



Implementation Methodology

DESIGN



Please open the Process Design Document available in the
Course Documentation folder



Please open the Test Cases Template available in the
Course Documentation folder



Implementation Methodology

BUILD

Tracking the progress

Criteria for considering the development done for a process	
1	Code produced (completed all 'ToDo' items in code)
2	Code commented according to best practices, checked and ran against current version in source control
3	Peer reviewed (or produced with pair programming) and meeting development standards
4	Passed unit tests
5	Deployed to system test environment
6	Passed System Integration tests and signed off as meeting requirements
7	SDD document filled in and approved
8	Relevant documentation/diagrams produced and/or updated

Tracking the progress

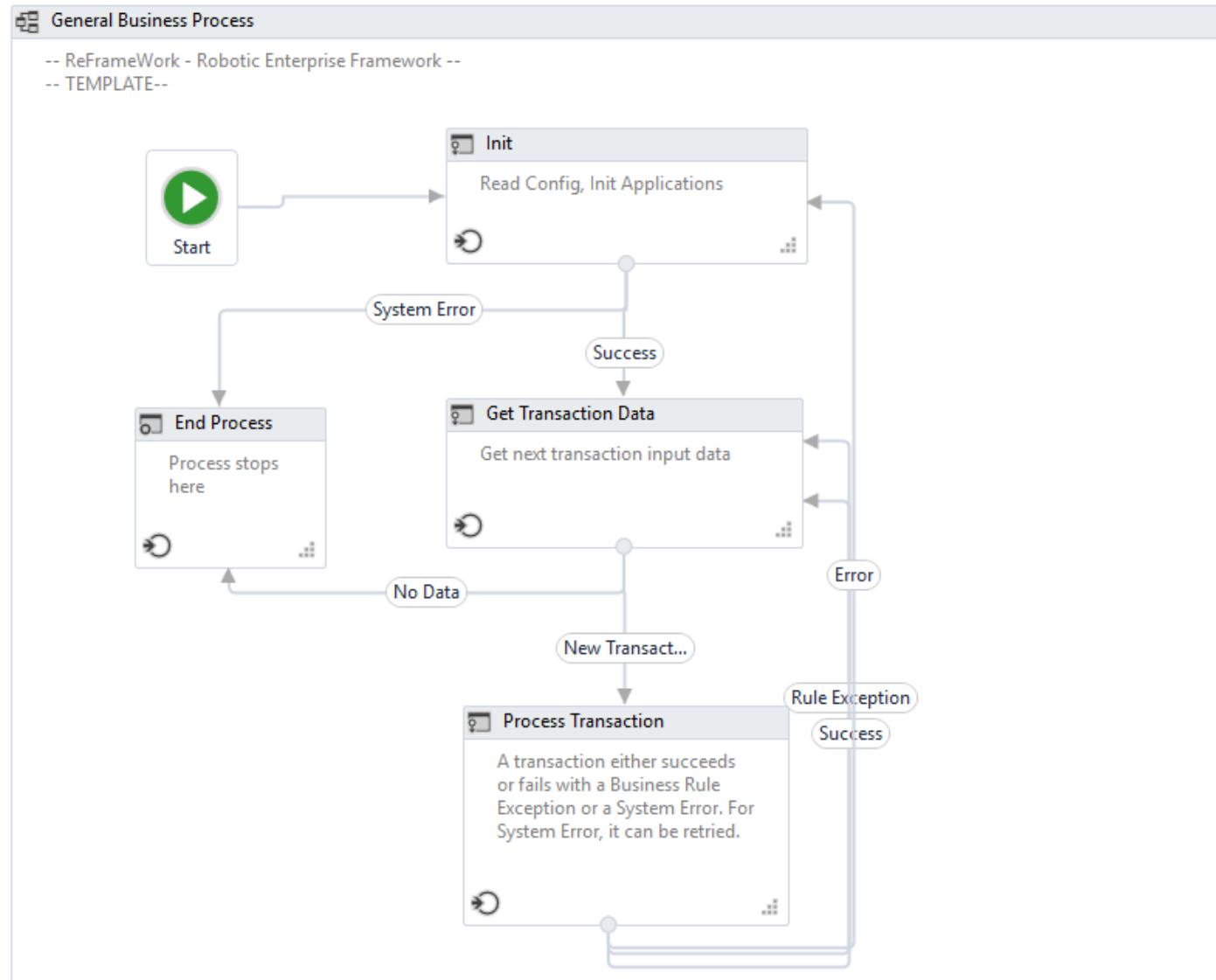
Scenario	No. of days	Timeline (End Date)	Owner	Status
Task 1	3			
Task 1 Unit Testing	5			
Task 2	2			
Task 2 Unit Testing	1			
Task 3	2			
Task 3 Unit Testing	1			
Reporting dashboards	1			
Post code-review changes	2			
SDD fill in	1			
Migrate workflow to Test	1			
System Integration Testing	3			



Please open the Development Specification Document
available in the Course Documentation folder

Robotic Enterprise Framework - ReFramework

Enables collaboration between developers



Repetitive implementation steps

- Initializing various applications
- Reading configuration parameters
- Capturing errors
- Closing all the applications
- Returning to a ground state once the process finishes

Framework benefits

- Proper exceptions handling
- Recovery abilities
- Effective logging
- Reporting functionalities
- High maintainability
- Extensibility
- Reusability
- Ease of deployment

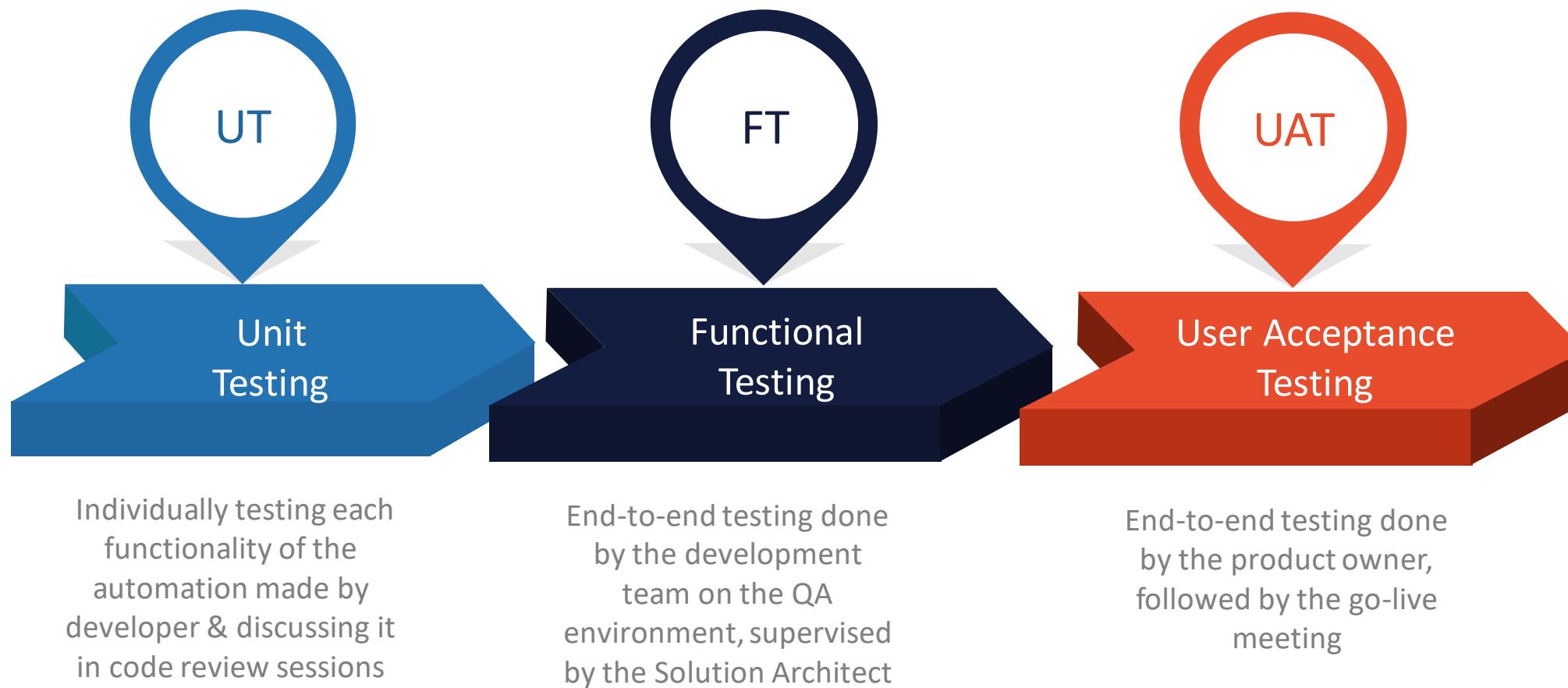


Implementation Methodology

TEST

Testing plan

UiPath has developed a three phase approach for the testing process, making sure no critical bugs will reach the production environment. Paired with code review sessions and approval board meetings, the methodology ensures quality in deliverables.





Thank You!



RPA Implementation Methodology

Agenda



- 1. Onboarding and COE enablement**
 - IT Onboarding
 - Business onboarding
 - Creating a Center of Excellence
- 2. RPA Preparation**
 - High level architecture
 - Best practices
 - Project management methodology
- 3. Opportunity assessment**
 - Identifying suitable processes
 - Common processes for automation



- 4. Design, Build, Test**
 - Design – the PDD
 - Build – the DSD
 - Tracking the progress
 - Robotic Enterprise Framework
 - Testing steps
- 5. Sustain RPA**
 - Hypercare period
 - Quantify benefits
 - Reporting the results

Implementation methodology target audience

- Program managers & Project managers – understand how to guide the teams and what outputs to expect from an RPA implementation
- L Technical leads and solution architects – Perceive the implementation steps and methodology for creating a predictable and productive environment for the technical teams
- All project team members – have a better in-depth understanding of the RPA implementation they are involved in

Learning Objectives:

- Understanding the UiPath recommended RPA implementation methodology
- Identifying the different steps of an implementation
- Learn to drive your RPA project
- Review the battle-tested best practices
- L Create RPA awareness throughout the company
- Pick the best automation candidates
- Leverage benefit reporting

Course Prerequisites





Thank You!



Implementation Methodology

OPPORTUNITY ASSESSMENT

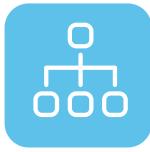
What Process Should I Automate?

Guide to Choose the Best Candidate Processes for Automation



Highly manual and repetitive processes

- High transaction volume processes
- Highly frequent processes running daily, weekly (instead of monthly or yearly, which involve lots of manual work or work prone to human error)



Processes with standard readable electronic Input Type

- Triggered by standard and consistent inputs. The inputs should be in a readable input type like Excel, Word, email, XML, PPT, readable PDFs etc
- Triggered by input types which are not readable (scanned images with no OCR are not prone to automation.)



Changeable Processing Method or System Change

- The processing method cannot be changed
- Fundamental changes are not required in the underlying technical architecture of the current systems (e.g new interface development or changes in configuration for existing systems to enable automation)
- **We strongly recommend to avoid automating a process that will be changed in the short term**



Rule-Based Processes

- Activities with clear processing instructions (template-driven), with decision making based on standardized and predictive rules



High Volumes

- Processes with high transaction volumes (and high frequency).



Automation Savings

- It's recommended to automate only the processes that can provide a saving in terms of human work-effort of minimum 2 FTEs



Low Exception rate

- Activities with low number of variation scenarios existing in the process leading to different handling procedures

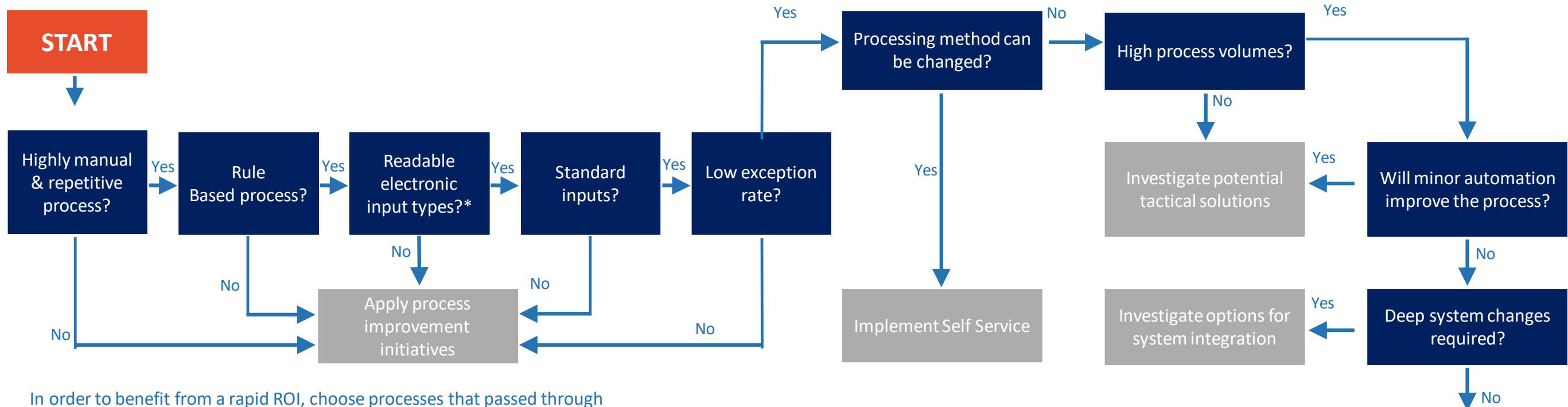


Mature and stable processes

- Well documented, stable, predictable
- Known operational costs

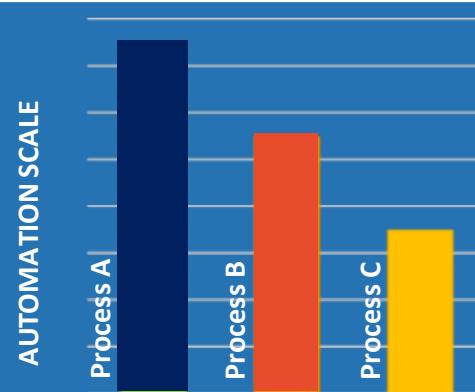
What Process Should I Automate?

Guide to Choose the Best Candidate Processes for Automation



In order to benefit from a rapid ROI, choose processes that passed through a transformation initiative using the Lean Six Sigma methodology.

Process 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 Volume Transactions	●	●	●
System changes	●	●	●

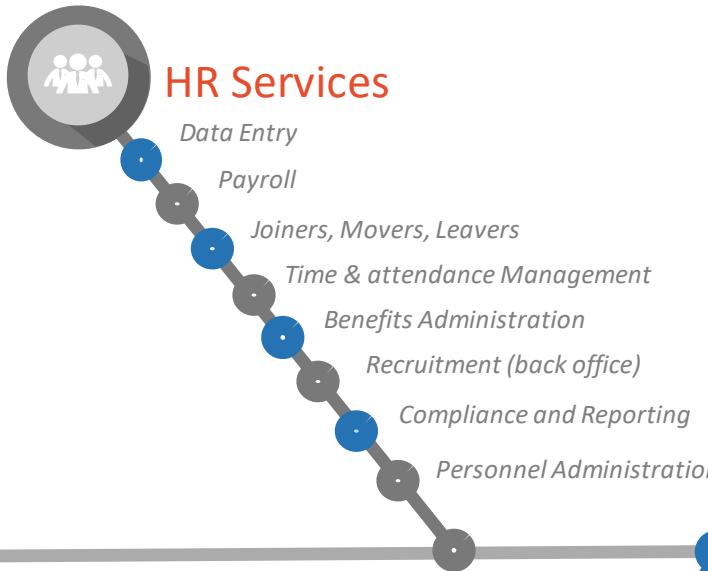


Process A is the best fit for automation, followed by Process B, while Process C should be subject to a Lean Six Sigma transformation approach prior to considering automating it.



RPA

Processes Every Company Should Automate



Finance and Accounting

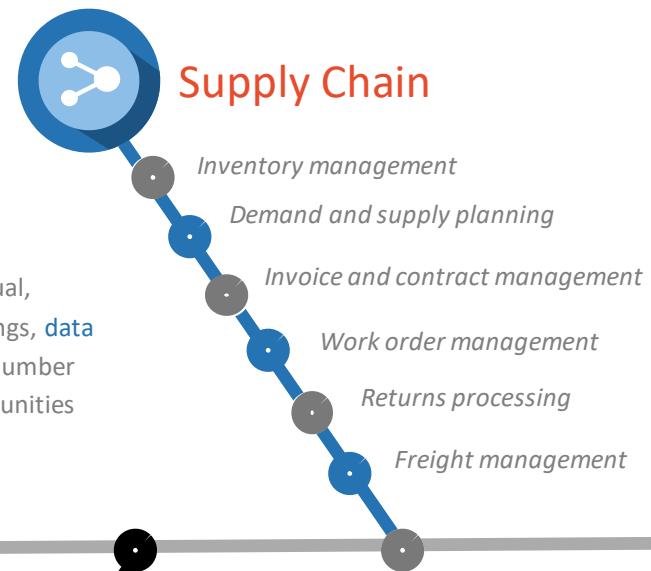
F&A is another area where automation can have significant positive impact on cost savings, improved efficiency and streamline processes, when applied



Finance and Accounting

HR Services

Due to the huge amount of repetitive, often manual, administrative tasks, under the shape of form fillings, data capturing, updating and disseminating and large number of request processing, HR is a gold mine of opportunities for automation



Supply Chain

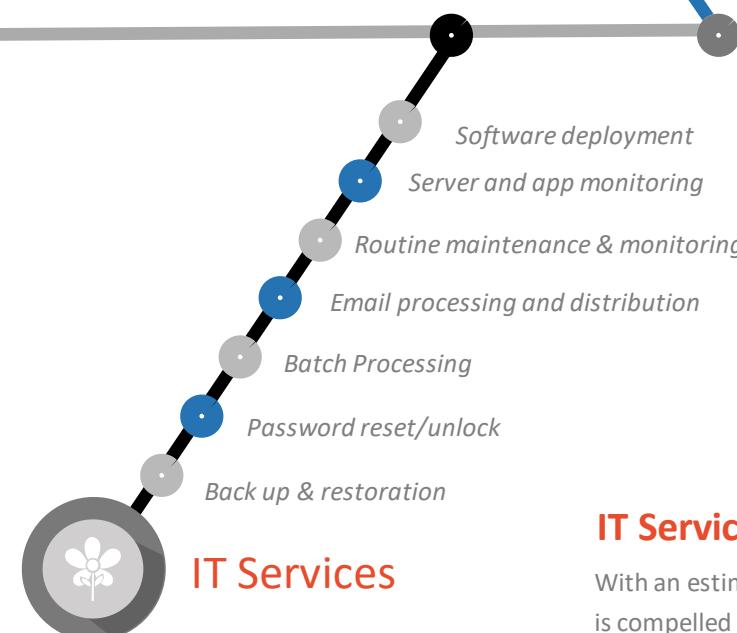
Supply chain problems cost companies between 9-20% of their value over a period of 6 months. The processes mentioned in this slide are typically prone to automation and represent typical area of improvement in any supply chain operations.



AUTOMATION

Other Areas for Automation

Besides typical horizontal services, there are other organizational activities that can fall easily under the scope of any automation strategy



IT Services

With an estimated 30% of time spent on low level tasks, IT is compelled to embrace automation as a way to focus on the initiatives that require innovative thinking, and be able to tackle with the critical organizational tasks currently consuming much of their time.

Best practices and lessons learned

Process assessment forms can be distributed over email. Alternatively, specialized tools can be used for this.

Tips for the interview:

Interview team:

- Composed of 2 members: one asks the questions, one documents the result
- Choose the right persons to be interviewed:
- The SME is the interviewee— having best knowledge on the detailed process, not the manager
- If the process is replicated in more teams (see 100 branches from a bank), the candidates should be chosen by following benchmarks: sample of relevant teams; best SMEs chosen by their managers

Others:

- The process metrics (FTE, AHT, etc) should be collected separately by the internal Business Analysts
- Group the interviews if more processes are performed by the same team

Note:

In some cases, team managers can exclude processes with high potential of automation. Instead, processes with lots of issues are promoted – these could be analyzed and addressed via other tools
If any process is excluded it should be listed and documented along with the reason for which it was dismissed

Possible challenge:

- Poor understanding of how the process looks
- Lack of process mapping (E.g.: procedure vs process)
- Identification of grouping criteria of the processes:
 - By geography (E.g.: grouping in 4 regions)
 - By business units (E.g.: grouping in 5 main BU)
 - By procedure

Process Inventory:

- Client to create a list with all processes and minimum info that can be collected on the template

Important: No process should be excluded from the list

Possible risks:

- Poor planning
- Poor communication of the scope of the exercise to the SMEs
- Previous failed measures to improve the processes to be assessed
- Poor quality of the data collected
- SMEs unavailability
- Delays in collecting the metrics
- The client rejecting the methodology used



Thank You!

Implementation Methodology

PREPARATION

UiPath Ecosystem

UiPath

UiPath Studio



→ DEPLOY →

UiPath Orchestrator



EXECUTE
BIG
SCALE
MONITOR

UiPath Robot

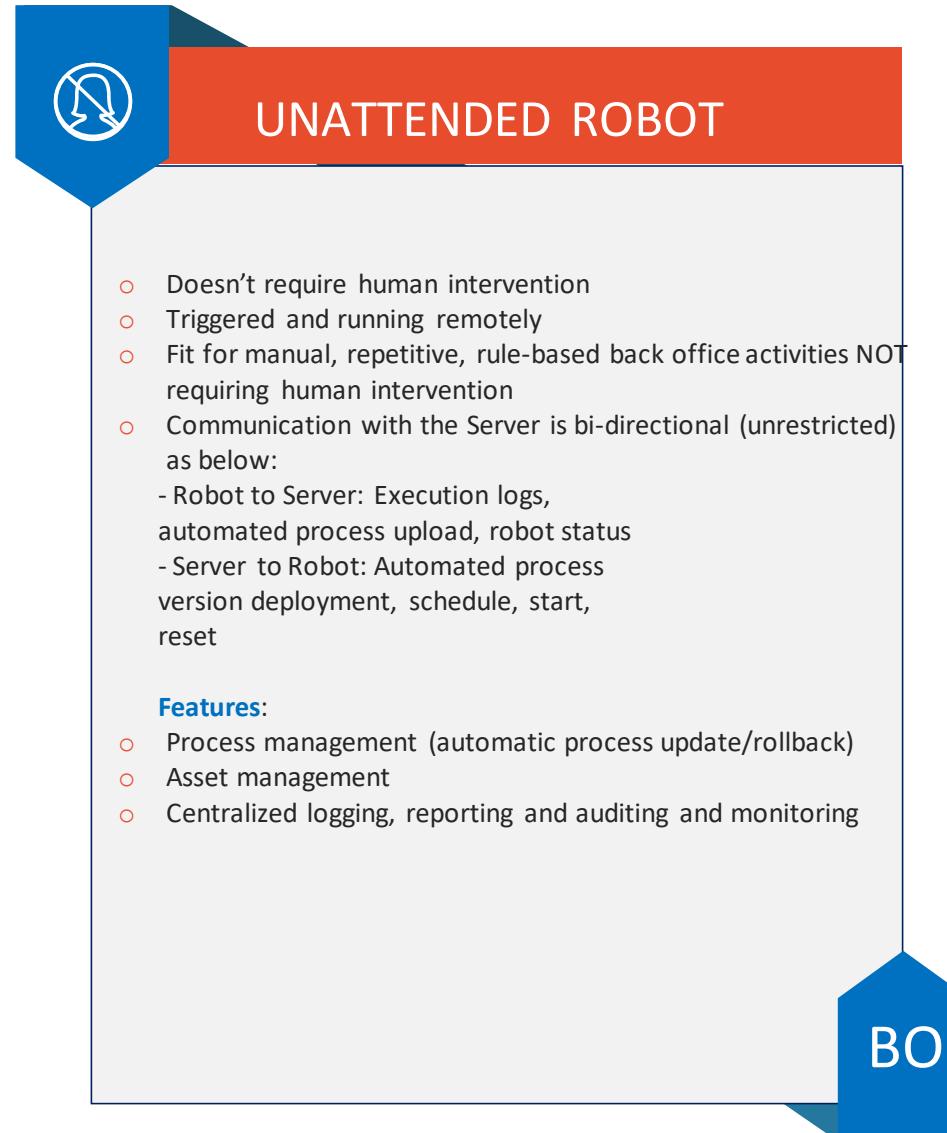
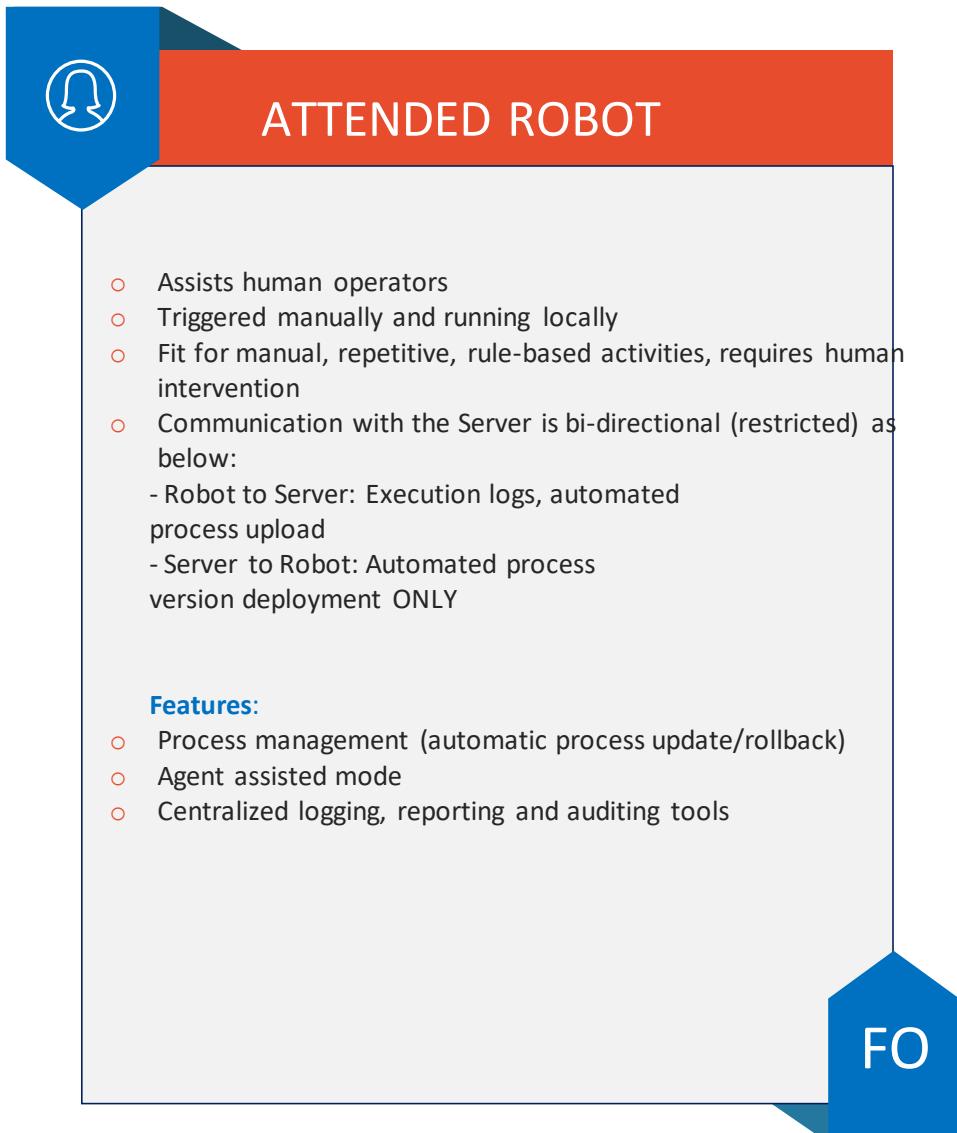


- Desktop application that enables users to automate with highly intuitive tools, not code
- Includes the following:
 - process recorders
 - drag & drop widgets
 - best practices templates

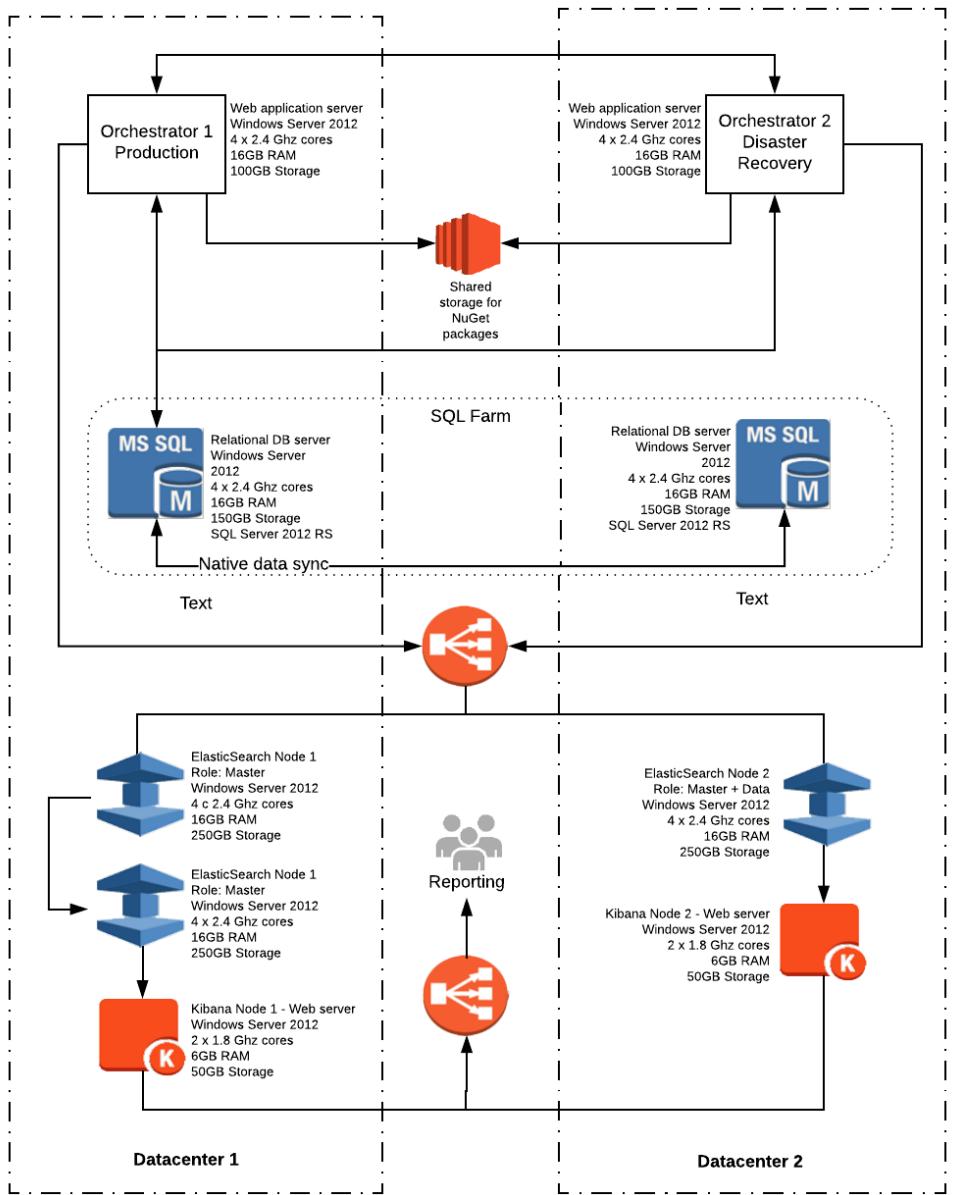
- Enterprise architecture server platform. Supports the following:
 - release management
 - centralized logging
 - reporting, auditing, monitoring tools
 - remote control
 - centralized scheduling
 - queue/robot management

- Windows service that executes automation instructions

Attended and Unattended Robots

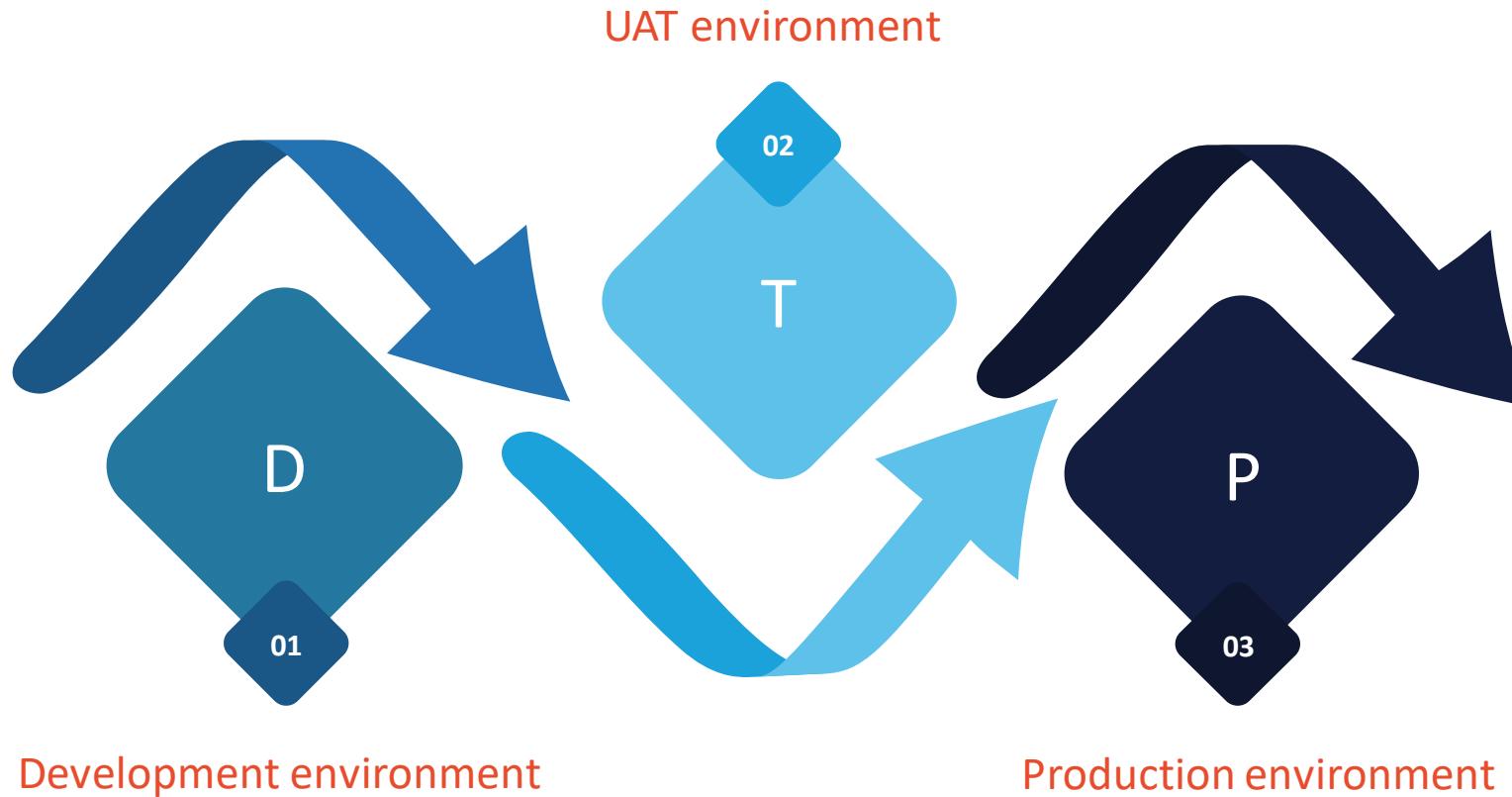


Server Architecture



- **Two data centers**
- **Active-active architecture**
- **A NLB and 2 Orchestrator nodes ensure high availability**
 - Round-robin network balancing algorithm
 - Multiple nodes supported if required
- **Full redundancy reinforced by:**
 - Shared storage of the NuGet packages
 - The SQL Server AlwaysOn Availability
 - Group feature
 - A load balancer between the 2 Kibana web servers
- **Reporting:**
 - ElasticSearch
 - Kibana

Environment configuration order



*The Infrastructure Components document includes details about the Dev, Test and Production environment and how to ensure that all steps are covered and the information is consolidated in the same place. This document is available in the course documentation.

Best Practices in Machine Configuration



Robot Machines

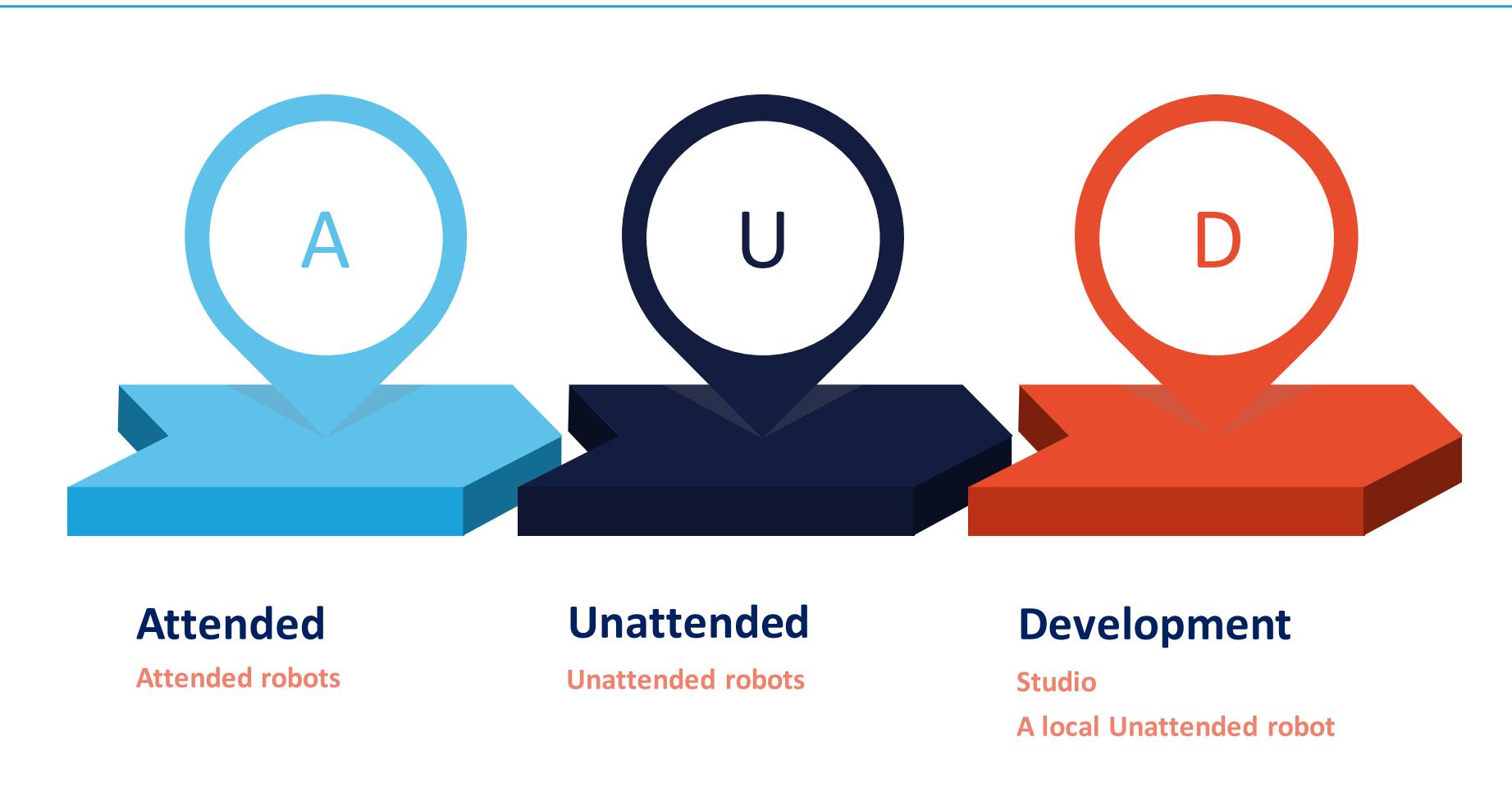
- Combine Attended and Unattended robots
- Design a scalable solution



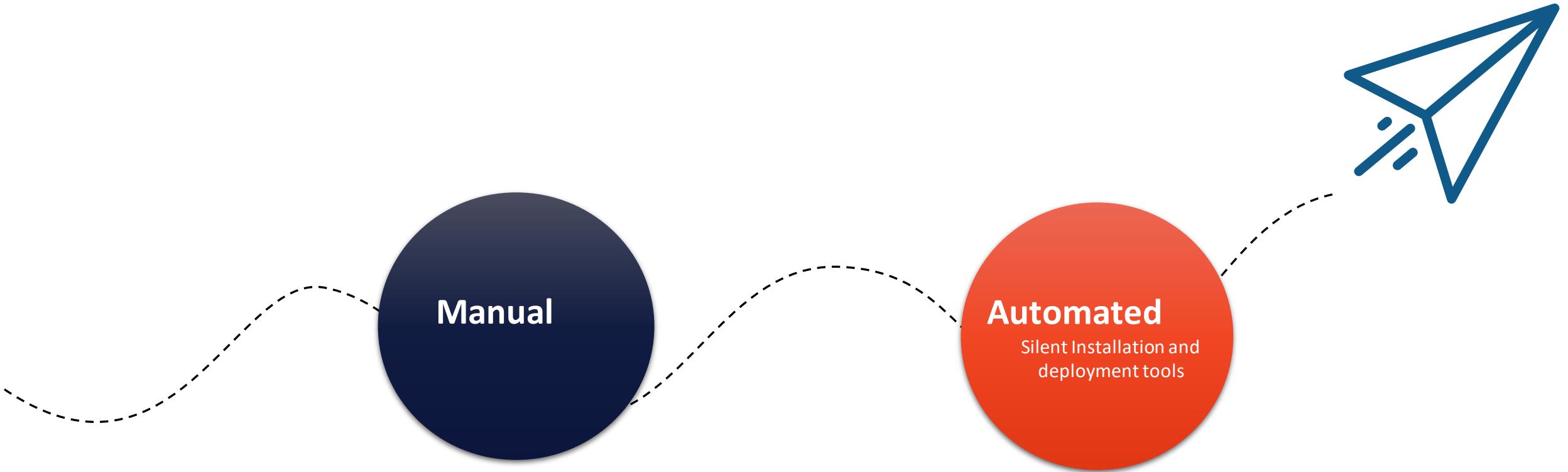
Development Machines

- Assign machines with enough processing power

License Features



Deployment and License Activation Methods



Implementation Methodology

SECURITY

Authentication

Authentication of robots



In Windows session

- The credentials used for authenticating the windows session and starting the workflow will be stored into Orchestrator
- The robot does not require administrator privileges to run
- Various options for robot accounts: one generic account, multiple technical accounts or user accounts
- Analyze the benefits of each approach for the automated applications.



In applications

- The work done by the robot requires using credentials.
- The credentials can be stored locally, in the Windows Credential store or in the Orchestrator Database, encrypted.
- Each robot can use its own set of credentials. Since the robot operates as a human operator would, it can use SSO the same way.
- Besides the two described methods for storing credentials, a third party solution for credential storing can be used.

Authentication

Authentication of users



With username and password

- Each Orchestrator user can log in with username and password
- The associated roles can be fully customized based on granular permissions



Active Directory integration

- The login to Orchestrator can also be done using Active Directory integration. This can be achieved by associating AD users to groups and assigning Orchestrator roles to particular groups
- The members of the groups would be able to automatically log into Orchestrator

Development collaboration tools

1

SVN

Native integration

2

TFS

Native integration

3

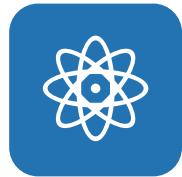
GitHub

Manual project
synchronization required

Environment Setup

Robot grouping	Mentions
By process	<ul style="list-style-type: none">○ Administration ease○ Low flexibility○ Low robot utilization
By used applications	<ul style="list-style-type: none">○ Administration difficulty○ High robot utilization
Mixed approach	<ul style="list-style-type: none">○ Optimal choice

RPA Development Approach



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.



Naming strategy

Adhere to the naming strategy standards suggested by the developers. The entire team should follow this convention to facilitate code understanding, review and maintenance.



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.



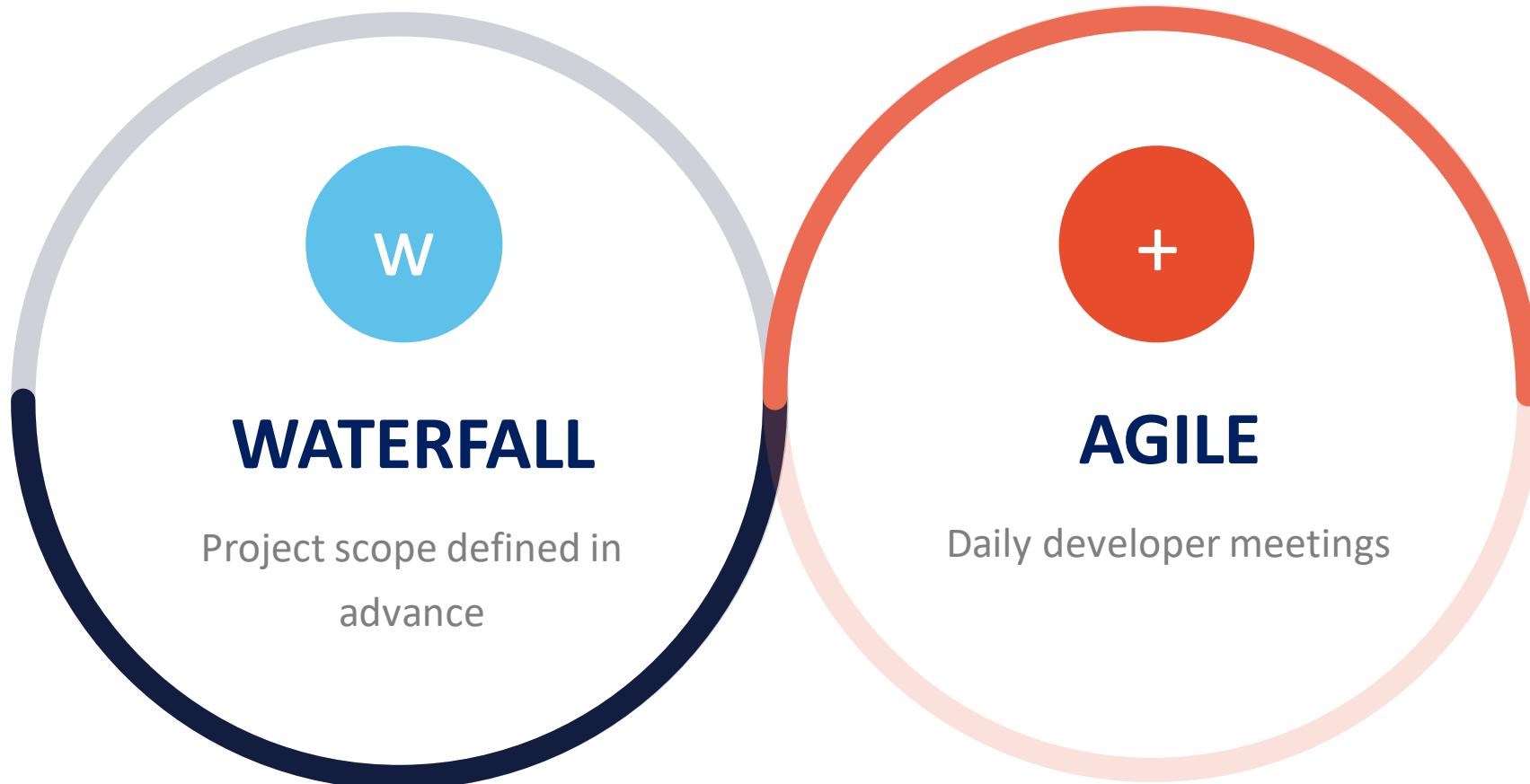
Reusable components

Agree on a strategy for reusing and distributing the developed components. Save time and effort by defining the reusability of components cross-department or cross-company

Reusable Components Approach

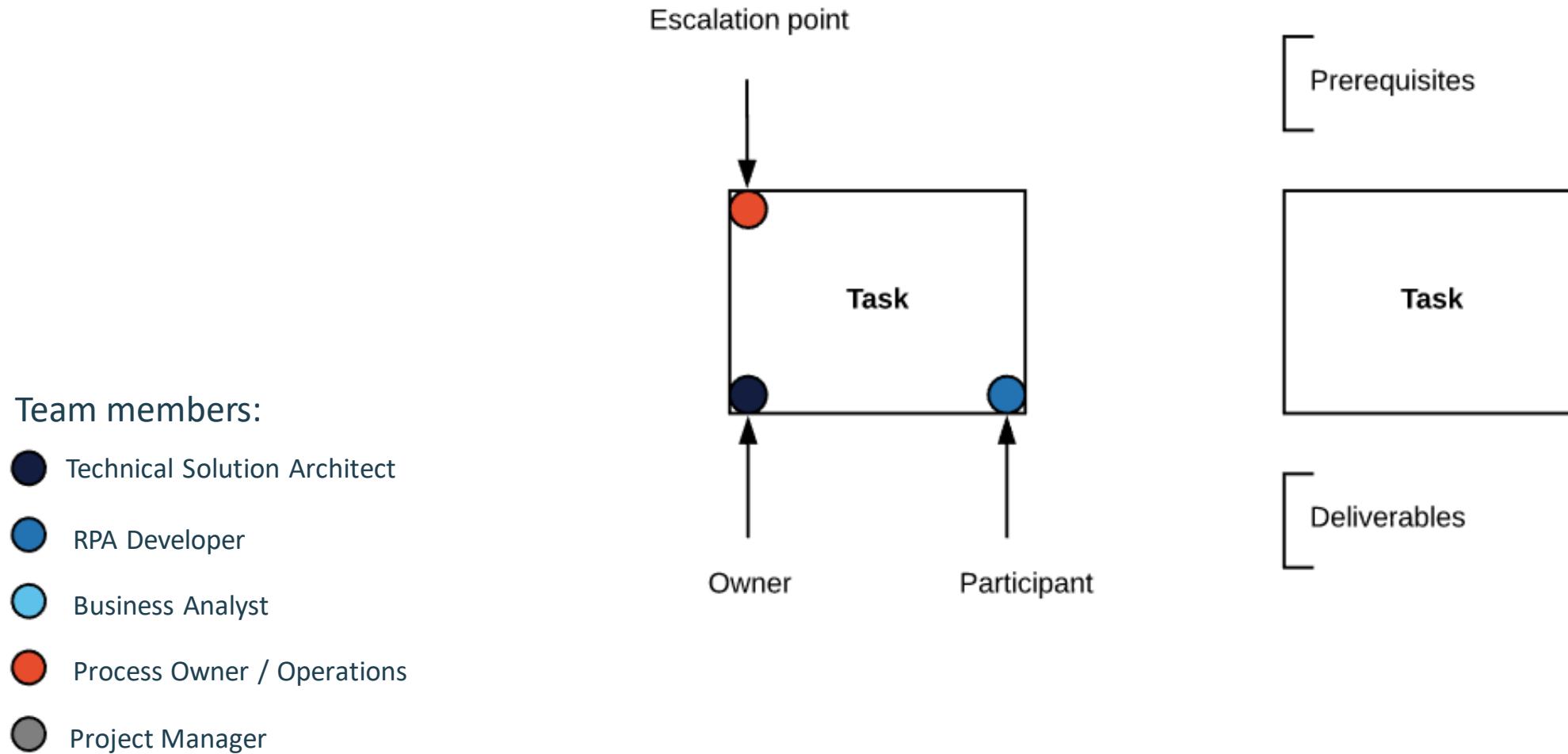
 Local File Storage	 Shared File Storage	 Shared Components Package	 Custom Packaging Method
Store the reusable components in the Source Control System. Sync files in shared location. Add the network path to the Library in Studio.(RECOMMENDED)	Use a file share location to store the reusable components and invoke them remotely.	Create one package containing shared components and distribute it using the Orchestrator embedded provisioning mechanism.	Use a third party solution to create packages that also provision the reusable components.
PROS: <ul style="list-style-type: none">✓ Easiest to implement✓ Most secure CONS: <ul style="list-style-type: none">▪ In case a reusable needs to be changed, manual re-publishing and re-deploying are required	PROS: <ul style="list-style-type: none">✓ Easy to implement✓ Calling by reference CONS: <ul style="list-style-type: none">▪ In case of network failure, the robots are not able to run▪ The robots can run more slowly due to network latency (or even trigger exceptions)▪ Security risk (access to shared folder)	PROS: <ul style="list-style-type: none">✓ Calling by reference✓ Version control CONS: <ul style="list-style-type: none">▪ Harder to implement▪ Project path needs configuration	PROS: <ul style="list-style-type: none">✓ An alternative to the Shared Components approach CONS: <ul style="list-style-type: none">▪ The most complex approach and the hardest to implement and maintain▪ Dependent on third party components

RPA Project Management Methodology



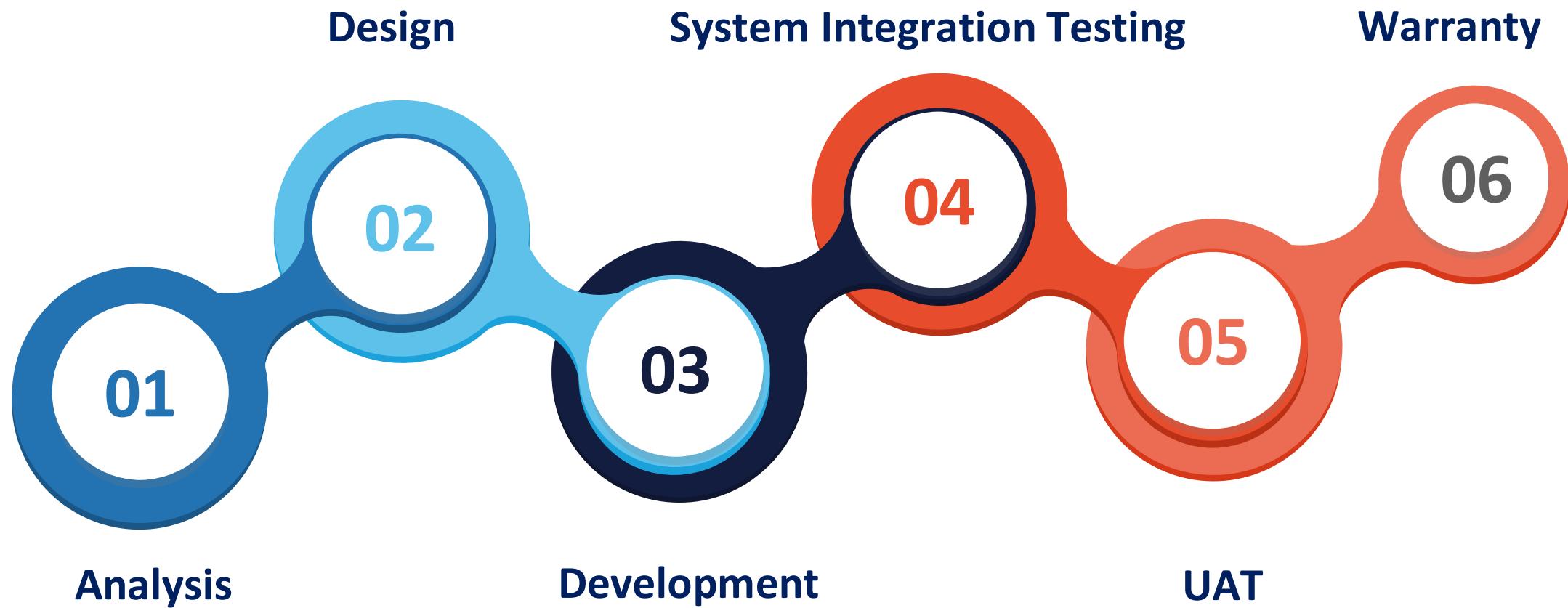
RPA Project Management Roles

Project chart



RPA Project Management Methodology

Authentication of users

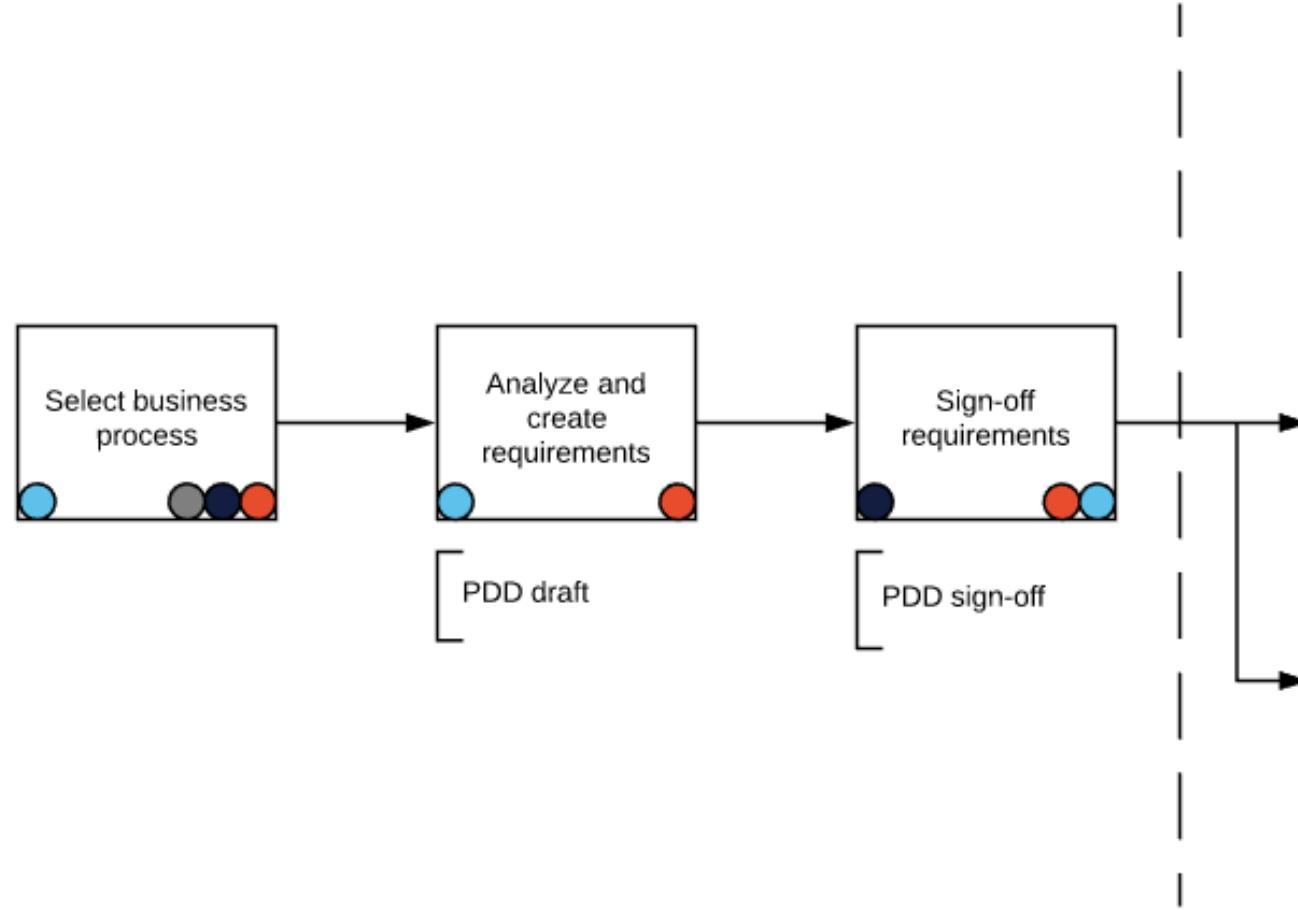


RPA Project Management Methodology

Analysis

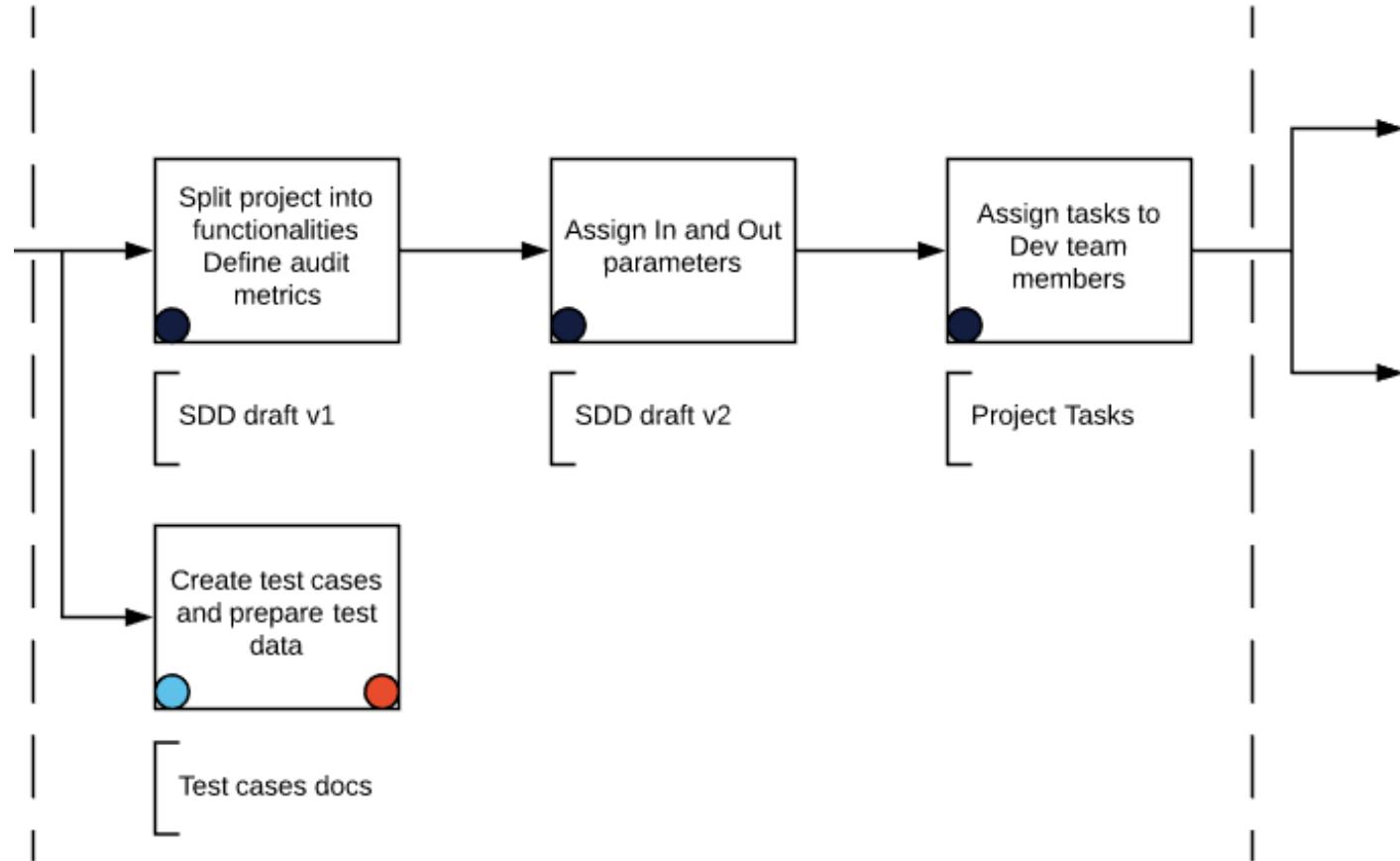
Team members:

- Technical Solution Architect
- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager



RPA Project Management Methodology

Design



Team members:

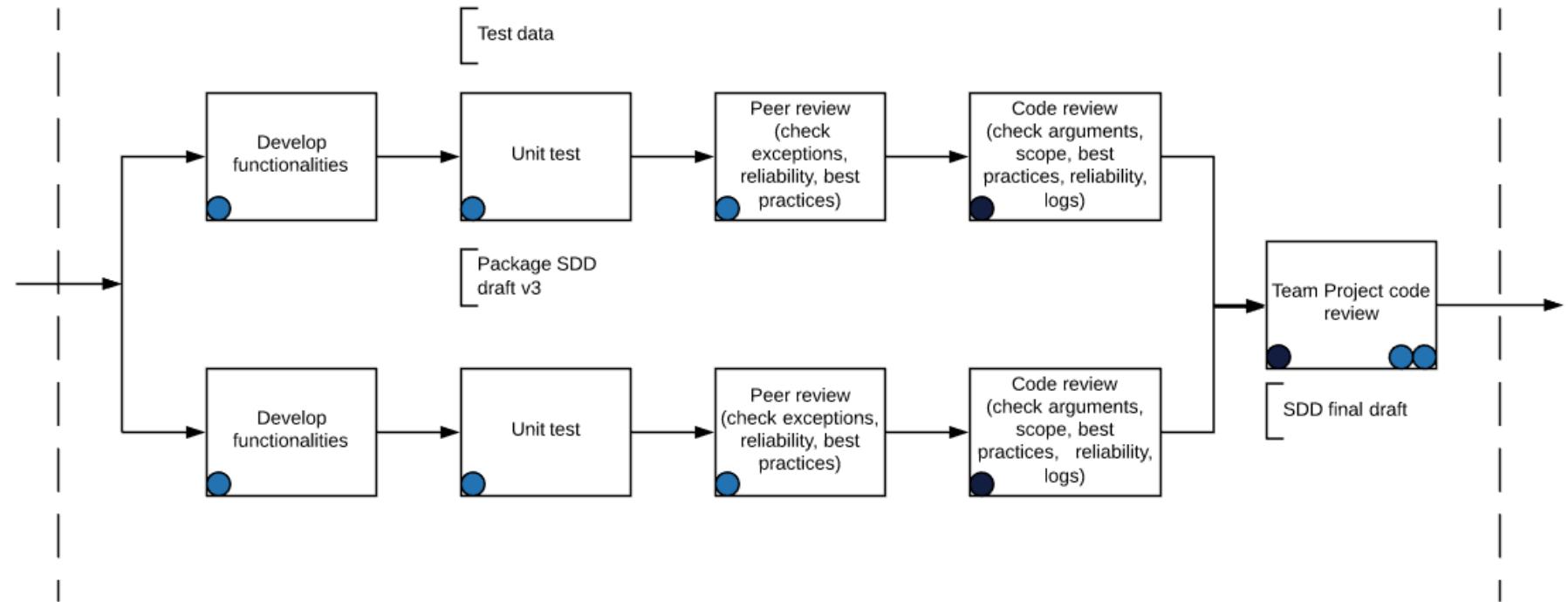
- Technical Solution Architect
- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager

RPA Project Management Methodology

Development

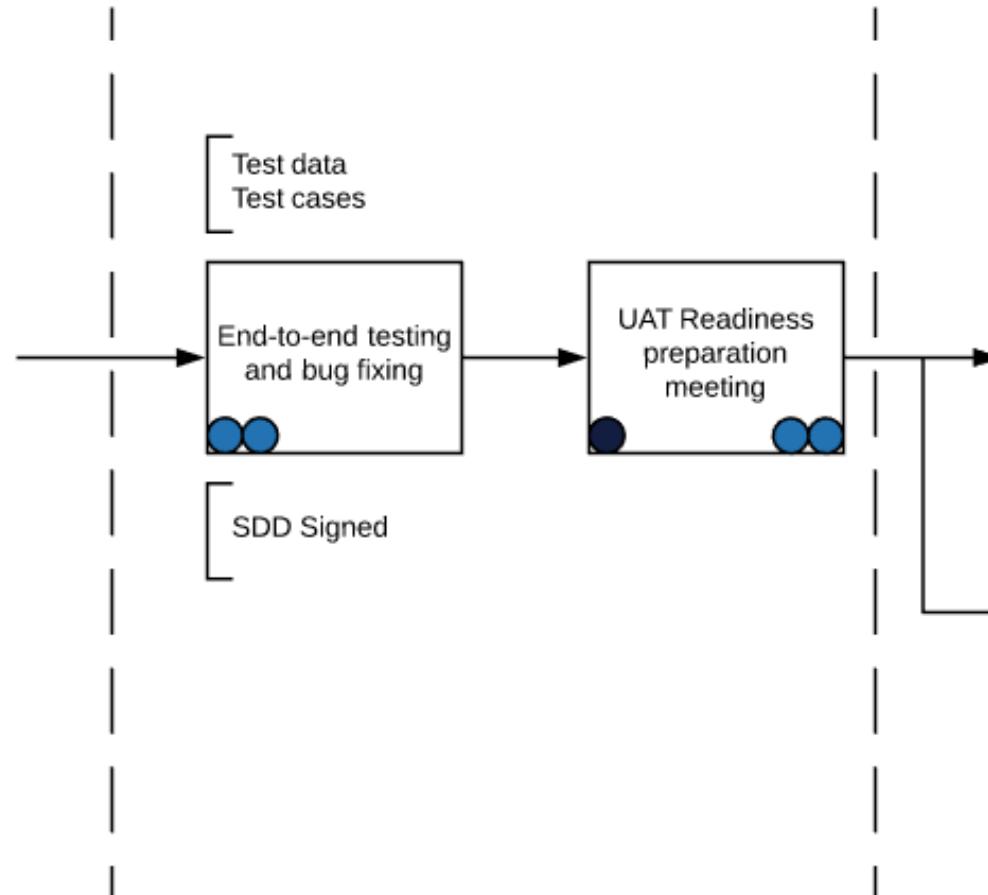
Team members:

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RPA Project Management Methodology

System Integration Testing

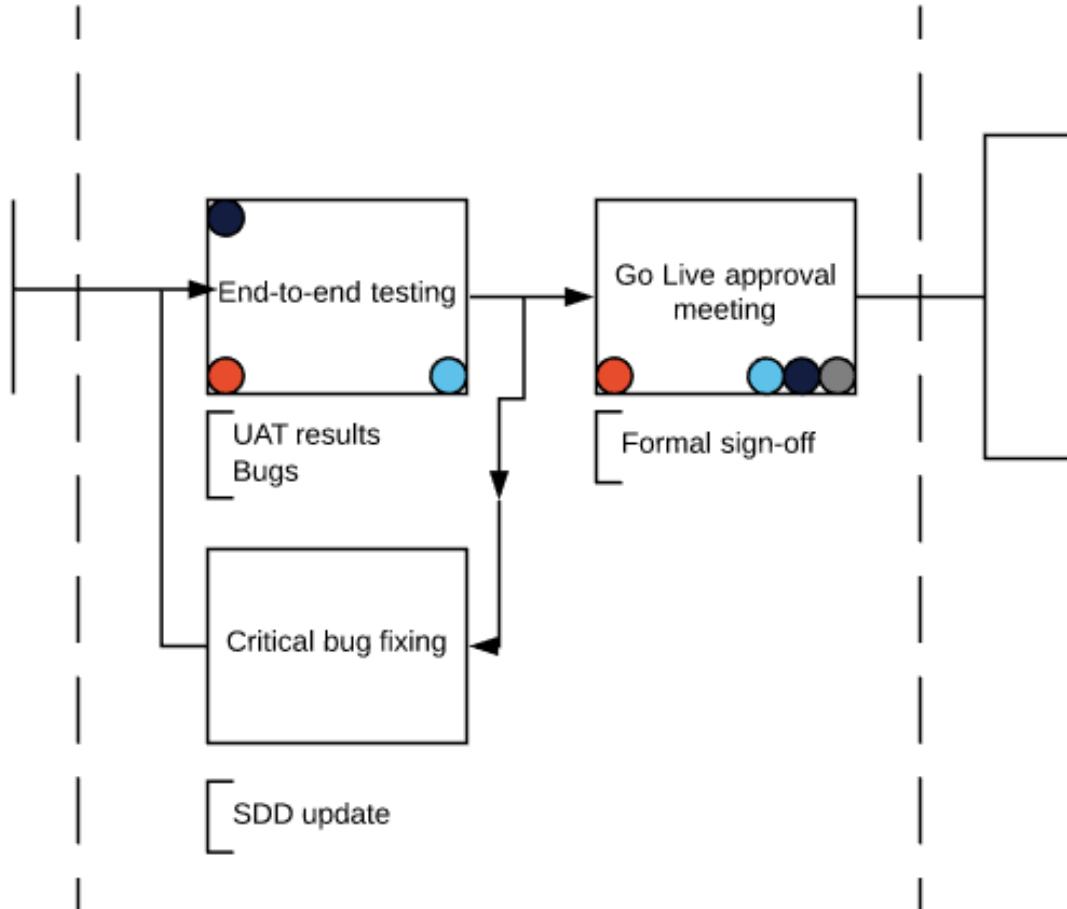


Team members:

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- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager

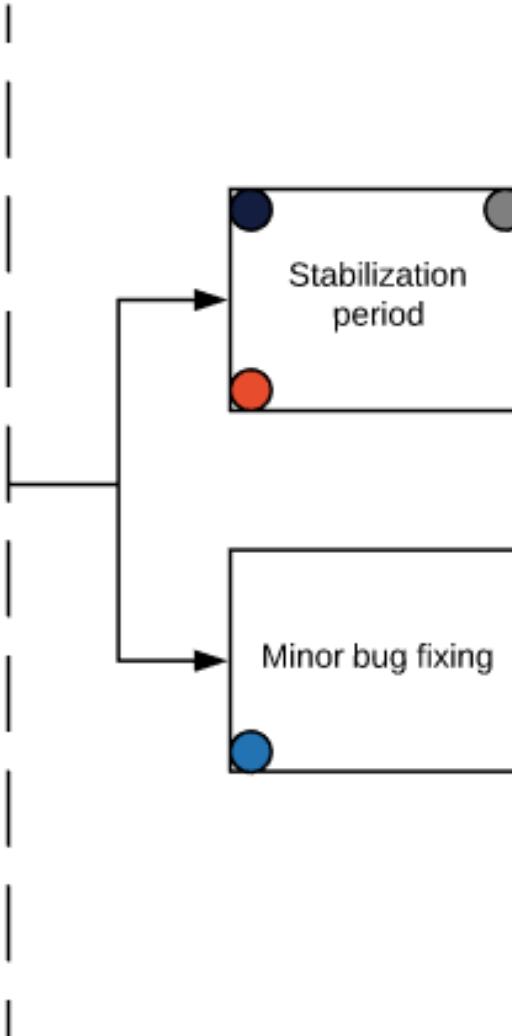
RPA Project Management Methodology

User Acceptance Testing



RPA Project Management Methodology

Warranty



Team members:

- Technical Solution Architect
- RPA Developer
- Business Analyst
- Process Owner / Operations
- Project Manager



Thank You!



Implementation Methodology

SUSTAIN

Sustain



Includes Warranty period and Business As usual, going towards a Continuous Service Improvement model

Monitor



The Business Processes and Workflows

- Review reports
- Verify outcomes
- Measure KPIs

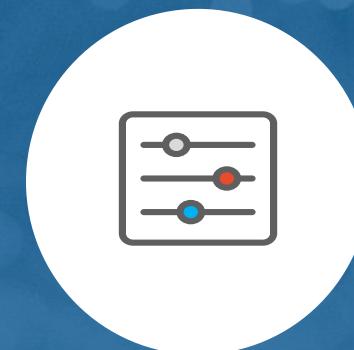
Control



The Digital Workforce

- Review Dashboards
- Quick Intervention mechanism
- Support model

Improve



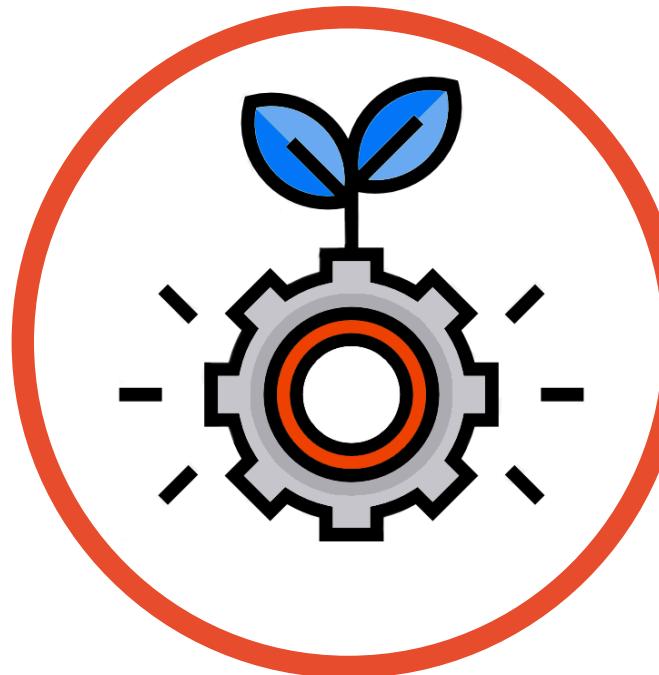
The Attended and Unattended Robots

- Correct failures
- Integrated automated process
- Extend scope
- Incorporate CRs

UiPath

Hypercare

- The Hypercare period starts after moving the process into production
- Various members of the team should monitor the first process run, and intervene if needed
- A business and a support representative should be available to supervise the first process run



Business representative:

- Is able to validate the outcome of the robot's work
- Cross checks the input file in case of errors

Support representative:

- Troubleshoots the technical aspects (application pop-ups, errors, crashes, machine issues or network connectivity problems)



Stakeholders sign-off for exiting the Hypercare phase

Support model

Support levels

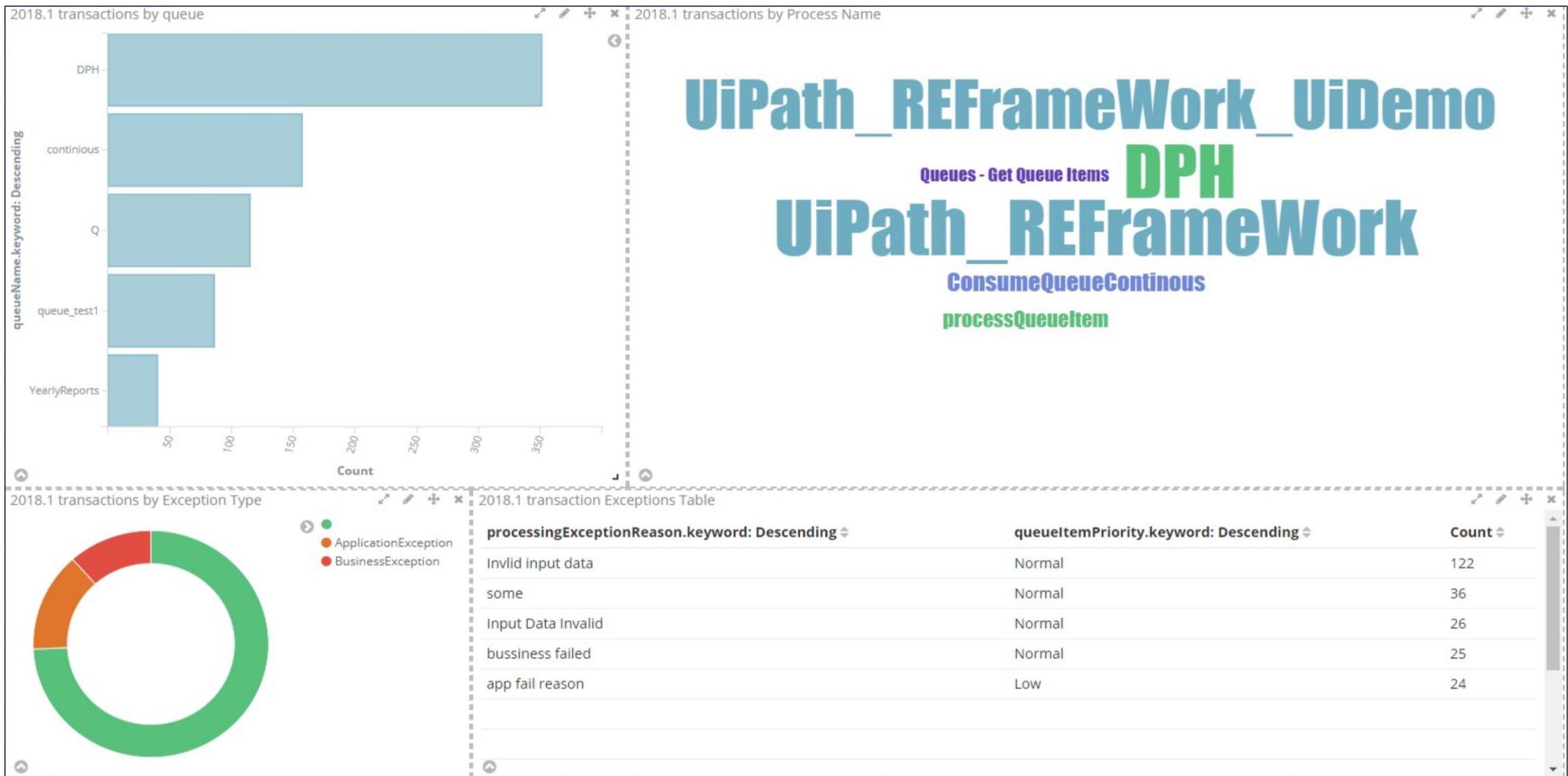
	Super users	Support Level 1	Support Level 2
SKILL	<ul style="list-style-type: none">Part of the business team; an expert of the business processesBasic technical knowledgeTrained as a Business Administrator	<ul style="list-style-type: none">Good technical backgroundUiPath Academy Foundation learning plan completedTrained as a support specialist	<ul style="list-style-type: none">Developer background (.NET or VBA)UiPath Academy Advanced Learning plan completedTrained as a developer
ACCESS	<ul style="list-style-type: none">Orchestrator & Kibana	<ul style="list-style-type: none">Orchestrator & Kibana	<ul style="list-style-type: none">Studio, Orchestrator & Kibana
PERMISSIONS	<ul style="list-style-type: none">First notified if the robot stops runningMakes the necessary changes to correct the robot's behavior	<ul style="list-style-type: none">Can view, monitor and change assets if requestedCannot make changes to the code released in production	<ul style="list-style-type: none">Can move the workflow in back to development stagecan move to production an improved version of the process

Quantify the expected benefits



Monitoring robots performance

Dashboards



Default processes

Dashboards





Default transactions

Dashboards

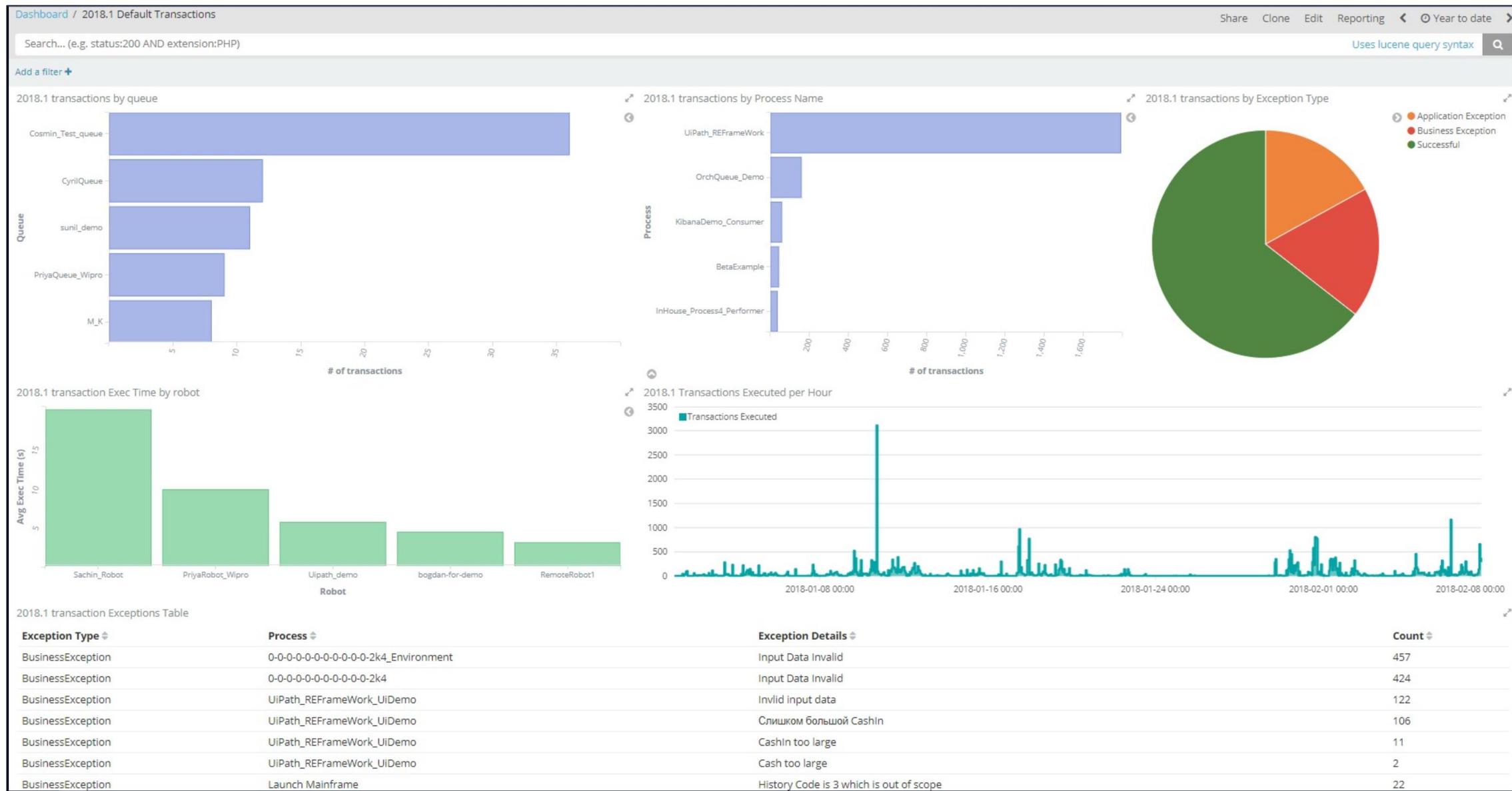
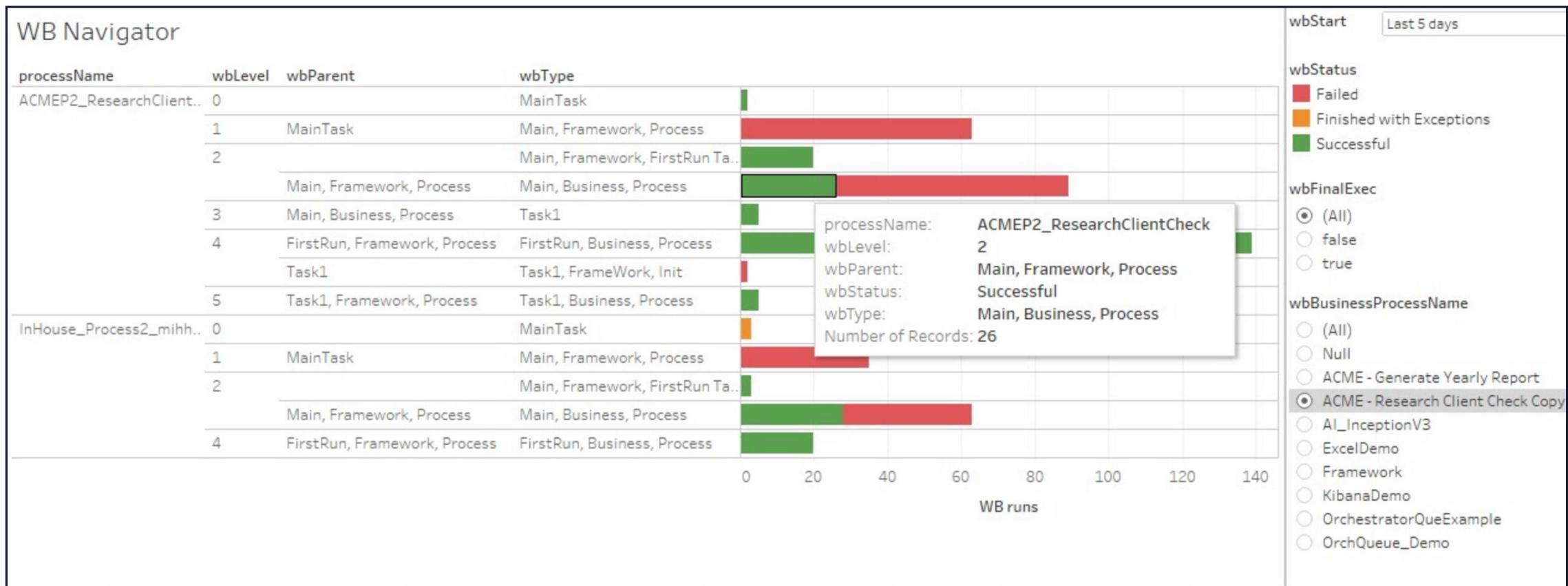


Tableau view

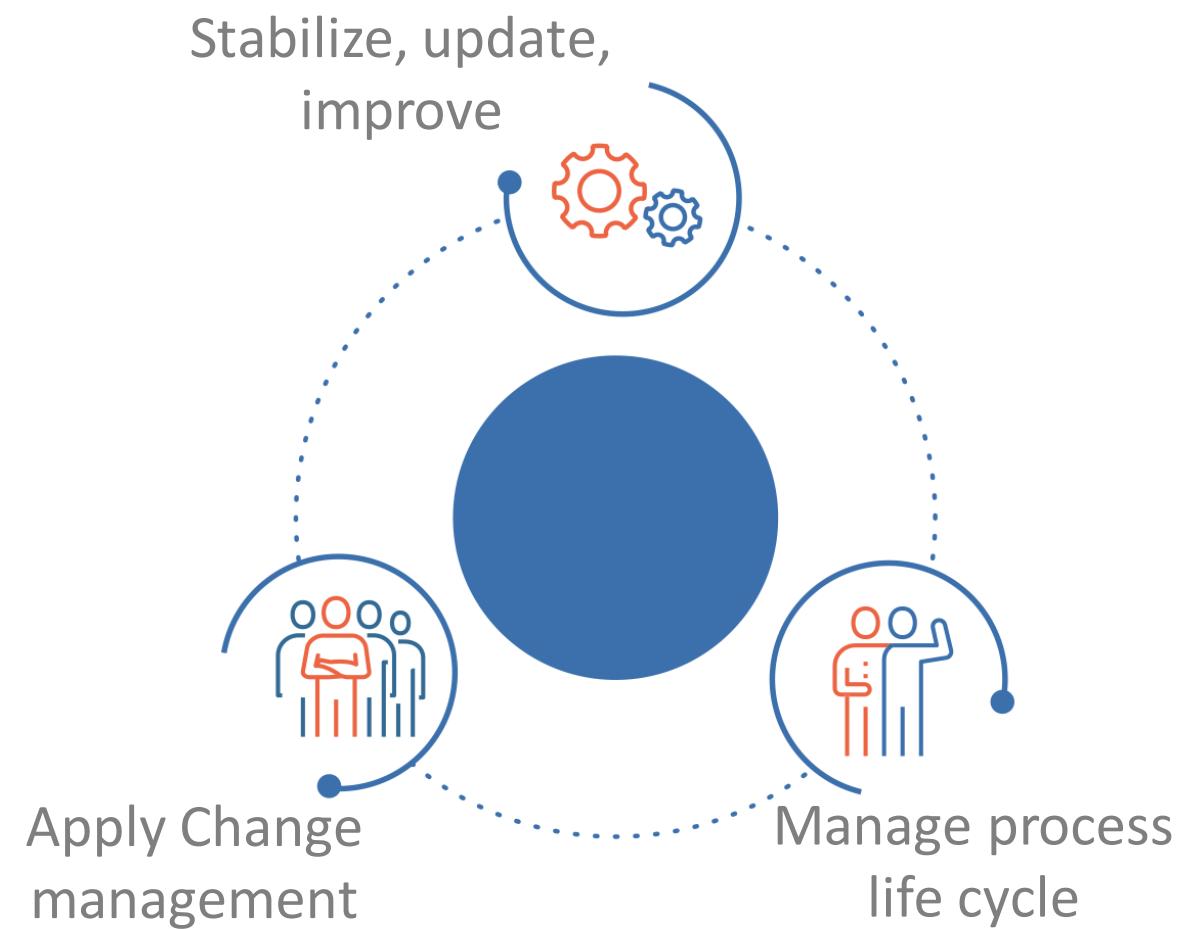
Dashboards

UiPath



Continuous service improvement

- Integrated automated process
- Extend scope
- Include new business process branches for more advanced features
- Simplify and stabilize
- Incorporate Change Requests
- Apply Change Management
- Release new versions
- Discontinue obsolete versions



Conclusion

1

The
hypercare

2

Maintenance &
support

3

Benefits
measurement

4

Continuous service
improvement



Thank You!
