous Integration
Enterprise Automation	▪ Database, Web Portals, Email ▪ Test data Creation ▪ Business Process

Copyright © 2017 Capgemini. All rights reserved.

RPA Benefits

Productivity	24/7 operations	Higher Accuracy	1 min of Robot = 15 mins of human time
Cost Efficiency	Processing cost reduced upto 70%	30-60% Onshore, 20% offshore savings	Investment recovery in 6-9 months
Operational Improvement	Ability to collect and mine vast data	Process quality, governance, Accuracy	Meeting Compliance needs
Time Saving	Fast Implementation and deployment	Re-use of RPA elements and fast adaptation of changed processes	Intelligent learning

Copyright © 2017 Capgemini. All rights reserved.

Case study 1 - SAP Automation on Citrix using RPA for IPG

Automation Use Case Identified

- SAP Automation on Citrix environment for various client landscapes.

Business Challenge

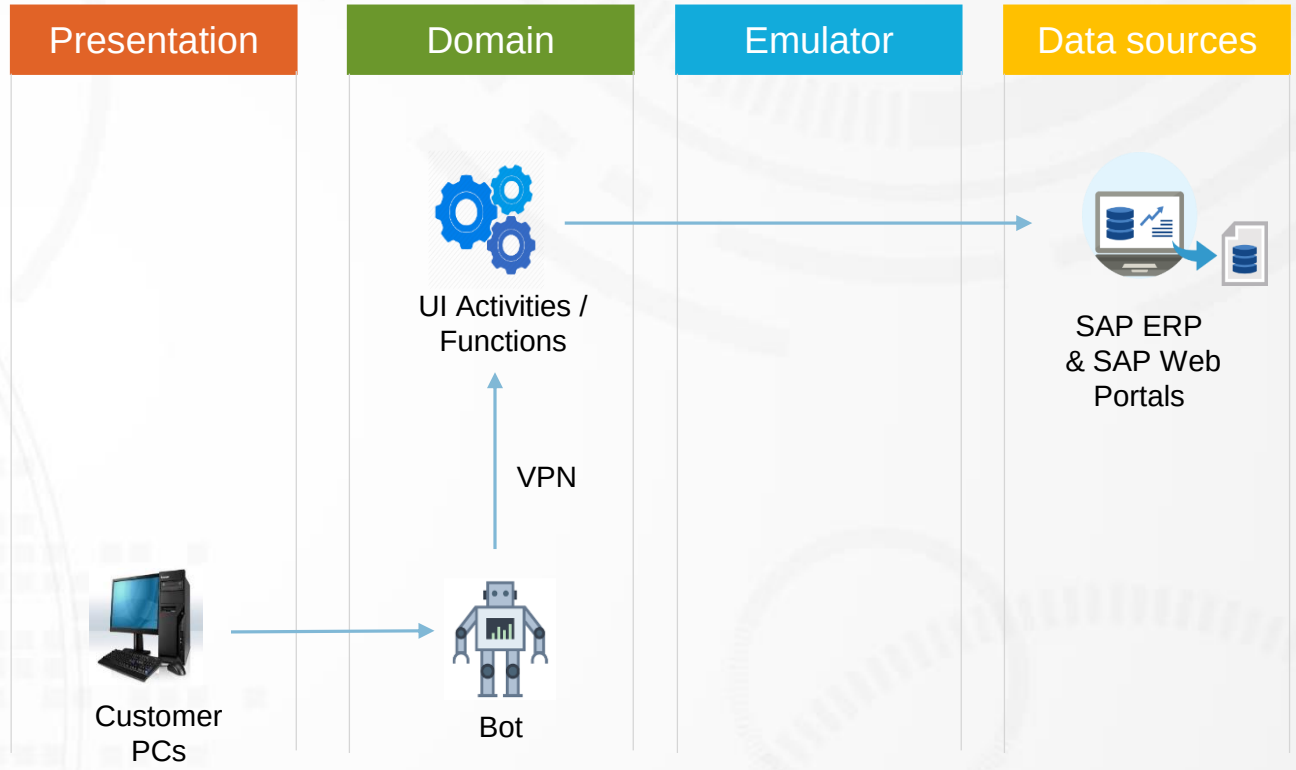
- To check whether RPA tool is feasible to automate the sample test scripts for various client landscapes such as SAP Net weaver portal, R3, Fiori client App and BPC.

RPA Solution Approach

- Automated the Test scripts such as SAP Net weaver portal, R3, Fiori client App and BPC identified from the client on citrix machine with UiPath RPA tool by eliminating manual touch points.

Solution Benefits

- SAP automation eliminating manual touch points.
- The proposed automation approach offers huge scalability as bots can be Scaled/ramped up to meet the demands.
- Reduces the cost of automation and offers scalability, leveraging this approach we delivered up to 60% improvement in effort saving and equivalent cost.
- Because of SAP automation reduces manual FTE by 10 to 15%



Copyright © 2017 Capgemini. All rights reserved.

Case study 2 - E2E Automation using RPA for T-Mobile

Automation Use Case Identified

- End to End Automation for Jump upgrade process

Business Challenge

- E2E process not streamlined.
- Many manual touch points which prevents scale.
- Desperate automation tools drives cost of automation and complexities between different systems and handoff.

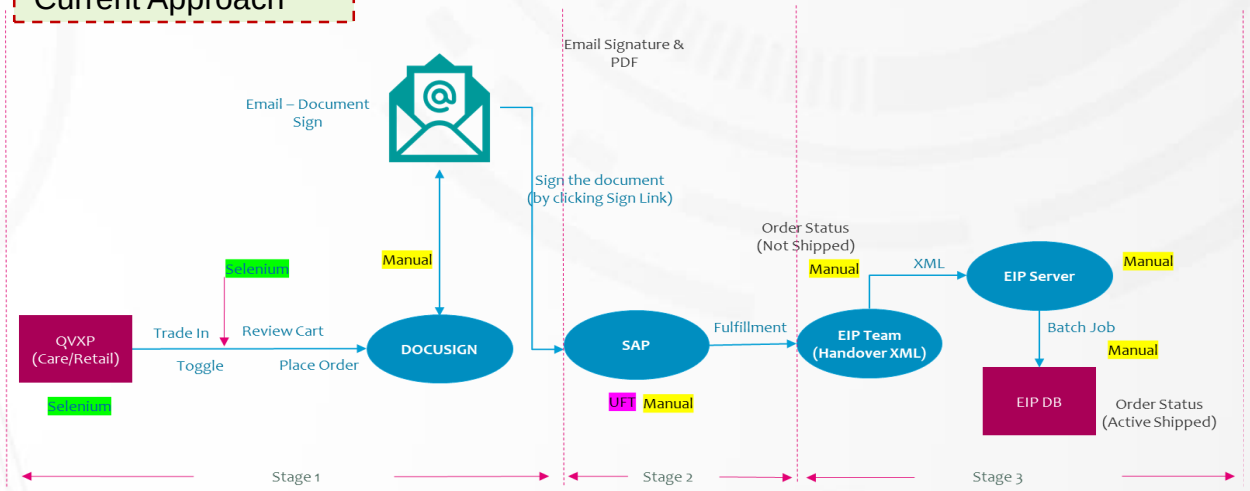
RPA Solution Approach

- The E2E Flow was broken into 3 flows Front end, SAP and EIP DB. All the flows are automated using UiPath by eliminating manual intervention and use of multiple tools. Solution was Front end flow is triggered manually and hand off the PO file to SAP flow, where SAP flow is triggered automatically based on PO file availability from front end and hand off the PO file to EIP DB flow to perform DB validations.

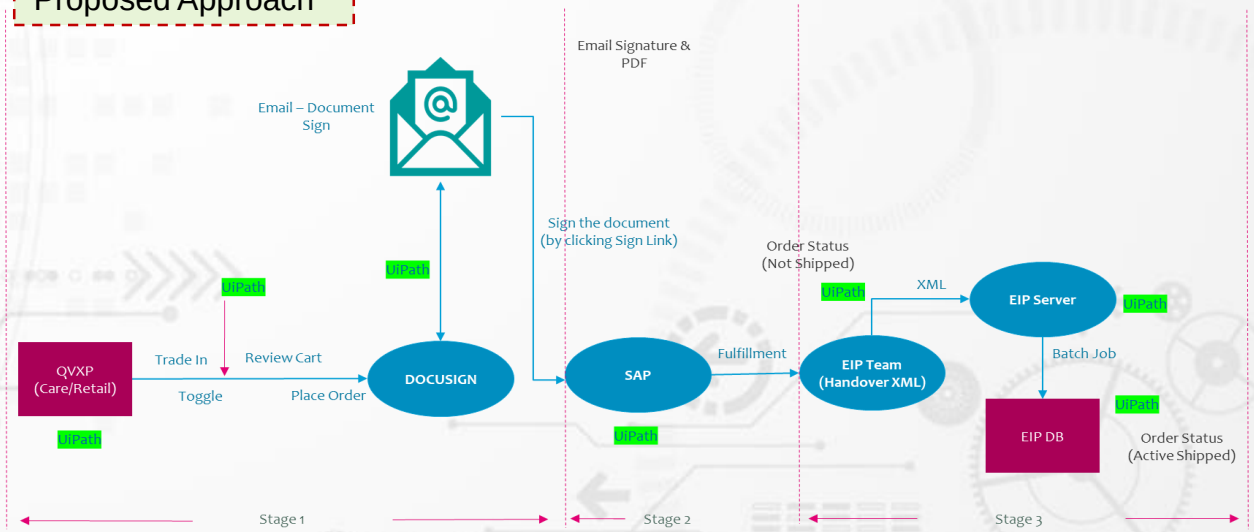
Solution Benefits

- Tool harmonization where single tool like UiPath provides E2E automation eliminating manual touch points and other automation tools like UFT and Selenium.
- The proposed automation approach offers huge scalability as bots can be Scaled/ramped up to meet the demands.
- Reduces the cost of automation and offers scalability due to tool harmonization, leveraging this approach we delivered up to 72% improvement in effort saving and equivalent cost.
- Because of E2E automation reduces manual FTE by 10 to 15%

Current Approach



Proposed Approach



Copyright © 2017 Capgemini. All rights reserved.

Case study 3 - SAP Automation for order fulfillment using RPA

Automation Use Case Identified

- SAP SD - Order Fulfillment process

Business Challenge

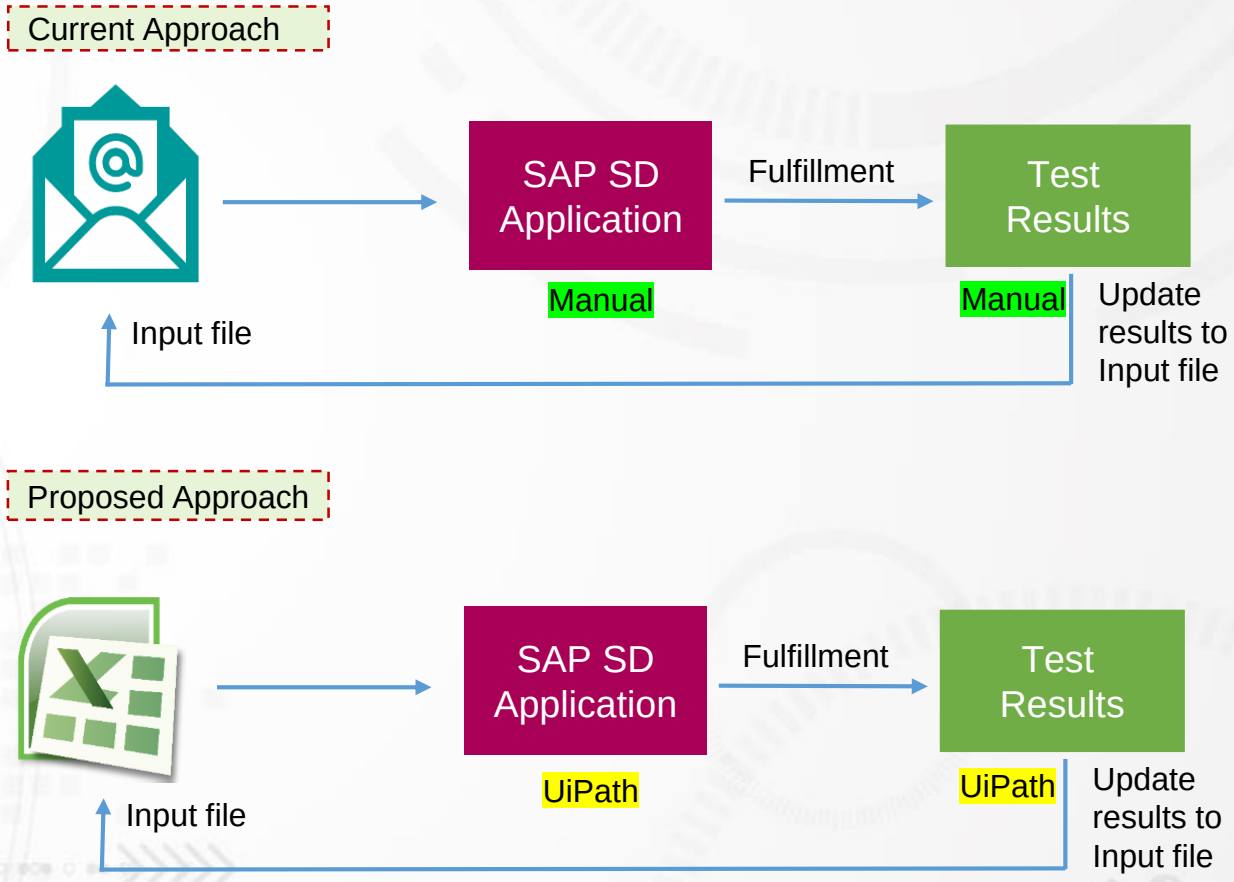
- SAP Fulfillment process is automatic in production setup, however in QAT environments this is manual process and needs to be done by Back office teams manually. When all projects need fulfillment in parallel, the team serves based on the priority

RPA Solution Approach

- RPA Bot will be created to fulfill the orders of types, Activation with device, BOYD Activation and Accessary purchase
- Different orders details will be captured in XLS and BOT will read from the XLS and completes the fulfillments for all the orders listed in XLS.
- A simple webpage will be created, to feed the order details into XLS. This will be an additional lever for users to invoke BOT instantaneously to get their fulfillments completed

Solution Benefits

- The proposed automation approach offers huge scalability as bots can be Scaled/ramped up to meet the demands.
- Reduces the cost of automation and offers scalability, by leveraging this approach we delivered up to 70% improvement in effort saving and equivalent cost.
- Because of SAP automation reduces manual FTE by 10 to 15%



Copyright © 2017 Capgemini. All rights reserved.

Case study 4 - AS400 Automation using RPA for Cox Automotive

Automation Use Case Identified

- Work Order creation for Consignor

Business Challenge

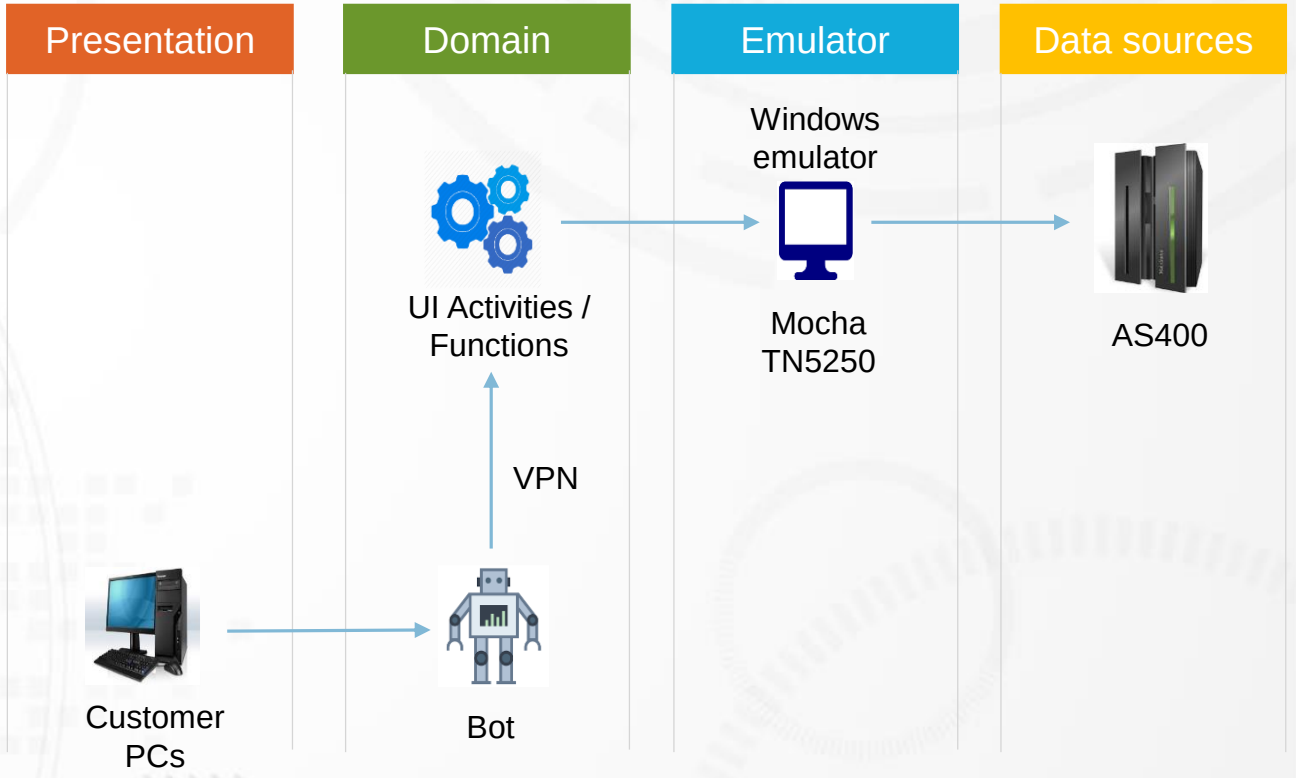
- Automate the legacy AS400 systems/applications and wanted to see if RPA technology can provide the solution within their environment.

RPA Solution Approach

- Automated AS400 application with RPA Tool/UiPath and Mocha TN5250 emulator

Solution Benefits

- Automation of Work order creation for Consignor using UiPath was successful.
- The automation efficiency is 40% better than the current manual testing.



Copyright © 2017 Capgemini. All rights reserved.

Case study 5 - CIF Automation using RPA for Coca Cola

Automation Use Case Identified

- CIF creation using sales workbook

Business Challenge

- Reading the email from sales person and preforming file validations requires lot of manual effort.
- Process is not streamlined
- Current process doesn't ensure good data quality
- Current process doesn't ensure proper feedback post update
- Human FTE is not adding value in the chain
- Validating data once the file is uploaded

RPA Solution Approach

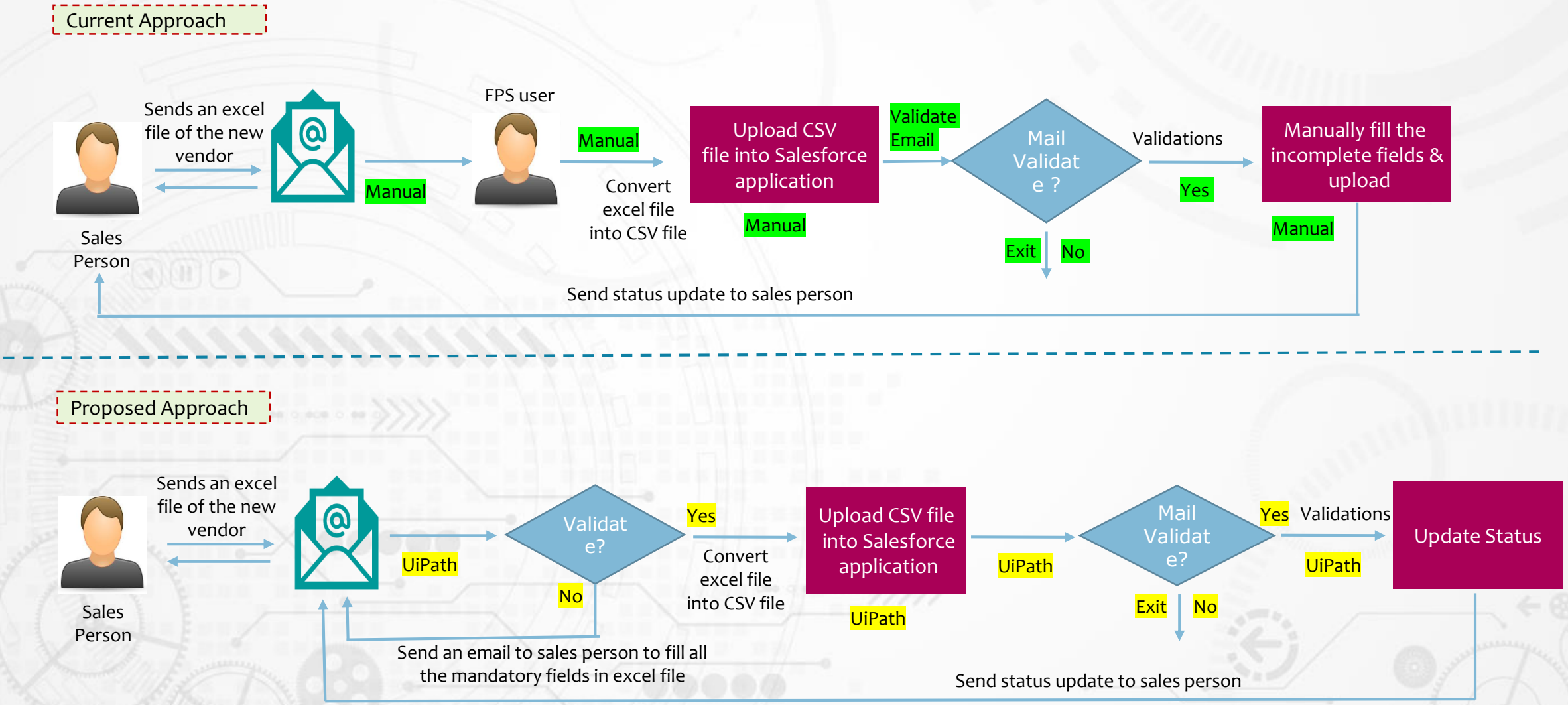
- Bot will read the email and perform validations. If the file is clean then it convert file from excel to csv format. It will then upload the file into Salesforce application. If there are any errors then bot will send an email to sales person to fill the data for missing fields and send the file.

Solution Benefits

- Process is streamlined
- Improved data quality by doing validations upfront
- Better feedback on invalid data entry
- Automation of manual process
- Savings of cost and FTE efforts.

Copyright © 2017 Capgemini. All rights reserved.

CIF Automation using RPA (Current & Proposed flow)



Copyright © 2017 Capgemini. All rights reserved.

People matter, results count.

About Capgemini

With more than 190,000 people, Capgemini is present in over 40 countries and celebrates its 50th Anniversary year in 2017. A global leader in consulting, technology and outsourcing services, the Group reported 2016 global revenues of EUR 12.5 billion. Together with its clients, Capgemini creates and delivers business, technology and digital solutions that fit their needs, enabling them to achieve innovation and competitiveness. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at

www.capgemini.com

This message contains information that may be privileged or confidential and is the property of the Capgemini Group.
Copyright © 2017 Capgemini. All rights reserved.

Rightshore® is a trademark belonging to Capgemini.

This message is intended only for the person to whom it is addressed. If you are not the intended recipient, you are not authorized to read, print, retain, copy, disseminate, distribute, or use this message or any part thereof. If you receive this message in error, please notify the sender immediately and delete all copies of this message.