

Robotic Process Automation

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Abstract - The Robotic Process Automation (RPA) [5] is a new booming future technology in IT industry. Robotic Process Automation is one of the advanced technologies in all the area where the processes are repetitive, ruled-based and frequent i.e. those tasks that are normally required employees for outsourcing. It enhanced the productivity level without affecting scalability and also improved the business processes. It has been observed that RPA automation will going to be one of the important aspects of the business processes in the organizations in the upcoming years. Robotic Process Automation (RPA) can able to achieve core processes by automating overall task of the industry. Besides, the Robotic Process Automation has generous applications including education, financial services, employee management, healthcare and pharmaceuticals and many more sectors. [5]

Keywords—Robotic Process Automation (RPA), Bots, Robotic, Robots ,Automation, Artificial intelligence (AI), Machine Learning, Internet of Things (IOT), Technology, Blue prism, Automation Anywhere, UiPath

I. INTRODUCTION

[3] Robotic process automation (RPA) is the software tool along with latest and advanced technologies proficiency to handle multiple tasks, high-volume, repetitive works that formerly required people to perform such work. The works may have different commands and queries, calculations, sourcing of data from different sources, maintenance of records and many more. [3]

RPA automation, [3] frequently called a software bots, act like a human and logging into an application, entering information, carrying out data and accomplishing a given works and logged out from the system. Instead, of that it has high preference by permissive a company to implement the automation quickly and very accurately all outwardly any changes to the current framework and structure. [3]

[5] Now in this modern era of the technologies, the small scale industries are migrating their business operations into a new area known as "Robotic Process Automation." Industry adapting in the new world of technology "Robotic Process Automation." known as "RPA". So, appropriate adoption of

RPA has become a necessity in day to day processes. So, in case industry do not adopt this technology in their daily operations, in the coming future they may not be able to survive in such business competition. RPA is much advanced and up-to-date technology of this current century. The approach used by organization for operations, the action taken by employee to do official work as well as the people daily life is going to be drastically assisted by new hardware, software technologies along with smart devices. The way of doing tasks and lifestyle of peoples are changing across the due to global collaborations, multi-national businesses, new IT advancements with RPA technology. The next section will explains what is the importance of Robotic Process Automation; followed by details of RPA. [5]

Robotic process automation (RPA) [5] is the tool which allow employee of the organization to automate the process by building the software bots to grab the information and understand current business processes in order to operate the data collecting and processing, manipulating and also generate responses which will help the organization to make a proper business decisions. [5]

[5] Those companies that use worker on a broad range for regular operations work, where employee are performing large scale, immensely transactional process, will increment their capabilities and save capital and time with robotic process automation software. RPA "bots" is modifying the workflow of the organizations. RPA provides sudden improvements in accuracy and response time and increased productivity in transaction processing while it elevates the nature of work by eliminating number of people doing the same repetitive task.

[1] These modern automation of RPA can be used in different industries for various works such as:

A. Process automation

[1] Automation which able to automate the business process, it is a process which perform the steps of or mimics a repetitive, rules-based, frequent, non-subjective process

without affecting the current IT infrastructure – can regularly carry out recommended functions and able to handle the range, adjust the requirement as per the need of industries. Process Automation can increase a huge impact on various sectors or business processes that require “swivel-chair” access to multiple existing systems [1].

B. IT support and management

[1] Robotic process automation in the remote administration of IT architecture can regularly examine and found the solution for faster process outcomes. Robotic Process Automation can advance operations, tasks and able to monitor different devices available on the network. It maintain the scalability of the organization and also help them to handle short-term demand.

C. Automated assistant

[1] Development of the machines processes languages such as voice recognition application software or automated online assistants recapture data and format essential content mean that RPA can give feedback to workers or client in natural language rather than in software code. This automation technology can help to maintain assets for large BPO’s and for different centers where customers interacted. As Robotic Process Automation deliver extra advanced methods and solutions to improve the business around the globe, existing architecture that enable automation will surely cut their costs, increases productivity and enhanced their product quality. [1]

D. Robotic Process Automation

Robotic Process Automation [5] is the coming movement of innovation, which will going to change the way of deployment of the processes. We are going to be the witness how automation will change the world and provide new business model for every business challenges. The term "Robotic Process Automation" [5] hint at visions of physical robots doing the human tasks; the actual meaning is automation of processes that were formerly done by humans. In terms of business workflow it can automation any application which take multiple input data from different sources such as email and excel sheets into the systems such as Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) and also Systems Application Products (SAP). The RPA is the

software of specific technology and methodology to use a software bots rather than an individual to make any changes to existing application software Enterprise Resource Planning’s, Learning Management System (LMS), Database in the same way that an individual today perform any tasks. We saw that 2016 is the year when sudden increment in the use of robotic process automation in back offices and other organizations. David Moss and Alastair Bathagte the founder of Blue Prism invented the term "Robotic Process Automaton" in UK. It offers a smart & an intelligent, software and easy to use workflow with various integration. Organizations are able to increase their productivity gains by making the use of software bots to perform daily routine, rules-based services. If it executed in such a way, then automation can result in high performing human-robot teams, in which software bots and human employees balance each other. So in other words, RPA is the automation of repeatable and rule-based tasks using non-invasive software called Bots which can act like actions performed by human users on computers to perform different business tasks. There are various vendors offering RPA tools, including Blue Prism, Automation Anywhere, Automation Edge, Cognizant, Soft motive, UiPath and many more. It is the need of hour that the Robotic Process Automation specialist needs to know this RPA software orientation about installation, structure (Flowchart vs. Sequence), control flow (Decisions, Loops, Switches), error handling with Try/Catch, automating excel, word, and Portable Document File interactions, email automation, breakdown a process into reusable sub-components and also able debugging skills, etc. The Robotics can generate high-quality responses to more complex questions outside the routine processes. The Robotic Process Automation technology has many advantages including accuracy of operations, improving in employee morale, increasing the productivity; make sure low technical barriers, compliance, consistency leading to reliability and non-invasive technology. The RPA expert had mentioned a overview about RPA in the below diagram Figure 1. The best part of robotic process automation is that person without have any technical skills can easily able to handle and configure the software bots to solve their automation challenges. [5]

II. AUTOMATION V/S RPA

[4] Automation happen even before RPA appears into the market. There are various similarities exist among these two, unlike RPA, Automation is the discovery of the latest

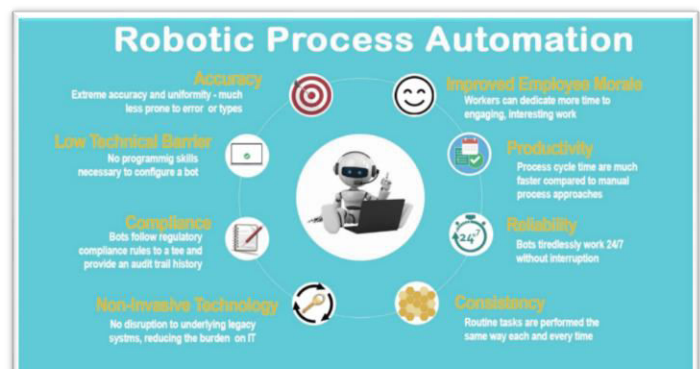


Figure 1. Robotic Process Automation

technology to solve the day to day problem with human intervention. [4]

[4]Let's see how Automation is differ from Robotic Process Automation.

Specification	Automation	Robotic Process Automation
What does it Reduce?	Response time is reduced	Number of workers working on the same project is reduced
What does it automate?	Repetitive test cases are automated	Automates the core business process
Programming Skills required	Programming Skills is needed to create a Test Script	Programming Skills is not needed as its contains wizard
Software Environment	Software Environment is Limited	There is a wide range of Software Environment
Operation Performed	Used for QA, Production, Performance, UAT environments It is Used for Quality Analyst, UAT environments, Performance	It is majorly used for productive environment

III. LIFE CYCLE OF RPA

[4] The life cycle of RPA consist of 4different phases. Analysis of the business requirement, Bots Development for automates the process, Testing for correctness, and Support &Maintenance of the bots.

- Analysis of the business requirement – Core business teams & RPA designer work together to evaluate a business requirement process for RPA development.
- Bots Development for automate the process – Development team start implementing the bots to automate the business workflows as per the requirement in a definite development environment.
- Testing for correctness – Execute the testing cycles such as SDLC module to evaluate the quality and correct fault or bug in the bot.

- Support & Maintenance - Once it completes all the previous phase, a bots come in the phases of support and maintenance in which it gets regular support and service in order to work in smooth manner without any problem.

IV. FUTURE OF RPA IN THE WORLD?

A. *RPA will reach \$2.3bn next year and \$4.3bn by 2022... as we revise our forecast upwards*

[2]So, it has been a wonder and amazing dream world of RPA in 2018, where some of the amazing number become real, as the market business hit about \$1.7bn - an increment of \$250m from our past last year. So, RPA had made their impact into the market by showing the power of automation and their needs into the organizations.[2]

[2]So why is RPA growing above ?

- RPA vendors, in especially Automation Anywhere (AA) and UiPath, have been able to make more profit than expected. Bots licenses are being sold and deployed faster than we anticipate, due to active training programs and combative back from third-party services providers.
- The drop in the business market action deploy commitment is driving more focus on various strategies with engagement with both human and bots in order to improve the overall business.
- The shift in the focus of RPA from job rejection to build up talent, computerize work processes and continuing the life of traditional IT systems has expanded the need of process executives to fast-track RPA training programs and devote in immense intelligent automation approach – even many organizations are still in tinkering phase.
- The slope up from service providers and consultants to backing enterprise adoption has continued incessant, especially with the concern in Global Business Services models. These shows to be a key factor behind the growth in RPA, as a solution providers choose to sell through the services channel for the large organization deal and advanced client training and development. The active focus from the well known companies has given the RPA market endless credibility;
- Speedy financing of RPA vendors has cheered these long-term contributions of many enterprises previously doubtful of investing in very small software solution provider. The Latest Example we have seen as Automation Anywhere and UiPath, able to obtained a huge amount around \$250/\$300m, but also there are few RPA tools firms, such as Soft motive, which recently had around \$25m of amount.[2]

Total RPA Market (By Robotic Process Automation and Robotic Desktop Automation)

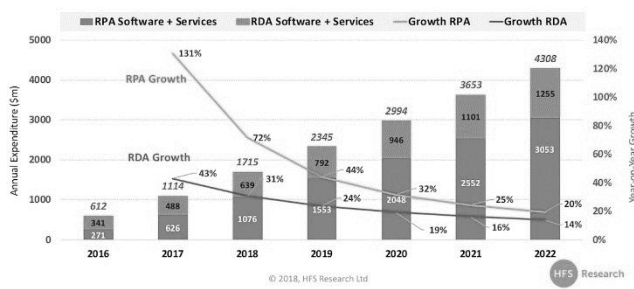


Figure 2. Total RPA Market

RPA Services and Software Market 2016-2022

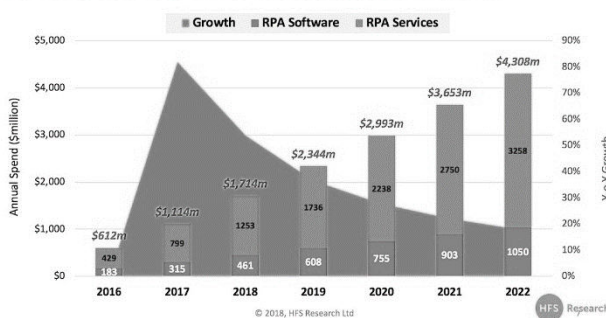


Figure 3. RPA Services and Software Market

Total RPA Market by Region (2018)

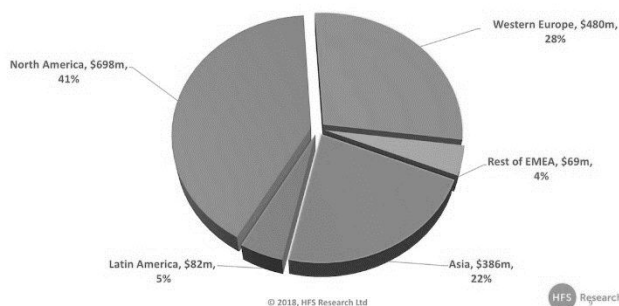


Figure 4. Total RPA Market Region of 2018

V. CONCLUSION

- [5] Robotic Process Automation known as software bots is a technology becoming compulsory as a part to do business operations in the organization. It improves the core business value of the organization along with doing traditional repetitive tasks. In few firms, the robots will be replacing completely the manpower. The best part is that they will do repetitive tasks and even multiple tasks at the same time. So, the employee in the company or industry can give their beneficial time in prime decision

making or the intelligent process of the company. Therefore, let industry welcome the artificial intelligence humanoids to assist to human life in the day to day activities with the organization. So, with this enhance technology employees will be improving their quality of products, escape the redundant work, able to do productive work with accuracy and response time and eliminate people for doing repetitive tasks[5]

ACKNOWLEDGMENT

I would like to thank the Kitan Systec Pvt. Ltd. and all my colleagues helping me throughout the implementation of the project. I would also like to thank you Prof. Pallavi Thakur for your guidance and support through the creation of this research paper. I am also grateful that my College Sardar Patel Institute of Technology that they allow me to choose this project topic. I have used UiPath RPA 5 community addition software to implement this project with a hands-on experience. Finally, I would like to thank my family for patience and endless support they have shown me during this semester.

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