

Automating Repetitive Work Using RPA Tools: A Case Study on Automation Edge

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Abstract

This paper presents a comprehensive overview of Robotic Process Automation (RPA), a transformative technology that automates repetitive, rule-based digital tasks using software robots. We analyze its architecture, types, benefits, tools, and provide a generalized business use case to illustrate its effectiveness.

Keywords: RPA, Automation, Business Process, Workflow Automation, Digital Workforce

INTRODUCTION

Robotic Process Automation (RPA) is a software technology that uses software bots to automate structured, rule-based digital tasks. These bots mimic human actions such as logging into applications, entering data, and generating reports. This paper explores the fundamentals, types, architecture, and tools of RPA.

WHAT IS ROBOTIC PROCESS AUTOMATION (RPA)?

RPA allows automation of repetitive digital tasks without altering existing infrastructure. Bots are trained to interact with user interfaces in the same way humans do.

Key Capabilities:

- Log into web and desktop applications
- Move files and folders
- Copy and paste data
- Fill in forms and extract structured data
- Read and write to databases
- Open emails and attachments

TYPES OF RPA

Attended RPA: Operates on user desktops and is triggered by the user. Useful for tasks requiring human validation.

Unattended RPA: Operates without human intervention. Useful for background processing.

Hybrid RPA: Combines attended and unattended automation for complex workflows.

RPA ARCHITECTURE OVERVIEW

Components:

Development Studio: Tool to design automation work- flows

Robot (Bot): Executes tasks as per workflow design

Orchestrator: Schedules, manages and monitors bots

Database: Stores logs and process data

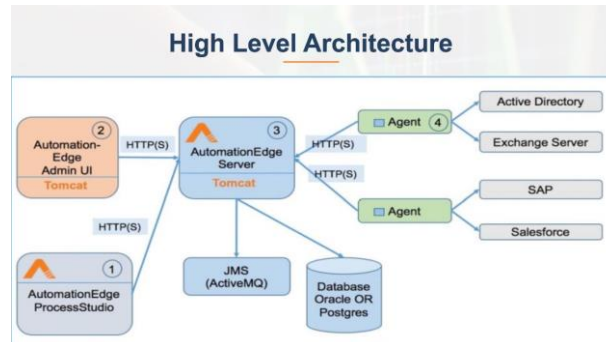


Fig. 1: Generic RPA Architecture

TOOLS OF RPA

TABLE I: Popular RPA Tools

Tool	Key Feature	Use Case
UiPath	Drag-and-drop interface	Data entry, email automation
Automation Anywhere	Cloud-native bots	Invoice processing
Blue Prism	High security	Banking, finance
Power Automate	Microsoft integration	Office automation
AutomationEdge	IT and business tasks	IT ticketing, onboarding

BUSINESS USE CASE: EMPLOYEE ONBOARDING

Manual Process

- HR fills forms and emails IT
- IT manually creates accounts
- Documents are shared over emails

Automated Process using RPA

- Bot reads new employee details
- Auto-fills HRMS and emails credentials
- Sets up system access

TABLE II: Manual vs Automated Onboarding

Activity	Manual	Automated
Data Entry	Manual by HR	Bot reads inputs
Account Creation	IT dependent	Auto provisioned
Notification	Manual emails	Auto emails sent
Document Storage	Email folders	Saved to cloud drive

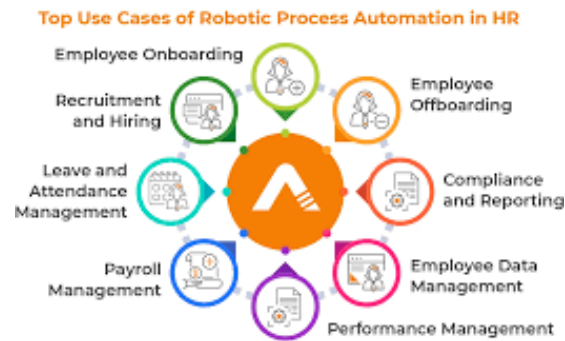


Fig. 2: RPA-Based Onboarding Process Flow

ADVANTAGES OF RPA

RPA helps companies by using software robots (bots) to do simple and repetitive tasks. Here are some of the main benefits:

Fast Work

Bots work much faster than humans.

Example: A bot can process hundreds of invoices in a few hours, which may take a human 2–3 days.

No Mistakes

Bots follow instructions exactly, so they don't make typing or calculation errors.

Example: A bot copying data from one system to another will do it perfectly without mistakes.

Keeps Records

Bots save everything they do, which helps in audits and tracking.

Example: A bank bot logs every transaction it processes.

Grows with Business

More bots can be added when work increases. *Example:* During busy times, a company can use extra bots to manage the extra work.

No Changes to Existing Systems

Bots can work with the systems a company already uses. *Example:* A bot can use Excel or web apps without changing the software.

CHALLENGES OF RPA

Even though RPA is helpful, it has some challenges:

High Starting Cost

Setting up RPA can be expensive.

Example: Buying software and training people can cost a lot in the beginning.

Only Works on Simple Rules

Bots can only follow fixed steps and can't make smart decisions.

Example: A bot can't decide how to reply to a difficult customer email.

Needs Supervision

Bots need someone to watch them and fix issues. *Example:* If a pop-up appears, the bot might stop, and a person has to help.

Employee Worries

Some people may worry that bots will take their jobs. *Example:* Companies need to train employees for new roles and explain how bots help.

CONCLUSION

RPA is a useful tool that helps businesses do boring and repetitive tasks quickly and correctly. It saves time, reduces costs, and avoids mistakes. In the future, RPA will become even smarter with AI (Artificial Intelligence), and will be able to do more complex jobs.

FUTURE OF RPA

Smarter Bots with AI and Machine Learning *Example:* Bots will be able to read and understand emails and documents.

Full Process Automation (Hyper automation) *Example:* Automating a whole process like ordering, billing, and delivery without human help.

Used in Many Industries

Examples:

- **Finance:** Automating tax filing or loan processing.
- **Healthcare:** Managing patient records and appointments.
- **Retail:** Handling online orders and updating stock.

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