White
PAPER

Avoiding RPA implementation pitfalls and failures by end-to-end testing

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Introduction

In the last few years, RPA (Robotic Process Automation) has observed a quick growth because of its unique features like increased efficiency and less headcount or operational cost. It creates a digital workforce; which can perform repetitive tasks, normally done by the employees. This sets the employees free to perform operations demanding superior technical and cognitive skills. The biggest advantage of RPA is that it does not require labor-intensive or expensive software application integration efforts as it works at the user interface. It works just like any other human operator, performing the routine activities.

In the current scenario, most of the companies are adopting RPA bots to increase their productivity. However, according to the EY report, about 30 to 50% of RPA implementation fails at the initial stage only[1]. In this essence, some of the common RPA failure reasons have been discussed.

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[1] https://www.ey.com/gl/en/industries/financial-services/fso-insights-get-ready-for-robotic-process-automation

Lack of Proper Planning

RPA is closely associated with the IT system and infrastructure. IN RPA, bots mimic the human actions by communicating with a web application just like an application user would. However, any changes in interface or decision-making can impact the entire course of action and eventually crash the system.

Most of the business organizations ignore thorough application requirement analysis and information flow at the planning stage. Without proper coordination between application administrators, RPA developers, and testers, confusion will exist at the production and deployment stage. RPA implementation also requires analysis of different decision paths.

Lack of a holistic approach for the RPA implementation

One of the common causes of RPA failure is that several RPA implementers focus only on automation and do not consider a holistic approach for the digitization of the entire system. Automation efforts require consideration of other complementary technologies which can address the entire requirements of the project.

Without feasibility analysis, companies tend to ignore those complementary technologies, which can benefit the automating process for the organization. Further, without a holistic approach, the design and the testing approaches cannot be selected beforehand, which can jeopardize the application at a later stage. Several times, the organization becomes focused on creating bots and configuring them that they are unable to automate the process correctly. There are several phases in the successful implementation of RPA software such as, analyzing the operating model of the process, designing the desirable process end-state which are neglected in the absence of a holistic RPA implementation approach.

Weak Governance Framework

During RPA implementation, it is commonly perceived that once bots are installed, they will automatically run in the background and operate without any supervision. However, in order to keep the bots productive, it is important to manage and maintain them throughout their lifecycle. Several updates and changes are required in terms of security, software version upgrade, and changes in process or data format. In the absence of a governance framework, introducing these changes will become extremely difficult. The development and testing team will have no provision to identify the discrepancies in production and testing. Further, it will also create challenges in the subsequent test and revision of the code.

RPA Quality Assurance

Quality assurance techniques can address the common pitfalls such as creating a comprehensive planning stage for the process, establishing a proper governance framework and developing a holistic approach for the software development and testing. As per above discussion, successful RPA implementation requires integration of heterogeneous software applications and technologies; therefore, quality assurance measures are mandatory for the RPA deployment.

With a governance framework, a company can assure quality automation. There are several performance issues, such as pop-ups or delayed application load time, which can be identified through end-to-end product testing. Software testing governance framework will be beneficial in creating a requirement traceability matrix, which is essential part of software quality assurance. Since RPA works at the user interface, issues with the application or software can impact the performance of the bots. These performance issues existing in the programming, module, and user-interface can be identified through end-to-end testing. CI (continuous integration) and proper documentation will be beneficial in creating a robust RPA solution. With holistic approach comes end-to-end testing, which can cover all the aspects of software development life cycle.

In RPA environment, two types of testing can cover all the major user and system requirements, namely, business process testing and robot testing.

Business Process testing:

In RPA, a business process is automated, so that no further human interference is required. Therefore, the business process needs to be tested in terms of their functionality, performance and system integration. A governance framework should be created prior to the business

Robot Testing:

Robot testing is an integral part of the RPA end-to-end testing. Several organizations use standardized bots and; however, most of them customize RPA bots according to their personal requirements. In such case, it is important to test whether the bots are performing what they are intended to perform. If the bots are deployed without testing, they will iteratively perform a task until the system crashes. Further, in functional testing, it should be analyzed if the robots will be able to interpret the instructions provided and perform those actions. Robot scheduling is also an important performance criterion. If the bots are invoked through an external program, the time lapse call and execution must be low. The testing framework also analyzes that the RPA bots are programmed to handle the exceptions. Otherwise, there will be a high probability of a system crash. There should be a proper algorithm, which can consistently handle the exceptions with proper notification options.

About Test Triangle

Originally founded in 2012, Test Triangle has become a leader in IT consultancy services providing services in application testing, DevOps, RPA, Custom software development, mobile app development, Atlassian consultancy, niche IT staff augmentation and training in advanced technologies. Test Triangle is headquartered in Ireland; but it also has branch offices in London, United Kingdom, and Hyderabad, India. We have exponentially grown to become a team of 200+ members providing services in different verticals such as Banking & Finance, Utilities, Pharma, Retail, IT & Education etc.

Test Triangle's R&D department has created a propriety platform, Test Outsourcing Dashboard [TOD] which can be used to manage software testing lifecycle using collaboration tools like email, live chat, video conferencing. We have also launched a self- service testing platform (the premium version will be released as SaaS solution), which can provide a project overview and real-time updates of the software development lifecycle.

Over the years, we have established the reputation of being a 'trusted partner in IT consulting'. Test triangle is an agile software company, which constantly strives to exceed the expectations of its clients. We adopt the software testing and software application lifecycle to meet the customer's demand in an efficient and reliable manner. With a global workforce, we have proved ourselves in delivering tight-deadline projects.

We are proud to declare ourselves a client of Enterprise Ireland and European commission.

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