

IDENTIFYING RIGHT PROCESSES FOR AUTOMATION



ANIRUDDHA GUPTA

Customer Success Specialist,
UiPath

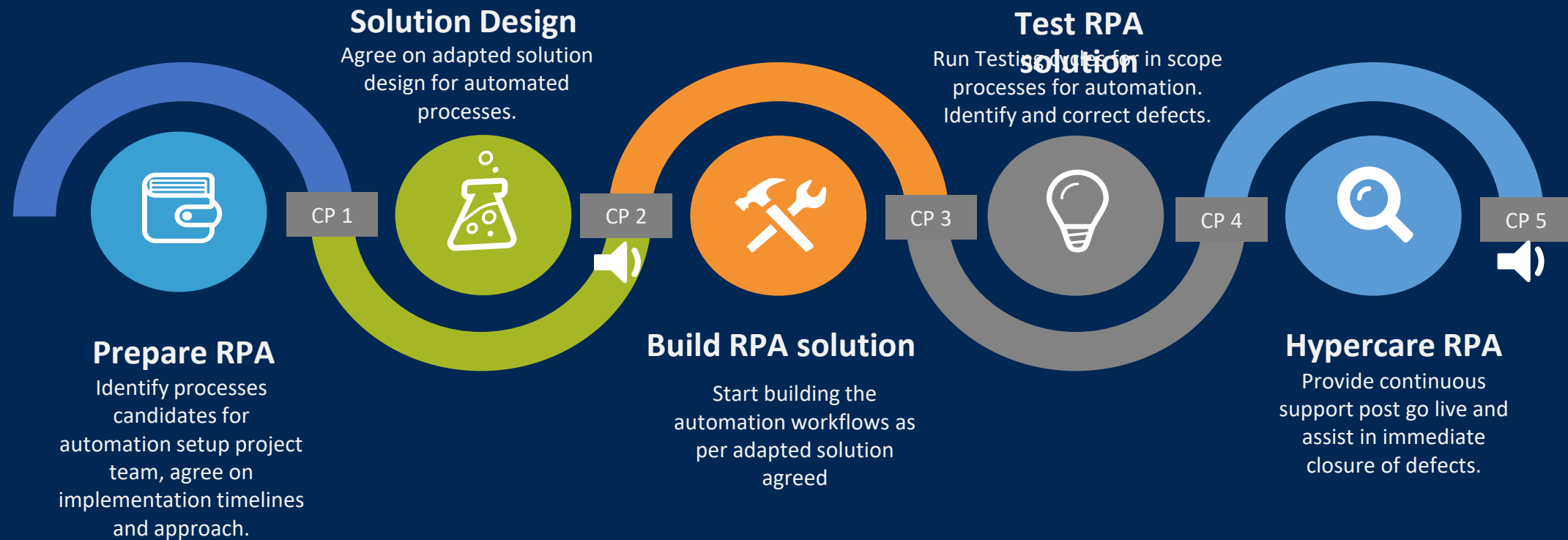


**KARUNAGARAN
SUNDARAM**

Business Analyst, UiPath



RPA Delivery Life Cycle



What should we look to Automate?



Highly manual and repetitive processes



Rule based processes



Processes with low exception rate



Processes with standard readable electronic Input type



High volumes / low complexity



Stable processes and underlying applications



Processes performed by large teams

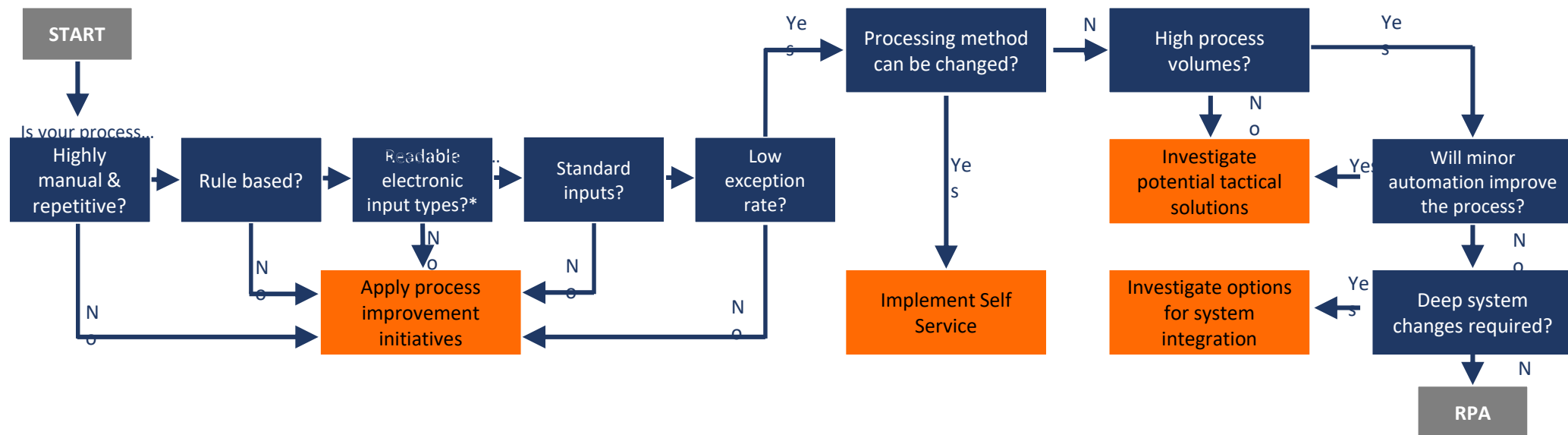


Mature, swivel chair processes

What should we look to Automate?






















Not all processes are ready for automation. In order to best benefit of a rapid ROI, choose processes which first have passed through a transformation initiative or are stabilized process.

Simple guide to choose the best fit for automation :



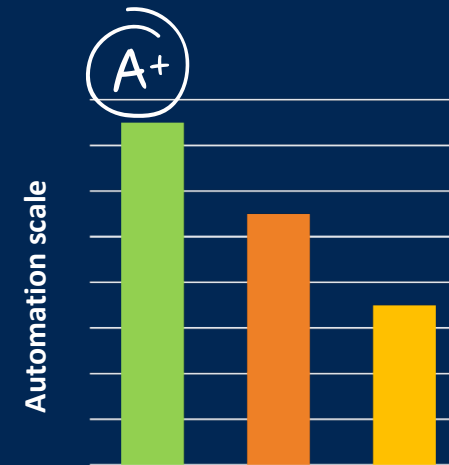
Process characteristics & Qualification Metrics

Process Characteristics

Characteristics	Process A	Process B	Process C
Highly manual and repetitive work			
Rule based processes			
Electronic Readable Input Types			
Standard Input Types			
Low exceptions rate			
High transaction volumes			
System changes			

- Readable Input Type = Excel, Word, email, xml, ppt, readable PDFs etc.
- Non readable input type: scanned image with no OCR

Qualification Metrics



Process A is the best fit for automation, followed by **Process B**, while **Process C** should be subject to a Lean Six Sigma transformation approach prior to considering automating it.

Process Complexity factors

Number of screens involved in a process can be taken as a proxy for number of steps

Variations/ Scenarios within the process (Number of If Else kind of Rules)

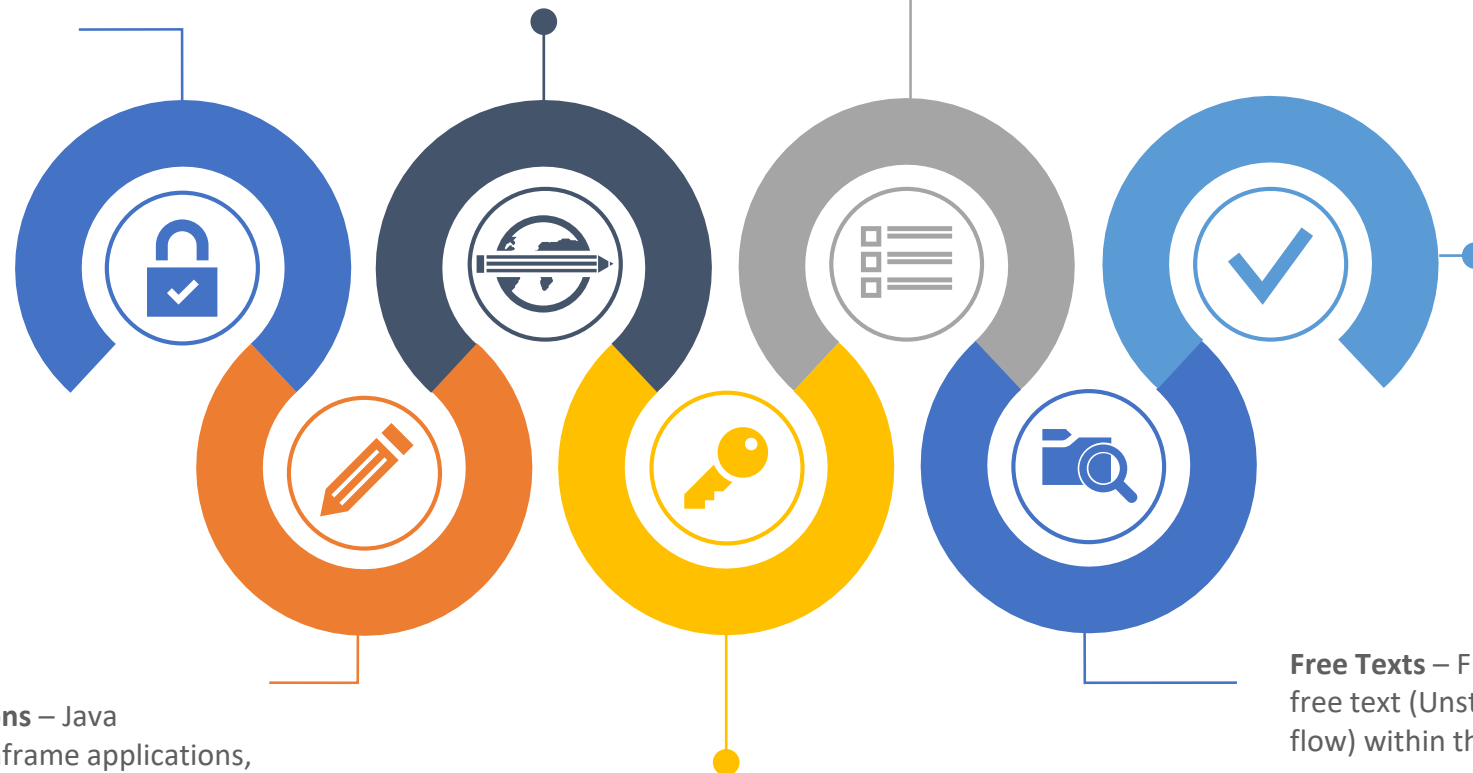
Standard Inputs – Templated inputs, same format or type of inputs across cases

Image based automation – VDI/ Remote desktops/ Citrix

Type of Applications – Java Applications, Mainframe applications, SAP, Web based applications, Dotnet applications, MS Office .. Etc

Structured Inputs – Machine readable and digital inputs. Scanned PDF Images/ Free flow texts in Emails are considered to be unstructured inputs

Free Texts – Flow of information as free text (Unstructured informational flow) within the process



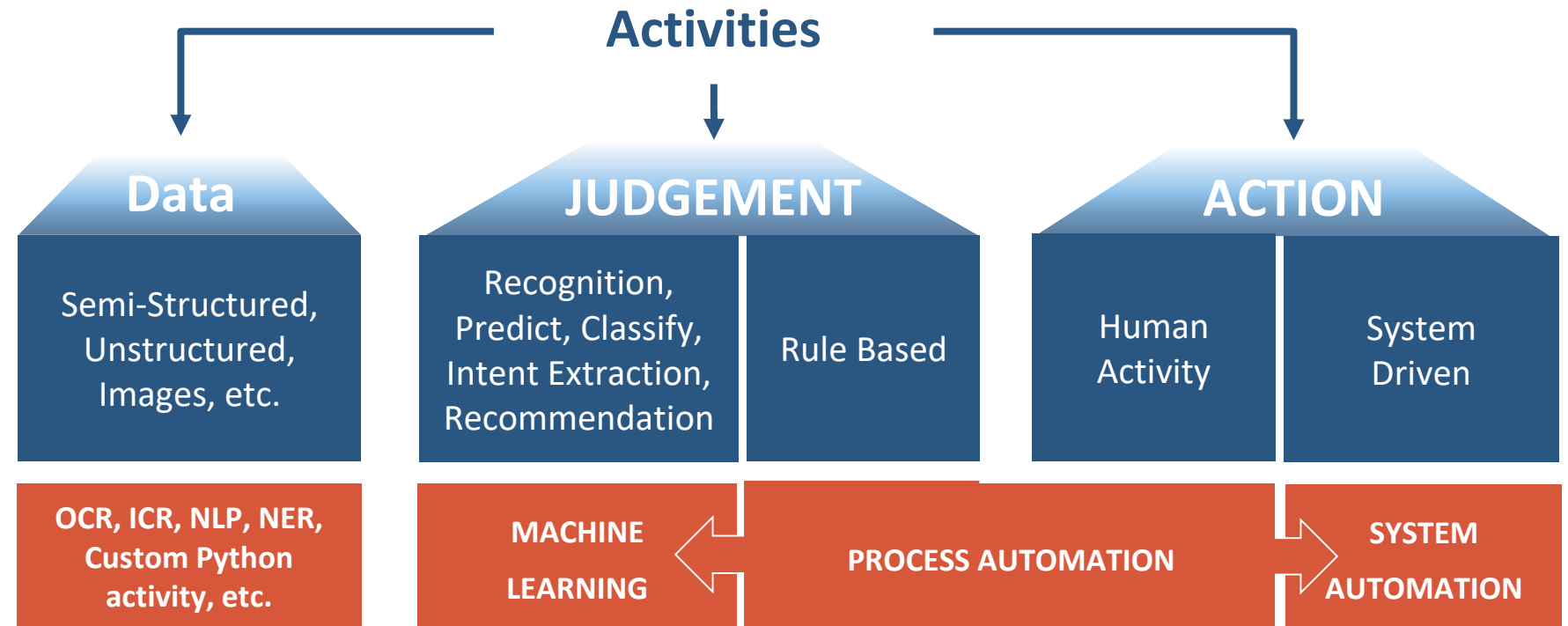
Aligning Process Complexity with Estimated delivery time

Key Criteria	Low complexity	Medium complexity	High complexity
Number of applications	1-2	3-4	>5
Number of screens	1-4	4-40	>40
Number of business logic rules	<5 Without alternative flow	5-50 Incl. alternative flows	>50 Incl. nested rules
Scale of exception handling expected	Low	Medium	High
Data type	Digital, structured & standardized	Digital, structured & standardized	Digital, Semi-Structured and Unstructured
Data handling required	Copy/paste	Copy, paste, read and modify data	Copy, paste, read data, data enrichment, PDF data extraction
Process redesign required?	No process changes required	Minor process changes required	Significant process redesign required
Systems integration	All Systems integrate natively	Requires some custom integration and/ Custom Function / Image Recognition	Leverage existing 3 rd party tools and/ complex Custom Functions
Associated level of operational risk	Non-core processing	Time or business dependent processing	Business critical BAU processing
Typical end to end delivery duration	<i>4-6 weeks</i>	<i>7-9 weeks</i>	<i>12-14 weeks</i>

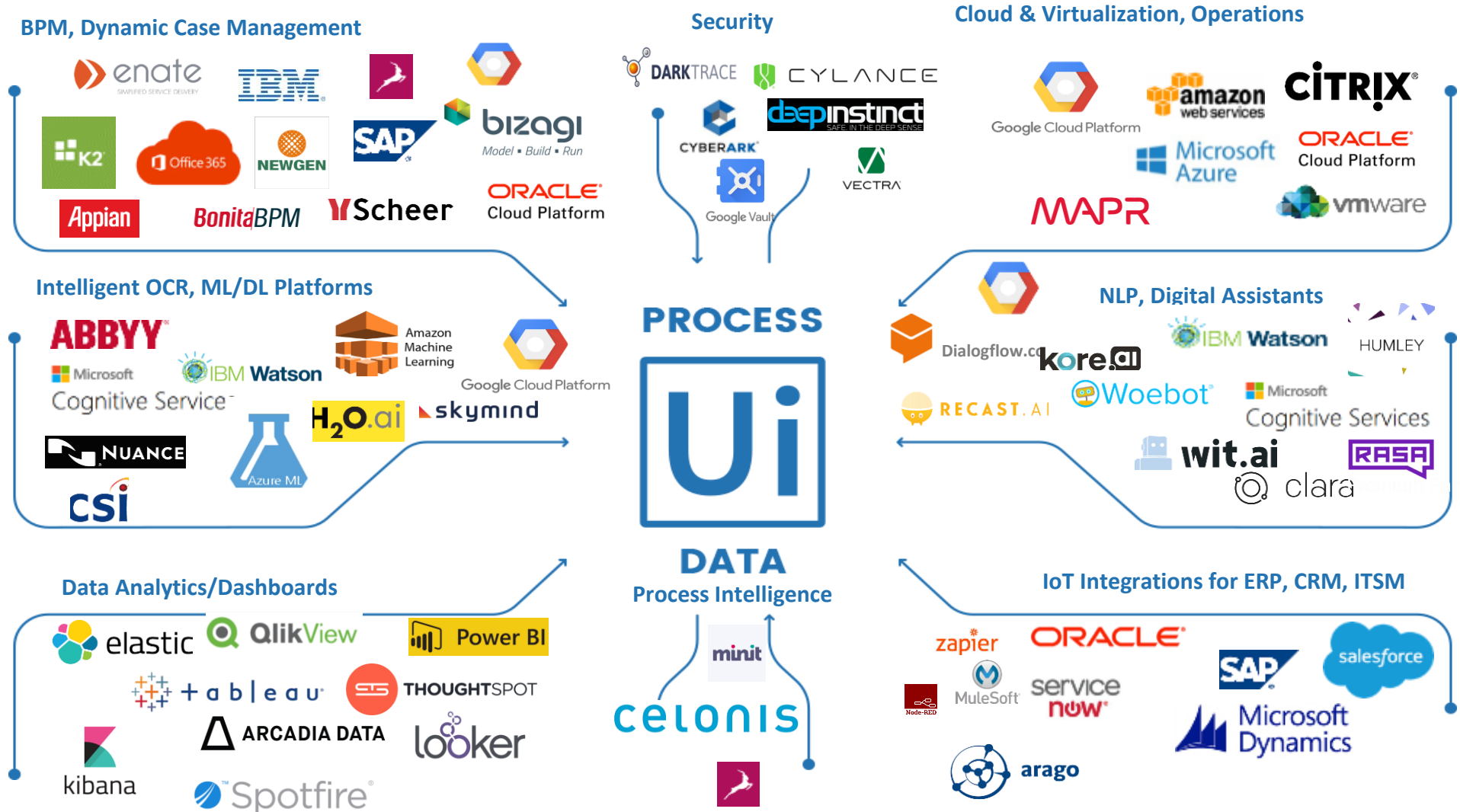
Eye for Intelligent Process Automation

Exploration of complementing technologies can result in exponential increase in benefits.

Potential of automation should not be restricted to the features and capabilities of RPA, have an eye for other complementing technologies which can enable an increased automation potential of processes.



Ecosystem of Synergy technology Partners



Deliverables of the Process Identification Phase

Phase	Deliverables	Description
Identification	Process Assessment	<ul style="list-style-type: none"> Define, by process, the feasibility, scope, complexity, effort, and projected benefits Refine the assessment during the opportunity assessment
	Implementation plan	<ul style="list-style-type: none"> Outline the approach, timetable and resources required for the delivery of the robotics portfolio
	Business Case	<ul style="list-style-type: none"> Present the aggregated results of Process Assessments into a financial case first at portfolio level, and later at robot level
	System compatibility assessment	<ul style="list-style-type: none"> Assess system compatibility and update central repository for RPA system compatibility
Design	PROCESS DESIGN DOCUMENT (as-is)	<ul style="list-style-type: none"> Documents the current process or "as-is" – forms part of the requirements for design
	SOLUTION DESIGN DOCUMENT (SDD)	<ul style="list-style-type: none"> Documents the design of the solution "to-be" at key stroke level. This document will be key for the development and the support of the robot in BAU

Do's and Don't



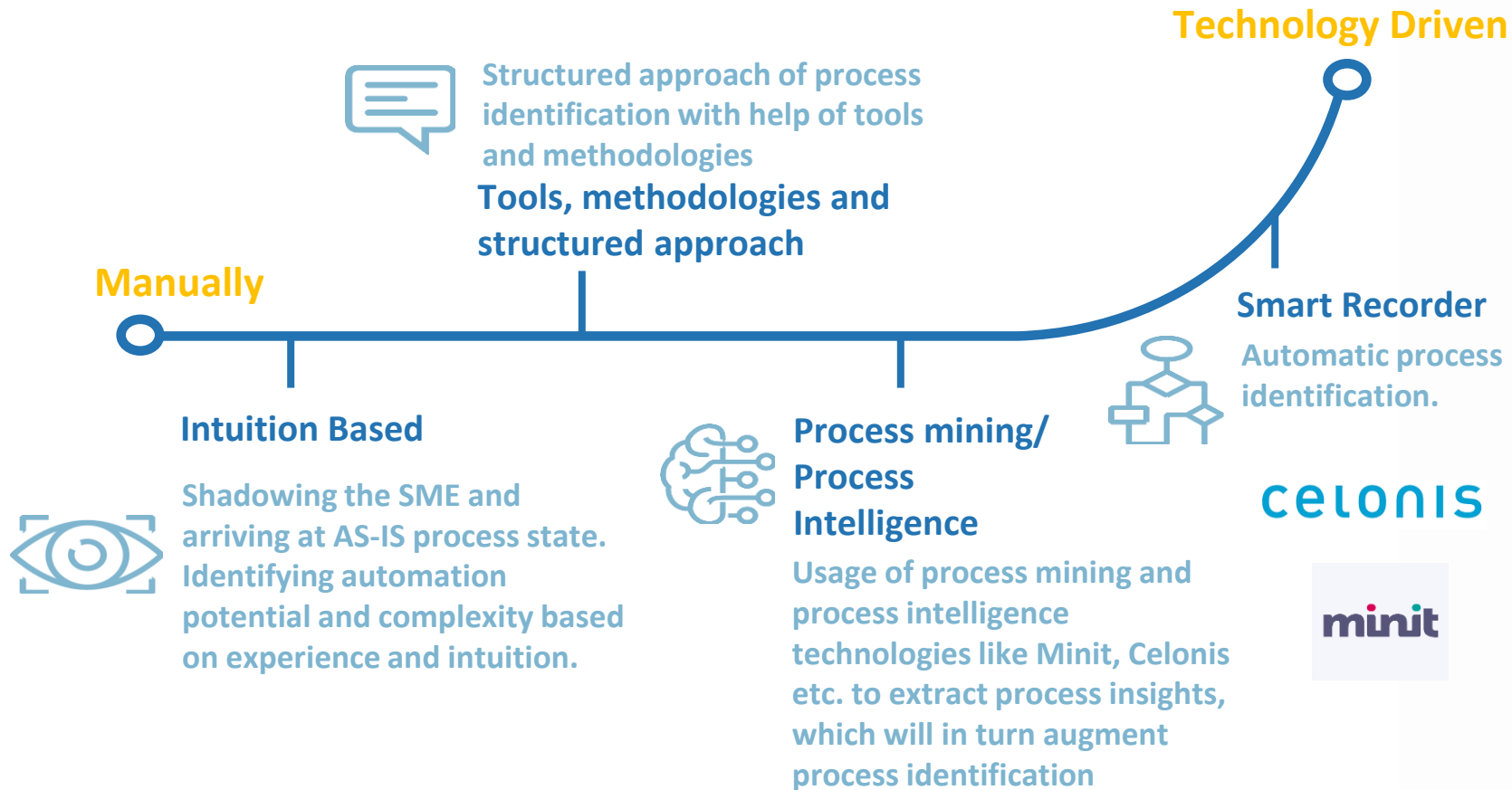
DO

- **Always** use the checklist method to quantitatively perform process assessment
- **Always** perform a technical feasibility with the target applications before assessing complexity (PoC)
- **Always** organize a pipeline and then select a process based on the automation strategy to proceed with POC

DON'T

- **Never** believe solely on what the SME says and always probe more until you are convinced
- **Never** pick a process which is constantly going through changes either on business rules side or the target application side
- **Never** refer all process automation through RPA, don't kill a fly using a gun
- **Never** pick one specific process to proceed with feasibility and viability analysis

Process Identification the new way



~50%

RPA opportunities are currently being missed -

~20 – 30%

Expected reduction of effort against manual process



Increased accuracy of Effort estimation and automation potential



DEVELOPER
CONFERENCE

Thank You

SETTING UP YOUR CoE



SANGEET TRIKANNAD

Senior Manager, UiPath



**SUPRIYA
ANANTHAKRISHNA**

RPA CoE Lead, Novo Nordisk





excellence

business

success

concept

management

strategy

organization

improvement

communication

presentation

expert

office

successful

benefit

perfection

development

motivation

customer

professional

win

service

industry

goal

achievement

plan

satisfaction

innovation

marketing

competition

challenge

company

education

achieve

best

performance

growth

quality

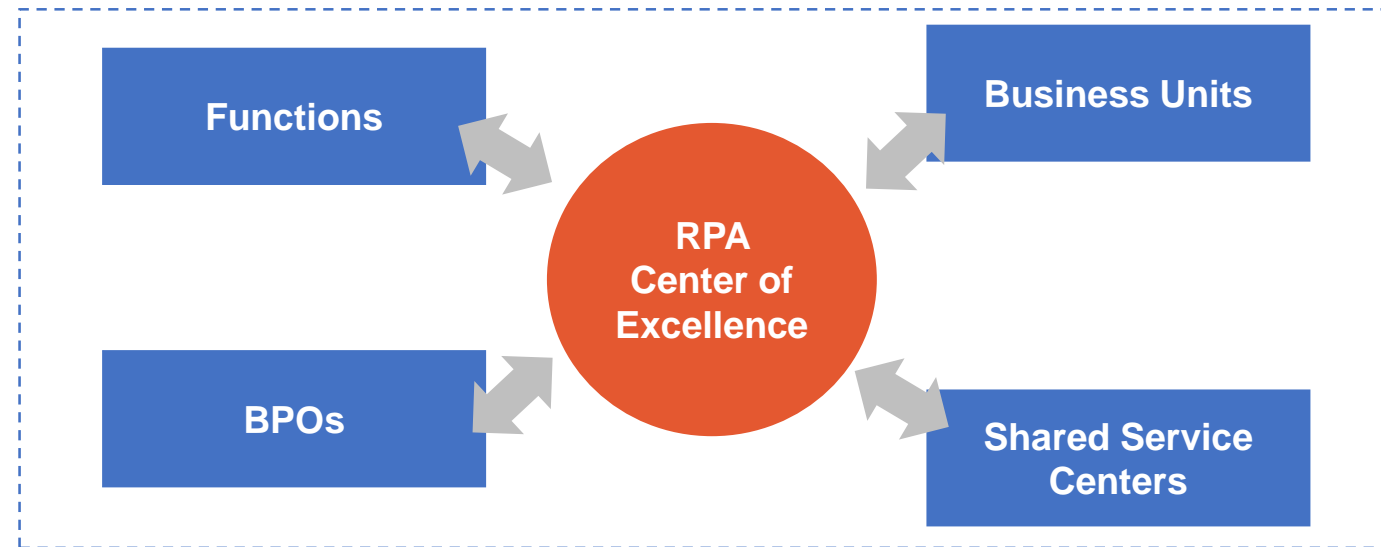
symbol

excellent

trust

Why do we need an RPA Centre of Excellence (CoE)?

An RPA Center of Excellence enables an organization to scale RPA at the enterprise level through the establishment of firm-wide **RPA standards processes and procedures, best practice sharing, common technology adoption**, and a robust **governance model**



People

- "Hum-Bot" Management
- Training and Coaching
- Change Management
- Roles & Responsibilities

Process

- Pipeline Management
- Governance
- Automation Implementation
- Automation Best Practices
- Performance & Analytics

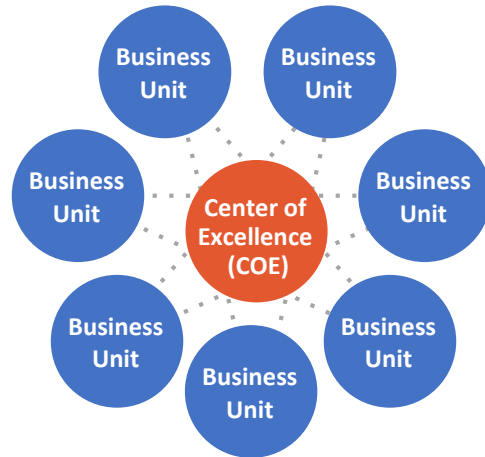
Technology

- Connectivity & Infrastructure
- Robot Configuration
- Service Delivery & Support – CR's and Production issues
- Other Technologies

RPA CoE – there's no “one size fits all”

CENTRALIZED

One RPA COE serving all business units.



ADVANTAGES:

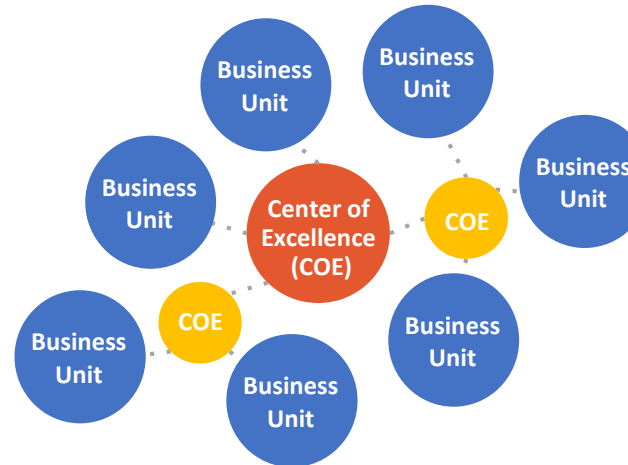
- Unified and centralized RPA IT support for all BUs
- Expertise, lessons learned & best practices easier to disseminate
- Standardized RPA process

DISADVANTAGES:

- Automation prioritization challenges
- Relies on distant communication

HYBRID

One main RPA COE, linked to several smaller RPA COEs dedicated to business units



ADVANTAGES:

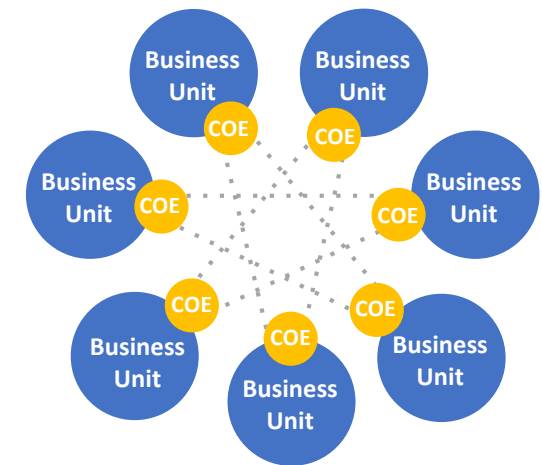
- The main COE handles the most complex projects while the smaller COEs cover the rest
- Decreased risk of prioritization challenges due to smaller and dedicated RPA COEs
- Higher process knowledge specific to business units concentrated in the smaller RPA COEs

DISADVANTAGES:

- Potential incoherence in process methodologies

FEDERATED

Independent RPA COEs within each business unit.



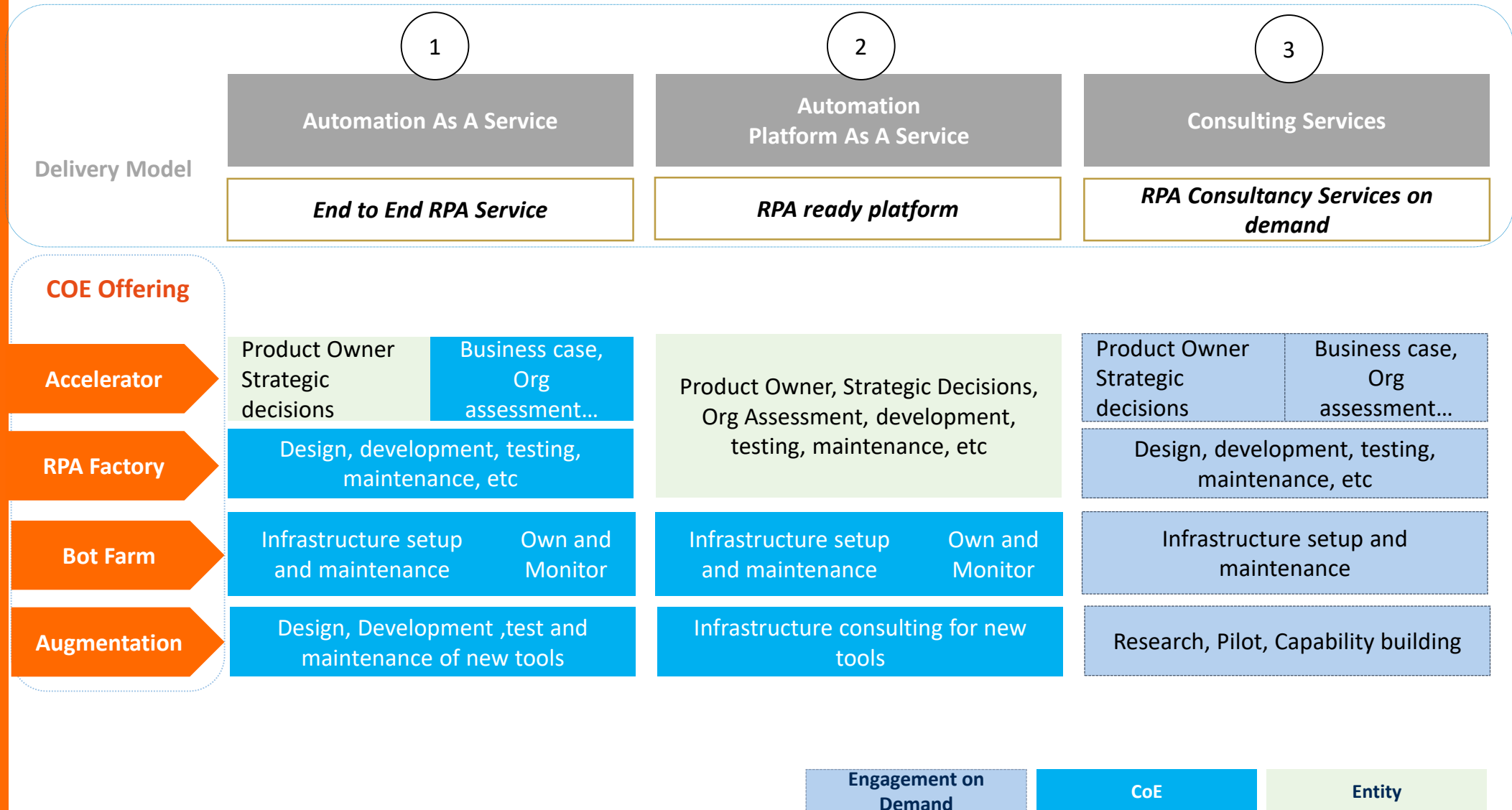
ADVANTAGES:

- Each business unit drives and is fully in control of automation projects and their prioritization
- All RPA COEs are close to each business unit

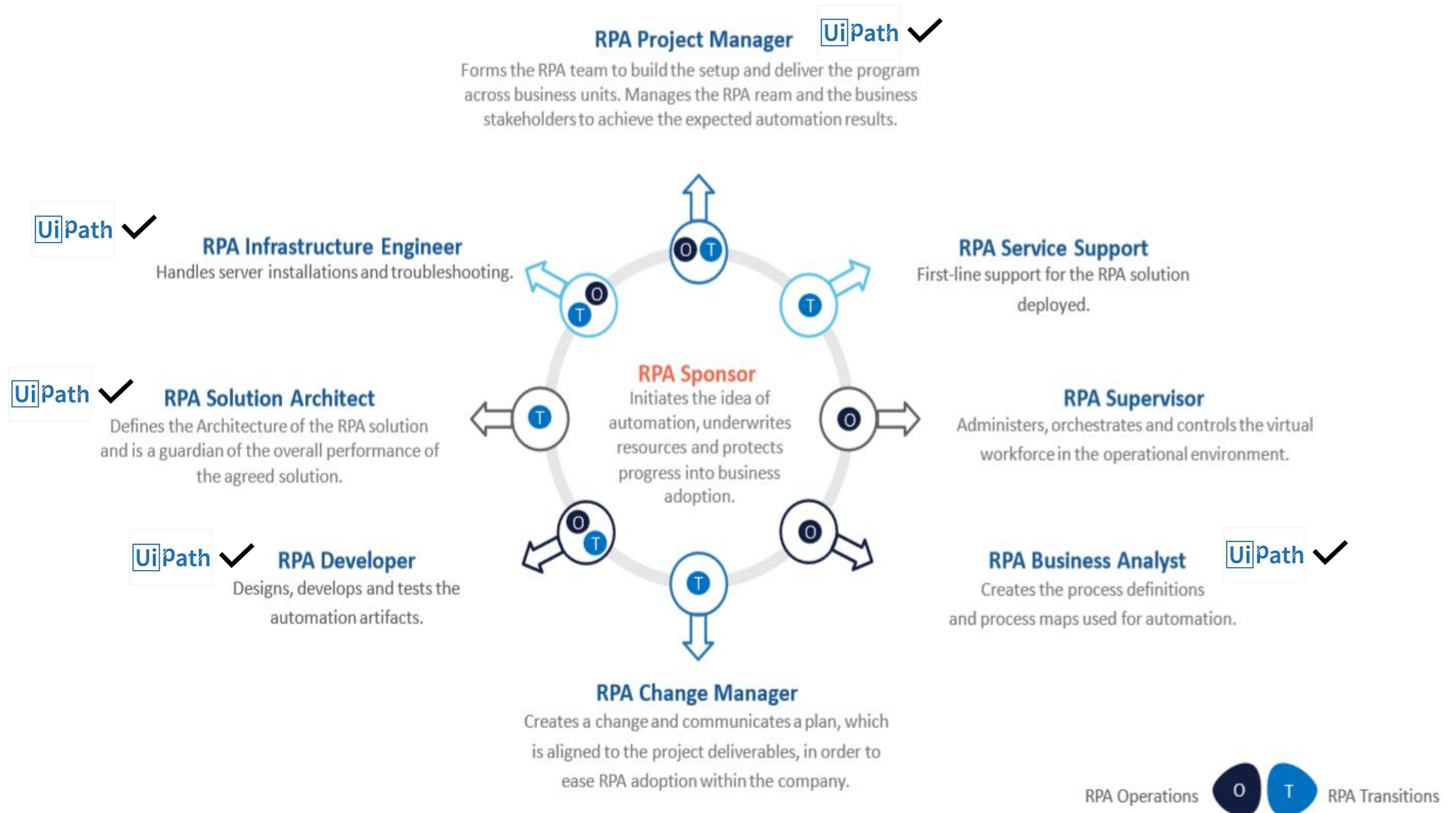
DISADVANTAGES:

- Regular exchange of best practice across different business units must be enforced
- High risk of incoherence in process methodologies
- Certain RPA roles will be duplicated

RPA CoE – The 3 delivery models



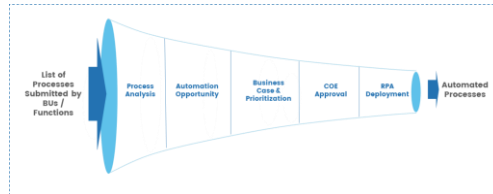
RPA CoE Roles – business need + career path



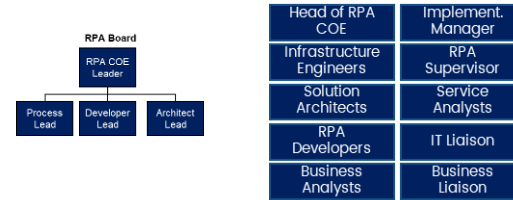
RPA CoE – a bird's eye view of the key building blocks



Pipeline Management



Governance



Workforce Management



Digital Workforce



Human Workforce

Quality Management



Automation Reviews



Customer Surveys

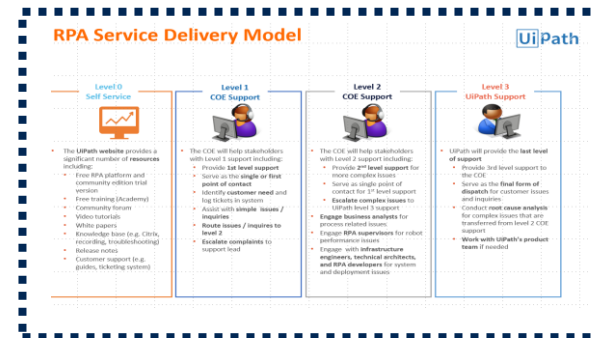


Stakeholder Focus Groups

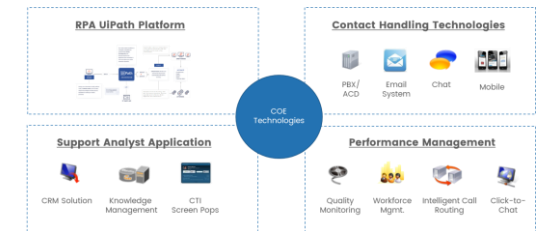
Performance and Analytics



COE Performance
Employee Performance
Benefit Realization



Technologies



Communication and Change Management

The Delivery Approach



Business Steps



Step 1 Process identification

The application of a methodology by which the right processes are chosen and prioritized according to their potential and complexity.



Step 2 Process assessment

The analysis in detail of processes to see if the potential and complexity assessed at first still hold and to assess the extent to which the process can actually be automated.



Step 3 Process redesign

Invariably, upon automation, organizations discover that their processes are not as standardized, optimized, documented or followed as they thought. Hence, this is an opportunity to optimize the process.



Step 4 User stories definition

The description of the process to its most detailed steps and understanding potential exceptions (technical and business) in order to develop robust RPA workflows that will be passed on to RPA developers

Technical Steps



Step 5 Development

In this step, based on the work done in step 4, actual RPA workflows are programmed and the process is automated.



Step 6 Testing

The automated process is tested to observe its behavior and to correct potential bugs and catch potential exceptions that might have been missed during step 4 & 5.



Step 7 Hyper-care

It is recommended that, for a period of 2 weeks, the process be carefully monitored by the team who developed the automation to correct any remaining issues until a high level of reliability is reached.



Step 8 Operational support

In this step the robot performance is continually monitored. Workflow errors are tracked and fixed. Automation scripts are updated when needed.

Development - Best practices



ENVIRONMENT SETUP

Decide on the split between the different robotic environments. The advantages offered by the different methods need to be weighted per each project.



ROBOT AUTHENTICATION

Decide between using one generic account, multiple technical accounts and user accounts for the robots. Analyze the benefits of each approach for the automated applications.



STORING CREDENTIALS

Select the best way of storing the credentials used for robot logging-in. Pick a centralized or local strategy based on the specifics of the automated process.



DEVELOPER COLLABORATION

Choose the developer collaboration method within the RPA team. Multiple technologies are supported, including TFS and SVN, which are natively integrated with UiPath Studio.



REUSABLE COMPONENTS

Pick a strategy for reusing and distributing the developed components – Shared Components, File Storage or Custom Packaging Method . Save time and effort by defining the reusability of components cross-department or cross-company.



NAMING STRATEGY

Adhere to the naming strategy standards – process, workflow and BOTs. Include internal best practices for consequent and reliable development.

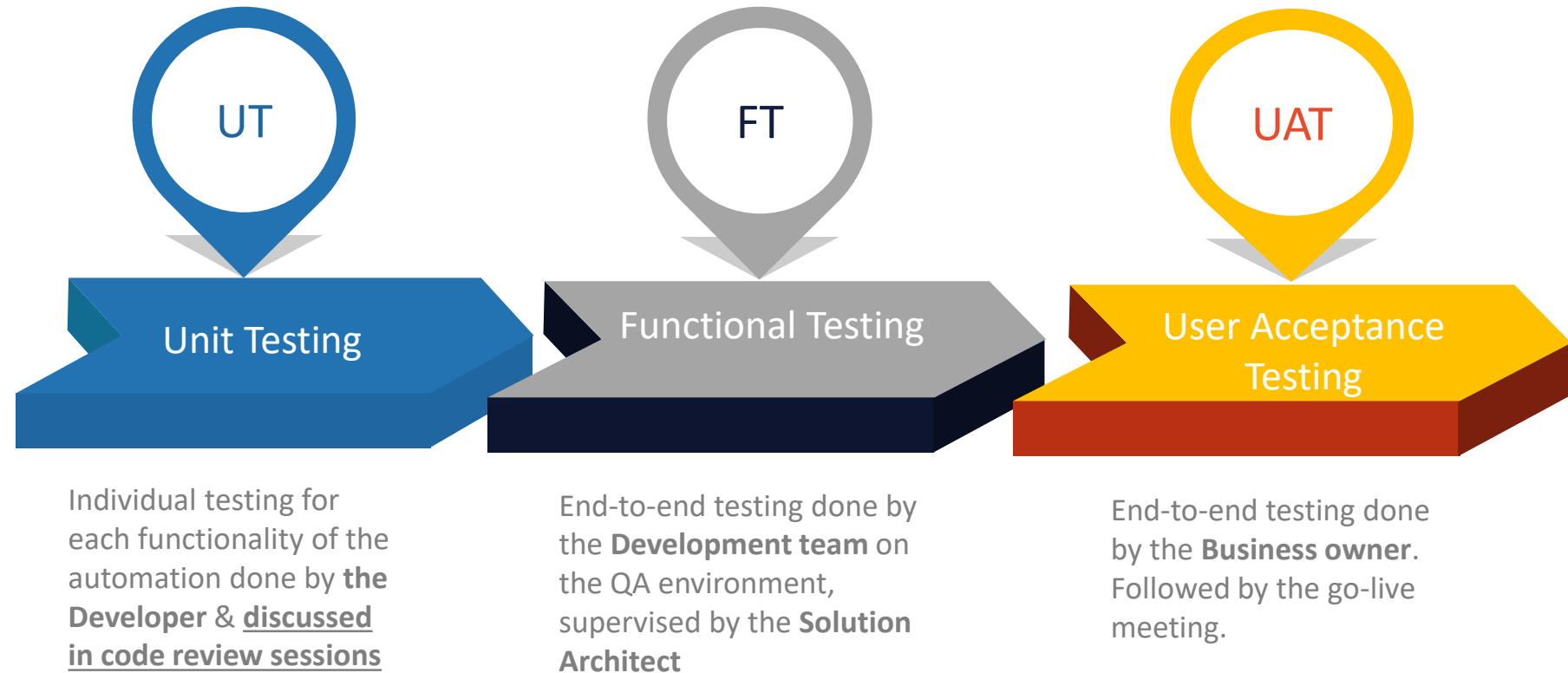


AUTOMATION STANDARDS

Define a set of coding standards and ensure enforcement through code reviews. Follow “maker-checker” principle.

Testing – Best Practices

Business Steps				Technical Steps			
Step 1: Process identification The application of a methodology to select the right processes for digital transformation.	Step 2: Process assessment The analysis of the current process to understand its strengths and weaknesses, and to identify areas for improvement.	Step 3: Process redesign The redesign of the process to improve its efficiency and effectiveness, taking into account the latest digital technologies.	Step 4: User stories definition The definition of user stories that describe the requirements for the new digital process, from the perspective of the end user.	Step 5: Development The development of the new digital process, using the latest digital technologies and following the agile methodology.	Step 6: UAT The execution of User Acceptance Testing (UAT) to validate the new digital process against the user stories.	Step 7: Go-live The launch of the new digital process, and the transition from the old process to the new one.	Step 8: Operational support The ongoing support and maintenance of the new digital process, ensuring it remains up-to-date and effective.



RPA Service Delivery Model



Level 0 Self Service



- The **UiPath website** provides a significant number of **resources** including:
 - Free RPA platform and community edition trial version
 - Free training (Academy)
 - Community forum
 - Video tutorials
 - White papers
 - Knowledge base (e.g. Citrix, recording, troubleshooting)
 - Release notes
 - Customer support (e.g. guides, ticketing system)

Level 1 COE Support



- The COE will help stakeholders with Level 1 support including:
 - Provide **1st level support**
 - Serve as the **single or first point of contact**
 - Identify **customer need** and log tickets in system
 - Assist with **simple issues / inquiries**
 - **Route issues / inquires to level 2**
 - **Escalate complaints** to support lead

Level 2 COE Support



- The COE will help stakeholders with Level 2 support including:
 - Provide **2nd level support** for more complex issues
 - Serve as single point of contact for 1st level support
 - **Escalate complex issues** to UiPath level 3 support
 - **Engage business analysts** for process related issues
 - Engage **RPA supervisors** for robot performance issues
 - Engage with **infrastructure engineers, technical architects, and RPA developers** for system and deployment issues

Level 3 UiPath Support



- UiPath will provide the **last level of support**
 - Provide 3rd level support to the COE
 - Serve as the **final form of dispatch** for customer issues and inquiries
 - Conduct **root cause analysis** for complex issues that are transferred from level 2 COE support
 - **Work with UiPath's product team** if needed

UiPath RPA CUSTOMER RAPID FIRE ROUND!



**SUPRIYA
ANANTHAKRISHNA**

RPA CoE Lead, Novo Nordisk



DEVELOPER
CONFERENCE

Thank you!

FRONT OFFICE AUTOMATION



PALAK KADAKIA

**Vice President Product
Management, UiPath**



***“Our vision is to have one
robot for every person”***

Daniel Dines

Attended automation features

18.3

- Attended floating robot
- Resizable robot tray
- Search within robot tray
- Switch between multiple Orchestrators from Tray
- Attended Automation activities to Block user input and Custom input forms

18.4

- Display currently running process
- Pause/resume/stop execution from tray
- Report Status activity



DEVELOPER
CONFERENCE

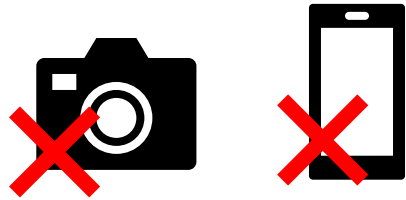
Roadmap

Disclaimer

The following content is confidential and intended for your information purposes only, and may not be incorporated into any contract.

It is not a commitment to deliver any material, code or functionality, and should not be relied upon when making purchasing decisions.

The development, release, and timing of any features or functionality described for UiPath's products remains at the sole discretion of UiPath.



Roadmap



Improved attended experience

Added functionality in Robot Tray to ensure best in class user experience



Human/process interaction

Enable human input and output for processes



Hybrid RPA

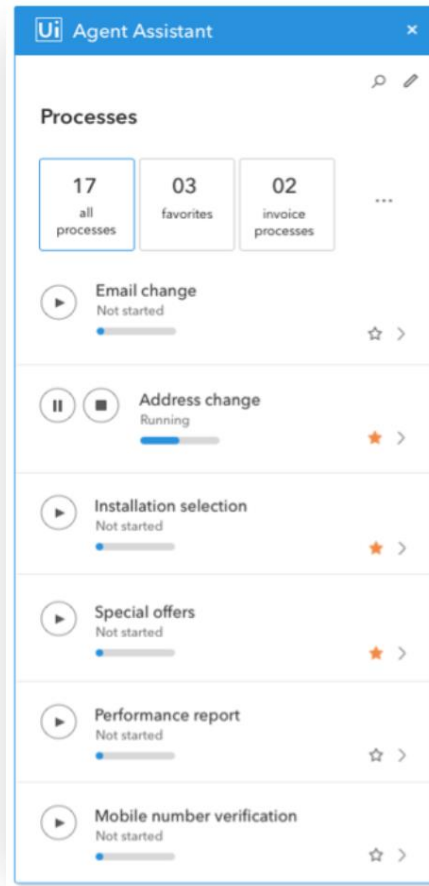
Collaboration between attended and unattended automation



Client extensibility

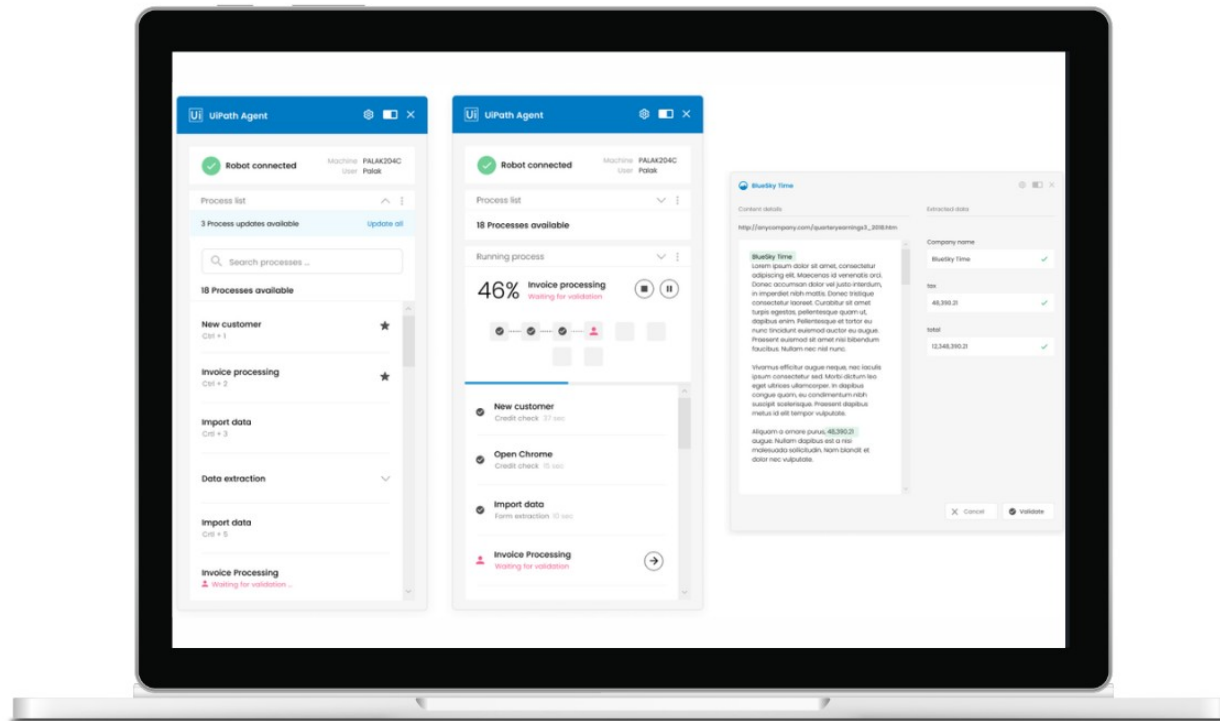
Trigger processes from custom client applications

Improved Attended Experience



- Robot tray accessibility
- Global hotkeys for pause/stop process
- Tray always on top
- Apply tags and favourites
- Grouped view of processes
- View execution progress
- Branding

Hybrid RPA



- Trigger unattended automation from attended
- View nested automation progress

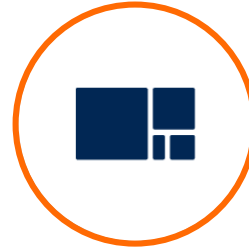
Human Process Interaction



Input forms



Progress notifications



Design custom forms easily



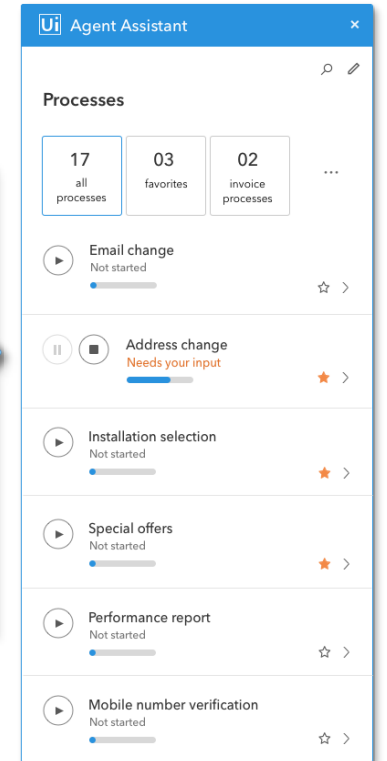
Process output



Support for human in the loop



Failure notifications



Client extensibility



Robot API



Trigger processes from any application



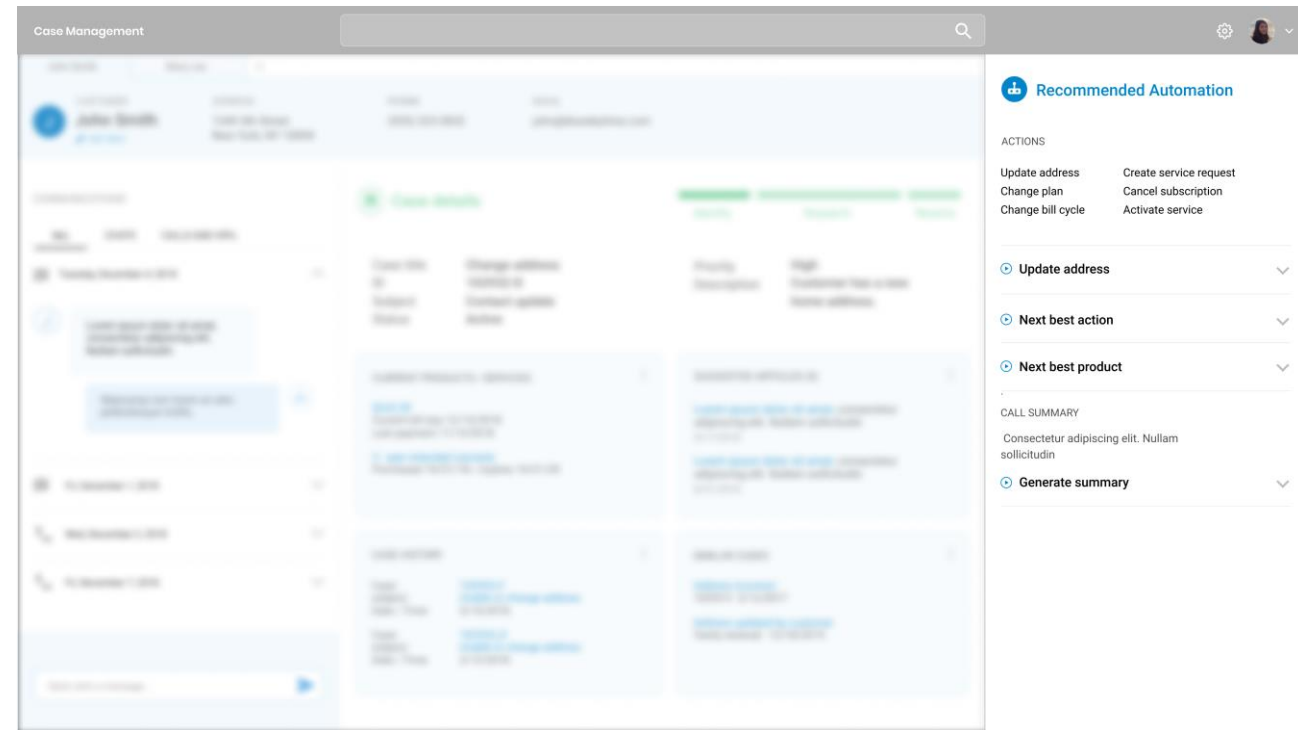
Business objects to store complex data types



Build custom applications leveraging UiPath



Mobile application for progress updates & human/process interaction





DEVELOPER
CONFERENCE

Questions?

STUDIO BEST PRACTICES



SAAHIL CHAUHAN

Senior RPA Developer, UiPath



FLORENT SALENDRES

UiPath MVP from Symphony



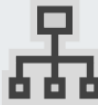
“

*Start with the end in mind
and everything falls in place.*

Layout diagrams



Sequence



Flowchart



StateMachine

Ui Main Workflow

- Flowchart
- State machine

Ui Business Logic

- Flowchart

Ui Data Processing

- Sequence, VB
- Powershell script

Ui UI Interactions

- Sequence

Selectors

Do your selectors identify the same element in case of:

1. Different environments .i.e. Dev , Test and Prod.
2. No matter which user logged on that Application.

Tips to Fine Tunes Selectors

Keep attributes that look steady and meaningful.

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Selector of current UI element is listed below.

```
<html title='Google Calendar - Week of Oct 16, 2016'/>
<webctrl id='dp_0_tbl' tag='TABLE'/>
<webctrl id='dp_0_day_23879' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>
<input checked="" type="checkbox"/> id	dp_0_day_23879
<input type="checkbox"/> innertext	7
<input type="checkbox"/> isleaf	1



Selector of current UI element is listed below.

```
<html title='Google Calendar - *'/>
<webctrl aaname='S M T W T F S' tag='TABLE'/>
<webctrl aaname='7' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input checked="" type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday-
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>d
<input type="checkbox"/> id	dp_0_day_23879

Tips to Fine Tunes Selectors

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Selector of current UI element is listed below.

```
<html title='Google Calendar - Week of Oct 16, 2016'/>  
<webctrl id='dp_0_tbl' tag='TABLE'/>  
<webctrl id='dp_0_day_23879' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>
<input checked="" type="checkbox"/> id	dp_0_day_23879
<input type="checkbox"/> innertext	7
<input type="checkbox"/> isleaf	1



Use wildcards
(*) where it
varies

Selector of current UI element is listed below.

```
<html title='Google Calendar - *'/>  
<webctrl aaname='S M T W T F S' tag='TABLE'/>  
<webctrl aaname='7' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input checked="" type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday-
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>d
<input type="checkbox"/> id	dp_0_day_23879

Tips to Fine Tunes Selectors

Remove if attribute = only Wildcard .(e.g. name='*')

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Selector of current UI element is listed below.

```
<html title='Google Calendar - Week of Oct 16, 2016'/>
<webctrl id='dp_0_tbl' tag='TABLE'/>
<webctrl id='dp_0_day_23879' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>
<input checked="" type="checkbox"/> id	dp_0_day_23879
<input type="checkbox"/> innertext	7
<input type="checkbox"/> isleaf	1



Selector of current UI element is listed below.

```
<html title='Google Calendar - *'/>
<webctrl aaname='S M T W T F S' tag='TABLE'/>
<webctrl aaname='7' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input checked="" type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday-
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>d
<input type="checkbox"/> id	dp_0_day_23879

Tips to Fine Tunes Selectors

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Selector of current UI element is listed below.

```
<html title='Google Calendar - Week of Oct 16, 2016'/>  
<webctrl id='dp_0_tbl' tag='TABLE'/>  
<webctrl id='dp_0_day_23879' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>
<input checked="" type="checkbox"/> id	dp_0_day_23879
<input type="checkbox"/> innertext	7
<input type="checkbox"/> isleaf	1



Add/Remove
intermediate
containers.

Selector of current UI element is listed below.

```
<html title='Google Calendar - *'/>  
<webctrl aaname='S M T W T F S' tag='TABLE'/>  
<webctrl aaname='7' tag='TD'/>
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input checked="" type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday.
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>d
<input type="checkbox"/> id	dp_0_day_23879

Tips to Fine Tunes Selectors

Avoid using idx attribute unless it is a very small number like 1 or 2.

S	M	T	W	T	F	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Selector of current UI element is listed below.

```
<html title='Google Calendar - Week of Oct 16, 2016' />
<webctrl id='dp_0_tbl' tag='TABLE' />
<webctrl id='dp_0_day_23879' tag='TD' />
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>
<input checked="" type="checkbox"/> id	dp_0_day_23879
<input type="checkbox"/> innertext	7
<input type="checkbox"/> isleaf	1



Selector of current UI element is listed below.

```
<html title='Google Calendar - *' />
<webctrl aaname='S M T W T F S' tag='TABLE' />
<webctrl aaname='7' tag='TD' />
```

InitializeFromSelector: 0 ms

Selector attributes	Value
<input checked="" type="checkbox"/> aaname	7
<input type="checkbox"/> class	dp-cell dp-weekday-
<input type="checkbox"/> colName	F
<input type="checkbox"/> css-selector	body>div>div>div>d
<input type="checkbox"/> id	dp_0_day_23879

Containers

- *Open Browser*
- *Open Application*
- *Attach Browser*
- *Attach Window*

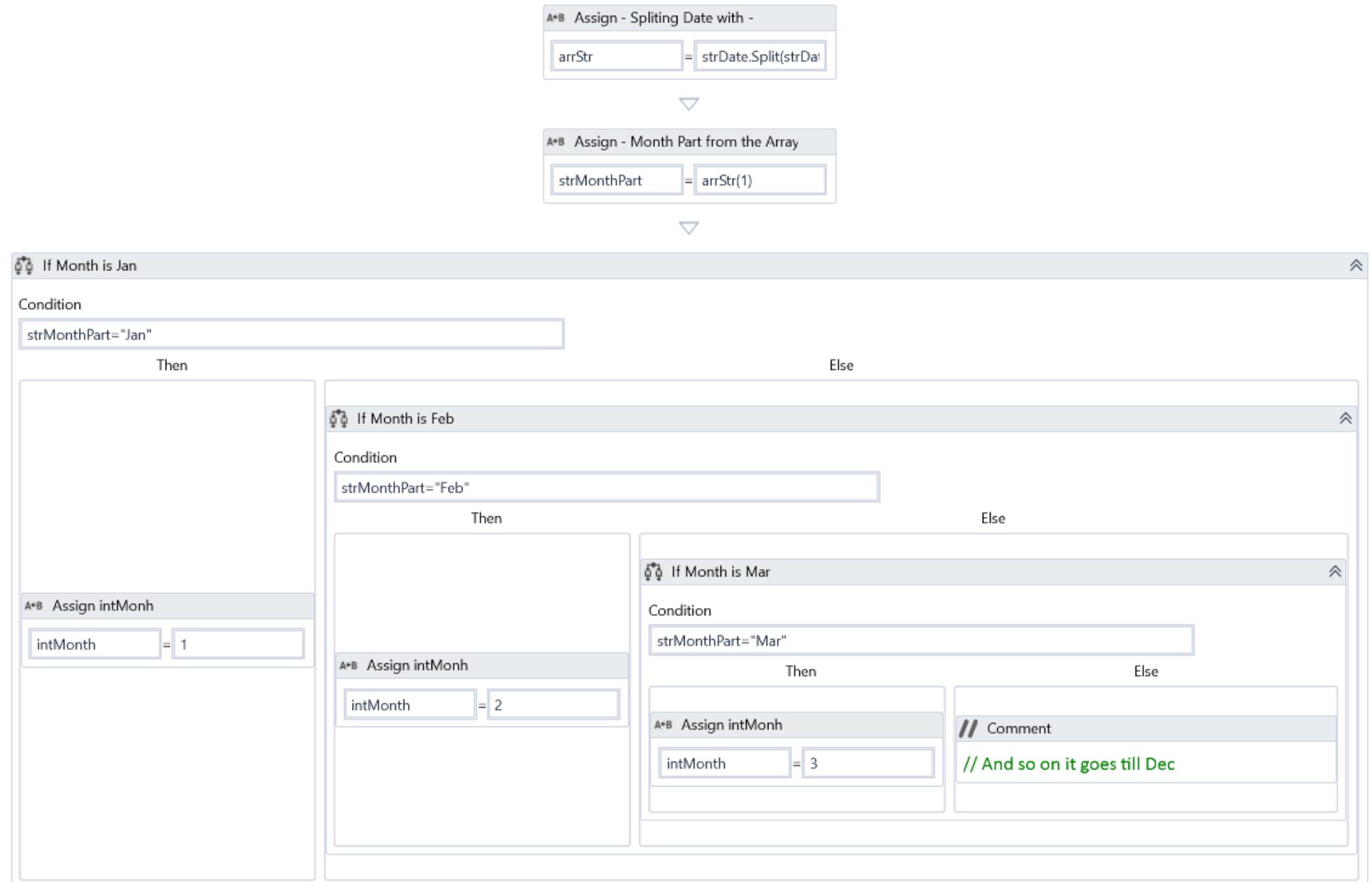
Edit Attributes

- ☒ title Amazon.in: pendrive - Pen Drives / External Devices & Data Stora*
- ☒ parentid result_0

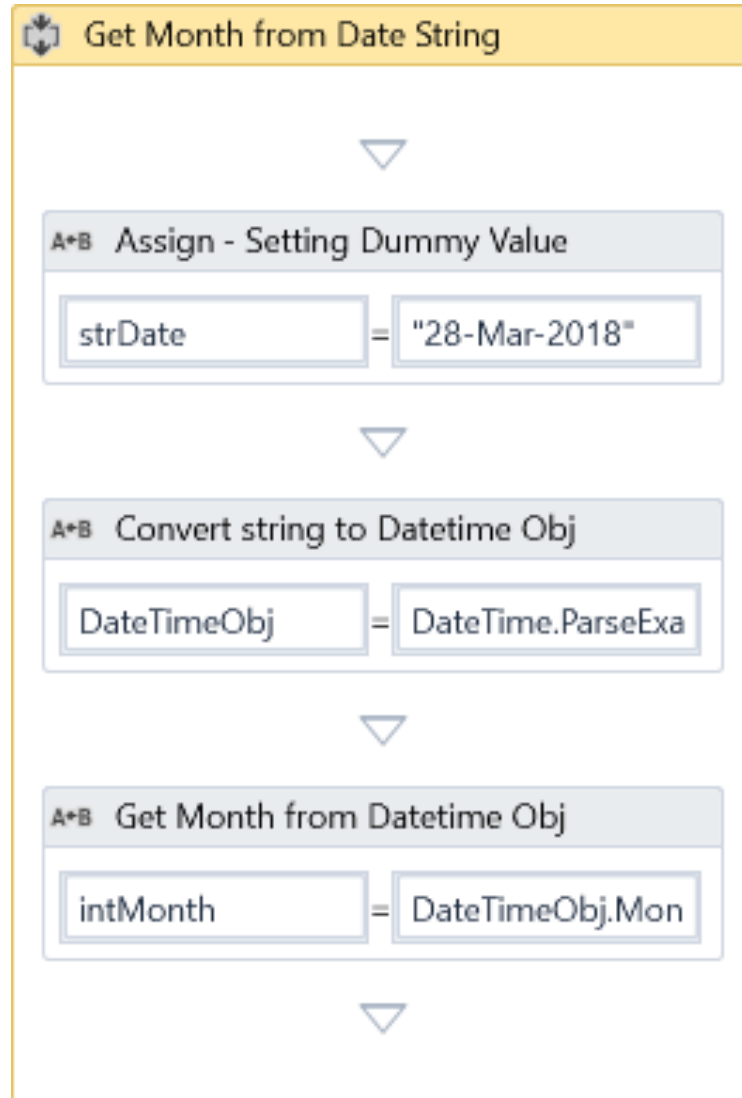
Edit Selector

```
<html title='Amazon.in: pendrive - Pen Drives / External Devices & Data Stora*' />  
<webctrl parentid='result_0' tag='H2' />
```


Can you identify the problem with this workflow?



Better way of doing it would be...

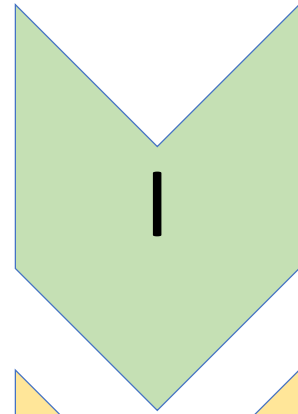


Either Methods Can be used like:

- a. `DateTime.ParseExact()`
- b. `Cdate()`
- c. `Convert.ToDateTime()`

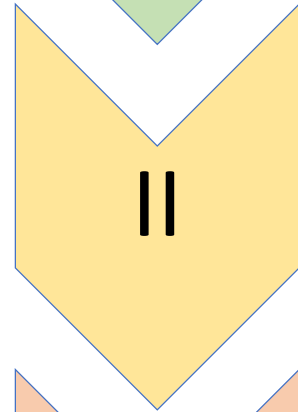
We have freedom of .Net Methods in UiPath.

Automation: Choose the best way.



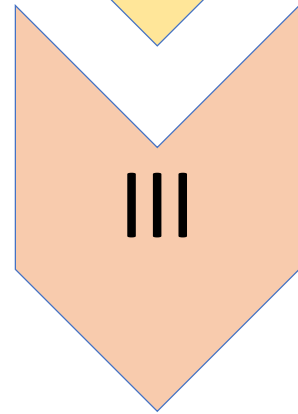
Background Automation

Simulate Type, API's, Data Scraping



Foreground Automation

Hardware Events, Send Hotkeys



Image/OCR Automation

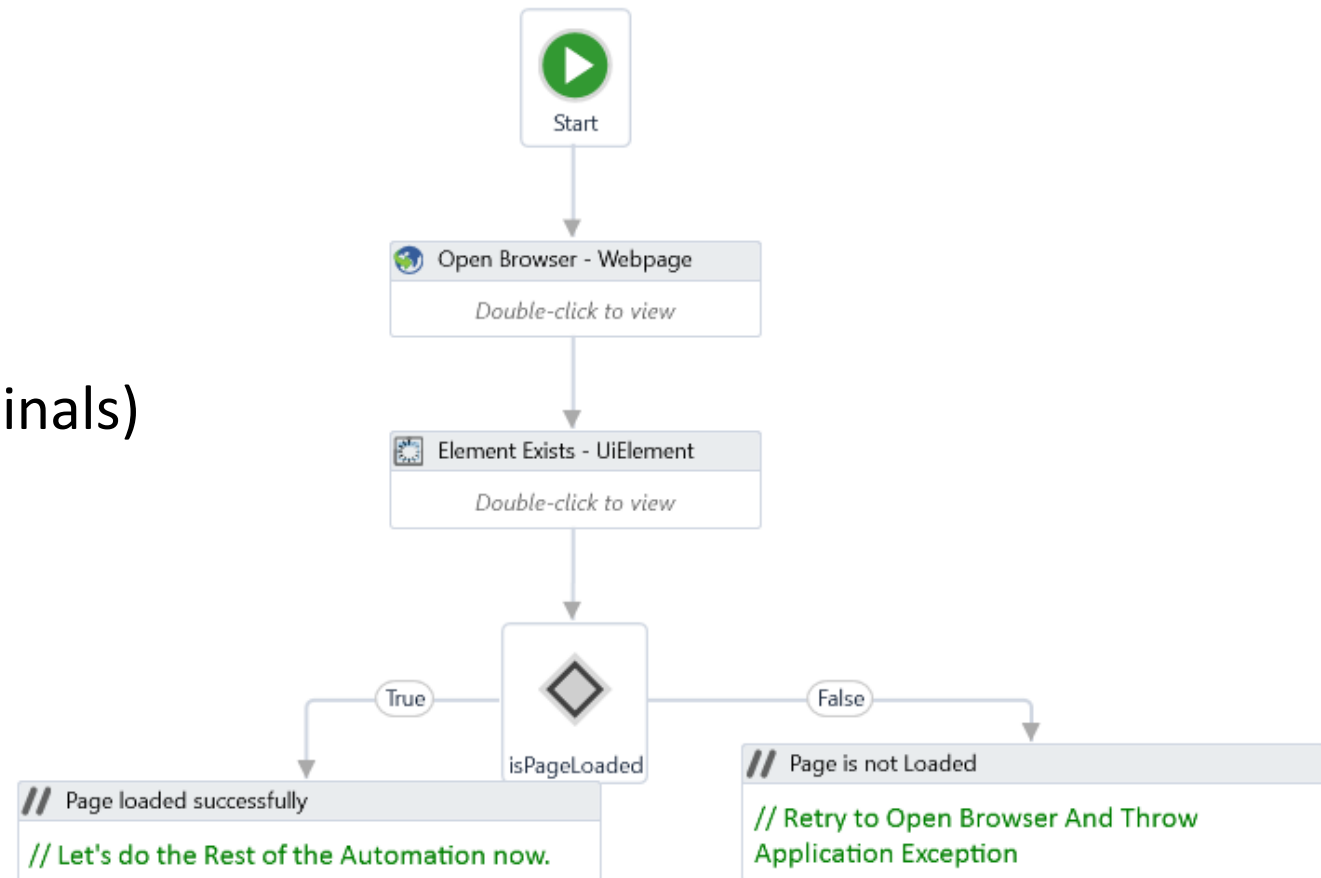
Click Image, Get OCR Text, etc.



Are your UI Elements in Sync.

Application state must be validated before proceeding with certain steps in a process.

- *ElementExists*
- *FindImage*
- *FindElement*
- *WaitElementVanish*
- *WaitImageVanish*
- *WaitScreenText* (in terminals)



Can you tell me the problem with this workflow?

Try Catch Typing Username

Try

Type Into Username

Username *

strUsername

Catches

Exception [Add an activity](#)

[Add new catch](#)

Finally [Add an activity](#)

Try Catch Typing Password

Try

Type Secure - Password

Password *

Catches

Exception [Add an activity](#)

[Add new catch](#)

Finally [Add an activity](#)

Try Catch Click Login

Try

Click 'Login'

Try Catch Typing Username

Try *Type Into Username*

Catches

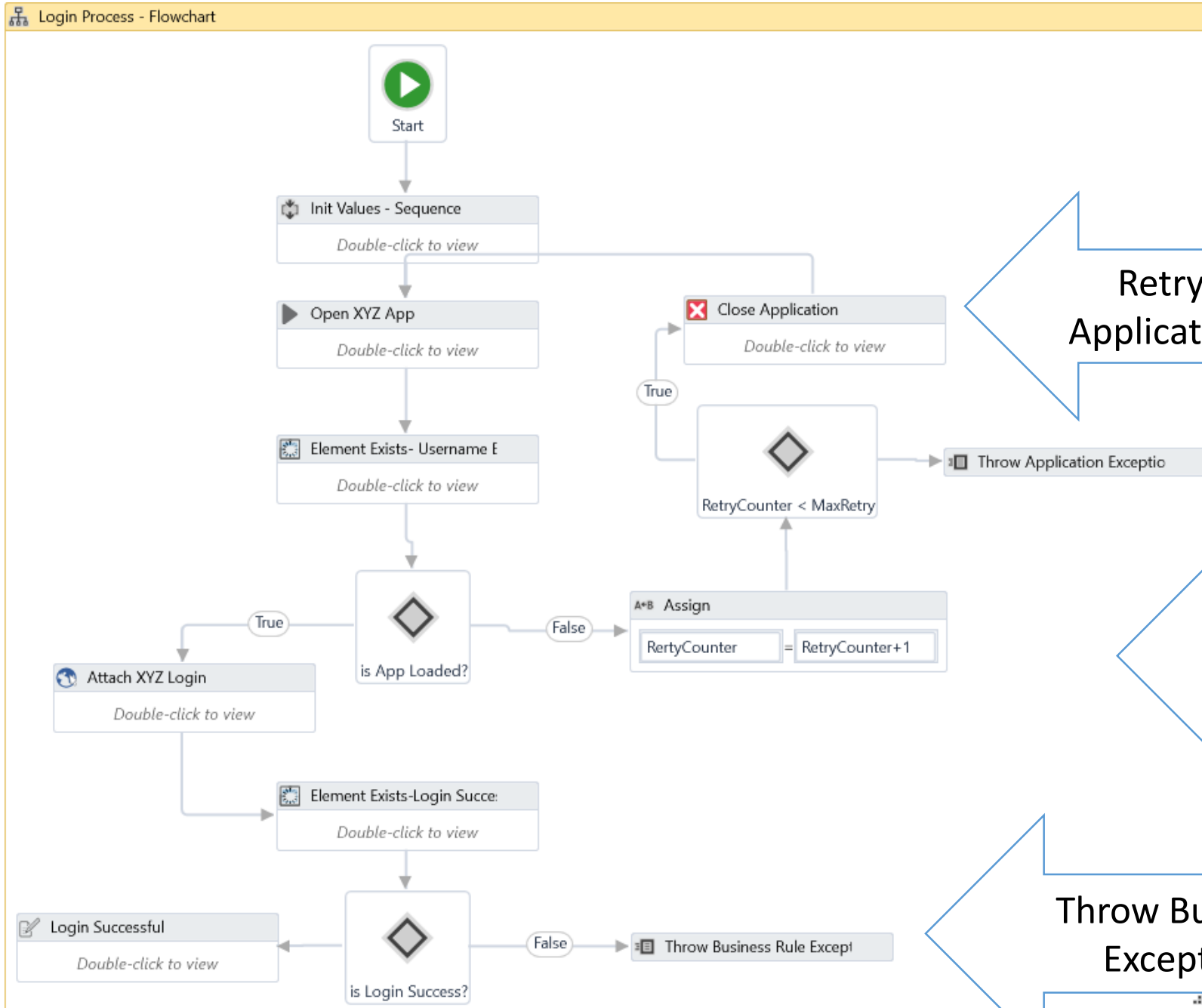
Exception

A*B Assign - Saving the Exception in Va

LoginException = exception

[Add new catch](#)

Finally [Add an activity](#)



Retry Application

Throw App Exception

Exceptions Handled are in Main/Parent workflow.

Throw Business Exception

Exception Handling

- Broader corrective measures. (Unexpected Exceptions)
- Contextual handlers. (Expected Exceptions)
- Vertical propagation mechanism.

Note: For any repetitive process, all workflow invocations from the main loop should be marked with *Isolated* option to defend against potential robot crashes (e.g. Out of memory).

Context Settings

To avoid hard coding external settings (like file paths, URLs) in the workflows, we recommend

- ☐ Keeping them in a config file (xlsx or xml or json)

OR

- ☐ Keep in Orchestrator assets if they may change often.

Credentials

No credentials should be stored in the workflow. They should be loaded from safer places like:

- ☐ Central Orchestrator assets via the GetCredential activities.

OR if Orchestrator is not available then

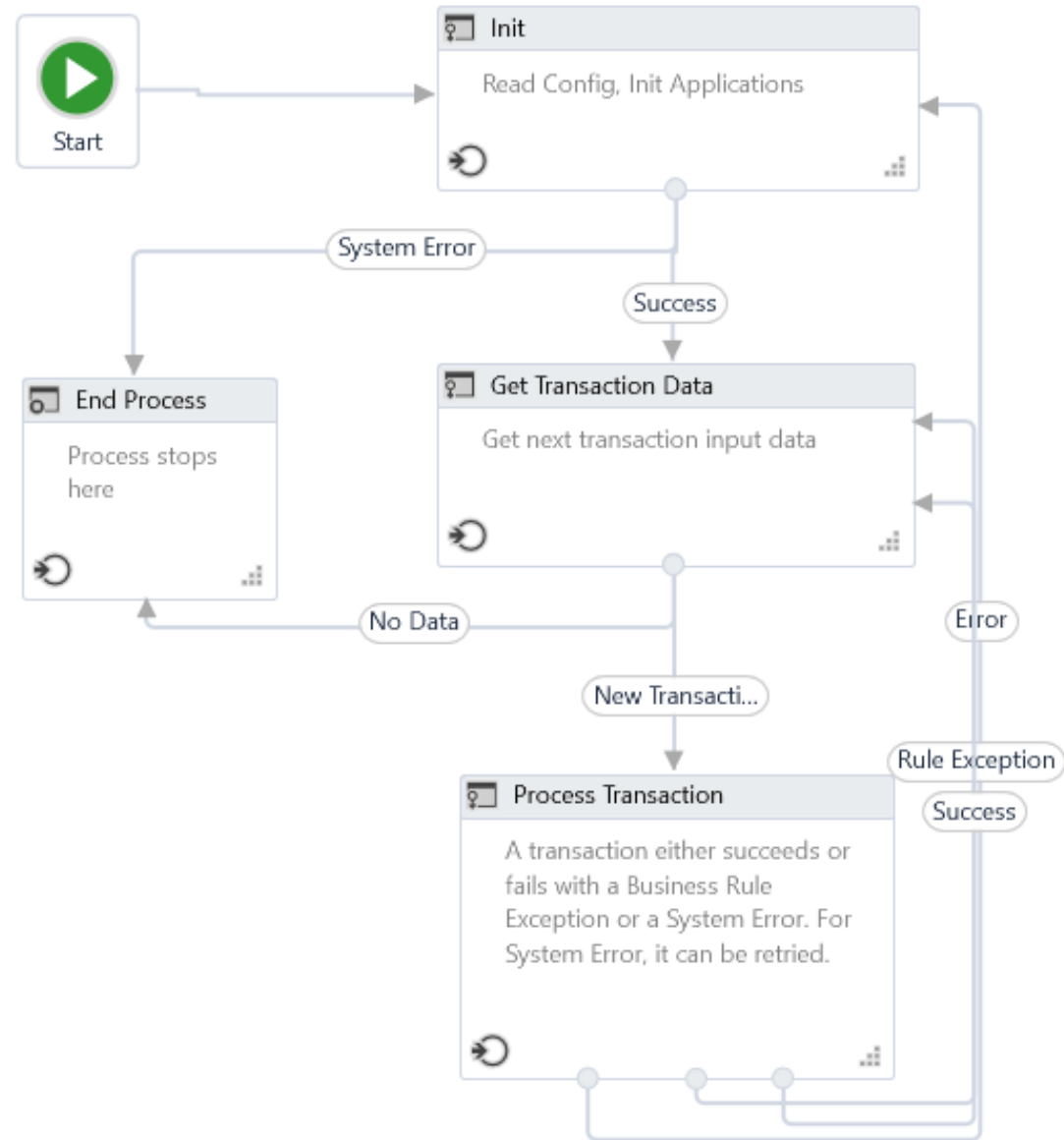
- ☐ Local Windows Credential Store

Developing the right way...

- Modular
- Clean, Clear & Readable
- Robust
- Configurable
- Secure
- Optimized (Reusable & Testable)

RE Framework

-- ReFrameWork - Robotic Enterprise Framework --
-- TEMPLATE--



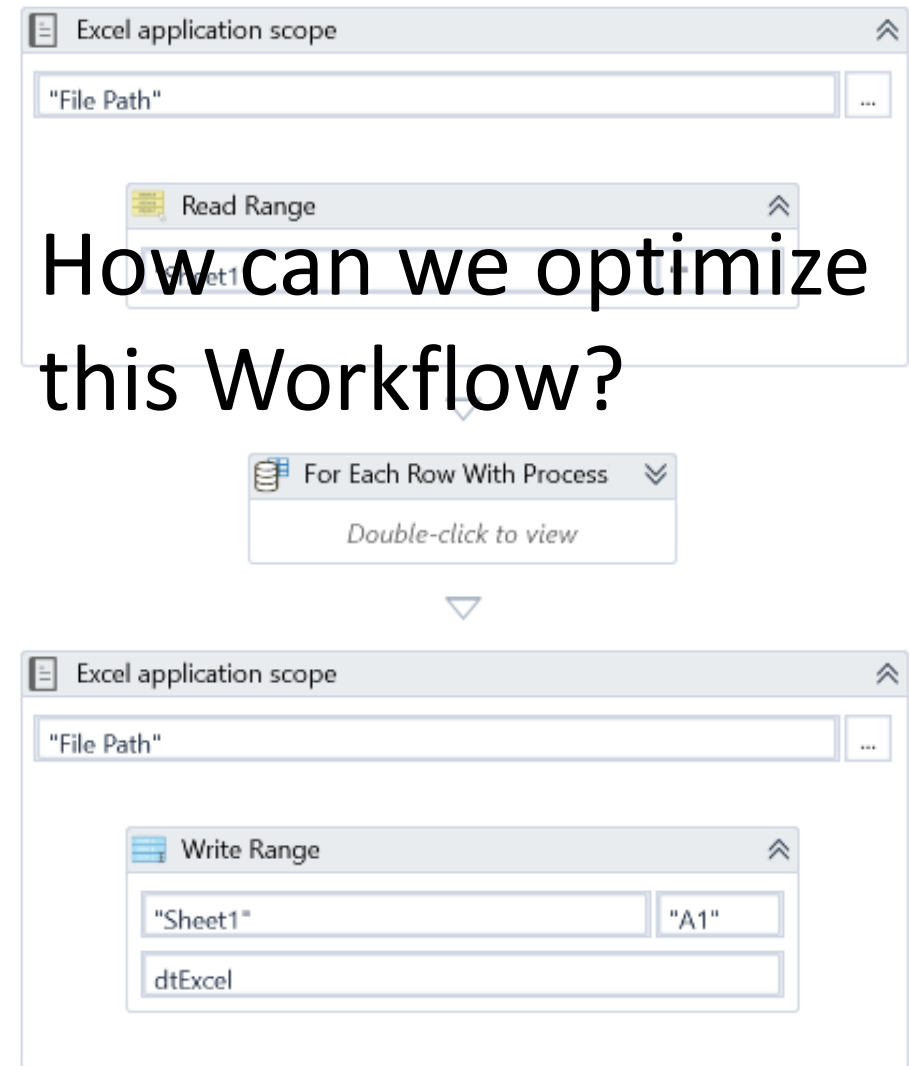
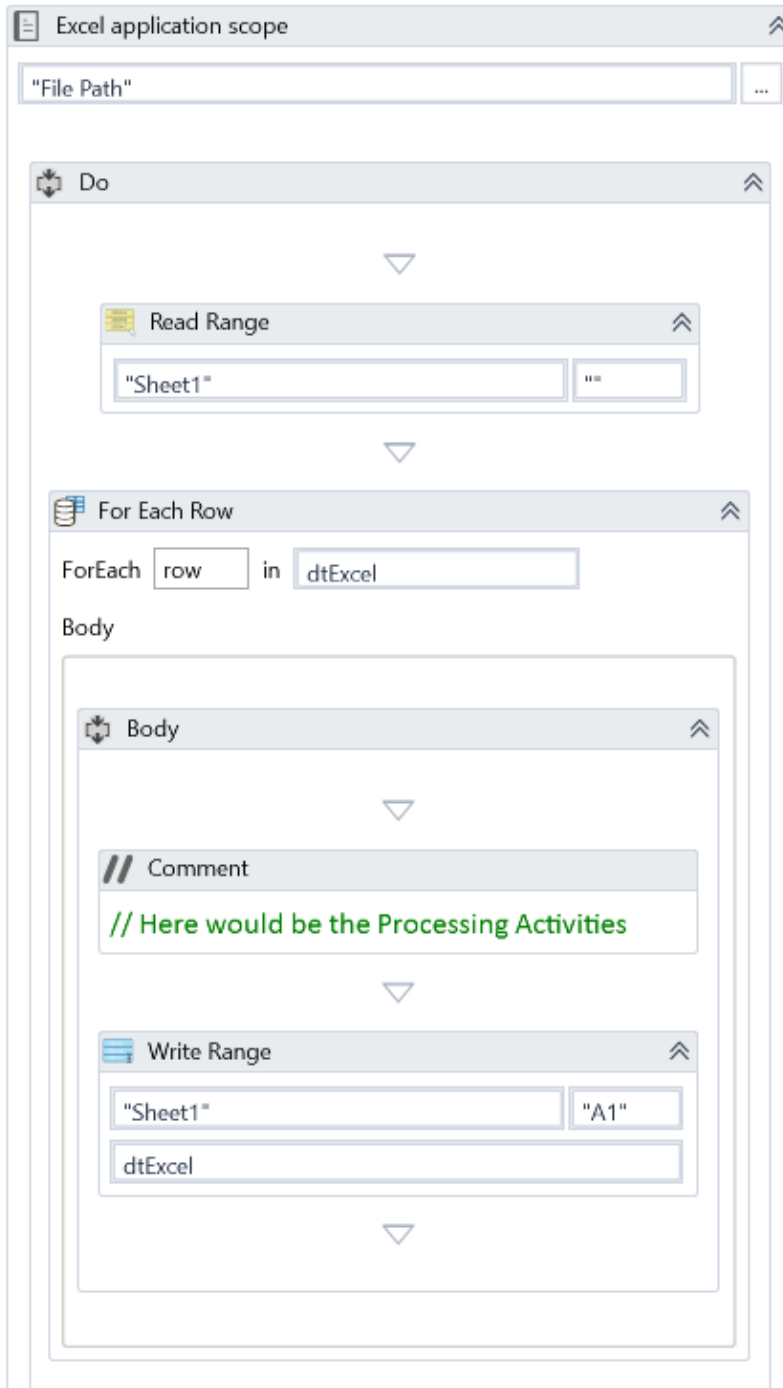
Organizing the Project

Prerequisites

Environments

Monitoring

How can we optimize this Workflow?





DEVELOPER
CONFERENCE

THANK YOU!

SMART PRODUCT SUPPORT



VIJAY CHAND

RPA Product Consultant, UiPath



**DEEKSHA
VASHISHTHA**

RPA Product Consultant, UiPath



Quick Browse on Innovations

- Robot Streaming - Watch your robots *live*!
- Monitoring Tool - *Health report* of the *Robot* on the go!

INNOVATION #1 : ROBOT STREAMING

Eagle Eye view of the Robots

ROBOT STREAMING

Cyber Eye view of the Robots functioning at the Customer's RPA Infrastructure

- ***Attended*** Robot Streaming - Watch the progress of attended robot at your convenience
- ***Unattended*** Robot Streaming - Watch the progress of unattended robot without hampering its execution

THE CYBER EYE FOR ATTENDED ROBOT

ROBOT MACHINE

BROWSER MACHINE

THE CYBER EYE FOR UN-ATTENDED ROBOT

ROBOT MACHINE

BROWSER MACHINE

INNOVATION #2 : UiPath MONITORING TOOL

***Monitor and HealthCheck UiPath RPA Resources
Hosted On The Customer Environment***

MONITORING TOOL

PROBLEM STATEMENT : To debug the issues on Customer Hosted RPA, Multiple files are investigated.

The Developed **HealthCheck** application

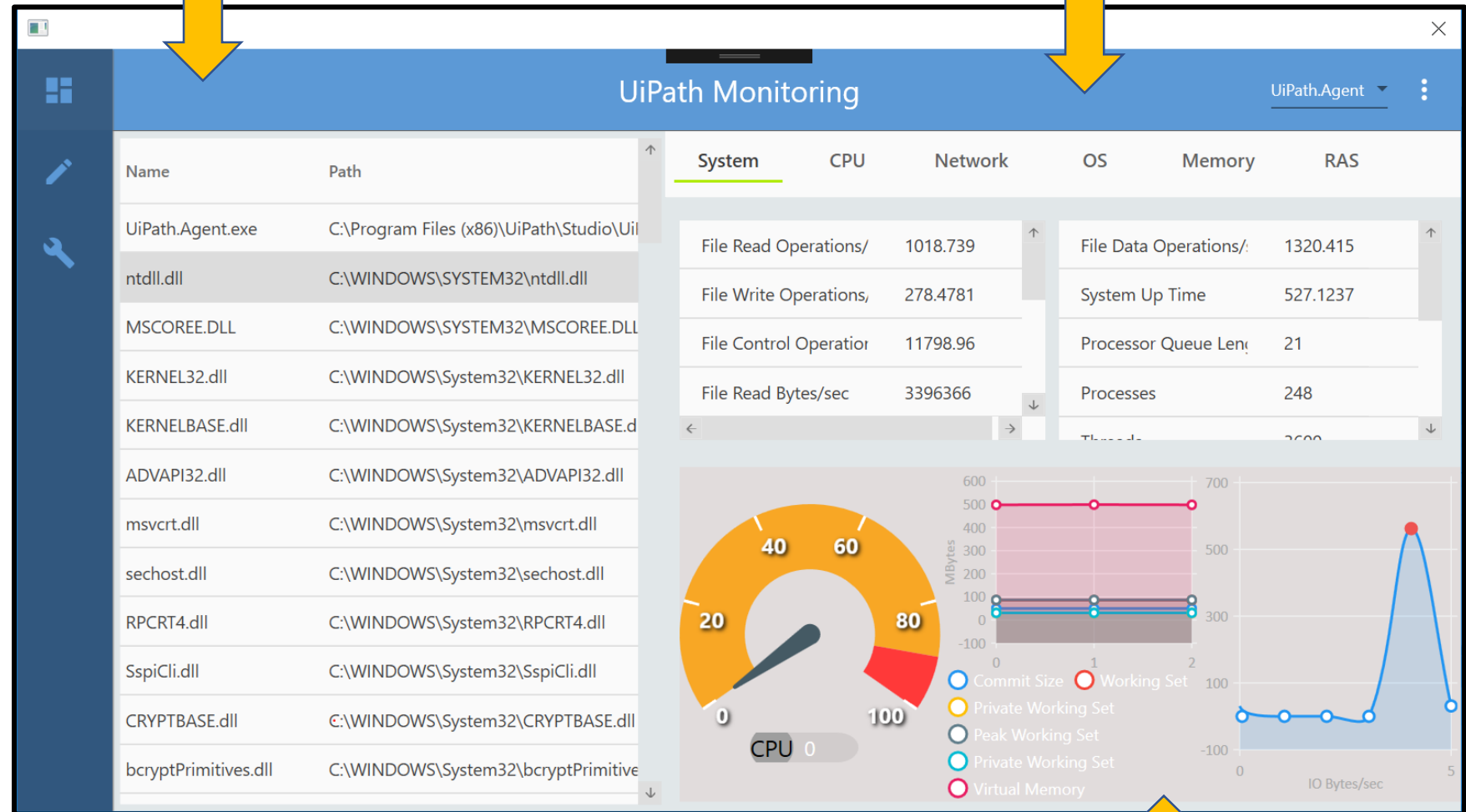
- Provides a common place to
 - ☐ **Capture** all the details with respect to any issue
 - ☐ **Modify** files & Settings
 - ☐ **Graphical Representation** of System related information
- **Time Effective** as all the required details for troubleshooting an issue is at one place
- **Enabling Customers** to do first hand analysis of the Issue

HEALTHCHECK DASHBOARD

PURPOSE : Robot Crash, Memory Leaks, Monitoring System Related Information

DLL

SYSTEM DETAILS

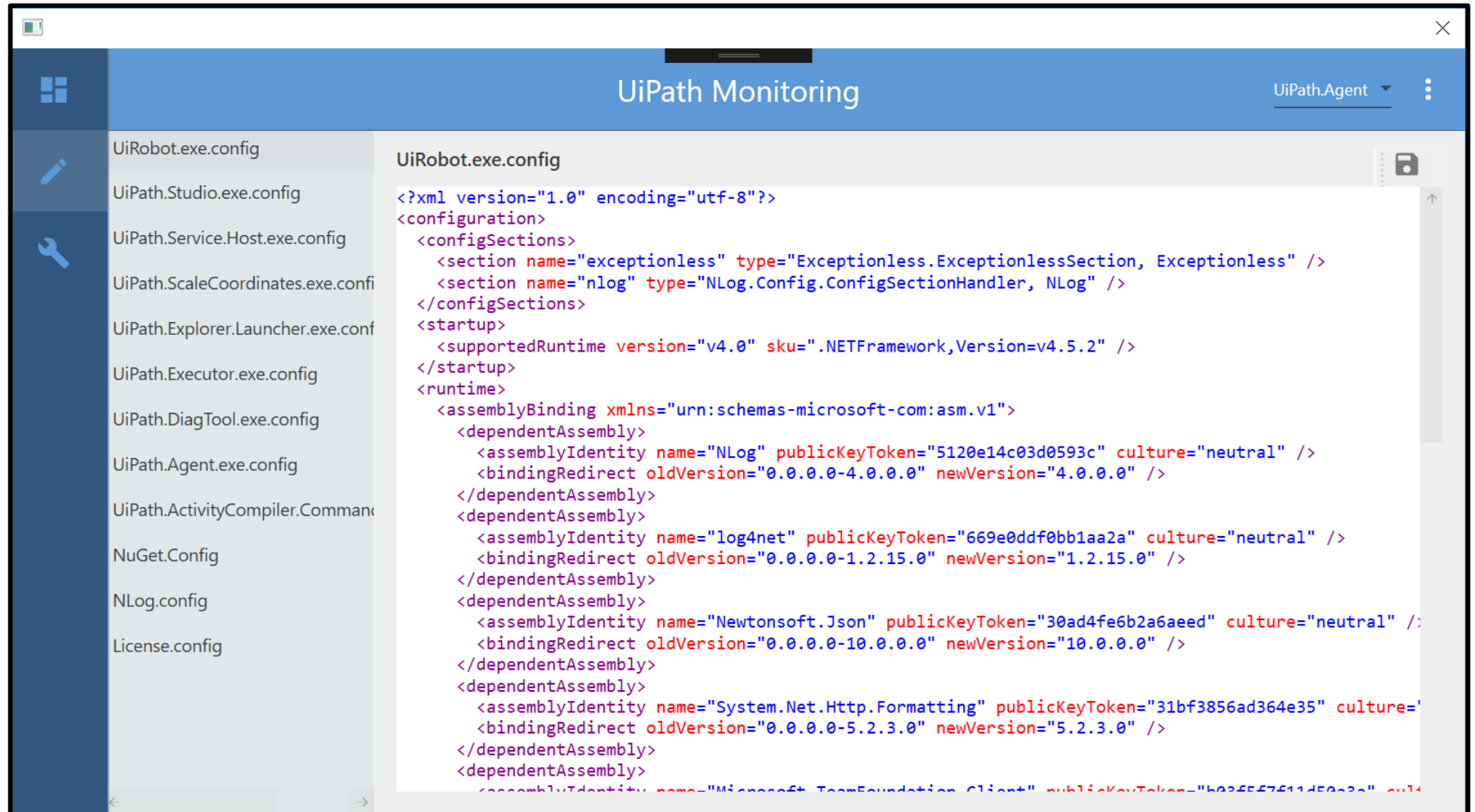


GRAPHICAL METRICS

CONFIGURATION TAB

PURPOSE : Provides all the CONFIG files related to UiPath at Common place

- Edit and Save it from here



EVENT LOGS

PURPOSE : Failure of Robot, Problem with Workflows, Session Management Failure from Orchestrator on Robot machine

UiPath Monitoring

UiPath.Agent

Event Viewer Logs Registry Group Policies Enable Tracing

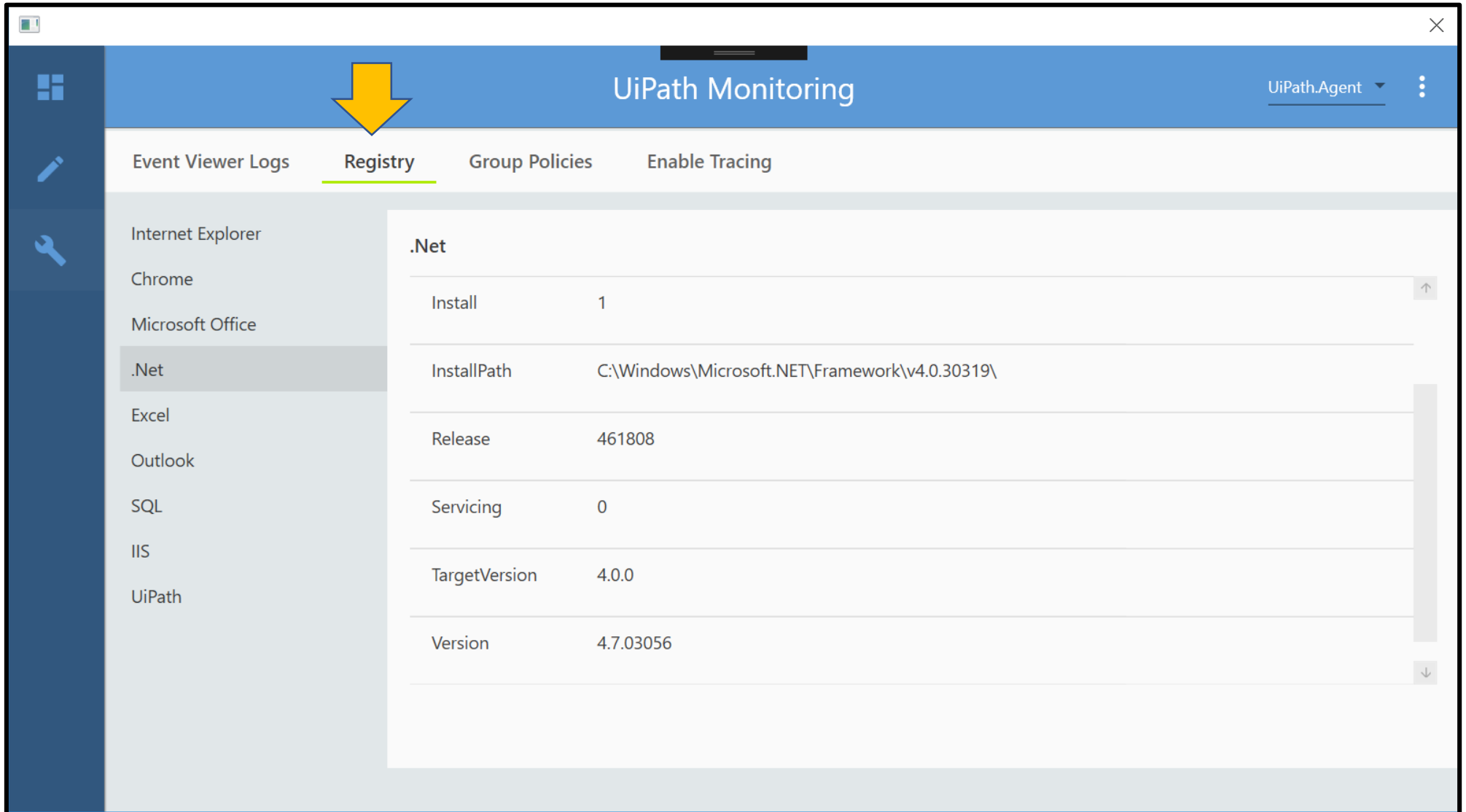
Source	Date and Time	Level	Message
UiPath	08-01-2019 18:28:47	Information	{"message":"UiPathRemote: SetSettingValue","level":"Verbose","logType":"Default",
UiPath	07-01-2019 18:29:27	Information	{"message":"UiPathRemote: SetSettingValue","level":"Verbose","logType":"Default",
UiPath	07-01-2019 18:19:25	Information	{"message":"UiPathRemote: SetSettingValue","level":"Verbose","logType":"Default",

Log Details:

```
{"message":"UiPathRemote: SetSettingValue","level":"Verbose","logType":"Default","timeStamp":"2019-01-07T18:29:27.226481+05:30","fingerprint":"7fba90d1-af6a-4aa2-8dd2-068297c3fd69"}
```


REGISTRY KEYS

PURPOSE : It lists the Important Registry Keys which we monitor

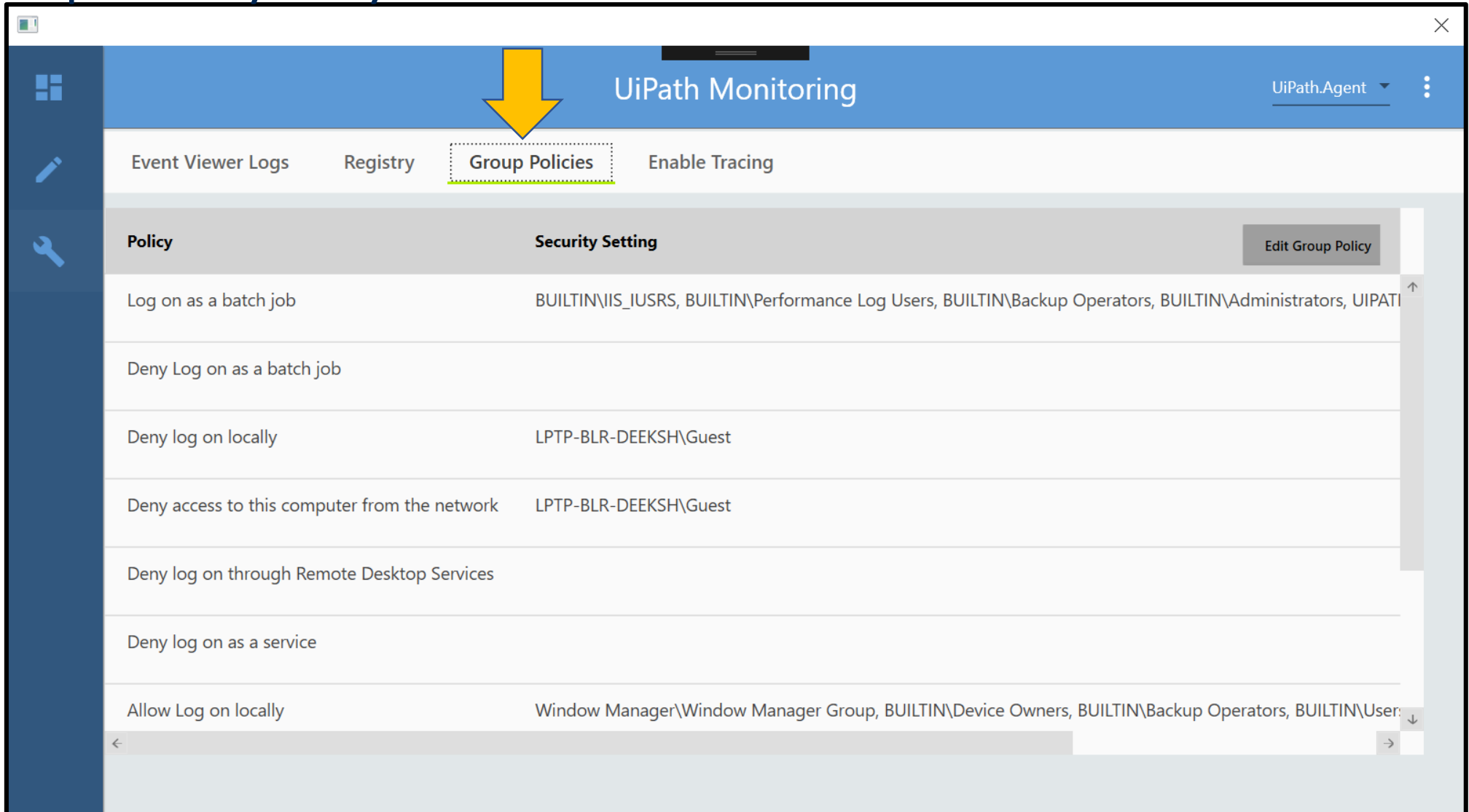


The screenshot shows the UiPath Monitoring interface. The 'Registry' tab is selected, indicated by a yellow arrow. The left sidebar lists various applications, with '.Net' selected. The main area displays a table of registry keys for .Net.

.Net	
Install	1
InstallPath	C:\Windows\Microsoft.NET\Framework\v4.0.30319\
Release	461808
Servicing	0
TargetVersion	4.0.0
Version	4.7.03056

GROUP POLICIES

PURPOSE : Policies related to UiPath, Prerequisite check on required Policies, Verifying required Policy on a system

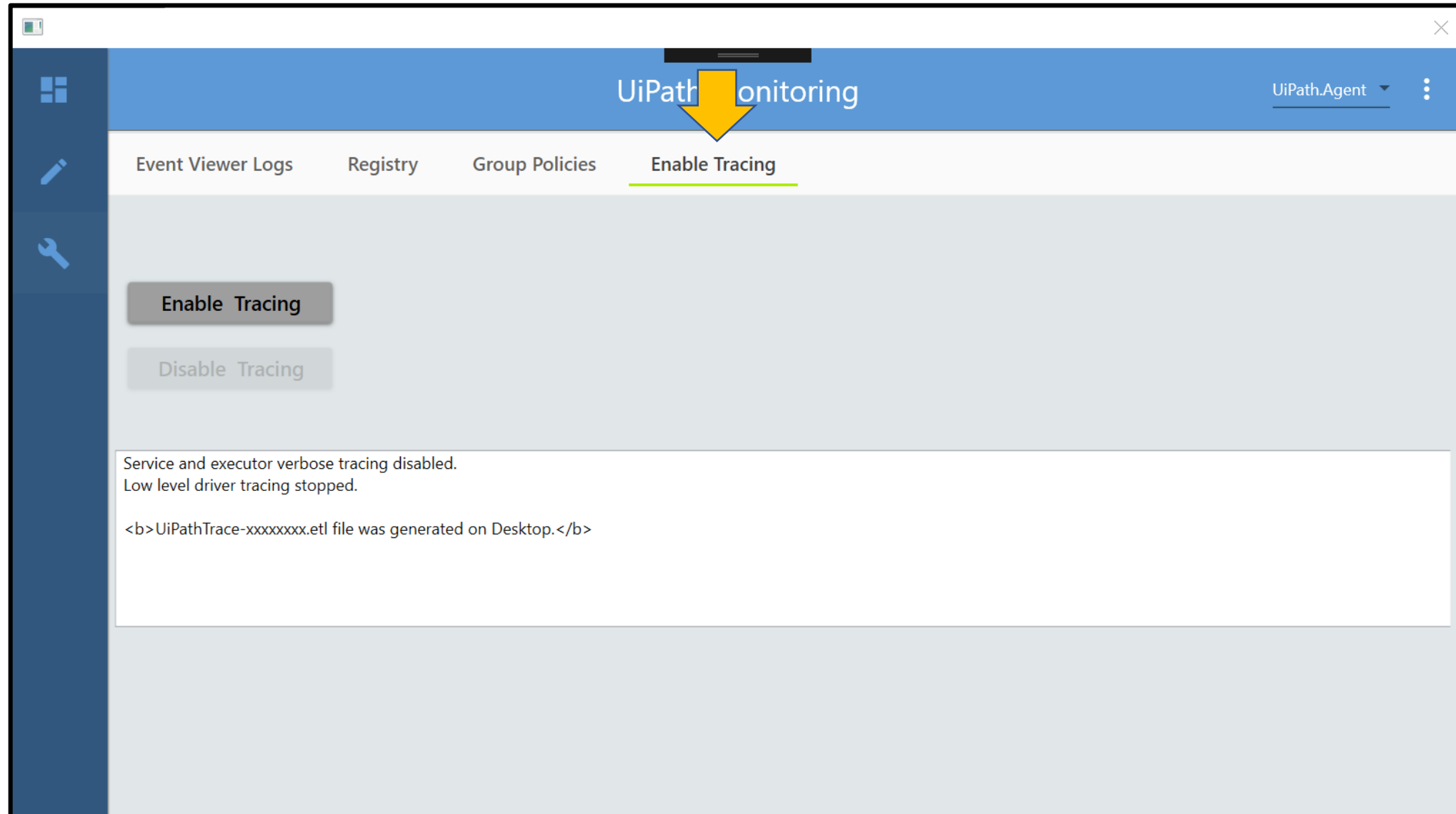


The screenshot shows the UiPath Monitoring console interface. The top navigation bar includes 'Event Viewer Logs', 'Registry', 'Group Policies' (highlighted with a yellow arrow and a dashed border), and 'Enable Tracing'. The 'Group Policies' tab is active, displaying a table of security settings. The table has two columns: 'Policy' and 'Security Setting'. A vertical scrollbar is visible on the right side of the table.

Policy	Security Setting
Log on as a batch job	BUILTIN\IIS_IUSRS, BUILTIN\Performance Log Users, BUILTIN\Backup Operators, BUILTIN\Administrators, UIPATH\UiPath.Agent
Deny Log on as a batch job	
Deny log on locally	LPTP-BLR-DEEKSH\Guest
Deny access to this computer from the network	LPTP-BLR-DEEKSH\Guest
Deny log on through Remote Desktop Services	
Deny log on as a service	
Allow Log on locally	Window Manager\Window Manager Group, BUILTIN\Device Owners, BUILTIN\Backup Operators, BUILTIN\User

TRACING

PURPOSE : Enable and Disable Low level Tracing



QUESTION & ANSWER





DEVELOPER
CONFERENCE

Thank You



DOWNLOAD THE APP

1. SCAN the QR code
2. DOWNLOAD the event app

OR

1. DOWNLOAD the Crowd Compass app
2. SEARCH for UiPath Developers Conference

DON'T FORGET TO: RATE EACH SESSION & FILL-IN THE SURVEY

