Integrating RPA & AI

January 2021

1

Agenda

RPA Recap

From RPA to AI

Integration with AI

PEOPLE MAKING THE DIFFERENCE

2

RPA Recap

3

What is RPA?

RPA is:
- A simple tool that can automate repetitive, annoying tasks
- Rule based
- Capable of vastly reducing errors
- Able to operate 24/7
- A gateway into more advance automation/AI

RPA NOT:
- A panacea that will eliminate all problems
- A tool to replace the human workforce
- Incapable of making mistakes

PEOPLE MAKING THE DIFFERENCE

4

What is a good fit for RPA?

- Well structured and repeatable tasks. Processes that are simple, high volume, and undesirable to complete.
- Accessing and moving files and data.
- Managing data between PDFs and spreadsheets.
- Manual reconciliations that involve different types of data sources.
- Recreating manual interfaces between two or more systems.
- Analysis and report generation for large data-sets.

PEOPLE MAKING THE DIFFERENCE

5

Most Common RPA Functions

Log into any application	Connect to system APIs	Copy and paste data
Move files and folders	Extract and process structured and semistructured content from documents, PDFs, emails and forms	Read and write to databases
Open emails and attachments	Scrape data from the web	Make calculations

6
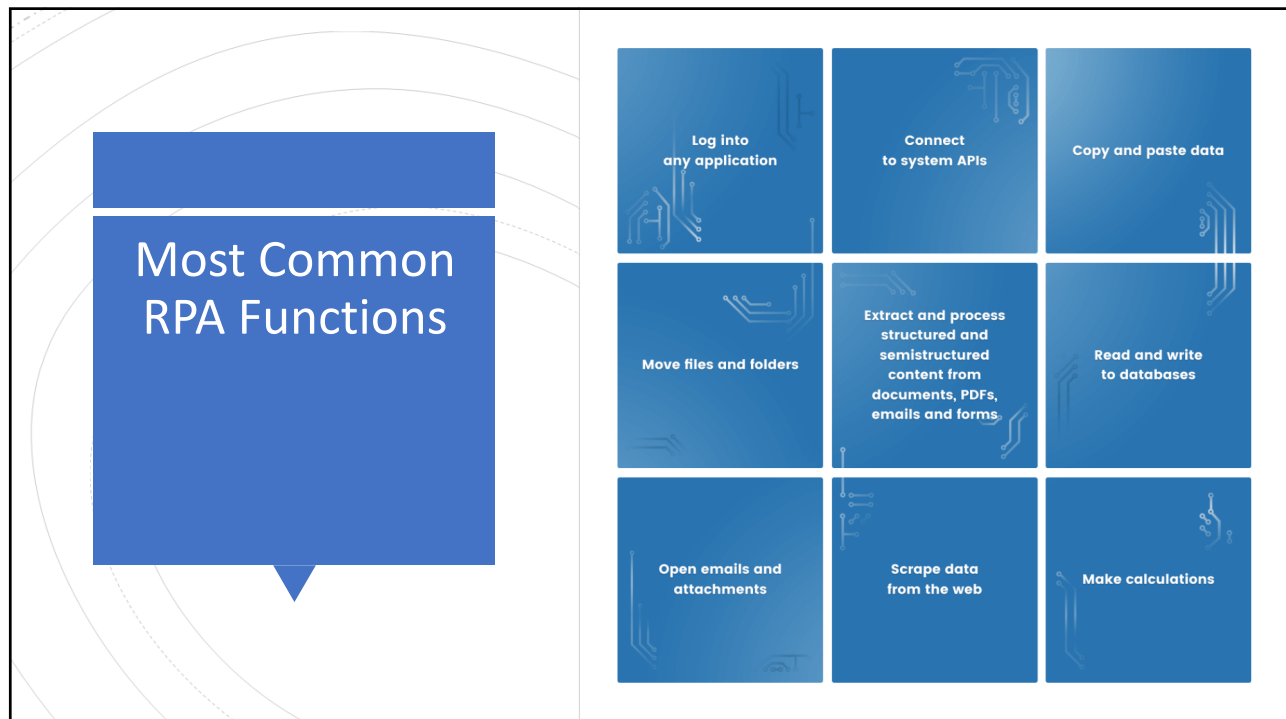
The Journey
From RPA to AI

MIL corp.

7

RPA Can Integrate with:

MIL corp.

OPTICAL CHARACTER RECOGNITION (OCR)

MACHINE LEARNING (ML)

NATURAL LANGUAGE PROCESSING (NLP)

CHAT BOTS

OTHER AI TOOLS

PEOPLE MAKING THE DIFFERENCE

8

AI Definition

The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages

PEOPLE MAKING THE DIFFERENCE

9

What is AI?

- https://youtu.be/2ePf9rue1Ao

PEOPLE MAKING THE DIFFERENCE

10

Optical Character Recognition (OCR)

- Document vision to software robots through classification and data extraction
- The ability to mimic human document sorting, identification and data entry
- Capabilities beyond basic OCR/text recognition

PEOPLE MAKING THE DIFFERENCE

11

Optical Character Recognition (OCR)

Why RPA Needs OCR

- Just as RPA tools solve the problems of Optical Character Recognition (OCR) human processing, so optical character recognition (OCR) tools solve the problems of human data entry
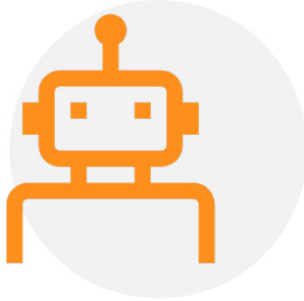- Technology uses a slew of visual, linguistic, and statistical techniques to quickly turn *pictures* of text into *actual* digital text. Bottom line: it's orders of magnitude faster, more accurate, and more cost-effective that the human brain
- RPA and OCR are complementary technologies, and may organizations have already integrated them seamlessly to automate processes from end to end

Documents, menus, sign posts, barcodes, snippets, articles, receipts, ads

IMAGES

- Taking picture
- Image preprocessing
- Text recognition

EXTRACTED TEXT

Searchable and editable text
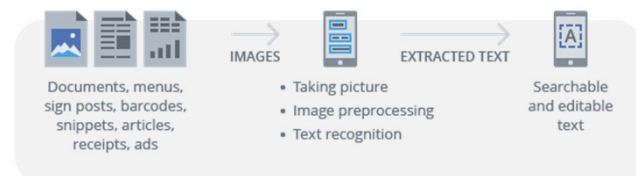
PEOPLE MAKING THE DIFFERENCE

12

OCR video

https://youtu.be/w7d5FoGBchM

13

Machine Learning (ML)

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed
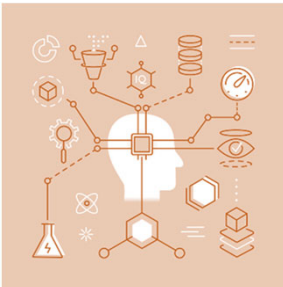
RPA combined with machine learning have created a new world of possibilities to further increase automation for time consuming/repetitive business processes outside of the pure RPA scope (intelligent automation)

14

ML Video

https://youtu.be/f_uwKZIAeM0

15

Natural Language Processing

NLP is a branch of artificial intelligence that helps computers understand, interpret and manipulate human language

FIGURE 2
Key NLP capabilities

Sentiment analysis
Topic modeling
Relationship extraction
NLP CAPABILITIES
Text categorization
Named entity resolution
Text clustering
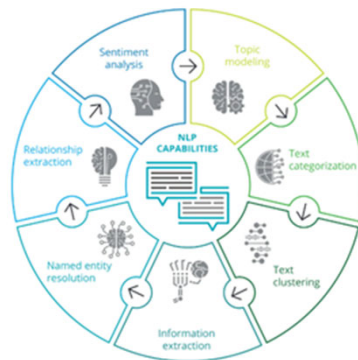Information extraction

Source: Deloitte analysis.
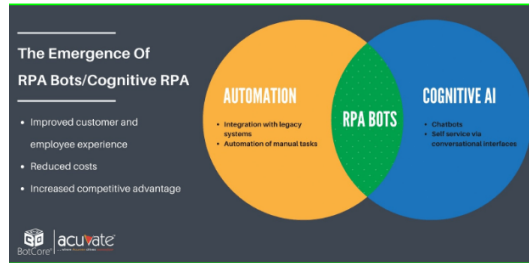
Deloitte Insights | deloitte.com/insights

16

Chat BOTS

Key benefits of chat bots

- Improved customer and employee experience
- Reduce business costs
- Reduced time to complete tasks
- Increased employee productivity

The Emergence Of RPA Bots/Cognitive RPA

- Improved customer and employee experience
- Reduced costs
- Increased competitive advantage

AUTOMATION
- Integration with legacy systems
- Automation of manual tasks

RPA BOTS

COGNITIVE AI
- Chatbots
- Self service via conversational interfaces

BotCore | acuvate

PEOPLE MAKING THE DIFFERENCE

17

Other AI Tools

Amazon AWS has a broad and deep set of machine learning and AI services

ML Services
Build, train, and deploy ML fast

AI Services
Easily add intelligence to your applications

Frameworks
Choice and flexibility with broadest framework support

Compute
Fastest and lowest-cost compute options

Analytics and Security
Comprehensive capabilities, no compromise

Learning Tools
Get deep on ML with AWS DeepRacer and DeepLens

PEOPLE MAKING THE DIFFERENCE

18

Integrating RPA with AI

19

Intelligent Automation Spectrum

Robotic Desktop Automation
Humans manually trigger bots to assist or perform repetitive, rule-based tasks.

Robotic Process Automation
Bots can be scheduled or triggered to perform workflow automations, either end-to-end or w/human in the loop

Intelligent Automation
Bots perform workflow automations utilizing AI/ML services to perform "easy" human tasks steps such as "reading" documents or "understanding" sentiment and context of words.

Deep Learning
Machine Learning Models ingest huge amounts of data to detect patterns for forecasting, anomaly detection, and other relevant business intelligence insight not possible otherwise.

Rule-Based → Judgment-Based

PEOPLE MAKING THE DIFFERENCE

20

RPA & AI Integration Demo

myux?44~tzyz3gj4XsR | qWhXJi9

PEOPLE MAKING THE DIFFERENCE

21