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RPA & ITS APPLICATIONS

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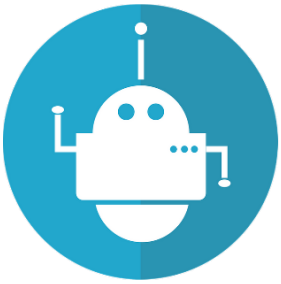
Abstract: ***Within digital transformation, which is continuously progressing, robotic process automation (RPA) is drawing much corporate attention. While RPA is a popular topic in the corporate world, the academic research lacks a theoretical and synoptic analysis of RPA. Conducting a literature review and tool analysis, we propose–in a holistic and structured way–four traits that characterize RPA, providing orientation as well as a focus for further research. Software robots automate processes originally performed by human work.***
Thus, software robots follow choreography of technological modules and control flow operators while operating within IT ecosystems and using established applications. Ease-of-use and adaptability allow companies to conceive and implement software robots through (agile) projects. Organizational and IT strategy, governance structures, and management systems therefore must address both the direct effects of software robots automating processes and their indirect impacts on firms.
Keywords—RPA, Applications, Benefits.

1. INTRODUCTION

RPA is a technological imitation of a human worker with the goal of automating structured tasks in a fast and cost-efficient manner. 'Robotic Process Automation', is the use of software to 'mimic' the actions a human user would perform on a PC at scale to Automate Business Processes.[1]

It is a concept that leverages virtual software robots (Bots) to emulate human interaction with systems to automate existing user actions. It represents a computer software programmed to execute repetitive labor-intensive tasks.



[RPA]

Bots work at desktop level and can traverse through applications just as a real human user would. Just as industrial robots are remaking the manufacturing industry by creating higher
production rates and improved quality, RPA "bots" are revolutionizing the way we think about and administer business processes.

2. DIFFERENCE BETWEEN RPA AND TRADITIONAL AUTOMATION

The traditional process automation is mainly considered as an inevitable aspect of Business Process Management (BPM), and it is referred to as Business Process Automation (BPA). The primary focus of the traditional automation (BPA) is on process improvements by streamlining existing processes and removing inefficiencies. Therefore, this approach is based on creating or evolving systems and processes to increase efficiency. Macros is one most common example of the same.
On the other hand, RPA is focused on enabling virtual workforce to do all the tedious, repetitive tasks. RPA doesn't optimize the process but aims to make it faster, using software robots for performing process operations instead of human operators. RPA is non-disruptive and is almost agnostic of the underlying technologies. The traditional automation of business processes (BPA) is a strategic information system transformation move, highlighting all of the places where existing processes can be automated with better system integration or the set-up of a specialized process software.
While implementing RPA there is no need for high programming skills, since it could be deployed on server or on user's desktop and it automates actions at the User Interface level.
BPA integration requires much higher programming skills than RPA does. The scope of traditional process automation is large and it covers workflow automation tools, specialized process software, structured and unstructured data, complex interfaces.

[RPA vs Manual Processes]

Traditional automation is often related with downsides like higher implementation cost and duration, complexity of integration, capacity of integration solutions and limitation of legacy systems. In contrast to this,
RPA is non-intrusive and doesn't require changes to existing applications, implementation is faster and project costs are in general less expensive than traditional automation projects. When it comes to an organizational impact,

RPA layered on top of existing applications; it doesn't require extensive employee training, therefore trainings like simple use of demonstration videos could be sufficient. Traditional automation is disruptive. It is initiated by IT specialists and requires a significant change management practice and training of employees.[2]

3. BOTS

Think of RPA bots as a Digital Workforce that can interact with any system or application. For example, bots are able to copy-paste, scrape web data, make calculations, open and move files, parse emails, log into programs, connect to APIs, and extract unstructured data. And because bots can adapt to any interface or workflow, there's no need to change business systems, applications, or existing processes in order to automate.

[Bots]

RPA bots are easy to set up, use, and share. If you know how to record video on your phone, you'll be able to configure RPA bots. It's as intuitive as hitting record, play, and stop buttons and using drag-and-drop to move files around at work. RPA bots can be scheduled, cloned, customized, and shared to execute business processes throughout the organization.

3.1 Types of Bots

A. Unassisted Bots

- Unassisted bots are like batch processes on the cloud. They complete a data processing task in the background.
- They are ideal for reducing work of back-office employees.

•Here are some examples of where unassisted automation is used:

Data input in a specified location: Most unattended bots are triggered when data is being inputted in the system. Whether it is data for new transactions or creating additional employee/customer/vendors records, additional data processing is generally required to serve regulatory or marketing-related needs.

Bot initiated bot: A bot can also launch another bot. For example, a KYC inquiry may either require manual investigation or automated processing to complete the customer's registration. Based on the outcome, the bot can notify the investigation team or launch another bot to complete the registration.

Specified intervals: Bots can be launched at specific times to batch process data.

B. Assisted Bots

- These bots reside on the user's machine and are invoked by the user. They are appropriate for tasks that are triggered at programmatically hard-to-detect points.

•For example, take the case of a customer service representative who needs to understand the customer's inquiry and then complete a transaction in the system. For this, the customer service representative would usually need to work with 3 screens and complete 5 manual steps to complete this transaction.

•The RPA bot works like the representative performing the necessary operations and asks for guidance from the representative if needed. RPA bots can actually work a lot better than the representative, perform regulatory and compliance checks and would never do manual mistakes due to fatigue or boredom.

4. USE CASES FOR RPA

A. Quote-to-Cash

It is considered as an important business process, which is responsible for increasing revenue for any organization. Organizations are usually dependent on selling. If there is any issue in the operations side of selling, then it can lead to customer's complaints.

Sometimes, organizations end up selling at reduced prices due to clerical errors. Automating such sales processes reduces errors and provides fast service to the customers.

B. Procure-to-Pay

It is the process that includes the extraction of invoices and payment data from various networks such as banks, vendors, logistics companies, etc. These networks usually do not provide easy integration methods. They generally involve manual labor to complete the tasks, which can be replaced by the RPA bots. It is the best way to fill integration gaps with a fully automated procure-to-pay.

C. Customer Onboarding

Most of the B2C (Business-to-Consumer) organizations are following a customer onboarding process. They must maintain good relations with their customers so that customers start using their products. Using cognitive automation and OCR (Optical Character Reader), most of the customer onboarding tasks can be easily done. It can be applied even in companies that rely on legacy systems, which will help in improving the customer experience.

D. Employee Onboarding

The process of setting up and onboarding new employees is labor-intensive and time-taking for HR and IT analysts. It includes a series of tasks such as creating new accounts, email

addresses, access rights, etc. Because of the rule-based and repetitive nature of employee onboard activities, it can be automated to apply pre-defined workflow once the new user account is created. RPA [4] bots can be assigned to send notifications and documents via email to new employees.

E. Data Migration and Data Entry

Most companies are still using legacy systems to perform critical functions. A legacy billing system is an example of such systems. It needs to interact with other systems that may not have the capability to get required data from APIs. In such cases, employees manually perform tasks to migrate the data using formats like CSV. With the implementation of RPA, manual labor, and unexpected clerical errors, can be reduced to the minimum level. Organizations can also automate entire workflows of data entries, which can maximize productivity by reducing the time.

F. Data Validation

RPA is more suitable than any other tools to perform data validation tasks such as checking the accuracy and quality of source data before using, importing, or processing the data. The primary aim is to create data that is consistent, accurate, and complete, so there will not be any data loss and errors during a transfer.[4]

5. BENEFITS OF RPA

Robotic Process Automation has a positive snowball effect on business operations and outcomes. RPA delivers measurable business benefits right out of the gate, think cost reduction, greater accuracy, delivery speed, then continues to add value as it picks up momentum and spreads across the organization.

A Greater Productivity

RPA bots create step-change in employee productivity by accelerating workflows and enabling more work to get done by executing processes independently. In document-intensive industries like financial services, insurance and in the public sector, RPA bots can handle form filling and claims processing all hands-free.

A. Greater Accuracy

With 100% accuracy there is no rework and near-perfect compliance. Automating with RPA is enabling industries such as finance, healthcare and life sciences to leverage the reliability of bots to achieve strict compliance standards. Robotic Process Automation in accounting is enabling new levels of speed and precision in order-to-cash and procure-to-pay processes.

B. Cost Savings & Fast ROI

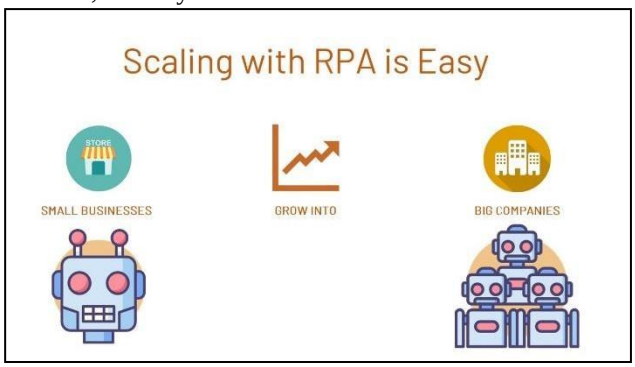
The intuitive, code-free interface allows anyone to quickly master bot creation and start driving ROI. For the average employee, that means regaining 40% of their time each day that was wasted on manual digital administrative tasks. In industries like healthcare the value of automating is amplified by the critical importance of error-free, compliant process execution to patient outcomes.

C. Integrate Across Platforms

RPA is application agnostic so you'll never need to upgrade or replace existing systems for RPA to work. Bots enable enterprises to live the dream of eliminating technology siloes by seamlessly connecting across all software tools regardless of function and department, in both front office and back office. The result? Achieve never-before seen enterprise-wide efficiencies and collaboration that taps into the true value of your human capital investment.

D. Scalability

RPA enables high-volume business processes to be more elastic and able to adapt in uncertain times and changing environments. Flexibly handle any workload—planned or unplanned—by expanding your Digital Workforce the moment it's required. Now imagine it being so simple, so intuitive, that anyone can do it.



[Scaling with RPA]

E. Customer Experiences

In the front office, attended RPA bots help agents interact with customers by doing all the system and data entry legwork—resulting in reduced call handling time (AHT) and a 50% improvement in customer experience at the same time. Industries such as telecommunications and life sciences deploy bots to streamline customer inquiry handling and smoothly respond to spikes in call volumes.[5]

F. Non-Invasive

RPA is non-invasive which means there is no disruption to underlying legacy systems, reducing the burden on IT and also making it a seamless integration.

G. Harness Artificial Intelligence (AI)

When artificial intelligence (AI) is combined with RPA to create Intelligent Automation, automating extends by an order of magnitude, able to draw on the 80% of enterprise data that's unstructured. In procure-to-pay, automate invoice processing of non-standard vendor invoices. In insurance, automate extracting claims data and detecting potential fraud. In HR, automate request intake by understanding the employee's intent

6. Scope of RPA

A. RPA Now

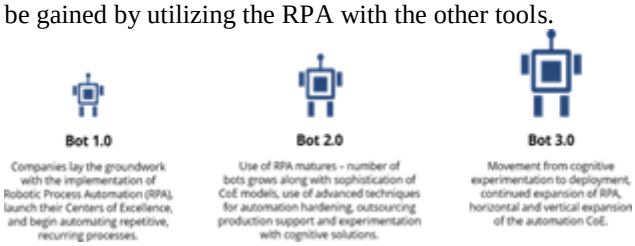
There are various human jobs which are being easily automated using RPA tools and technology. The various repetitive tasks such as formatting, data assembling or anything which requires a series of steps are easily carried out with the help of RPA. The other computer-supported processes which utilize a set of procedures are also

performed through RPA. RPA is proving to be helpful in improving the data collection process and is also enabling this data to be analyzed in a much better way, as all the tasks which were being carried out by humans are performed by these bots.
A tremendous growth is observed in the field of RPA and therefore it is delivering higher technological abilities towards significantly reducing the risk of incorrect regulatory reporting, including the improved data analytics and higher data accuracy.
RPA in the current market is progressing rapidly and acceptance of this robotic automated technique is helping to restructure the business process management marketplace.

B. RPA In The Near Future

RPA's influence will go to range within the organizations. Nowadays, most of the organizations are executing RPA to automate their various business processes, its impact will become higher in the future. The RPA will be utilized in different ways and through maximum processes as compared to the present utilization within an organization. RPA will not only focus on its internal processes, it'll also emphasize on external as well as customer-oriented processes. The incoming email sorting is one of the examples in which the huge productivity can be delivered by these bots.
Analysis shows that the influence of RPA within the organization would be greater in the forthcoming years than the previous years in terms of overall business. An amount of this will occur when implementation of RPA begins to change from the initial and proof of concept to real production. RPA is tested in organizations and its usefulness is proved in every situation. [6]

Further innovation can be seen in the RPA area at this stage and new applications would also arise positively. It has been observed that if any of the automation tools are integrated with other tools it will function flawlessly. RPA will be utilized with other types of technologies as well because most of the companies have realized that the automated tools do not function to their full potential alone but they give their best results when combined with the other tools. It doesn't mean that the RPA would not provide appropriate results alone but rather, the next step is not just to grow the RPA technology alone, but also expand it into other tools beneficial or essential for the organizations[7]. RPA is more versatile, which alone can solve several functions, but the finest consequences would be gained by utilizing the RPA with the other tools.



RPA will develop itself as RPA 2.0. It will move further than a rule-based technology and begin to combine the various features of artificial intelligence. The discussion will move away from the RPA towards the Smart process automation in the upcoming year. This transition will lead to a future where business processes would be a lot smarter than they are today.

7. Conclusion

RPA is going to be used in various industries and domains. It will not only be utilized in industries such as banking and insurance but will also show its impact on industries like manufacturing, aviation, oil and gas, retail and analytics.
It is expected that RPA market is going to reach about USD 8.75 billion by the year 2024.[8] It has been observed that the RPA is evolving as a disruptive technology, which has the capacity to provide the several benefits such as improved accuracy, cost reduction, scalability, and compliance.
RPA tools are less costly than the full-time staff, it is expected that RPA will disrupt the predictable business process model and change the global subcontracting industry. RPA technology is not very expensive or complex and a huge career growth is expected in the upcoming years.

RPA isn't a distant future but rather is the smart present.

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