**Robotic Process Automation**

**What is Robotic Process Automation?**

Have you ever heard of software that uses Artificial Intelligence and Machine Learning to perform repetitive tasks such as data-entry, transaction processing, and record keeping? Robotic Process Automation (RPA) software does that and more. With RPA, robots perform all human user actions by capturing user interference data and manipulates each step that is required to complete each process in the same way that humans do. With this technology organizations have a virtual worker that is performs a human’s work without any errors, 24 hours a day, 7 days a week, 365 days a year.

**Major Players**

UiPath – Founded in 2005 in Bucharest, Romania as DeskOver by Daniel Dines and Marius Tirca to build automation scripts. By 2012 the company pivoted to RPA and in 2013 the UiPath Desktop Automation product was launched. By 2016 UiPath expanded globally to New York, London, and Bengaluru and had 250 enterprise clients. Currently, UiPath has over 5K global enterprises, a 250,000+ strong developer community, and has over 20 clients from the Forbes Fortune 500 list.

AutomationAnywhere – In 2003, Tethys Solutions, LLC was founded in [San Jose, California](https://en.wikipedia.org/wiki/San_Jose,_California) by Ankur Kothari, Mihir Shukla, Neeti Mehta, and Rushabh Parmani. In 2010 the company rebranded itself as AutomationAnywhere, where 2018 was an extraordinary year for Automation Anywhere. It had GM, Google, and LinkedIn as clients; A combined total of $550 Million where invested by SoftBank, and a funding round that was hosted by [New Enterprise Associates](https://en.wikipedia.org/wiki/New_Enterprise_Associates) and [Goldman Sachs](https://en.wikipedia.org/wiki/Goldman_Sachs).

BluePrism – In 2001, Alastair Bathgate and David Moss co-founded BluePrism in England. They used their process automation knowledge to create a new approach on how back office processes are handled. During the 2017 fiscal year BluePrism expanded their offices to Austin, TX, where a customer support hub was opened. The software version released in 2017 was able to run on AWS, Google Cloud Platform, and Microsoft Azure clouds.

**RPA Technology Overview**

RPA technology depends on different software plug-ins to perform functions. Microsoft .Net Framework, Citrix, OCR Readers. A global resource that expands the use of RPA is known as packages, which allow for RPA users to use open source libraries, frameworks, and wrappers to add functionality to their own projects. Attended robots work on the same workstations as humans and require human interaction to function. Unattended robots are independent of human interaction and work on separate workstations.

**Uses**

Financial institutions such as banks, insurance companies, and investment firms benefit from RPA because RPA automates data management, customer service, and can prevent fraud. For brand new customer onboarding, RPA features such as OCR allow for a faster more efficient way to process customer identification documents. OCR will accurately read each document and upload the required data to the bank application. This allows for bankers to speed up the customer onboarding process, while interacting with each new customer and answering their questions. Through RPA, software is developed that uses analytics and algorithms to interpret data and predict outcomes from transactions. AI powered technology can spot suspicious transactions through the ability of understanding different consumer patterns. For example, if a $20,000 withdrawal is made from an account that never withdraws more than $2,000, the AI enabled software will notice such transaction and take predefined steps to investigate the transaction.

RPA is widely used in new employee recruitment processes due to the amount of time it saves to HR staff by allowing recruiters to focus on interacting with the most qualified candidates. A useful function of RPA is resume skimming, which reads each resume and determines if the candidate has the qualifications for the job. Once the robot determines which candidates are fit for the job it will send each candidate an automated message whether the company will be moving forward with their application. Using RPA embedded in the web browser, candidates will be able to schedule an interview with the company to speak with company representatives. In employee recruiting, RPA allows for HR teams to reduce the time they spend reading each application to determine who is a right candidate, the robot will let HR staff know who is the right and will assist with the interviewing, hiring, and onboarding processes.

Small businesses, such as logistics firms, restaurants, and HVAC businesses benefit from RPA because it saves managers an average of 2 hours a day. RPA allows small business owners to automate data entry, invoice management, and report writing tasks. RPA software simplifies spreadsheet automation by using OCR software that can read reports and transfer the data to an Excel spreadsheet. OCR software is crucial to RPA software, due to the ability to scrape the data of images, webpages, and documents. An advantage of RPA software is the ability to save numbers from scraped documents as variables. The software will then perform calculations using the variables which will report to business owners operating costs, revenues and profits. This allows for business owners to grow their business by focusing their time and resources on their employees, revenue, and clients.

**Benefits**

RPA Benefits organizations because it allows them to automate at a fraction of a cost and time, without any significant upgrades to existing IT infrastructure. As organizations grow RPA is tool that adapts to the organizations changes.

Cost efficiency is a byproduct of RPA because high volume processing tasks can be done with less human capital with a zero-error rate. According to Capgemini, RPA implementations have lowered their client’s costs by 65% for onshore process operations and 30% in offshore delivery.

With UiPath, software developers can integrate SQL, Java, and Python to increase the computing power of UiPath. To integrate these development platforms the developer needs to install activities from the packages tab. The image bellow depicts the packages menu with the respective activities installed for each of the development platforms.

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