INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X

Impact Factor: 6.078

(Volume 7, Issue 4 - V7I4-1396)

Available online at: https://www.ijariit.com

Analysis of business process automation: RPA

Namrata Manohar Dhuri
namratadhuri12@gmail.com
MET Institute of Computer Science, Mumbai, Maharashtra

Dr. Abhijit N. Banubakode
principal_ics@met.edu
MET Institute of Computer Science, Mumbai, Maharashtra

ABSTRACT

This research is a study to explore the features available in the leading RPA software for business. Robotic process automation (RPA) is a leading software technology that helps in building, deploying, and managing software robots that surpass human actions interacting with digital system. The software bot can perform task as of human do like identifying what's there on the screen, extracting & identifying data, navigating system etc. But RPA robots are more consistent than human. The main highlights of this study discussed Pros and Cons of RPA.

Keywords: *Robotic Process Automation, Architecture, Lifecycle, Applications*

1. INTRODUCTION

Since business is trying to find new ways to do manual work efficiently and at a lower monetary cost. They don't want to automate entire workflow but want to attempt to find a way to optimize their existing human resource's time and effort which are spend on doing the daily operational task that can be automated **Robotic process automation** (or RPA) is a form of business process automation technology based on metaphorical software robots (bots) or on artificial intelligence (AI)/digital workers and are referred as software robots.

2. RPA (ROBOTIC PROCESS AUTOMATION):

RPA can automate task that are perform by human by following the same tasks that human perform, with the help of UI interactions, it imitates the task within a workflow which is referred as "bots" or "robots". RPA has two type of bot which are "Attended" & "Unattended" bots. Attended robots work with people on processes that require human trigger the bots to initiate the processing of the bot to complete repetitive desktop tasks faster and more accurately. On the other hand, Unattended initiate the processing of the task without any human intervention they are server – based bots.

2.1 RPA Archietecture

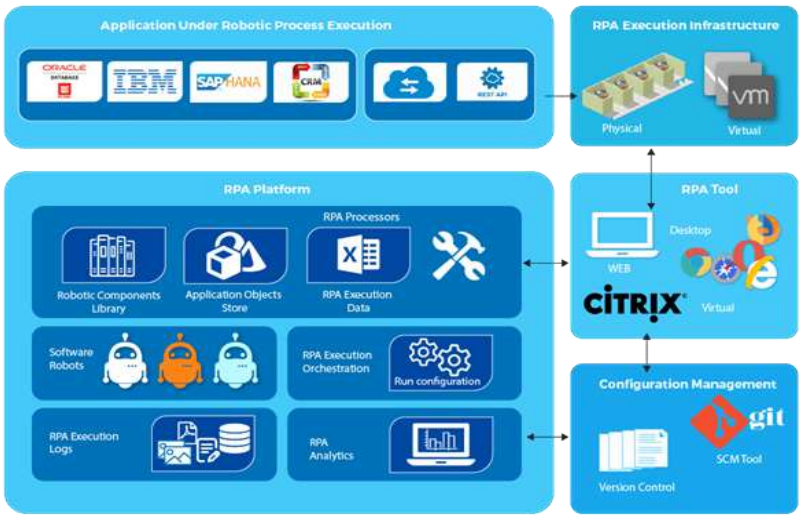

Figure 2: RPA ARCHITECTURE (Photo from https://intellipaat.com/blog/tutorial/rpa-tutorial/architecture-pattern-of-rpa/)

This architecture represents various tools, applications platforms and infrastructure used in robotic process automation. [2]

2.2 Applications under robotic process execution
There are some of the enterprise applications with repetitive tasks like ERP, SAP and has intense data loaded with it.

2.3 RPA Tool
Used in developing software for web, desktop & citric environments. The tool has ability of exception handling, write or form various data sources and can also build reusable components.

2.4 RPA Platform
The RPA software bots can be stored on a shared repository which can be accessed through various software robot libraries The platform has an ability to develop insights on the robots & processes.

2.5 RPA Execution Infrastructure
The infrastructure is a bank of parallel physical or virtual machines controlled based on the usage pattern and the machines scales up or down to achieve automation.

2.6 Configuration management
As the bots are shared across libraries branching, merging and updating of the bots can be performed.

3. RPA LIFECYCLE:
In Robotic Process Automation lifecycle provide a structure to automate the process and to ensure that the implementation is as expected at each stage of process. As it uses robots to handle complex task of high precision. According to the requirement and degree of complexity RPA tools vary between multiple applications. [1]

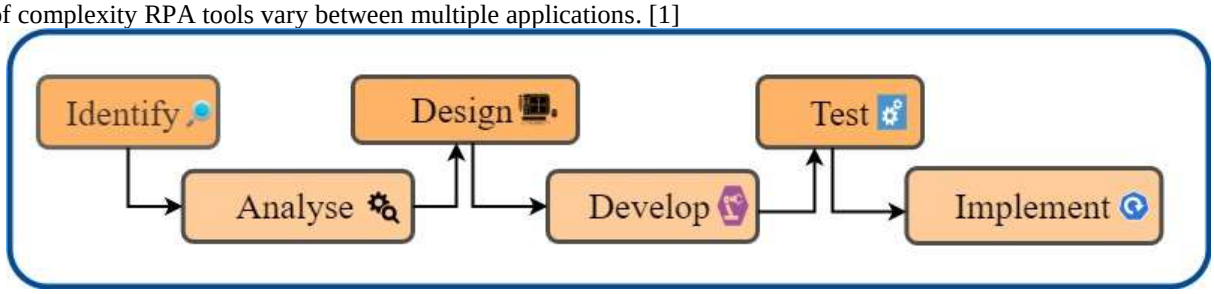

Figure 1: RPA LIFECYCLE

Stage 1 – Identification
The RPA team identifies the business process which needs to be developed with the help of business team and it follows agile methodology for development.
Stage 2 – Discovery/Analysis
Analysis & Complexity of the process is analyzed and identified by process architect and the degree of automation is decided on the bases of analysis.
Stage 3 – Design
The PDD (Process Definition Document) is created on the basis of requirement analysis created by the Process & Technical architects which describes the information of process flow. In which object diagram and flow chart is created for RPA tool to automate the process.
Stage 4 – Development
In the development phase the developer creates the automation scripts and codes with the of the RPA tool (UiPath, Automation Anywhere) along with the reference of PDD provided to him.
Stage 5 – Testing
In the testing environment the bot is tested by the testing team which includes QA (Quality Assurance) to check whether the performance of the bot is as per the requirement mention in the PDD document.
Stage 6 – Implementation
Unit testing should be performed smooth integration of all components. Upon issue occurrence the bot is re-evaluated by the development & testing team for resolution of the issue. Uipath architecture consists of Dev & Test environments which allows testing of the processes outside the live environment.

4. BENEFITS AND CHALLENGES OF RPA
4.1 Benefits
There are multiple benefits of RPA, including:

- **Less coding:** With drag & drop features at user interface makes it easier for the non-technical to configure the process.
- **Rapid cost savings:** The team and staff can be reallocated to other priority work which requires human input which leads to increase in productivity and ROI
- **Higher customer satisfaction**: Chatbot & bots reduce the waiting time of customer and leads to customer satisfaction.
- **Improved employee morale:** RPA allows lifting of repetitive, high-volume workload of the team, and people to focus on thoughtful and strategic decision-making.

- **Better accuracy and compliance:** RPA follows specific workflow and rules which result in less human error around accuracy and compliance like regulatory standards. Audit trail of RPA makes easy monitoring & resolving issues of the process.
- **Existing systems remain in place:** RPA bot works on presentation layer of the application which does not disturb the underlying systems & also can implement where you don't have API (application programming interface).

4.2 Challenges

Following are some of the challenges face by the RPA:

- **Organizational culture:** While RPA has reduced certain job roles, but also has driven growth in new roles which tackle more complex task & enabled employees to focus on higher-level and creative problem-solving strategies. Organizations need to promote innovative learning culture within the job roles. In automation and digital transformation projects adaptability of workforce plays an important role in successful outcomes of teams.
- **Difficulty in scaling:** RPA can perform multiple task simultaneously, which difficult to scale the regulatory updates or changes in an enterprise. A company should have more than 100 active working robots to qualify an advance program.

5. APPLICATION OF RPA

Table 1: Various Application Areas Of RPA [3]

Industry	Usage
Healthcare	• Patient registration • Billing
HR	• New employee joining formalities • Payroll process • Hiring shortlisted candidates
Insurance	• Claims Processing & Clearance • Premium Information
Manufacturing & Retail	• Bills of material • Calculation of Sales
Telecom	• Service Order Management • Quality Reporting
Travel & Logistic	• Ticket booking • Passenger Details • Accounting
Banking and Financial Services	• Cards activation • Frauds claims • Discovery
Government	• Change of Address • License Renewal
Infrastructure	• Issues Processing • Account setup and communication

6. CONCLUSION

In this analysis, we observed that a RPA can benefit the business by performing the repetitive task because of which the employee can focus on the more productive work which can help in enhancing the business. It also tells about what type of bots are available in RPA for the specific workflow. Also it gives the overview of the challenges that organizations face in RPA and benefits of it. And how RPA is implemented in the organization and with its lifecycle which is followed by the business & RPA teams. Also a broader view of application of RPA in different sectors.

7. REFERENCES

[1] https://www.infobeans.com/robotic-process-automation-lifecycle.
[2] https://intellipaat.com/blog/tutorial/rpa-tutorial/architecture-pattern-of-rpa/
[3] https://www.guru99.com/robotic-process-automation-tutorial.html

