



```
import pandas as pd
import requests
import json
import time
from pandas.io.json import json_normalize
```



Transitioning from Intelligent Automation to Artificial Intelligence. Lessons from top performers



Robotic Process Automation (RPA) was at the core of the digital transformation starting with 2015

CHARACTERISTICS OF ROBOT PROCESS AUTOMATION

1. Trained by the users
2. Working with the client's user interface
3. Undertake structured, repeatable, computer based tasks
4. Works flawlessly with multiple systems
5. Works with different electronic formats (e.g. PDF, MS Excel etc)
6. Performs checks and takes in consideration validations points according to a predefined set of rules
7. Identifies easily exceptions (either against a database, either based on a specific condition inserted in the code)
8. Works 24/7 and during the holidays and weekends
9. Logs are stored inside the program, but can be configured to be sent by email at a specific point, date or frequency
10. Provides a case for introduction of analytics

Automation was done through a 3-step process

1

A platform (e.g. Studio)

3

Robots (ie. which run according to a set of instruction in Studio)

2

A web management console (e.g. Orchestrator)

From 'dummy' to "Intelligent automation"

CHARACTERISTICS OF ROBOT PROCESS AUTOMATION

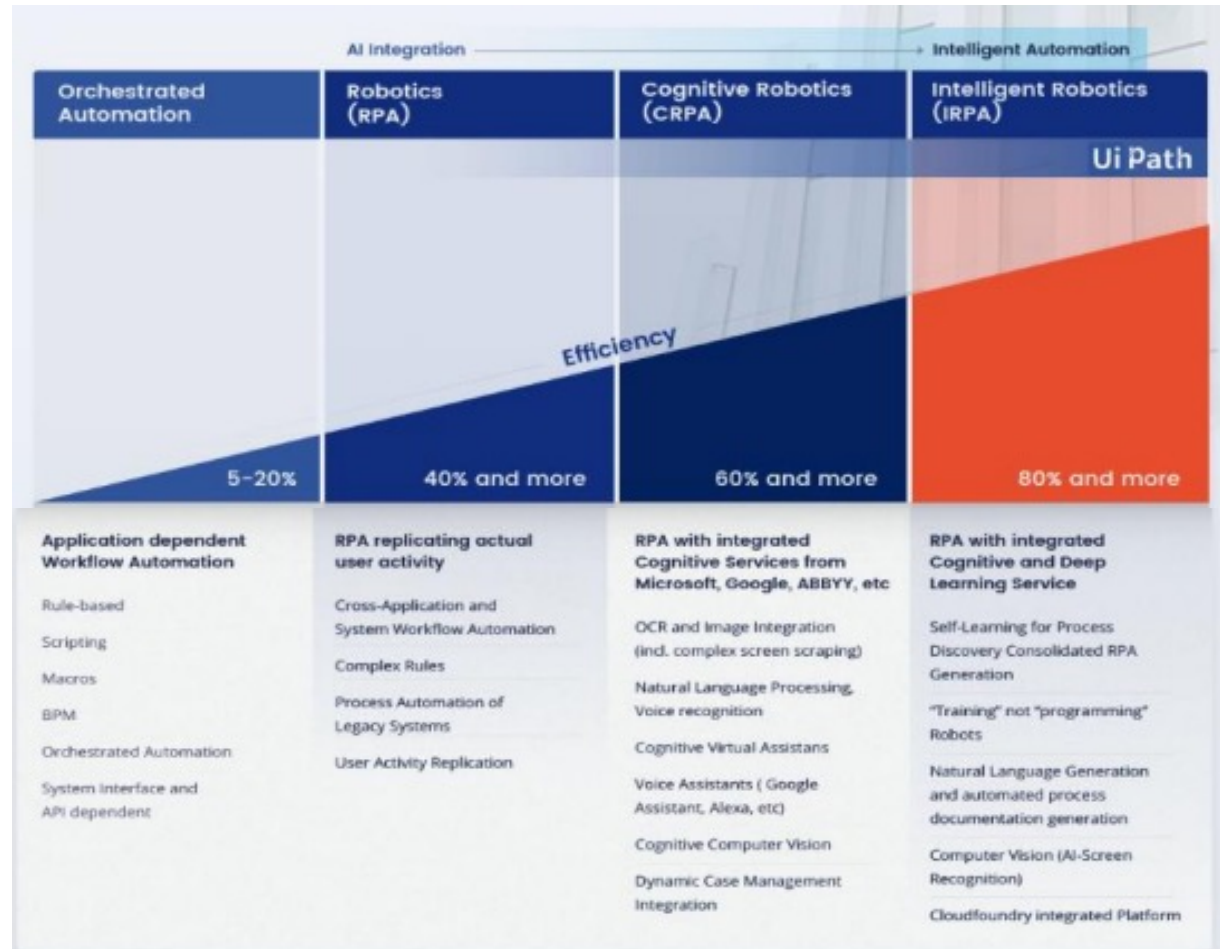


Figure 1. Towards Intelligent Automation (source: www.uipath.com)

Automation was done through a 3-step process


- 1 Having a solely tactical approach to RPA
- 2 Considering RPA as an IT only topic
- 3 Forgetting about IT
- 4 Not selected carefully enough the best processes to automate
- 5 Not selected carefully enough the best processes to automate
- 6 Wanting to automate too much of a process
- 7 Underestimating the skills required for a full roll-out of RPA
- 8 Overestimating the ROI of an RPA program and justify it solely on Full Time Employee (FTE) reductions
- 9 Underestimating the stakeholder management effort
- 10 Using an inappropriate delivery method

Not all industries and business functions are suitable for full automation

RPA ADOPTION POTENTIAL BY BUYER INDUSTRY AND FUNCTION

Function	Finance & Accounting	Procurement	Human resource	Contact center	Industry specific processes
Industry	Accounts receivables, accounts payable, general ledger	Invoice processing, requisition-to-purchase order	Payroll, hiring, candidate management	Customer service	
Banking & financial services					<ul style="list-style-type: none"> ✓ Cards activation ✓ Frauds claims
Insurance					<ul style="list-style-type: none"> ✓ Claims processing ✓ New business preparation
Healthcare					<ul style="list-style-type: none"> ✓ Reports automation ✓ System reconciliation
Manufacturing					<ul style="list-style-type: none"> ✓ Bills of material generation
Hi-tech & Telecom					<ul style="list-style-type: none"> ✓ Service order management ✓ Quality reporting
Energy & utilities					<ul style="list-style-type: none"> ✓ Account setup ✓ Meter-reading validation

Potential for RPA
 Low  High

 Illustrative processes with higher potential

Source: Authors' own research

Asking the right questions can save you a lot of time and money

TYPICALLY ASKED QUESTIONS FOR ASSESSING THE AUTOMATION POTENTIAL

Criteria	Question
Digital data availability	What percent of data are available in digital format?
Data source quality	Where are the major source of data quality errors?
Effort to execute	How many FTEs are required to execute the process/task? How many different individuals are involved?
Time to execute	What is the average time required to execute the process/task? How much of that time is spent "waiting" on information, system processing, etc.?
Average FTE cost	What is the average cost of FTEs executing the process?
Data protection prevents offshoring	Are any processes prevented from being offshored due to regulatory constraints?
Ownership of process	Who is accountable for the end to end process?
Existing process automation	What level of automation currently exists? How many systems, applications (including Access dBs, Excel spreadsheets/workbooks, OCR, etc.) are used in the process? What percent of the process is performed manually vs. automated?
Interaction channel	How do you communicate with your customers and how do they communicate with you?
Process complexity	How complex are the processes being performed, and do they require a lot of specialist knowledge? Are subjective decisions made by specialists or are decisions based on pre-defined rules?
Workload volume and growth	What is the current transaction volume? How fast is the workload growth in terms of year on year transactions growth?
System change	How frequently are the development cycle/system updates/bug fixes/new releases of the core systems/applications used in the process?
Change portfolio	Are there any major transformation programs taking place in your area?

Source: Authors' own research

Asking the right questions can save you a lot of time and money

TYPICALLY ASKED QUESTIONS FOR ASSESSING THE AUTOMATION POTENTIAL

Function	Sub-process	Process automation potential (%)	Potential time savings	Quick win
General accounting	▶ Fixed assets / FMM / closing and reporting	25%-30%	10%-15%	Yes
	▶ Local tax accounting	10%-15%		No
Controlling	▶ Costing	5%-10%	15%-20%	No
	▶ CO operation/reporting	10%-15%		
	▶ Business controlling support	5%-10%		
	▶ BI and systems	10%-15%		
	▶ Group financial controlling	5%-10%		
Finance (other)	▶ Intercompany	25%-30%	30%-50%	Yes
	▶ Account and bank reconciliations	15%-20%		No
	▶ Financial planning and analysis	25%-50%		No
	▶ Tax	40%-60%		Yes
Order to cash	▶ Customer master data management	25%-30%	40%-60%	Yes
	▶ Credit management	25%-30%		Yes
	▶ Customer service support	25%-30%		Yes
	▶ Account receivables management	25%-30%		Yes
	▶ Incoming payments	0%-5%		No
	▶ Deductions and disputes management	25%-30%		Yes
Human resources	▶ HR general services	25%-30%	60%-80%	Yes
	▶ Expat management	10%-15%		No
Source to pay	▶ Source to purchase	25%-30%	50%-70%	Yes
	▶ Purchase to Pay	25%-30%		Yes
	▶ Projects support	10%-15%		Yes
Supply chain	▶ Supply chain planning	10%-15%	10%-15%	No
	▶ Transport planning	10%-15%		No
	▶ Supply planning	10%-15%		No
	▶ Project management	10%-15%		No
	▶ General supply chain services	10%-15%		No

Source: Authors' own research

There are four stages to reach intelligent automation

Everything can be automatized if all the technologies are put in place, as represented below:

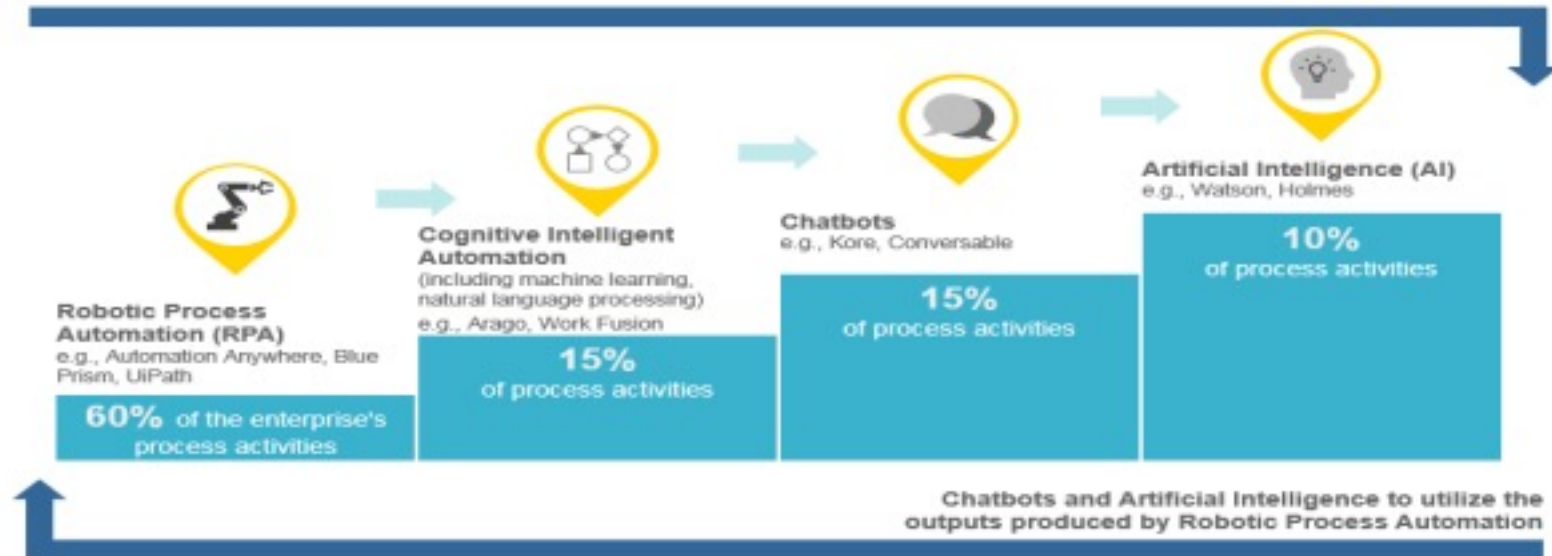


Figure 2. Towards Intelligent Automation (source: Author's own research)

Example of a successful integration between RPA and Intelligent OCR

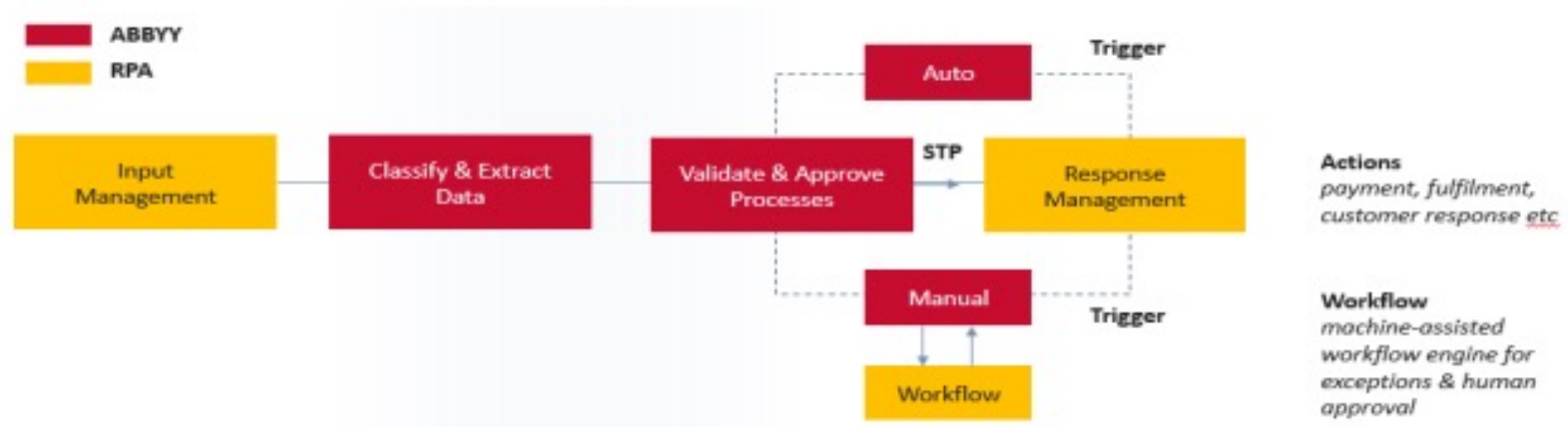


Figure 3. Business flow automated with Abbyy (source: EY Romania Automation Conference, 26th October 2017)

Source: Authors' own research

When setting up a Center of Excellence (CoE) organizations should consider three decisions

1

The CoE Target
Operating Model

2

Scope

3

Delivery model

An in-house CoE is always preferred for large organizations, hence new roles should be defined

Legend: CoE role IT role

	Step 1: Process identification	Step 2: Process assessment	Step 3: Process reengineering	Step 4: User stories definition	Step 5: Process automation	Step 6: UAT	Step 7: Hyper-care	Step 8: On-going support
RPA Team Leader	✓	✓	✓	✓	✓	✓	✓	
RPA Solution Architect				✓	✓	✓	✓	
RPA Process Analyst	✓	✓	✓	✓				
RPA Developer				✓	✓	✓	✓	
CoE Trainer	✓	✓	✓	✓	✓	✓	✓	✓
RPA Controller							✓	✓
IT Infrastructure/ Applications/Security				✓				✓
IT Technical Architecture Design				✓				
User Management Support				✓				
Helpdesk Support								✓

Figure 4. Involvement of each role (source: author's own research)

A proposed structure of a Center of Excellence

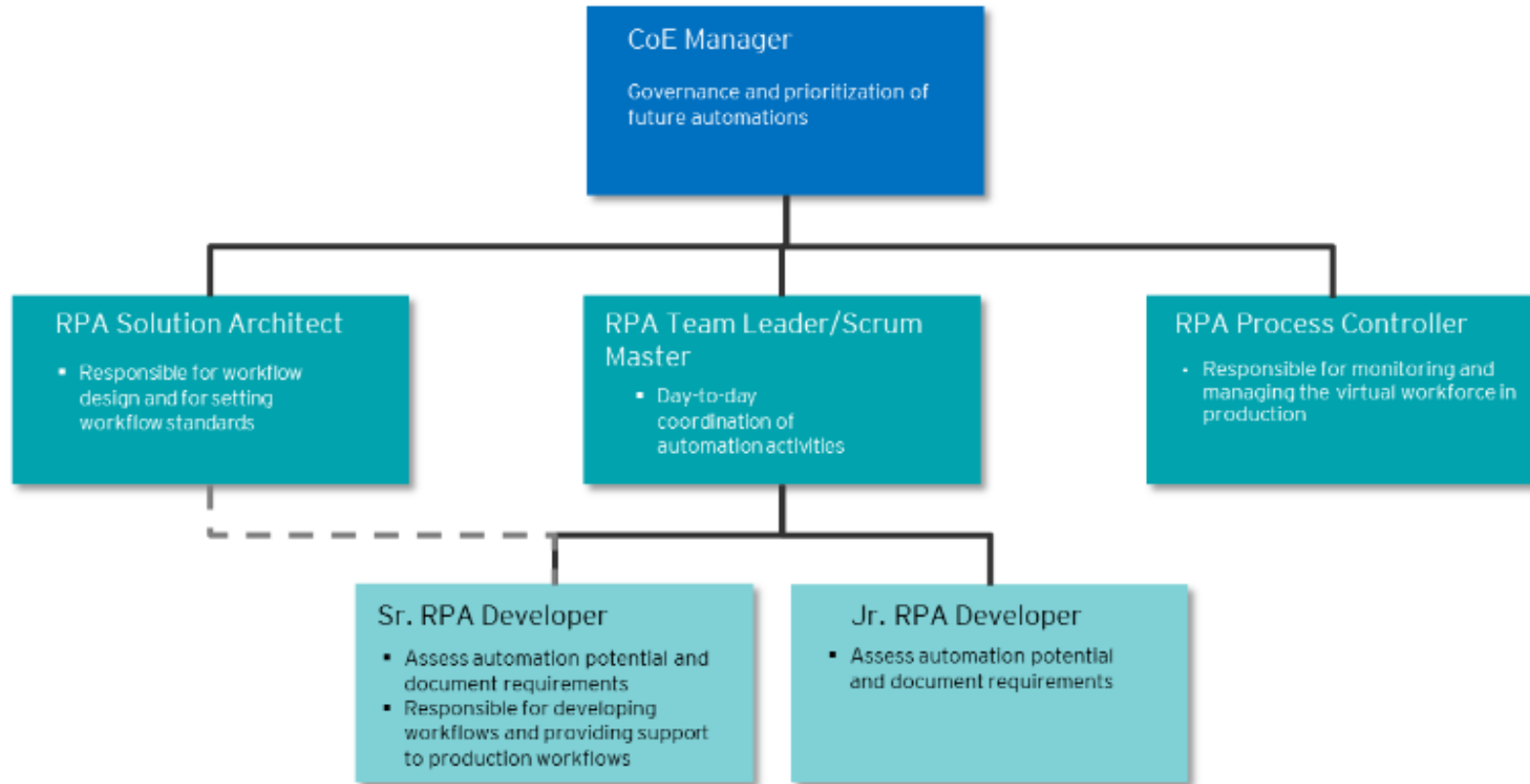


Figure 5. CoE's organizational structure (source: author's own research)

The KPIs in a CoE are pretty straight forward

1

Automation KPIs

3

Financial KPIs

2

Virtual workforce KPIs

4

Employee KPIs

”

The potential of automation is vast. We believe the power of AI can make it almost limitless. And so, we've built AI into every part of the UiPath Platform

Daniel Dines

Co-CEO, UiPath

The Artificial Intelligence (AI) market will reach \$200 billion for 2026, according to Forbes

85%

of enterprises will combine human expertise with AI, ML, NLP by 2026 (source: IDC)

\$6,6T

Productivity growth by 2030 – PwC Research

Where to apply AI

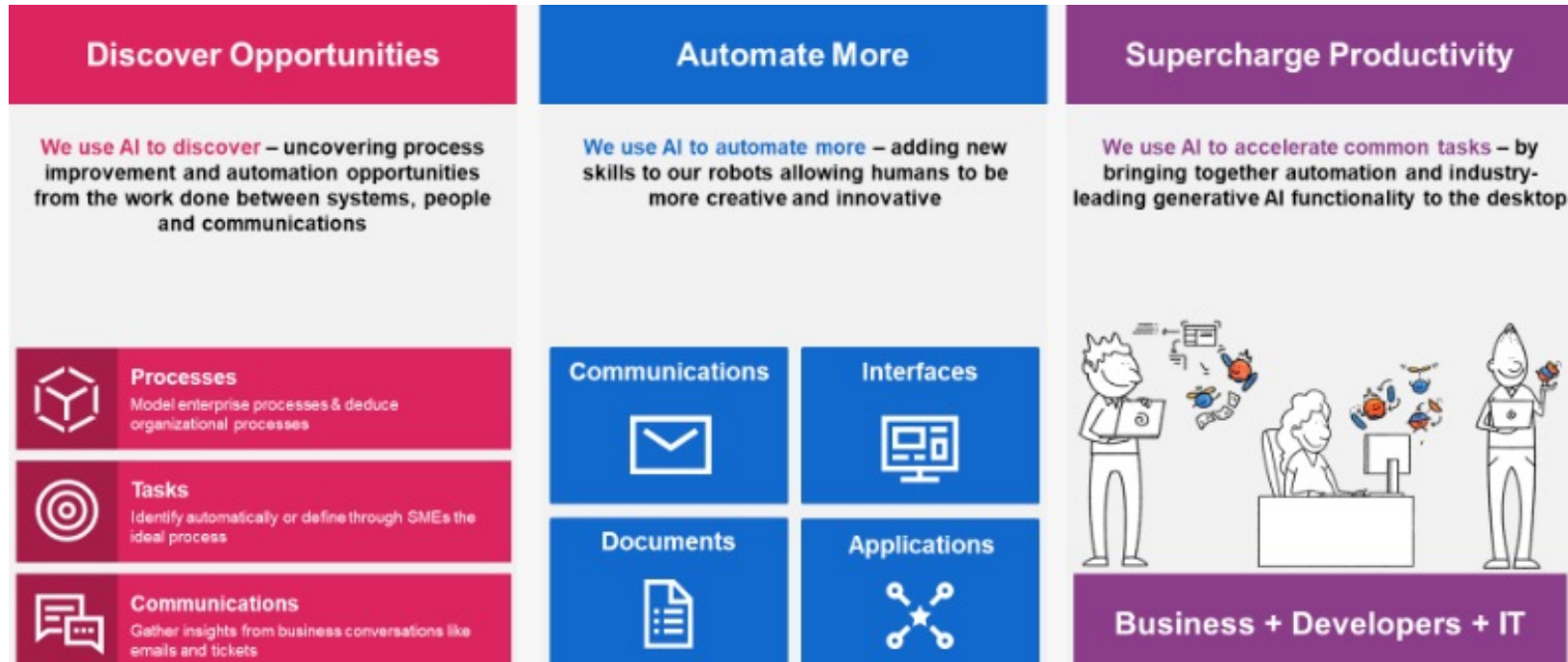


Figure 5. AI-powered automations drive industry innovation (source: www.uipath.com)

Operationalizing AI: with AI embedded in the organization's DNA the software automation potential is tremendous

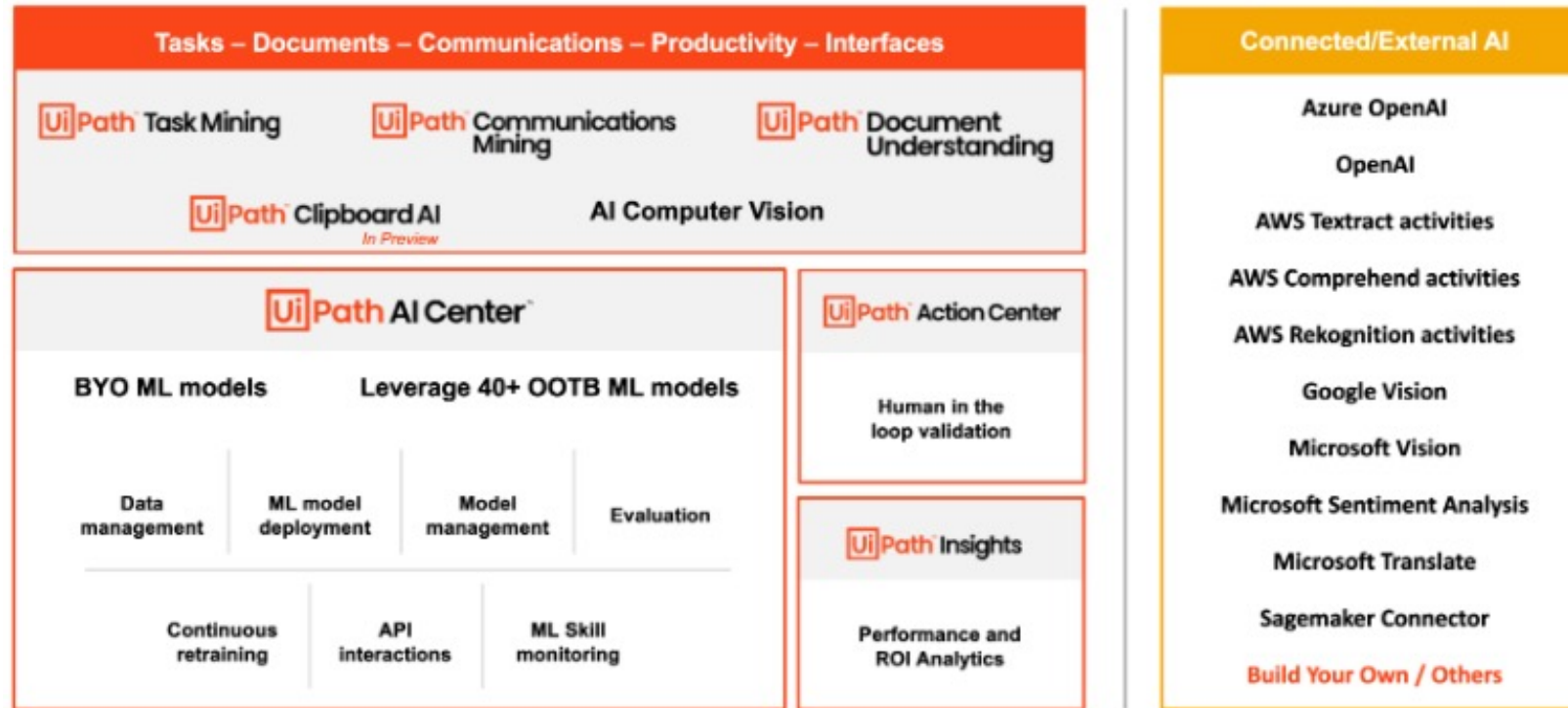


Figure 6. AI potential in RPA (source: www.uipath.com)

Conclusions

1

Ongoing transition to fully automated enterprises

3

Regular staff become “citizen developers”

2

A fully automated enterprise makes people’s work more fulfilling, valuable, and strategic

4

End-to-End software automation is here

Thank you!

