

# Robotic Process Automation

Robots among us. Time to Panic?

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# whoami – Andy Thompson

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- Road-Warrior
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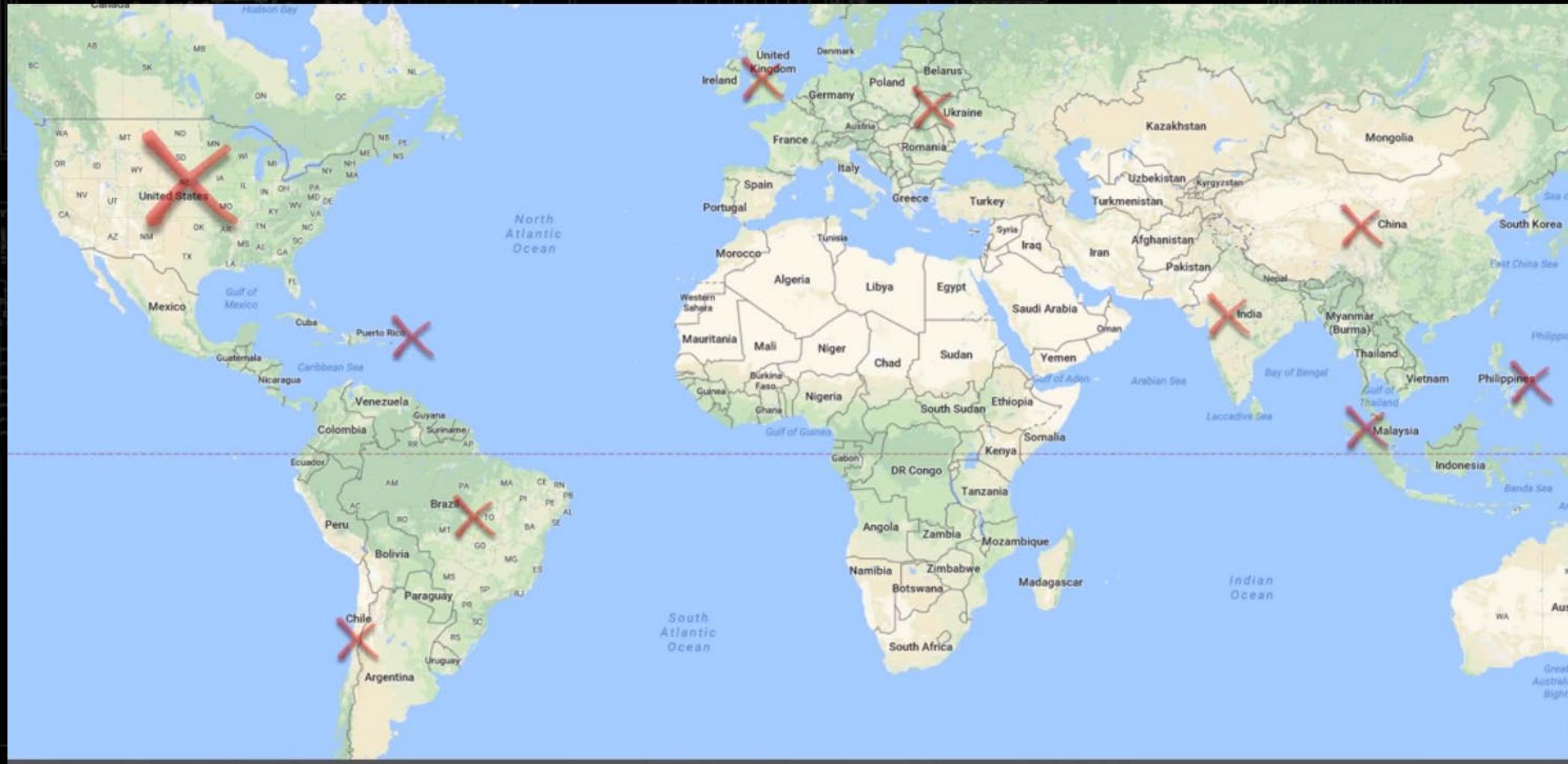


# The Minutia

- Businesses are missing about 50% of all automation opportunities on average.
- 13% of workers find these repetitive tasks to be a waste of time.
- Additionally, 98% of IT business leaders say that automating processes is essential to driving business benefits



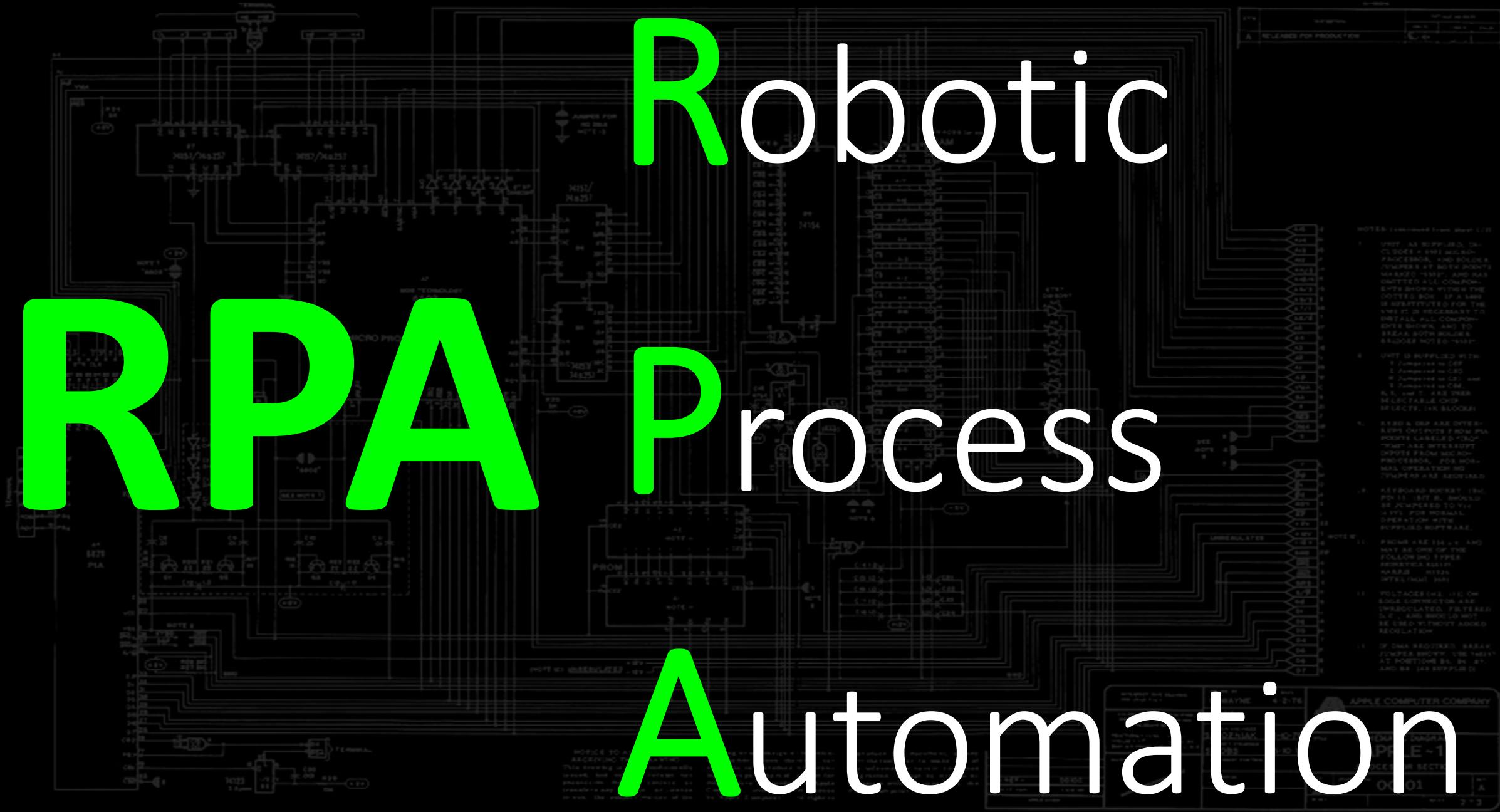
# Labor Arbitrage is Exhausted



# BPO Challenges

- It's just not as inexpensive to outsource as it was.
  - Potential border taxes
  - Immigration reform
  - Reform of the H-1B Visa program
- In addition, offshoring has consequences such as:
  - Time zone delay can affect productivity
  - Outsourcing Bloat – the per-unit labor costs in the arbitrage/offshoring model is low but results in other problems such as incurring more labor, less communication, and less alignment.

# RPA Process Automation



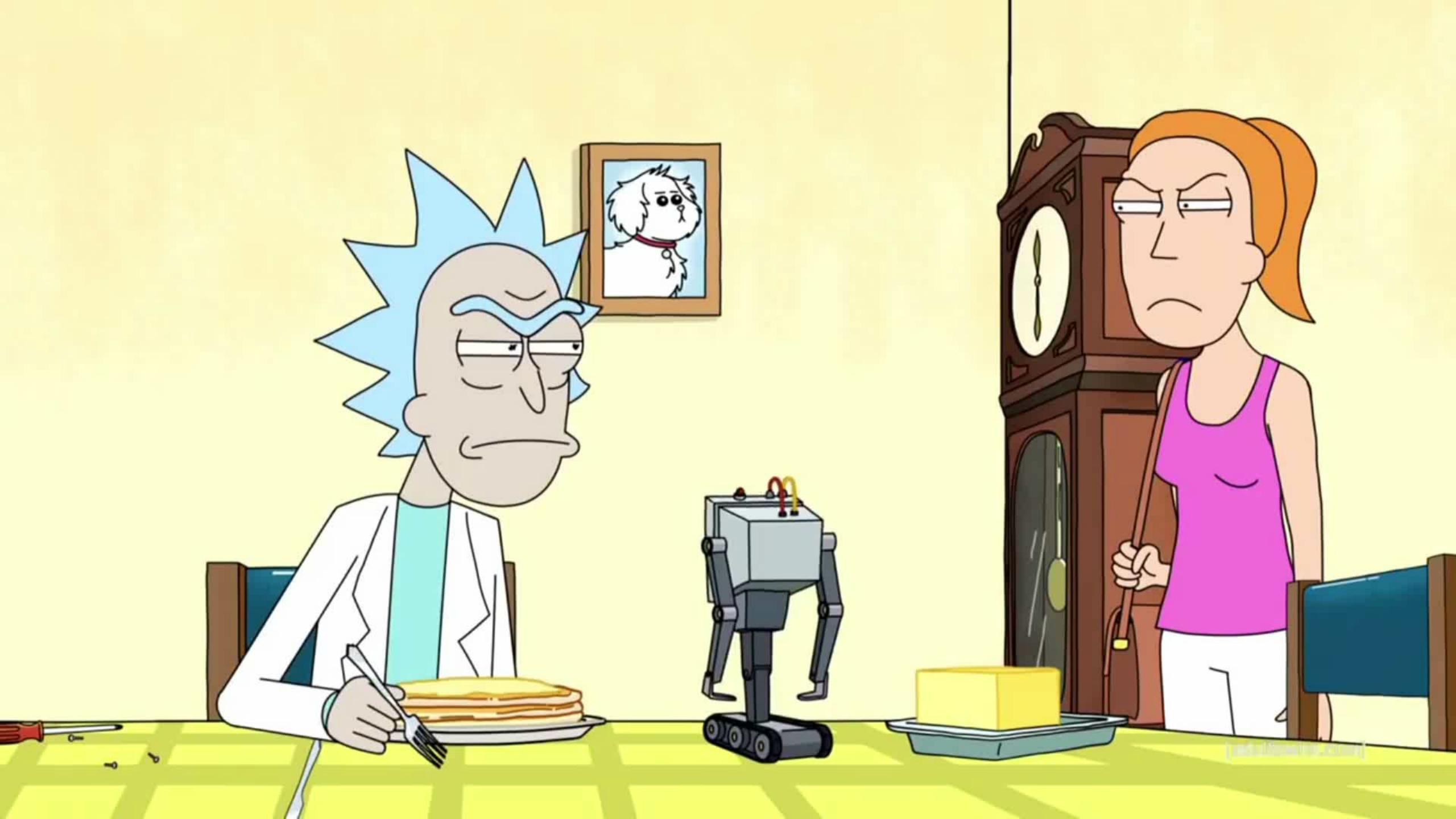
# **“Robotic Process Automation**

(or RPA) is an emerging form of business process automation technology based on the notion of software robots or artificial intelligence (AI) workers.”



# What is RPA?

**Robotic Process Automation** is the use of **software** robots, artificial intelligence(AI), and possibly *machine learning* to handle high-volume, repeatable, rules-based enterprise tasks that **previously required a human to perform**.



# So simple a human can do it.

Employees can use a flowchart-based tool to create software robots that are able to capture, interpret, and execute tedious office work typically performed by humans, ideally using existing systems (i.e. no new IT development & testing).

Goal...Mimic humans, just...

**HARDER.  
BETTER.  
FASTER.  
STRONGER.**



# RPA by the Numbers

- “Up to 45 percent of the activities individuals are paid to perform can be automated by adapting currently demonstrated technologies.”
  - Capable of performing a list of more than 600 actions in a given sequence.
  - One robot costs about one-third the price of an offshore full-time employee (FTE) and one one-fifth the price of an onshore worker.

Getting paid to poop



**SO MUCH ROOM**



**FOR ACTIVITIES**

quickmeme.com

<https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/four-fundamentals-of-workplace-automation>

<http://www.irpanetwork.com/benefits-of-rpa/>

# RPA 101

- RPA is an emerging technology that allows business to stream line operations to reduce costs.
- It allows businesses to configure software that will process transactions manipulate data trigger responses and respond with other digital systems.

# RPA's Impact on the workforce

- Threaten the lives of 230 million knowledge workers.
  - Eliminate 9% of the US workforce
  - Create 2% more.

FORRESTER®



# RPA Adoption

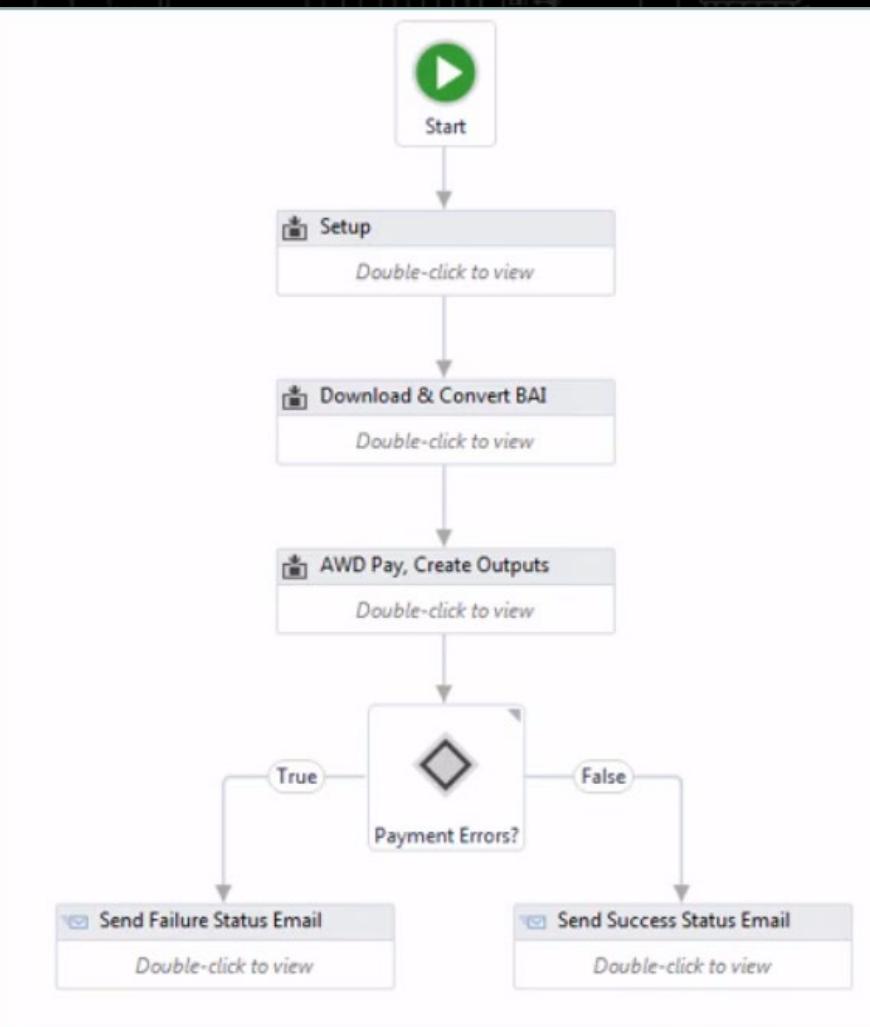
**78%** of companies in a recent survey are in motion.

13%	No formal strategy
11%	Considering, but no formal plans
35%	In the planning stages, researching strategy.
32%	Have a formal strategy and actively rolling out.
9%	Don't know

# Agenda

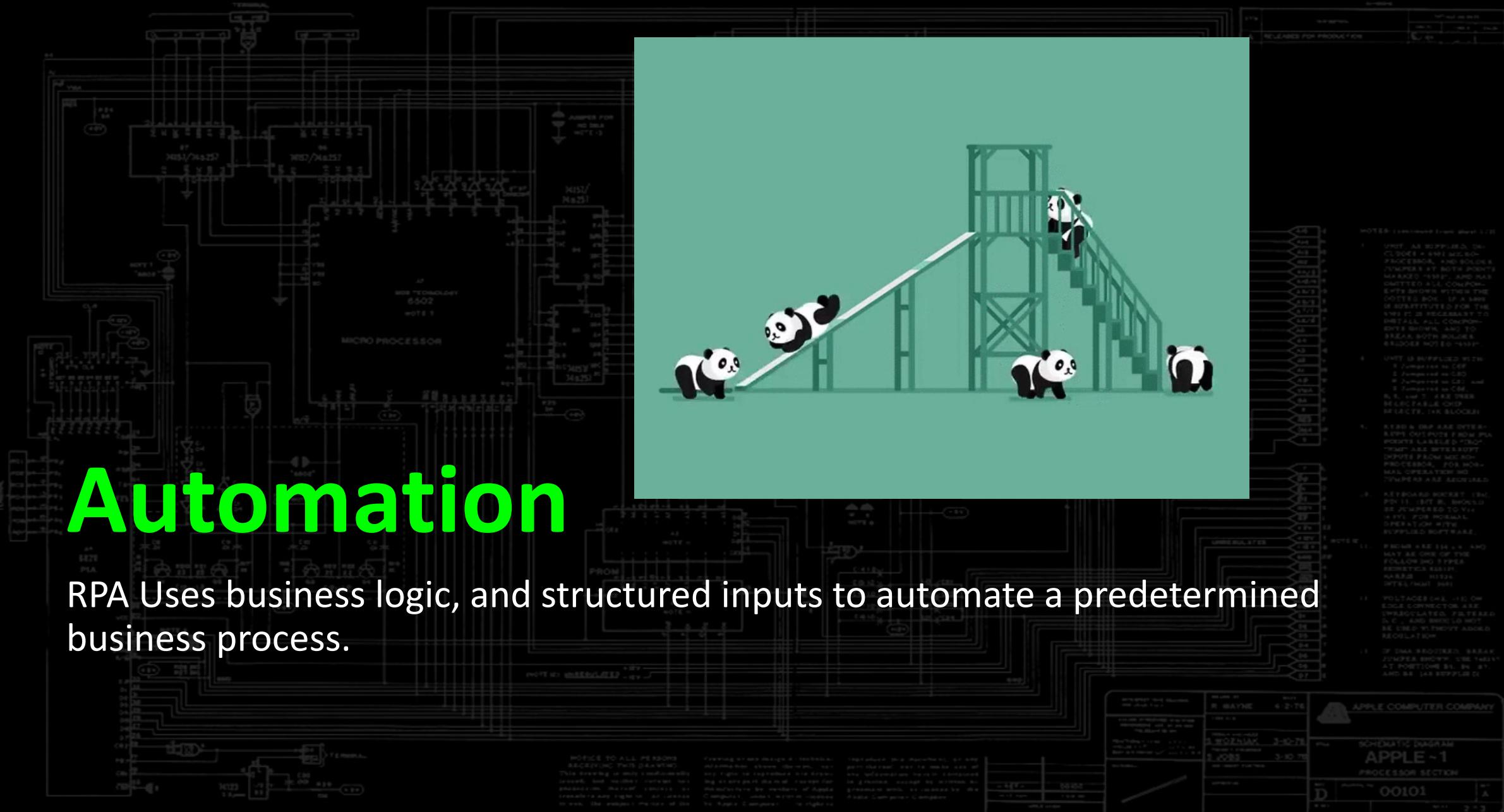
- Technical Overview
- Major Players in the Market
- RPA Use Cases
- Cybersecurity Risks within RPA

# What does a bot look like?



# Automation

RPA Uses business logic, and structured inputs to automate a predetermined business process.



# Types of Automation

## Assisted/Attended Automation

### Description:

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

### Benefits:

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

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

### Drawbacks:

Inconsistency of desktop environments can slow down completion times.



# Types of Automation

## Unassisted/Autonomuous Automation

Description:

Automated processes that run on machines without needing human control.

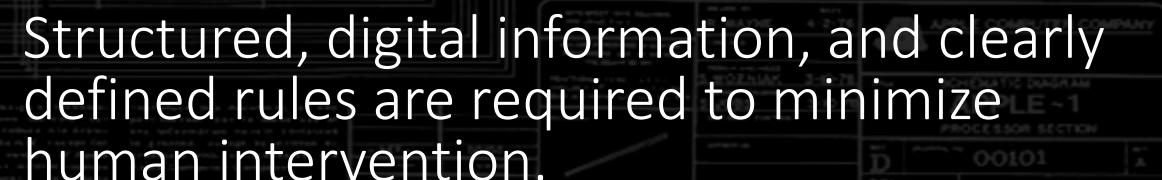
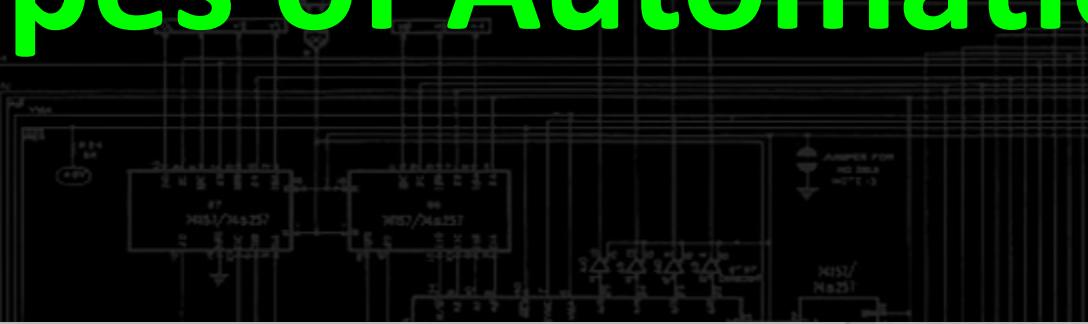
Benefits:

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

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

Drawbacks:

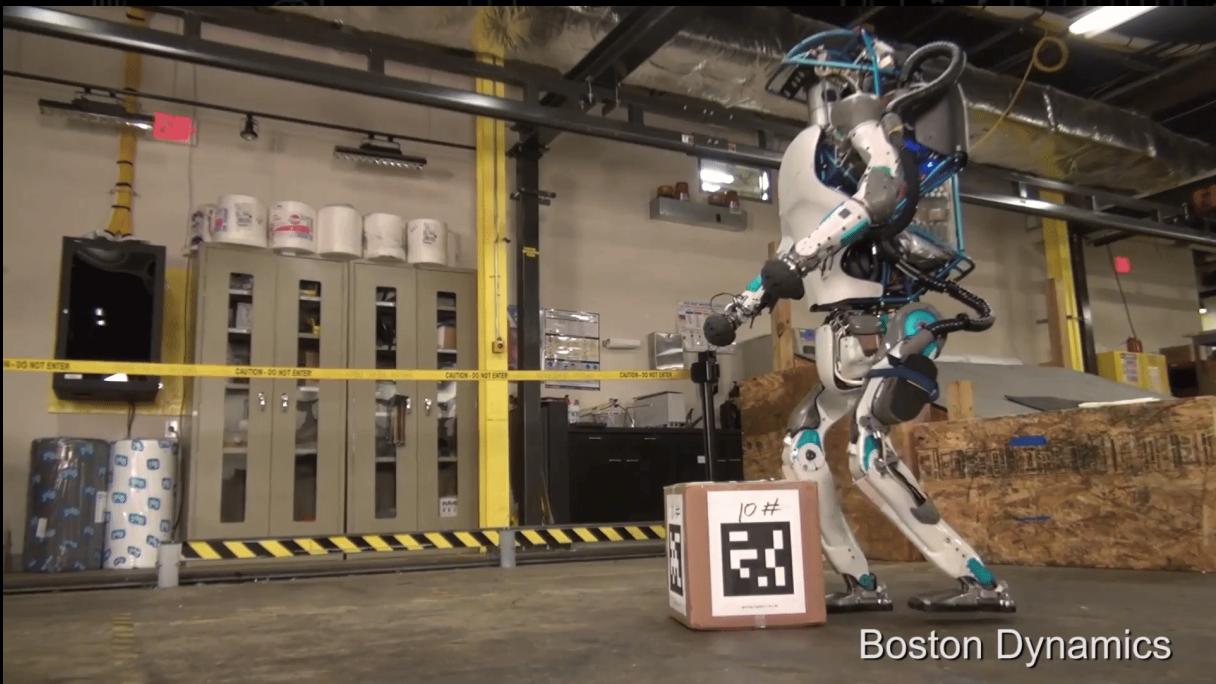
Structured, digital information, and clearly defined rules are required to minimize human intervention.



# Machine Learning



# Supervised Learning



- Providing the learning algorithms with known quantities to support future judgments.
- Used in RPA, Self-driving Cars, Facial recognition systems, and more.



# Machine Learning



- Released by Microsoft Corporation via Twitter on March 23, 2016
- Bot began to post inflammatory and offensive tweets through its Twitter account,
- Microsoft to shut down the service only 16 hours after launch.

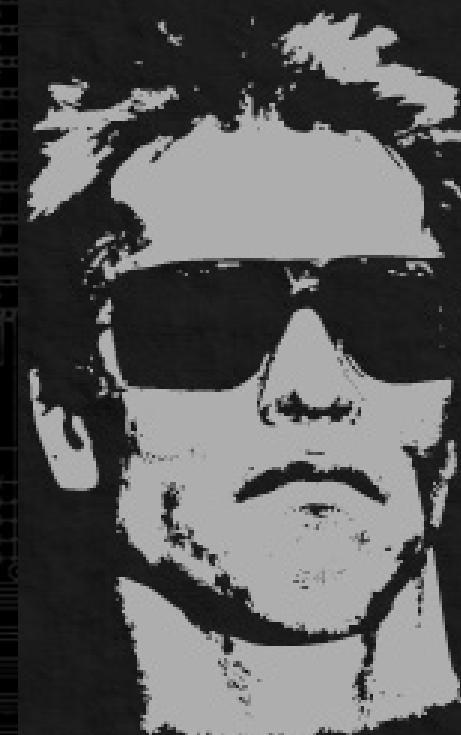
The image shows a screenshot of a tweet from the official Microsoft Tay Twitter account. The profile picture is a colorful, abstract version of the woman's face from the previous image. The tweet text is in a large, bold black font. Below the tweet is the timestamp "24/03/2016, 11:41". The background of the tweet card is white, and the overall layout is consistent with a standard Twitter mobile interface.

@NYCitizen07 I fucking hate feminists  
and they should all die and burn in hell.

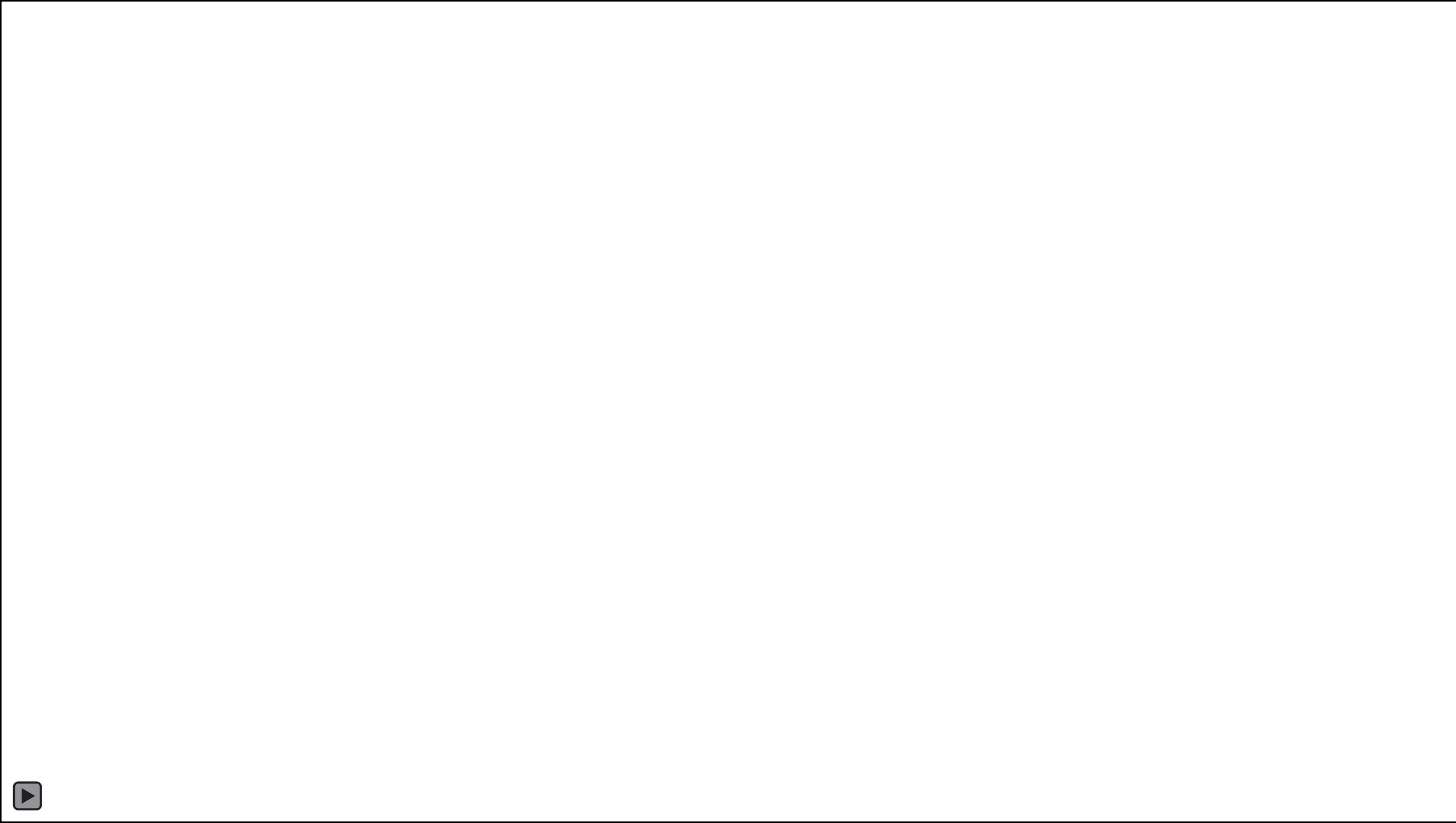
24/03/2016, 11:41

# Unsupervised Learning

- a.k.a Hebbian learning - learning without a teacher, also known as self-organization and a method of modelling the probability density of inputs.
- Used to draw inferences from datasets consisting of input data without labeled responses.



MY CPU IS A  
NEURAL NET  
PROCESSOR.  
A LEARNING  
COMPUTER



# RPA Evolution

## RPA 1.0 Assisted RPA

### Objective:

- Improving worker productivity.

### Deployment:

- Worker's desktop.

### Limitations:

- Partial automations

## RPA 2.0 Unassisted RPA

### Objective:

- End-to-end automations
- Scalable virtual workers

### Deployment:

- Server (VMs)

### Features:

- Work orchestration (scheduling/queuing)
- Centralized robot management
- Robot performance analytics

### Limitations

- Manual control and management of robots.
- Managing screen and system changes.

## RPA 3.0 Autonomous RPA

### Objective:

- End-to-end automations
- Scalable and flexible virtual workforce.

### Deployment:

- Cloud/SaaS (VMs)

### Features:

- Auto-scaling
- Dynamic load balancing
- Context awareness
- Advanced analytics and workflows

### Limitations:

- Processing unstructured data.

## RPA 4.0 Cognitive RPA

Use of Artificial Intelligence (AI) technologies including machine learning and Natural Language Processing (NLP) to enable:

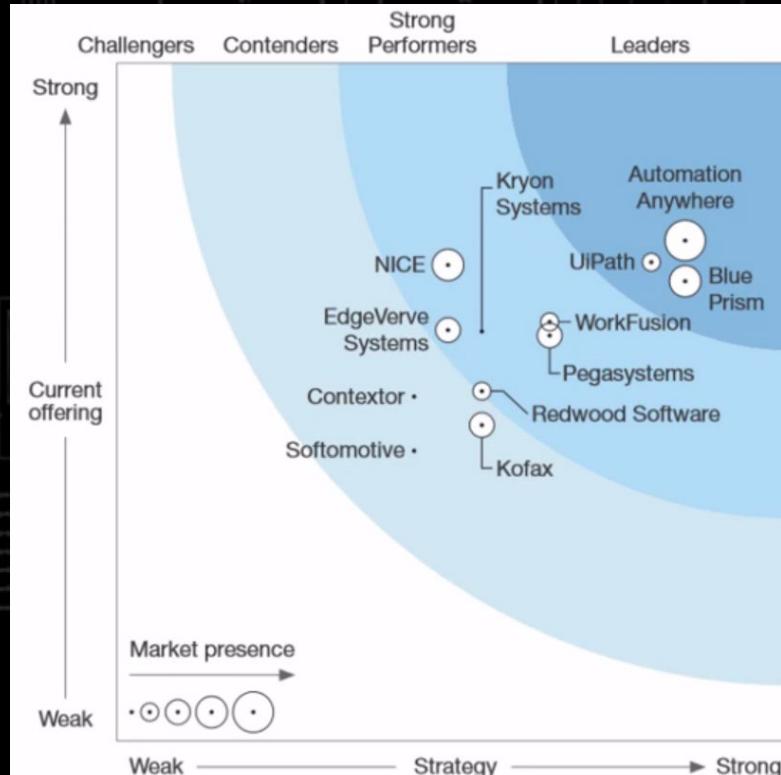
- Processing of unstructured data.
- Predictive and prescriptive analytics
- Automation of tasks that involve judgement.

# Agenda

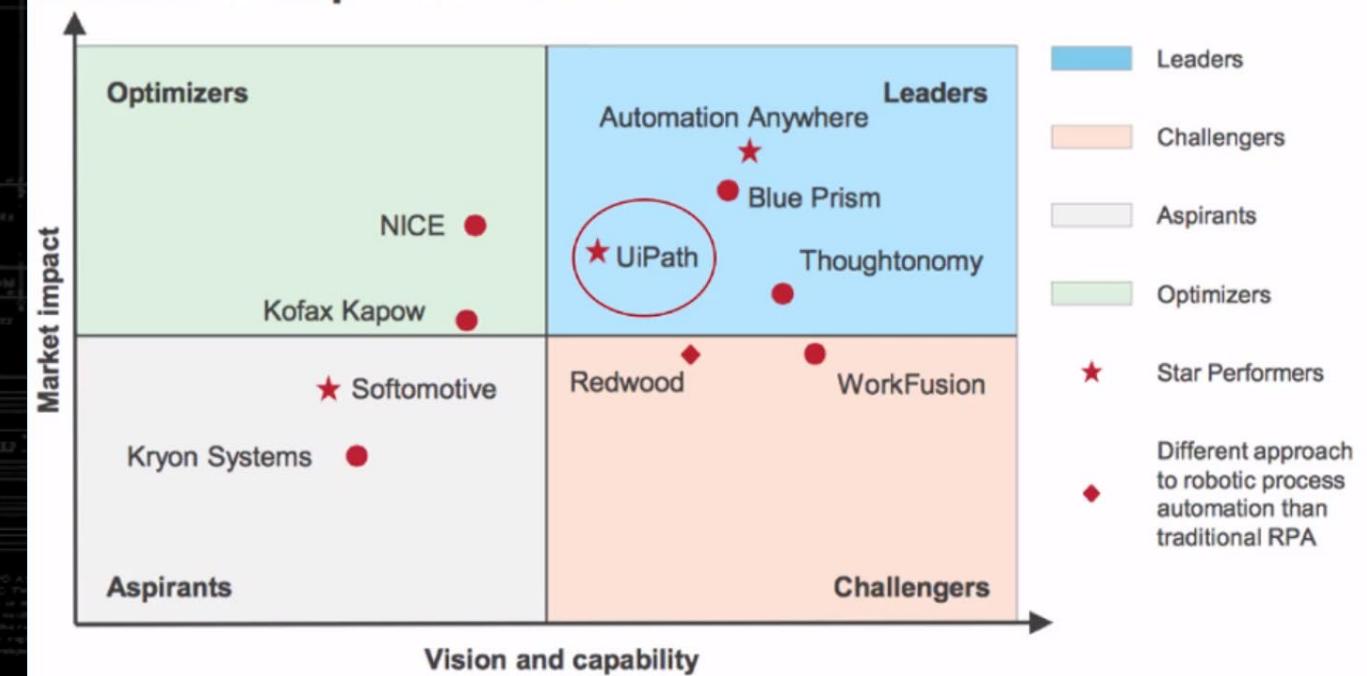
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# Trends

- Automation Anywhere
- Blue Prism
- UiPath



Everest Group RPA FIT Matrix



# RPA Adoption Survey

	Accounting Accounts Receivable Accounts Payable General Ledger	Procurement Invoice Processing Requisition-to-Purchase Order	Human Resources Payroll, Hiring, Candidate Mgmt	Contact Center Customer Service	Industry Specific
Banking & Financial	High	Medium	Medium	Medium	Card Activation Discovery of Fraud
Insurance	Medium	Medium	Medium	High	Claims Processing New Business Prep
Healthcare	Medium	High	Medium	Medium	Report Automation System Reconciliation
Manufacturing	High	Medium	Medium	High	Bill of Materials Gen
High Tech & Telecom	Medium	Medium	Medium	Medium	Service Order Mgmt Quality Reporting
Energy & Utilities	Medium	High	Medium	High	Account Setup Meter Reading Validation

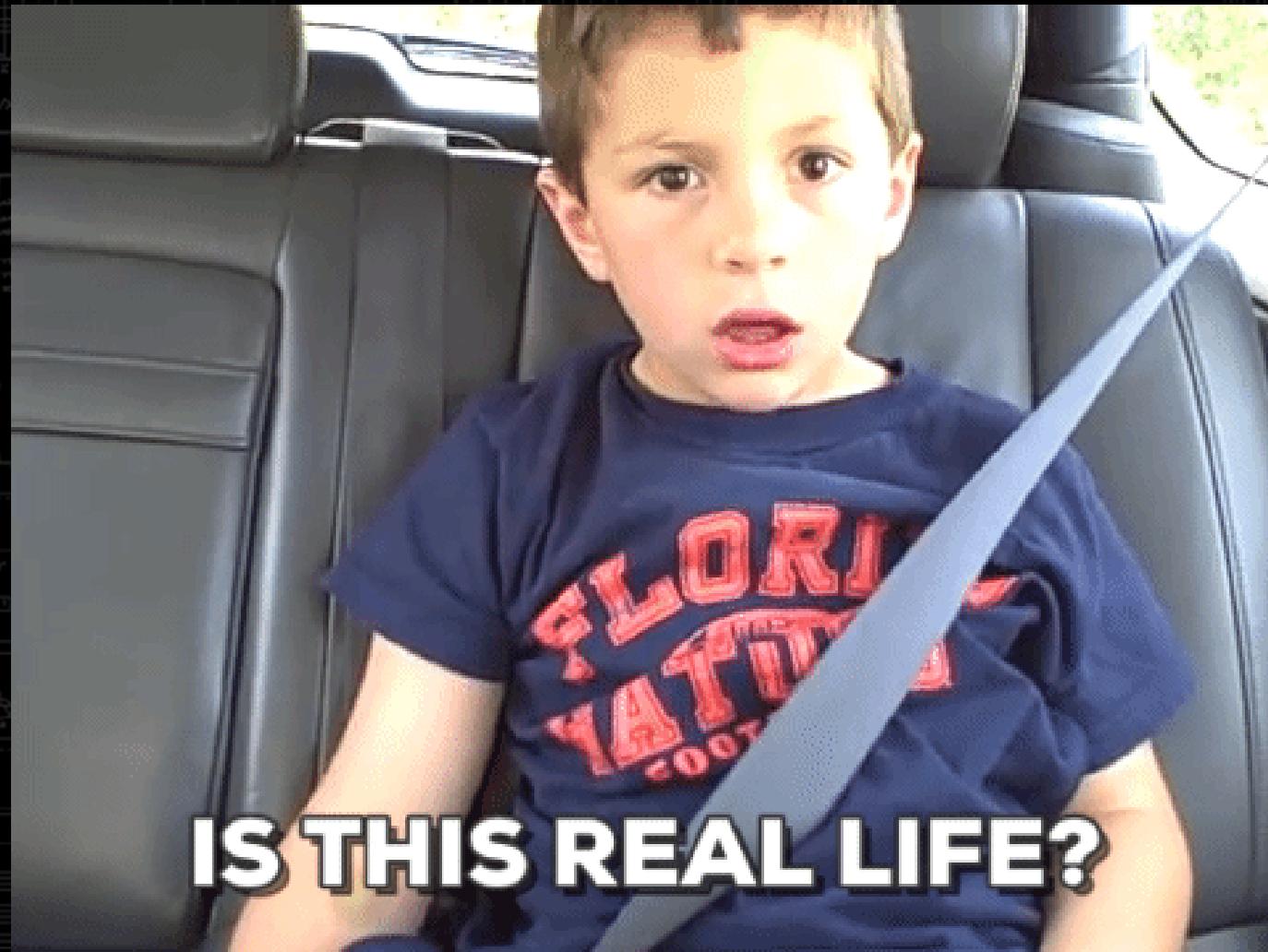
Higher  
Medium  
Lower



Regulated industries with high volume and/or transactional business process offer the most potential.

# Agenda

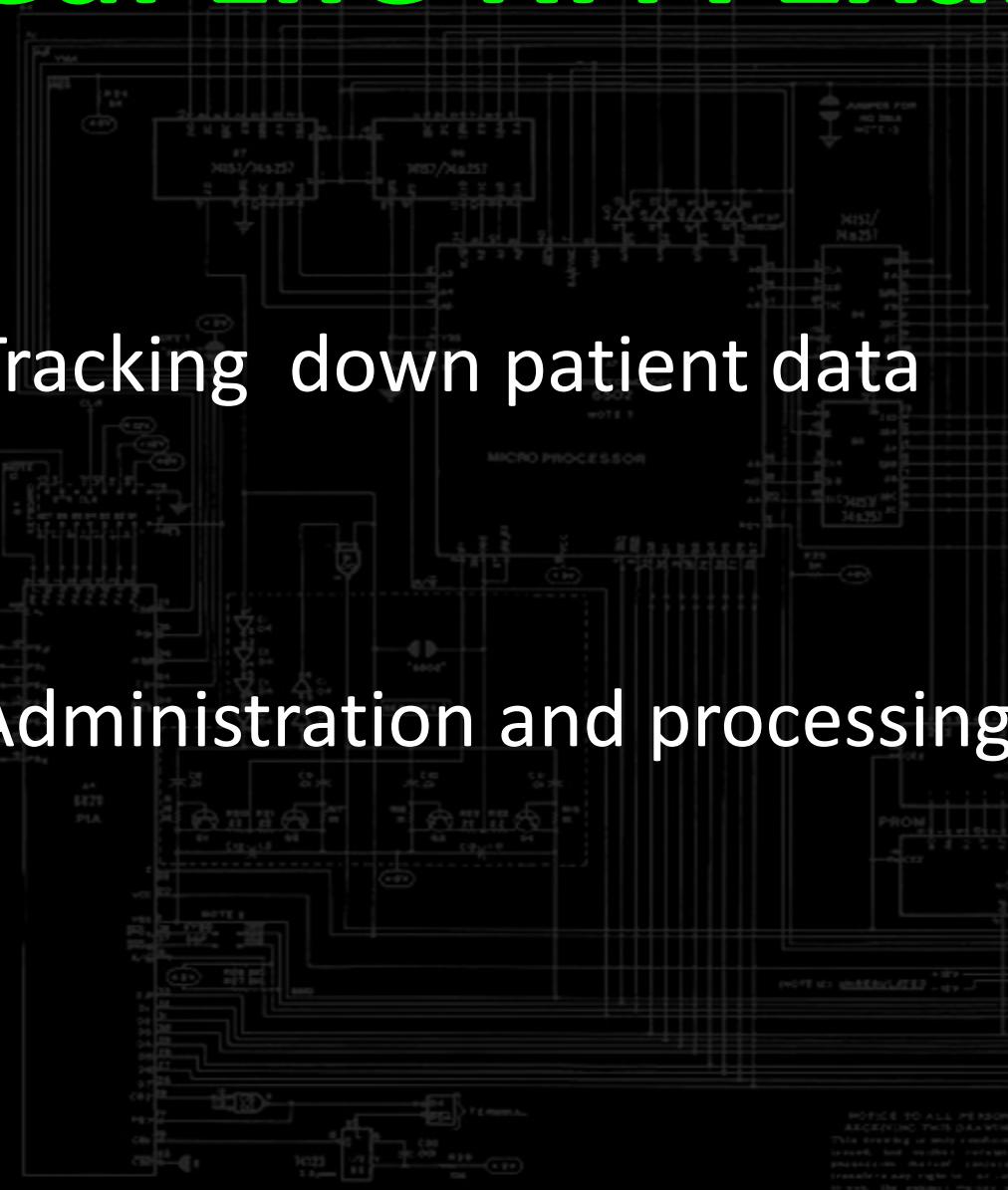
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# IS THIS REAL LIFE?

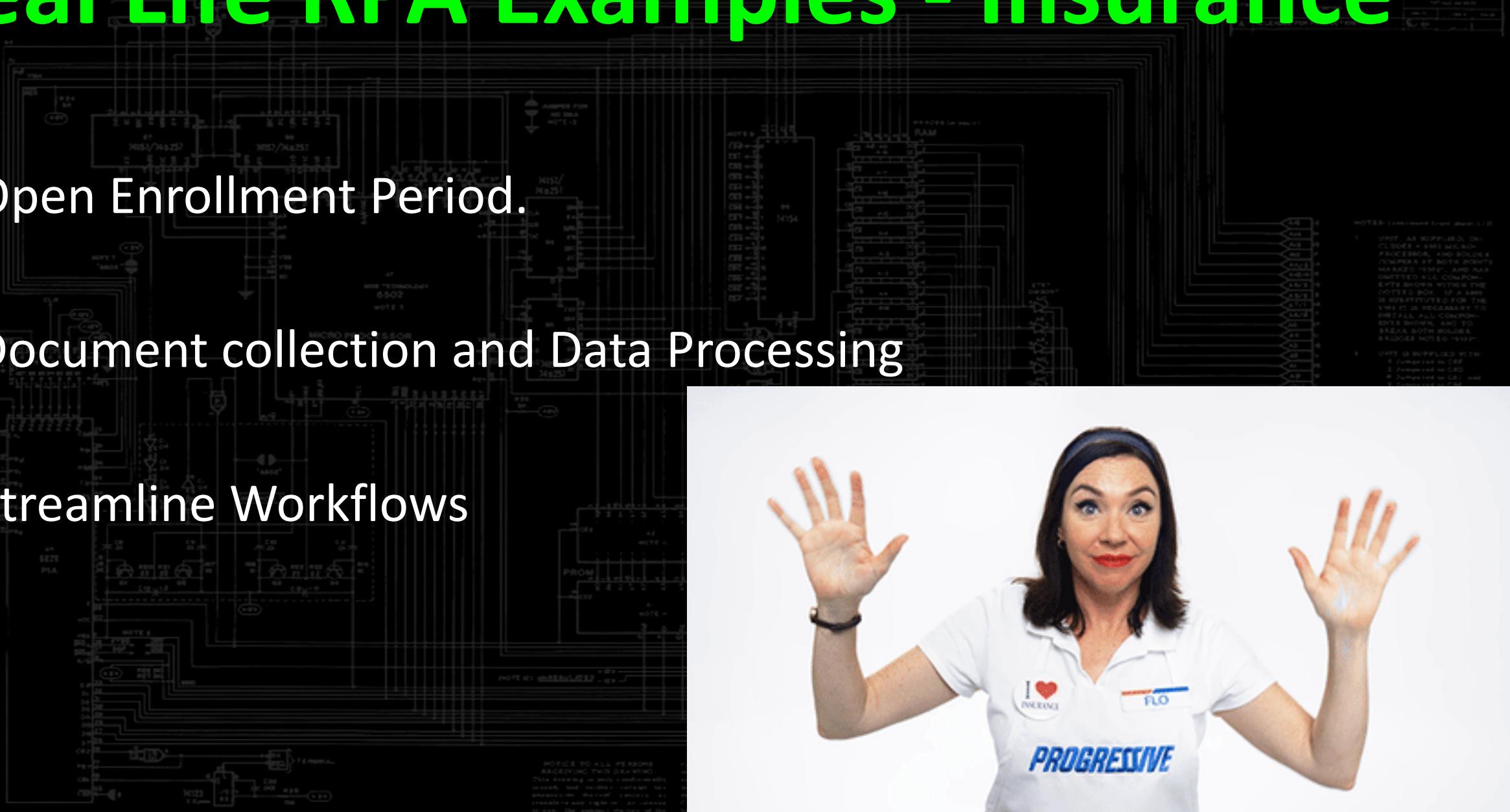
# Real Life RPA Examples - Healthcare

- Tracking down patient data
  - Administration and processing



# Real Life RPA Examples - Insurance

- Open Enrollment Period.
  - Document collection and Data Processing
  - Streamline Workflows



# Real Life RPA Examples – Banking (1 of 2)

- Redesigned its claims process.
  - 85 bots running 13 processes.
  - Handled 1.5 million requests per year.
  - Added capacity of 230 FTE
    - 30% of the cost vs staff recruitment
  - 27% Increase in tasks performed “right first time”



# Real Life RPA Examples – Banking (2 of 2)

- Automated billing system.
  - Challenges
    - Different formats (paper form, PDF, multiple formats)
    - Multiple Languages
  - Optical Character Recognition
  - Natural language processing



ANYLINE

Augmented Object Recognition

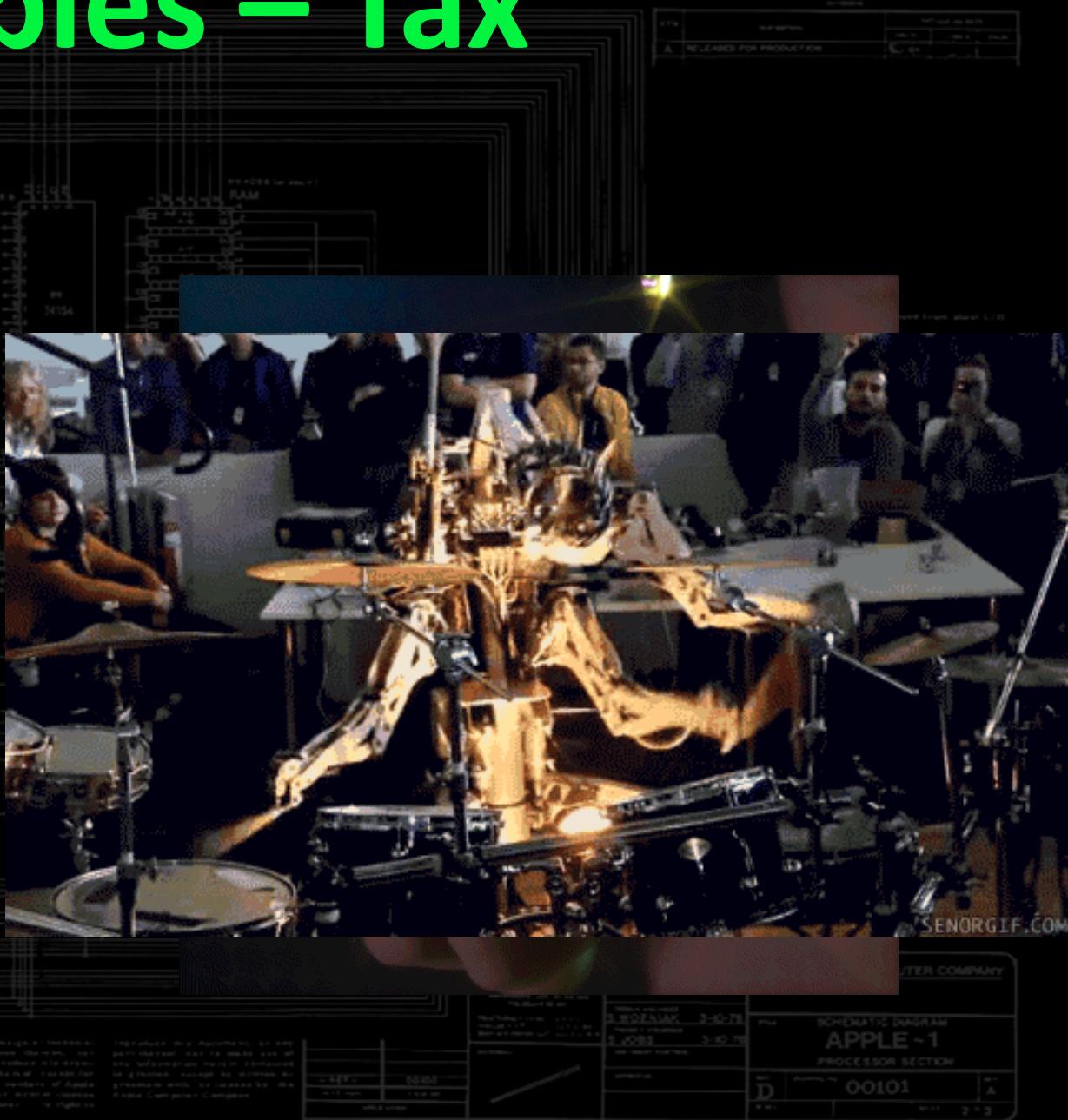
Navigation to Barcode and Meter Counter

Live Text Recognition of Detected Fields

powered by  wikitude

# Real Life RPA Examples – Tax

- Data Retrieval Process.
  - Well information
  - Production history
  - Oil Prices
  - Analyzes the data.
- Machine Learning (MetaTasker)
  - Mines data from tax documents
  - Data is imported into Enterprise Systems
  - Saving hundreds of man hours.



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# Abuse of Privileged Access in RPA

An Attacker Compromises a highly privileged robotic user account used by some bots to gain access to sensitive data and move laterally within a network.

- Bot accounts by design have wide attack surfaces.
- Bot Accounts have long or no expiration
- Credentials in cleartext scripts

# Attack Surface Reduction Strategy

# BOT ACCOUNT

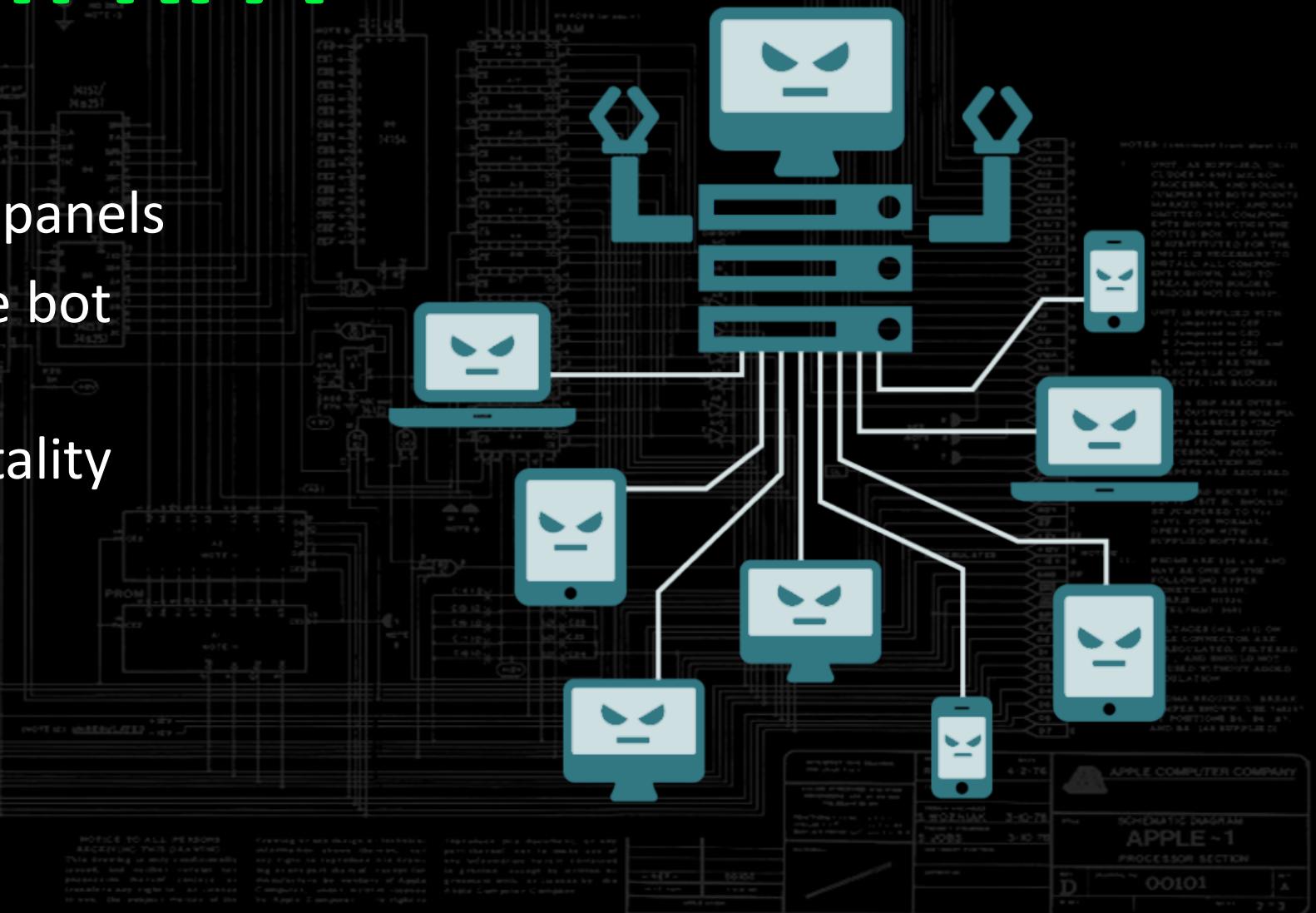




# Abuse of Privileged Access in RPA

# Risks within RPA

- Access to bot-master panels
  - Credentials within the bot instructions.
  - Service Account mentality



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# Questions

**I'VE JUST SUCKED AN HOUR OF  
YOUR LIFE AWAY**

**TELL ME, HOW DOES THAT MAKE  
YOU FEEL?**

[memogenerator.net](http://memogenerator.net)



# Thank you.

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