

## **UNIT-II**

### **Initiation Of RPA:**

#### **Get started with RPA: 4 steps**

How do you identify and implement the first phases of an RPA initiative that can become both sustainable and scalable?

That can feel a bit mystifying at the outset. Where do you begin? How do you identify and implement the first phases of an initiative that can become both sustainable and scalable? How do you measure success or failure? We asked several RPA leaders those very questions. Here are four tangible steps to consider when getting started with RPA.

#### **1.Don't start small with RPA: Start micro**

It's conventional wisdom when starting from scratch with a new technology: Start small. With RPA, the wisdom needs some modification: Start smaller.

"It sounds obvious, but most people get this wrong: Automate the small, easy processes that you do a lot," says Antony Edwards, COO at Eggplant. "Too many people start by trying to automate the really long, gnarly process that only happens twice a month. This is hard, takes a lot of time, is brittle, and has low value."

What is micro RPA? Think about automating specific, small actions that take two to five seconds to complete.

In fact, "small" might not be quite the right scope when you're just starting out. Instead, consider "micro RPA," which Edwards describes as "automating specific, small actions that take two to five seconds" to complete.

"This is more robust and will get you going," Edwards says. "Then build up."

It can be useful to think in terms of single tasks rather than large, end-to-end processes when you're getting going with RPA. In fact, RPA on its own can't always necessarily tackle end-to-end processes in their entirety, particularly if there are any steps in that process that require creative or complex decision-making, or that are otherwise not a good fit for RPA.

## **2. Look for high-value RPA candidates**

As Edwards points out above, that byzantine process that only runs once or twice a month probably isn't your best fit for RPA, and it certainly not a good candidate for square one.

Instead, look for tasks where you see (and can articulate to others) a valuable business outcome via automation. The driving question of your evaluation process shouldn't solely be: Can we automate this? Rather, if the answer is yes, then you need to ask: Should we automate this? You can spin up all sorts of variations of the same, such as: What will we gain by automating this? If you can't find a clear answer, that should give you pause.

"Many organizations have a lot of ideas for automation candidates, but only a few of them ask for the real business value," says Tom Thaler, senior product manager, ARIS at Software AG. "This prevents successful RPA implementation and can burn all potential to grow."

Look at highly repetitive steps in a larger process that are currently causing a lot of pain.

We've got an in-depth article for you on how to identify RPA opportunities. As a starting point, though, map the "micro RPA" approach to highly repetitive steps in a larger process that are currently causing a lot of pain.

"It's essential to focus on the real weak points and bottlenecks of the end-to-end processes right from the start," Thaler says, adding that established techniques such as process mining or business process analysis (BPA) can be useful ways to reliably smoke out bottlenecks.

"This allows you to not only identify good automation candidates, but also to predict the effect of automation on the business outcome," he says.

## **3. Capture the process at a keystroke-and-click level**

RPA is essentially software that can automate certain computer-based tasks that would once have required a person to do manually with a keyboard and mouse. So, if you want to create a robot or bot – the popular terms for this kind of software, not to be confused with physical robots – you're going to need to show it how to do its job.

"You then need to capture the process with all details on a click level, as this is required for implementing the robot," Thaler says.

Some 70 percent of RPA project resources are spent on this stage: Don't let it become a bottomless pit.

RPA bots on their own (unlike machine learning tools) can't figure it out over time. So shortchanging this phase could render your project DOA. The fundamental necessity of this phase can create a different issue, however, one IT leaders will want to keep in mind: Based on experience, Thaler estimates that around 70 percent of RPA project resources are spent on this stage.

"This phase may become a bottomless pit," Thaler says. "The reason for this is you'll always have bias and [missing] information if you [only] talk to people, which leads to a number of workshops and iterations until everything is covered."

Certainly, talking with your team is a good way to identify bottlenecks and other pain points. Thaler points to task mining or process mining as a more complete approach to RPA discovery, one that doesn't solely rely on anecdotal input.

"[This] can prevent bias and allow you to learn from the daily work of your employees," Thaler explains. "From there, it's easy to implement the first robot – and also the second, third, fourth, and so on."

It's important to note that RPA won't magically improve a broken process; it will just automate – or attempt and then fail to automate – a broken process. Process optimization needs to happen in the real world before you implement RPA.

#### **4. Define how you'll measure RPA performance**

As with most IT initiatives, your RPA program is more likely to founder or outright fail if you have nothing in place to measure its progress. This is not something you should figure out months or years down the road.

"Build an enterprise business case to determine ROI for your RPA efforts," advises Chris Huff, chief strategy officer at Kofax. Huff has seen success, at Kofax and previously while implementing RPA while leading Deloitte's public sector robotics and intelligent automation practice, with a four-pillar framework for a holistic business case. It should cover:

Strategic alignment to the larger enterprise strategy  
Workforce impact  
Operational metric impact  
Financial profile/impact

Huff is also a proponent of the Center of Excellence approach for ensuring long-term RPA success. In your baby-steps stage, you should at least be planning to capture your results in a meaningful way.

Workforce impact alone is a good motivation not to skimp on this step early in your project. Automation anxiety is real. Communicating quantitative and qualitative RPA results will be key to alleviating it, as well as for getting the kind of buy-in necessary to grow the program beyond its infancy.

#### 10 Factors To Keep In Mind Before You Automate:

Automation is not new and in today's business world automation is everywhere. But the proliferation of automation artificial intelligence tools continues to grow leaps and bounds. While Robotic Process Automation (RPA) is a viable option when organizations have to replace or assist manual workers, it doesn't mean that RPA is the solution to all of the business problems. It might be tempting to dive headlong into automation just because others are into it only to realise that you have burnt your finger in the process. Before you plunge right in, there are a few things you have to keep in mind.

(1) Understand the process you are automating The most important step is figuring out which processes you want to automate and which could be best solved by RPA. You can evaluate automation process either by yourself or with the support of consultants, system integrators, and business process outsourcing companies. Take time to evaluate the process, and where necessary, change it.

(2) Charter a clear roadmap Start with a clear list of benefits and limitations of robotic process automation to business stakeholders. Much disappointment starts when you apply tools in less than optimal ways or apply it to wrong processes. Start by asking which processes are suitable for RPA? Is there a software/tool that is already available for the activity you are trying to automate? How will you monitor the Robots activities? What would you do if the RPA tool malfunctions or stops?

(3) Choose the right tool There are a number of robotic process automation software available on the market today. Some robotic process automation tools support unattended automation while others run as a robotic desktop application, some come with their own metalanguage, while some have a record button to make a pass at the typical path of a process, some come with configurable dedicated process automation tools while some have no pre-programmed processes. Enterprise architecture and technology leaders must understand the differences in technical functionality of the robotic process automation tools to select the right software platform. Remember there may not be a single tool available that may meet all your requirements.

(4) Get your teams ready First and foremost formalize your IT teams' involvement as early as possible. This is necessary to get maximum business value. They need to understand why robotic process automation is different from the other tools and what security measures have to be taken care in deployment. Identify any potential gaps in skills and prioritize them by impact and need and hire necessary skill sets and expertise in automation to fit your purpose. Help your technical teams adopt the new technology. It is not just enough if you automate and leave, it has to be adopted by the team. People do not embrace change easily. Identify and build necessary skills and provide enough training to any workflow automation you introduce.

(5) Standardize your environment Automating a diverse environment is complex. This is because to ensure that each step is executed and completed successfully you need workflow checks and balances in place which results in longer, highly risky and more complex processes. But in a standardized environment, the processes are simpler because automation is done in a known state and the time and effort required are less. The standardized environment also reduces risks of errors, requires fewer support requirements and skills, and improves logging, tracking and performance analysis.

(6) Ensure proper review Estimate the amount of work a robot needs to perform. This has to be carefully defined and tested. Testing is critical to success. Activities that advent frequent changes may not be suitable for robotic process automation. During production, continuously monitor. Dashboards might come in handy.

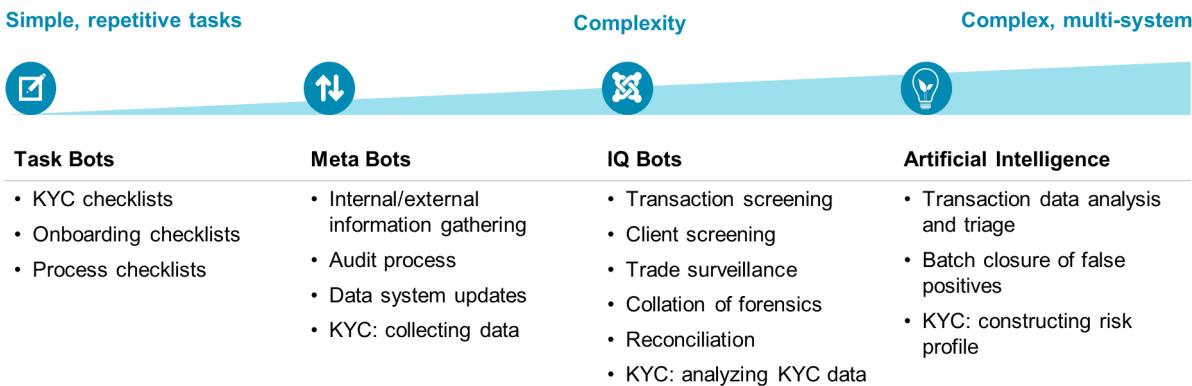
(7) Curtail costs Automation investments go beyond just investing in the tool. More often the process of automation may cost twice as much as the tool itself. Manage carefully cost for implementation, setup and customization. Depending on the project scale, diversity and complexity the cost will vary. Be careful not to allow for scope creep. For this, you have to ensure that your objectives are clear and well-defined.

(8) Calculate ROI of automation Automation isn't easy. Estimate the time and cost savings that automating a process will give and compare it with the actual time and cost it has taken to automate. This will give you the Return on your Investment (ROI).

Prioritize automating processes that will save you the most time and at the same time provide the biggest ROI.

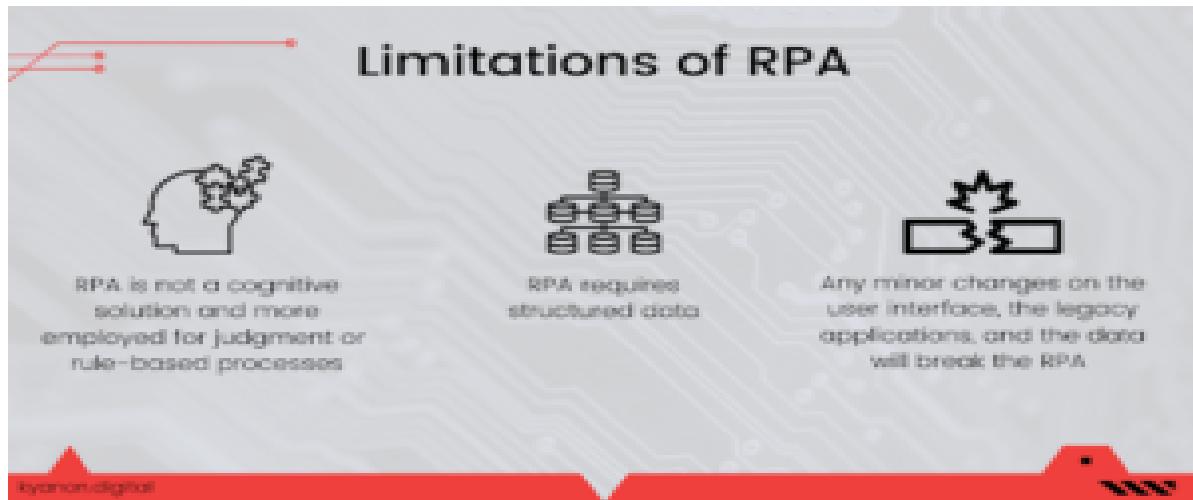
(9) Quality matters Define high quality control standards. Like any other computer systems, automation software will also have its own bugs. A poorly defined automation procedure can introduce issues much faster than any human process and its implications could be widespread and damaging. To realise the value of automation, it must be treated like any other software development process and include requirements, scoping, acceptance testing, validation, support and revision tracking.

(10) Think futuristic Don't plan for short-term automations, have a long time goal in mind. Always make sure that the solution you employ has the flexibility to adapt to future changes. Service providers have been investing in automation for a long time but only recently automation has gained priority. According to Gartner, 'Through 2021, cost savings from automation will range from 2% and 5% which will further the ongoing deployment of automation". However, don't just focus on reducing labor costs while going in for automation. There are many more factors to consider before you automate. It is wise to consider all the factors before you automate!



## limitations of RPA

The limitations of current RPA systems make meeting these expectations challenging, particularly for businesses with expansive settings that are subject to strict regulations. But in order to get closer to the ideal RPA implementation, issues can be fixed, Which include the following –



### Process improvement or cognitive capabilities

"RPA is not a cognitive computing solution". Instead, it's "best suited for rules-based vs judgment-based processes", to workaround this limitation, we can recommend using "smart AI and ML integrations that understand and relate the exceptions and can provide recommendations according easily based on the real time scenarios."

### RPA requires structured data

some tech experts stated that "RPA requires structured data but 80% of enterprise data is buried in unstructured documents- emails, letters of credit, invoices, passports, sanction lists, etc." those limitations to include "voice and callback processes and processes that require human subjectivity." Although unstructured data is an issue for bots of RPA, other tools can be used to structure the data before using RPA bots to get the best and exact results.

### Reading and interpreting image or graphic data

As per the reviews came from organizations, an employee shared an experience where it wasn't possible to "read a network topology or some machine drawing."

### Handwritten Documents

One of testing members,Aprajita jha working at MyAnatomy , says that handwritten documents present a challenge for RPA bots but it "is slowly being addressed and

hopefully in the next few years we will see more intelligent 'handwritten notes' recognition which robots can identify."

Implementing RPA with a broken and incompetent process will not fix it. RPA is not a Business Process Management solution and does not bring an end-to-end process view.

It cannot read any data that is non-electronic with unstructured inputs. RPA tools aren't intelligent robots with machine learning and artificial intelligence; RPA "bots" are scripts that can't dynamically respond to changes.

### **Balancing short-term needs with long-term priorities.**

Some things about RPA may seem too good to be true, such as the ability to increase productivity, minimize human error and streamline complex workflows. The problem is that many teams use RPA as a means of bypassing outdated technologies (e.g., decades-old COBOL systems that are still in place). This is often because replacing and replacing legacy systems is disruptive. This process can cost thousands (if not millions) of dollars and take years to complete.

While it's tempting to rewrite every part of the technology stack into a modern, microservices-based application, doing it all at once can stall an organization's critical processes. To get around this problem, companies are turning to RPA systems to automate small actions, such as typing results from a green screen into a web interface or transferring data from scanned paper documents into a CRM.

It's important to understand that this is a short-term solution. An RPA bot programmed on a legacy system lacks the underlying API connectivity for deeper, more complex automation.

### **Partial Process Automation**

RPA in use today does not completely replace human labour. The main cause of this is that only portions of tasks that are made apparent via a user interface may be automated by RPA, not entire complex processes. While RPA can be useful for

substituting manual labour in repeated activities with predictable inputs, finishing procedures frequently necessitates interacting with APIs or other input sources.

RPA must be integrated into larger BPM and ITPA platforms, which offer a broader perspective of processes and more extensive methods of integration with a variety of applications, in order to overcome this restriction. The optimum RPA integration with BPM and ITPA technologies will reduce the number of user interfaces that staff members must learn and maintain and will offer the quickest and most affordable route to automation.

### **Governance and Security Issues**

The excitement for RPA may be dampened by worries about security and governance for businesses that stand to lose a lot, especially those that are subject to strict regulation. Some particular security and governance issues that need to be resolved include –

- How do robots manage, store, and use passwords or other login credentials? Although this can result in additional license charges, many RPA vendors integrate with third-party password vaulting tools.
- Are multiple departments able to access the password vault? If so, how would you, for instance, prevent HR from obtaining financial data?
- Is there a mechanism to keep track of shady transactions or prevent data loss, such as when data is sent to an odd IP address or inexplicably huge file size?

Some of these issues are addressed by the majority of RPA suppliers, but companies require comprehensive solutions to all of them if they are to prevent security and governance teams from derailing RPA initiatives.

While expecting an RPA provider to provide all of these features in a single product is unreasonable, the product that integrates the best with your organization's security tools and protocols will be the best choice. Given the promising early results, higher expectations for RPA are unavoidable. But for RPA products to continue to gain value, integration with complementary process automation technologies needs to be

expanded, scalability barriers need to be overcome, and security issues need to be addressed with more effort.



Figure 1. Several characteristics of RPA [10]

### Environments setup for RPA Implementation:

Robotic Process Automation (RPA) is new to the industry. Most of the implementations start with Proof of Concept (POC). POC is right way to start on any new technology or concept. It gives organization an idea about the capabilities, benefits and challenges with the new tools and technology. While working on POC, there are lot of concessions made and not all organization's procedures or policies are followed. As POC starts getting stable and RPA code move towards implementation, discussion starts about production implementation. It is big transition from POC to actual production implementation. Every organization make some concessions or allows nonstandard approaches for POC but when time comes for production implementation it is totally different ball game. Lot of parties and stakeholders are involved in this and with strict organization policies, procedures and SLAs.

Infrastructure setup one of most neglected areas during POC. RPA environment setup should be based on organization's processes and policies. Infrastructure setup are very strict and tightly controlled by different groups. First step is to create a list of tool and

capabilities, work with vendors for suggested step in different environments (Dev, Test, Prod). Following are some of the points to consider while deciding on infrastructure:

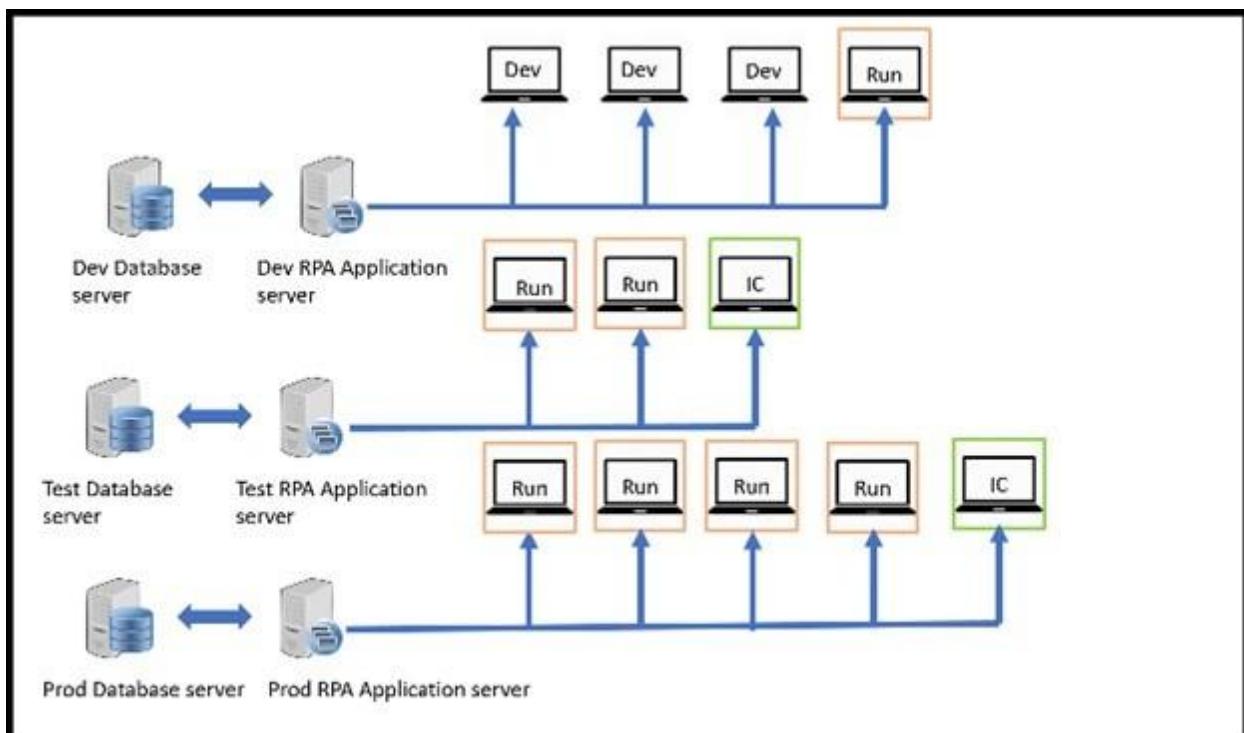
1. **Licensing of RPA tool** – Does organization has licenses for tool to step in multiple environments. Licensing terms are different for each tool vendor so this needs to be discussed and appropriate licenses should be acquired for Dev and Test
2. **RPA tool support for Virtual Environment** – Infrastructure setup depends on organization processes and procedures. Most of the organizations are moving towards Virtual machines or cloud. RPA tools needs to be evaluated for VM and Cloud setup and support.
3. **Application access on servers** – If the setup is done on VM server, application capabilities should be tested. Some applications are not compatible with server and sometimes servers have additional restriction which create issues down the line.
4. **Security Policy** – desktop and VM may have different security policies. VM security policies should be looked at and make sure that it will not interfere in application and RPA tool functionality.
5. **Software update policies** – Software update policies needs to be discussed. Infrastructure team should consider RPA team as stakeholder. Software update may create issues for RPA automation. These updates should be tested in lower level environments before putting in production.
6. **Access restrictions on higher level environments** – As the access management best practice, access restriction should be in place for higher level environments. Access should be granted based on business needs and it should be based on organization policies
7. **Access for supporting tools** – Most of the RPA implementations have some support tools like OCR, Microsoft Office, emails etc. These supporting tools should follow the infrastructure setup as RPA.

8. **Supporting application server versions** – Some applications may have different version of desktop and server. If infrastructure is setup on VM servers, this point also should be kept in mind.

9. **AD groups** – If possible, access request should be based on AD groups. Groups should be created for different user' groups and appropriate access should be granted to each group. This is also a onetime activity but helps a lot in managing.

### Infrastructure setup

RPA implementation should be treated as any other software development. Environments needs to be setup with distinct environment names, server/workstation names, access control. Following is the example of infrastructure setup for Blue Prism. Each environment (Dev, Test and Prod) has similar structure.



**Development** – It should have a Dev database connected to Blue Prism Application server. Developer Desktops (Dev) connect to Application. At least One runtime resource (Run) and one interactive control (IC) should be connected to Application server.

**Test/PreProd** – It should have a test database connected to Blue Prism Test Application server. At least one runtime resource and one interactive control should be connected to Application server. More than one runtime resource is needed to test multi-bot step and queue processing. No developer desktop connection should be in Test. All development should happen only in Dev and code should be promoted to Test environment.

**Production** – It should have a Prod database connected to Blue Prism Prod Application server. Runtime resources should be based on the need of use case. At least one runtime resource and one interactive control should be connected to Application server.

### **Best Practices for environment setup**

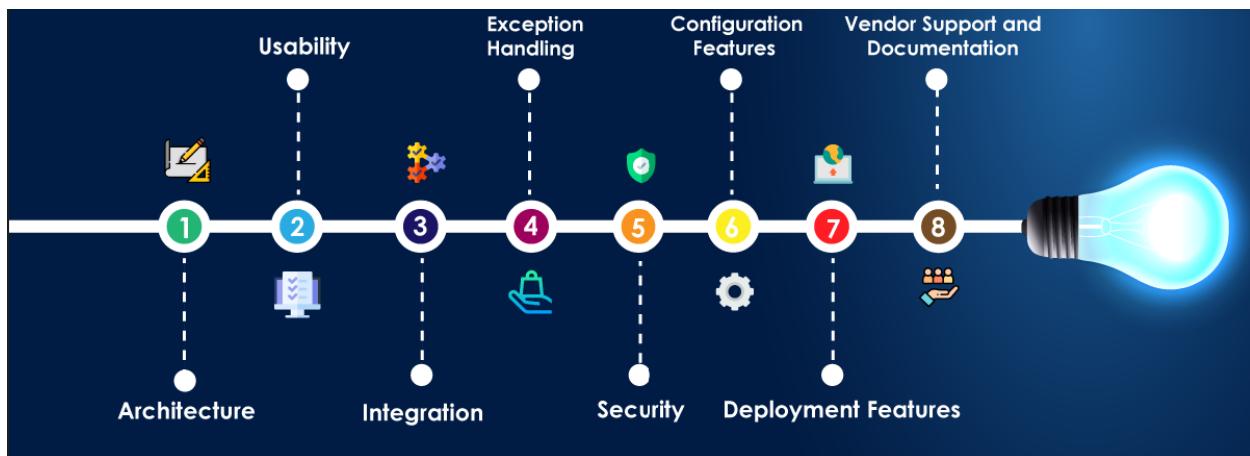
**Start early** – Infrastructure setup should not be an afterthought. It should start while working on POC. This should start early in the lifecycle. Generally, infrastructure setup SLAs are longer and multiple levels of approval are needed. Early start on setup and design will help the project a lot.

**Distinct Environments** - These should be 3 or more swim lanes of environments. Environment setup is onetime activity and needs to be carefully planned and implemented. Once infrastructure setup is done properly it helps to speed up deployment of new functionality and processes. It seems complex or time-consuming activity, but it pays in long run. It also reduces risk of cross connection and shields production environment from inadvertent change or access.

**Runtime Resource setup** – Every environment should have at least 1 runtime resource. Runtime resource setup should match production setup in terms of types of workstation (Server/VDI), version of software, screen resolution etc. This helps in testing and reduces getting errors in higher environments.

**Code Promotion** – Code packages should be promoted from Dev to test and prod. No code changes should be allowed in test and prod environments. This helps keeping code in sync in all environments.

**Monitoring and infrastructure maintenance** – Production environment should be monitored and maintained on a regular basis. Proper downtime schedule should be place and activities check list should be in place during downtime like restart of runtime resources, clearing log files, check space etc.



### Infra types to implement the RPA:

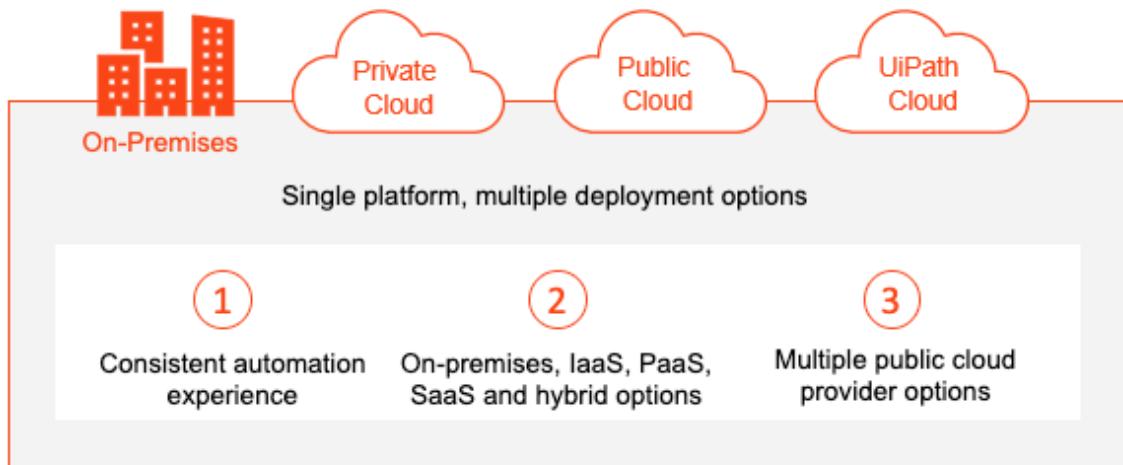
When implementing RPA, there are several infrastructure types that organizations can consider based on their specific needs and preferences. Here are some common infrastructure options for RPA implementation:

#### On-Premises Infrastructure:

This refers to setting up RPA infrastructure within the organization's premises. It typically involves deploying the necessary hardware, servers, and networking components on-site. On-premises infrastructure offers organizations complete control over their RPA environment, data security, and integration with existing systems. However, it requires substantial upfront investment, ongoing maintenance, and

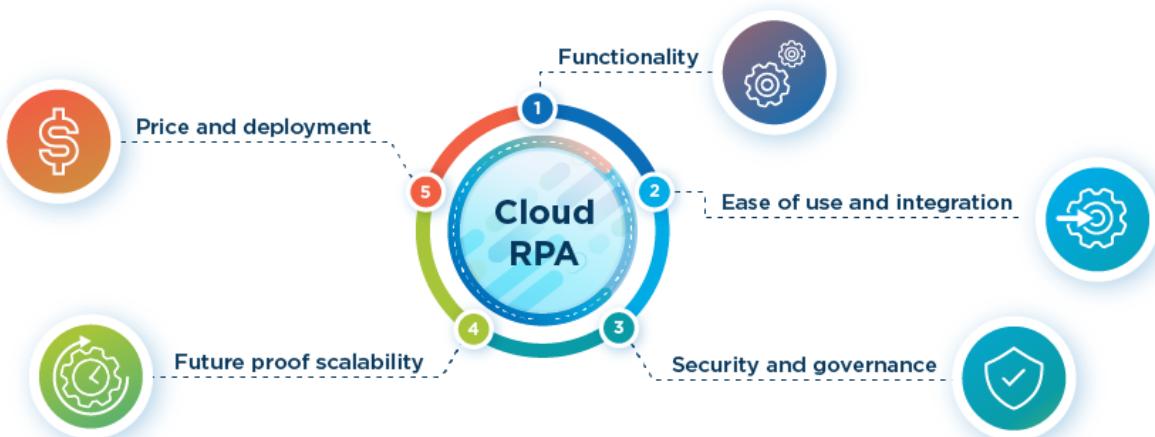
scalability

challenges.



### Cloud Infrastructure:

Cloud infrastructure involves leveraging cloud service providers such as Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform to host the RPA infrastructure. Organizations can utilize virtual machines, storage, and other cloud resources to deploy and scale their RPA environment. Cloud infrastructure offers flexibility, scalability, and the ability to pay for resources on-demand. It eliminates the need for upfront hardware investment and allows easy integration with other cloud-based services. However, organizations need to consider data security, compliance, and potential connectivity issues.



### Hybrid Infrastructure:

A hybrid infrastructure combines on-premises and cloud components. Organizations can host critical components of RPA on-premises for enhanced security, while utilizing cloud infrastructure for scalability and flexibility. Hybrid infrastructure provides a balance between control and cost-efficiency, allowing organizations to leverage the advantages of both deployment models. However, it requires careful planning, integration efforts, and coordination between on-premises and cloud environments.

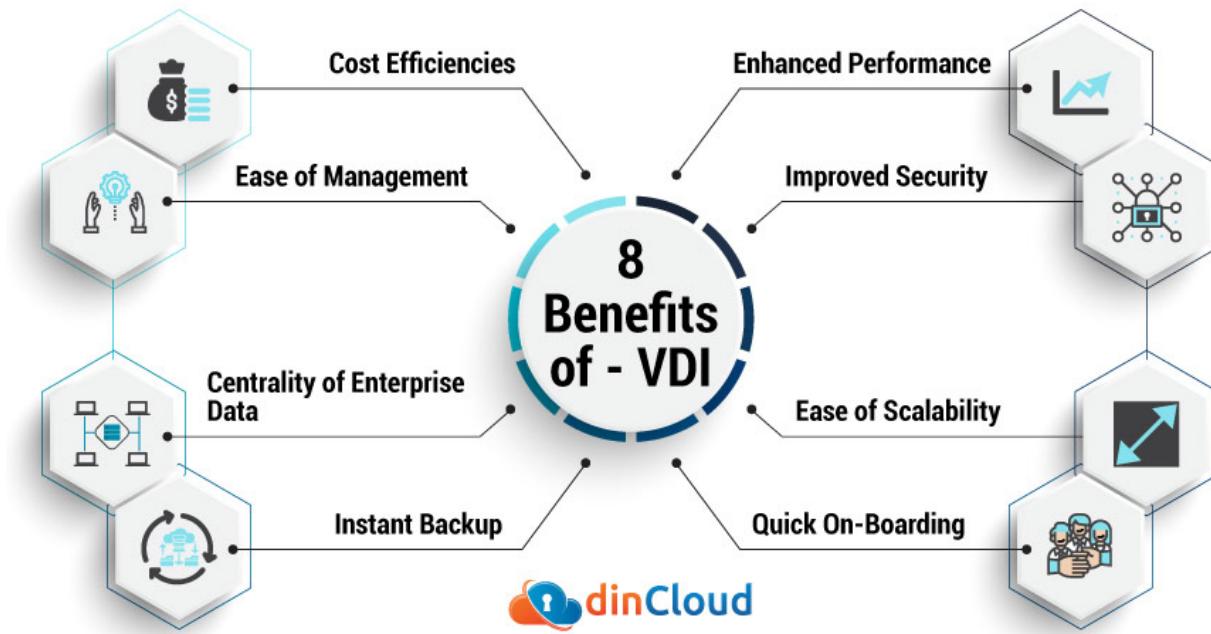
### **Managed Service Providers (MSPs):**

Some organizations prefer to outsource their RPA infrastructure and operations to specialized managed service providers. MSPs offer RPA as a service, handling infrastructure setup, maintenance, and management. This option allows organizations to focus on their core business while relying on the expertise of the service provider. However, it's important to select a reputable and reliable MSP, and organizations should consider factors such as data privacy, service-level agreements (SLAs), and ongoing support.

### **Virtual Desktop Infrastructure (VDI):**

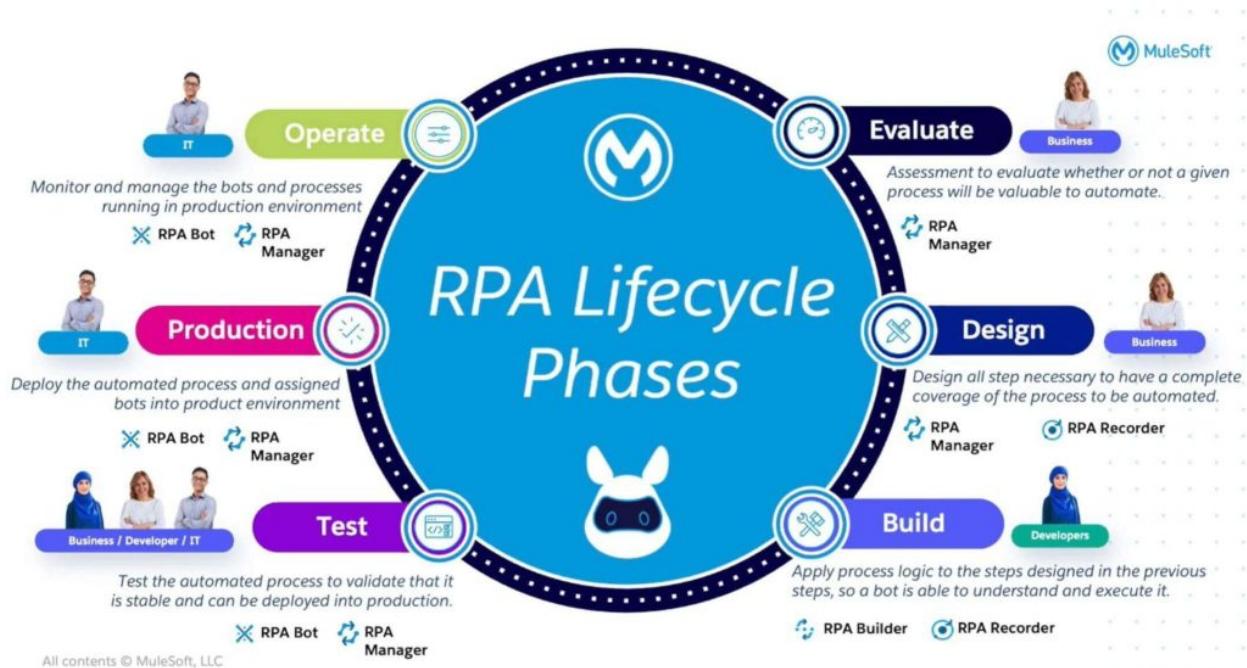
VDI infrastructure involves providing virtual desktop environments to RPA developers and users. With VDI, the actual RPA software and tools reside on centralized servers, and users access them through thin client devices or remote desktop connections. VDI offers centralized management, improved security, and easier software updates. It allows remote access, facilitates collaboration, and simplifies the provisioning of RPA environments. However, organizations need to consider infrastructure requirements, network bandwidth, and user experience aspects when implementing VDI. The choice of infrastructure type for RPA implementation depends on factors such as budget, security requirements, scalability needs, existing IT infrastructure, and organizational preferences. It's important to evaluate the pros and cons of each option and select the

infrastructure type that aligns with the organization's goals and objectives.



### Automation Life Cycle in detail:

The automation life cycle encompasses the various stages involved in the implementation and management of automation initiatives, including Robotic Process Automation (RPA). Here is a detailed overview of the automation life cycle:



## Discovery and Assessment:

Identify and prioritize processes for automation: Assess the suitability of processes for automation based on factors such as volume, complexity, rulesbased nature, and potential benefits.

## Conduct process walkthroughs:

Understand the existing process steps, inputs, outputs, and dependencies to determine automation feasibility and potential improvements.

## Perform a business case analysis:

Evaluate the costs, benefits, return on investment (ROI), and strategic alignment of automating the identified processes.

## Design and Development:

Define automation objectives: Clearly articulate the goals and expected outcomes of the automation initiative.

## Map process workflows:

Create detailed process flow diagrams to visualize the automation sequence and identify potential automation steps.

## Develop automation scripts:

Use RPA tools or programming languages to create automation scripts that replicate the manual steps performed by humans.

## Configure automation rules:

Define business rules and decision-making logic within the automation scripts to handle exceptions and variations.

## Test and validate the automation:

Conduct rigorous testing to ensure that the automation performs as expected, handles exceptions correctly, and meets defined quality criteria.

#### Deployment:

Prepare the production environment: Set up the necessary infrastructure, resources, and permissions required for running the automation in a live environment.

#### Deploy automation scripts:

Transfer the developed automation scripts to the production environment and configure them to execute at the desired schedule or trigger events.

#### Integrate with systems:

Connect the automation with the relevant systems and applications, ensuring proper data exchange, security, and compatibility.

#### Conduct user training:

Provide training to users and stakeholders who will interact with or manage the automation, ensuring they understand its functionality and usage.

#### Operations and Monitoring:

##### Monitor automation performance:

Continuously track and analyze the automation's performance, including success rates, cycle times, error rates, and resource utilization.

##### Handle exceptions and errors:

Establish processes to handle exceptions and errors encountered during automation execution, including error logging, notification, and resolution mechanisms.

##### Maintain and update automation:

Regularly maintain and update the automation scripts to accommodate process changes, system updates, and optimization opportunities.

Implement governance and control:

Establish governance practices, access controls, version management, and change management processes to ensure the automation remains reliable, secure, and compliant.

Continuous Improvement: Collect feedback and insights: Gather feedback from users, stakeholders, and monitoring systems to identify areas for improvement and optimization.

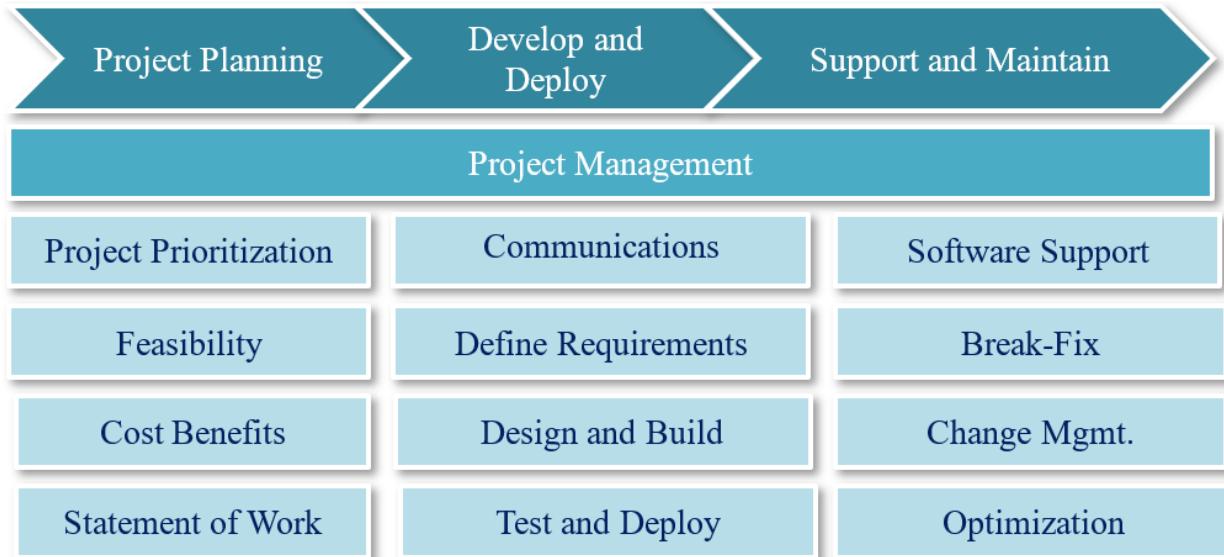
Analyze automation data: Leverage data and analytics to identify bottlenecks, optimize workflows, and enhance the automation's performance and impact. Iteratively enhance the automation: Implement changes and enhancements based on the identified improvement opportunities, ensuring proper testing and validation

Scale and expand automation: Identify additional processes that can benefit from automation and repeat the automation life cycle steps to implement automation at a broader scale. It's important to note that the automation life cycle is not strictly linear and can involve iterative cycles as organizations continually refine and expand their automation initiatives. Regular reviews, stakeholder engagement, and a focus on continuous improvement are key to maximizing the benefits of automation throughout its life cycle.

## **RPA Feasibility Analysis:**

Conducting an RPA Feasibility Assessment

Before progressing further on how to conduct RPA feasibility, it's important to understand the process of automation. See the visual below.



Process feasibility is one of the most vital components of the RPA automation framework. It consists of two steps: process examination and technical feasibility. A few key people are required to conduct the feasibility assessment, including the operation user, an SME (Subject Matter Expert) and an RPA expert.

### Stage 1: Process Examination

In this stage, the SME should make a list of the step-by-step process, down to keystroke and mouse click levels. The remaining steps should go as follows:

- Identify the nature of each step and activity performed by the operation user and validate whether the process received the rule-based activity or requires any additional decisions or analysis from the user.
- Ascertain preventive elements that can be automated, then decide on the type of application, followed by downtime, and so on.
- Validate the input data type, structured or unstructured, and template creation or modification.
- Define the process scenarios or sub-scenarios, as well as the need to capture the time taken of each request with the specified scenarios.

### Stage 2: Technical Feasibility

The RPA expert should validate the defined logics, rule-based steps, and input & output data, then ensure the process is suitable for automation. Also, mention any manual intervention if needed during the process, followed by complexity analysis, volume of

transactions, technology landscape, development efforts, data size and information flow. Additionally, consider the process standardization or do re-engineering if required.

Below are the key components needed to be performed during the feasibility study:

#### Process Level

- Create a process document that contains the high-level steps or process map.
- Define the most common errors and process flows to fix or escalate these errors.
- Create a business application decision and provide details.

#### Metrics

- Define schedule details to make sure it follows the standard set timings as per daily, weekly or monthly.
- Define whether the process must be completed by a standard set timing or date.
- Define daily transaction count details.
- Provide average timings per transaction and define how many errors found.
- Mention how long it takes to rectify an error.

#### Applications & Data

- Provide application details and other prerequisites.
- Mention the input or trigger (Excel spreadsheet, CSV file, email, workflow or time of day) that leads the process and source details.
- Provide output and format details (letter/email to a customer, notification to a service area, spreadsheet or management report).
- Update the test environment that mirrors the live system and mention the access to the same inputs and outputs.

#### Support

- Provide resource availability details for support throughout the User Acceptance Testing (UAT) and implementation process
- Define Service Level Agreement (SLA) details

RPA feasibility analysis is a critical step in determining the suitability and potential benefits of implementing Robotic Process Automation (RPA) within an organization. Here are the key aspects to consider during RPA feasibility analysis:

Process Suitability:

Identify candidate processes:

Assess the organization's processes and identify those that are repetitive, rules-based, high-volume, and manual in nature.

Complexity assessment:

Evaluate the complexity of the processes, including decision-making requirements, cognitive tasks, unstructured data handling, and exceptions handling. RPA is best suited for processes with a high degree of standardization and low complexity.

Feasibility assessment:

Determine whether the identified processes can be effectively automated using RPA tools and techniques or if other automation methods are more suitable.

Potential Benefits:

Cost savings:

Evaluate the potential cost savings through automation, including reductions in labor costs, error rates, and process cycle times.

Productivity improvement:

Assess the impact of RPA on productivity by comparing the time taken for manual tasks versus automated execution.

Accuracy and quality improvement:

Consider the potential for reduced errors and improved data accuracy through the use of RPA.

Scalability and capacity:

Evaluate the ability of RPA to handle increased process volumes without significant resource investments.

Process improvement:

Identify opportunities to streamline processes, eliminate redundant steps, and optimize workflows through automation.

Technological Considerations:

System compatibility:

Assess the compatibility of the existing systems and applications with RPA tools, including the availability of application programming interfaces (APIs) or other integration options.

Data security:

Evaluate the security requirements and determine if RPA implementation can meet the organization's data security standards and compliance regulations.

IT infrastructure:

Analyze the organization's IT infrastructure, including hardware, network, and server capacity, to ensure it can support RPA implementation and ongoing operations.

Software and tools:

Evaluate the available RPA software and tools in the market, considering factors such as functionality, ease of use, scalability, and vendor support.

Organizational Factors:

Change management: Assess the organization's readiness for change, including employee acceptance, training needs, and the impact on job roles and responsibilities.

Stakeholder alignment:

Determine the level of support and alignment from key stakeholders, including management, IT, operations, and process owners.

ROI analysis:

Conduct a comprehensive return on investment (ROI) analysis, considering the costs of implementation, training, maintenance, and expected benefits over time.

Risk Assessment:

Identify risks: Assess the potential risks associated with RPA implementation, such as security vulnerabilities, data privacy concerns, compliance risks, and the impact on job displacement.

Mitigation strategies:

Develop strategies to mitigate identified risks, such as implementing security controls, establishing proper governance, and conducting thorough testing and validation. The feasibility analysis helps organizations make informed decisions about the adoption of RPA by evaluating the suitability of processes, estimating potential benefits, addressing technological considerations, and understanding organizational readiness. It provides a foundation for developing a business case and roadmap for successful RPA implementation.

### **Process Definition Document(PDD)**

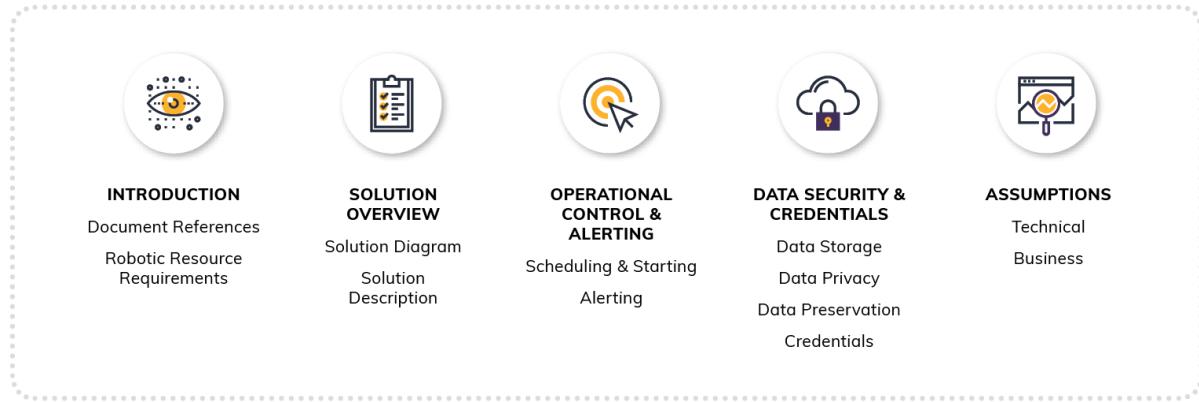
Process Definition document is something that helps you to document the existing process.

Once a process has been identified as a potential candidate for automation, it is time to document it in detail.

This will serve as the basis for implementing software bots that will handle the manual process in the future.

During the requirement gathering phase, the developer and the Business analyst will closely work with the clients/ business side to get familiar with the current process.

After finding all the gaps and possibilities of improvements in the process to make it more flexible for automation, the results of this requirement gathering phase is collected in a document called Process Definition Document.



## **Process Definition Document:**

### **1. Introduction:**

#### **Purpose of the document:**

Provide a brief description of why we are using this document.

How this helps to the developer and the target process description.

#### **Objectives:**

Mention what is the main motto behind automating this process by the business owners.

Examples like process execution time and soon.

#### **Key Contacts:**

Who was responsible from the business side for clarifying all the doubts or clarifications on exceptions in the process to the development team.

#### **Prerequisites for Automation:**

This section discusses the server, tool licenses, and permissions or restrictions on the client environment.

Mainly the required test data for developing the process.

## **2. As-Is Process:**

### **Process Overview:**

Here we usually mention the process name, time spent manually for completing it, and also the short description of the process.

### **Applications Used in the Process:**

This section mention all the applications that are used to perform automation of the business process.

### **As-Is Process Steps:**

Gather a step by step process for the business process and document it in this section.

## **3. To be Process Description:**

### **To be Process Map:**

As we discussed earlier while gathering requirements we made some changes to the existing process.

High level overview of all those steps to be described in this process map.

May be as a flow diagram or step wise.

### **To Be Process Steps:**

Complete steps about how the bot is going to design will be documented here.

### **Parallel Initiatives/ Overlap:**

In this section, we mention about any server upgrades or any updates of application which we are using in automation.

**In Scope for RPA:**

Mention what are possibilities/activities that bot can perform in that particular business process.

**Out of Scope for RPA:**

Mention what are possibilities/activities that bot can't perform in that particular business process.

**Business Exceptions Handling:**

What are the known exceptions that might encounter while doing that process manually?

This helps the developer to integrate those exception handling mechanisms to handle errors while executing the bot.

**Application Error Handling**

Here we need to mention the known errors that can cause often in the business process.

**4. Reporting:**

This section mention whom to report all the execution results and exception reports of the bot.

**5. Additional Sources of Process Documentation:**

Mention all the recorded videos or any other documents that are referred for creating this process definition document.

A solution Design document has an almost similar structure to that of a Process Design Document. Now, Solution Design Document(SDD) is generally Prepared by Sr. Developer/Developer for a selected Process. The document consists of solution approaches which include To-be Flow, Logic Flow charts, how the bot will perform screen recordings, clicking on keys, buttons, dropdowns, etc. It also includes runtime process screenshots, errors and exceptions handling techniques, applications working in the process, how the bot is going to be built according to business rules, and more. Find a Sample SDD Template of a process below:-

1	Introduction	4
1.1	Purpose	4
1.2	Audience	4
1.3	Change History	4
1.4	Approvals	4
2	Summary	5
2.1	Objective	5
2.2	Stakeholder Matrix	5
3	Scope	6
3.1	In Scope	6
3.1.1	Functional Requirements	6
3.1.2	Non-Functional Requirements	6
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4	Solution Design	7
4.1	AS-IS Implementation	7
4.1.1	Folder structure	7
4.1.2	Database Design	7
4.1.3	Configuration	7
4.1.4	Schedule	7
4.2	TO-BE Implementation	7
4.2.1	Folder structure	7
4.2.2	Database Design	7

- 
- 4.2.3 Configuration
  - 4.2.4 Schedule
- 4.3 Assumptions and dependencies
- 4.3.1 Assumptions
  - 4.3.2 Dependencies
- 4.4 Risks, Issues and Challenges
- 4.4.1 Risks
  - 4.4.2 Issues
  - 4.4.3 Challenges
- 4.1 Limitations
- 

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## RPA Data Migration Solution DesignPage 2

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- 5 Migration Design
- 6 Sample and Test Data
- 7 Setup and Configuration/Migration Requirements
  - 7.1 Hardware, Software, and Access Requirements

## Solution Design Doc- Page2

SDD is a word file consisting of a Landing page containing a Table of contents and the Logo of the company. This table of contents page consists of an Introduction (purpose, objectives, process key contents, document version/viewers/approvers), To-be process description, Process Flow description, handling of exceptions, interaction with different applications with diagrams, etc.

## 1 Introduction

---

### 1.1 Purpose

<<State the purpose of the solution design>>

### 1.2 Audience

<<The audience of the solution design needs to be mentioned here>>

### 1.3 Change History

Version	Name	Role	Date	Reviewer
0.1	<<Author Name>>	<<Author Role>>	dd-MMM-yy	<<Reviewer Name>>

### 1.4 Approvals

Version	Name	Role	Reviewer	Approver
0.1	<<Name>>	<<Role>>	<<Reviewer – YES/NO>>	<<Approver – YES/NO>>

## 2 Summary

---

### 2.1 Objective

<<State the objective of the solution design>>

### 2.2 Stakeholder Matrix

Name	Role	Email Address

## 3 Scope

---

### 3.1 In Scope

#### 3.1.1 Functional Requirements

Existing RPA automations ({{state any other automation as well}}) will need to be able to port data from a variety of sources including text and media files and RPA databases. In addition, a data porting solution need to be created that can

- Connect to various data sources,
- If needed map data fields from one source into another as well as transform data from one source into another source. Whenever possible, data should be formatted using data format standards
- Copy the data from source to destination so that the automation migrated on newer version/upgraded version is running like the previous version.

#### 3.1.2 Non-Functional Requirements

##### 3.1.2.1 Exception Handling

##### 3.1.2.2 Logging

##### 3.1.2.3 Authentication

##### 3.1.2.4 Authorization

### 3.2 Out of Scope

- Any other point that is not stated in the section 3.1 above

## 4 Solution Design

This section describes Bot views of the Solution for different stakeholders.

### 4.1 AS-IS Implementation

- 4.1.1 **Folder structure**
- 4.1.2 **Database Design**
- 4.1.3 **Configuration**
- 4.1.4 **Schedule**

<<Support it with the Diagrams>>

### 4.2 TO-BE Implementation

- 4.2.1 **Folder structure**
- 4.2.2 **Database Design**
- 4.2.3 **Configuration**
- 4.2.4 **Schedule**

### 4.3 Assumptions and dependencies

#### 4.3.1 Assumptions

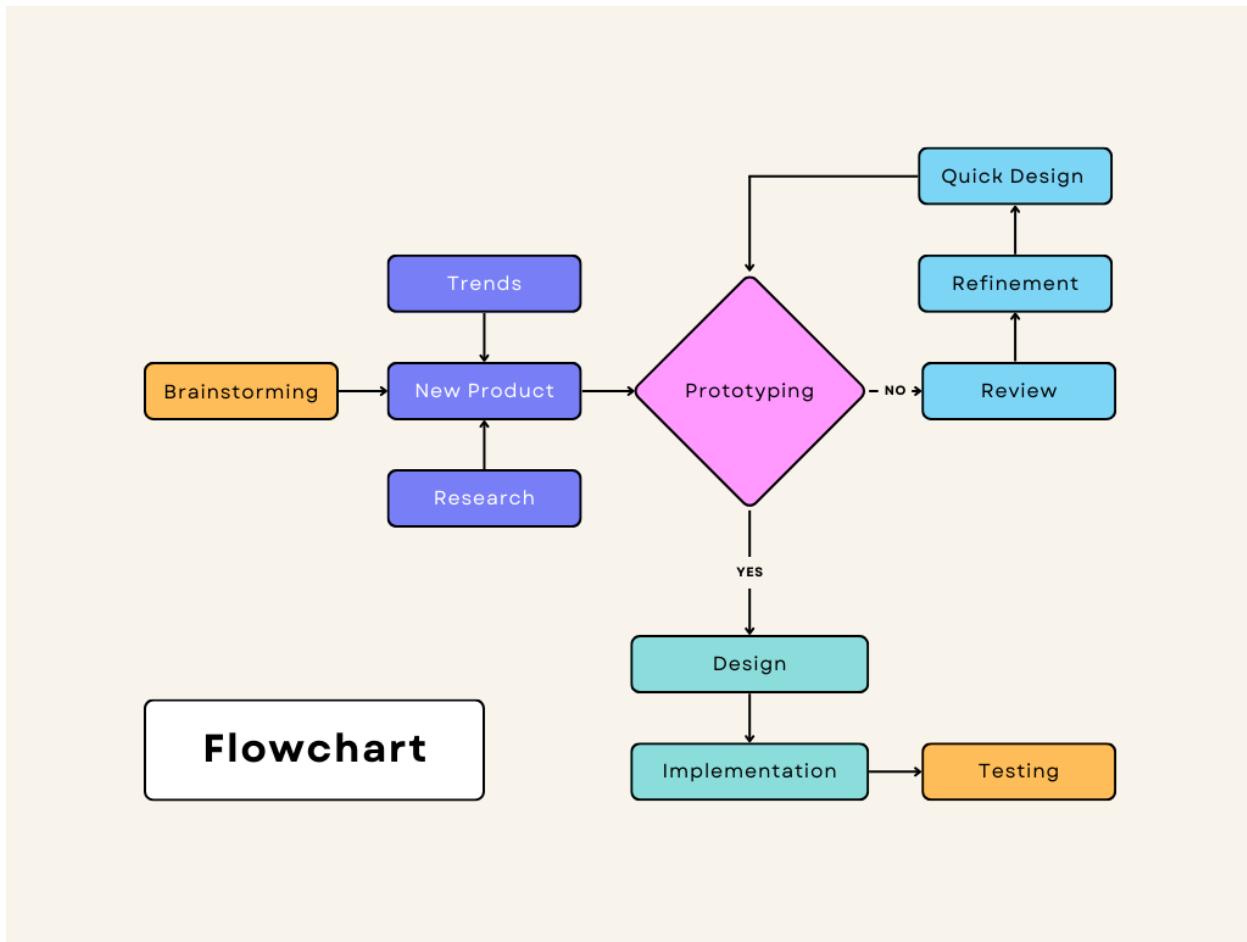
The solution design assumes below:-

Ref#	Description

## 6 Glossary

Term	Definition
RPA	Robotic process automation ( <b>RPA</b> ) is the practice of automating routine business practices with software robots that perform tasks automatically.
Credential Vault	The Credential Vault is used to store all system managed credentials and critical system configuration data.
BOT	A software robot mimicking human action on target applications to achieve Robotic Process Automation.
OCR	Optical Character Reader technology is used to convert the unstructured/semi structured data into structured format. For example reading a remittance document given in scanned pdf/image and reading it to extract data in structured format like excel/csv/xml
AA	Automation Anywhere is robotic process automation platform used to create software robots
BRD	Business requirement document stating the robotic process automation requirements
UAT	User acceptance test typically performed on a user acceptance test environment by subject matter experts

So, in the above diagrams, we can see what the Solution Design Documents look like. Contents and order may vary in different SDDs but the overall structure will be the same. Again for the SDD creation, we need diagrams to put in it for that we can refer to various websites.



SAMPLE Flow Chart Diagram.

Once Solution Design Document(SDD) is ready, it should be sent to the client for approval. Once client approves (SDD signoff email), the document is ready and that process is now eligible to go ahead and ready to be built on a development environment.

#### **Industries best suited for RPA Implementation:**

Robotic Process Automation (RPA) can be implemented across various industries to streamline processes, increase efficiency, and reduce manual effort. However, certain industries are particularly well-suited for RPA implementation due to their repetitive and rule-based nature. Here are some industries that have shown significant benefits from RPA implementation:

#### **Manufacturing**

## **Streamlining assembly line processes**

Robotic Process Automation (RPA) has revolutionized the manufacturing industry by streamlining assembly line processes. With the help of RPA, manufacturers can automate repetitive tasks such as material handling, quality control, and packaging. This not only reduces the risk of human error but also increases production efficiency and reduces costs. RPA can also be used to monitor and analyze data from sensors and other devices, allowing manufacturers to identify and address issues in real-time. Overall, RPA has proven to be a game-changer for the manufacturing industry, enabling companies to improve their bottom line while delivering high-quality products to customers.

## **Improving quality control**

Robotic Process Automation (RPA) has significantly improved quality control in various industries. With RPA, businesses can automate repetitive tasks, reduce human errors, and ensure consistency in their processes. In manufacturing, RPA can monitor production lines and detect defects in real-time, leading to faster identification and resolution of quality issues. In healthcare, RPA can automate medical coding and billing, reducing errors and improving accuracy. In the financial sector, RPA can automate compliance checks, ensuring that all regulations are met and reducing the risk of penalties. Overall, RPA has proven to be a valuable tool for improving quality control across various industries.

## **Reducing production time and costs**

Robotic Process Automation (RPA) has proven to be a game-changer for industries that rely heavily on production processes. By automating repetitive and time-consuming tasks, RPA has significantly reduced production time and costs. This has been particularly beneficial for manufacturing, where RPA has streamlined assembly line processes, reduced errors, and improved product quality. RPA has also been adopted in the logistics industry, where it has optimized supply chain management, reduced delivery times, and improved inventory management. Overall, RPA has enabled

businesses to operate more efficiently, increase productivity, and ultimately, improve their bottom line.

## **Healthcare**

### **Automating administrative tasks**

Automating administrative tasks is one of the most common uses of robotic process automation (RPA). This includes tasks such as data entry, invoice processing, and report generation. By automating these tasks, companies can reduce errors and increase efficiency, allowing employees to focus on more strategic and value-added activities. RPA can also help companies save time and money by reducing the need for manual labor and streamlining processes. As a result, industries such as finance, healthcare, and manufacturing have all seen significant benefits from implementing RPA for administrative tasks.

### **Enhancing patient care through telemedicine**

Robotic process automation (RPA) has the potential to revolutionize the healthcare industry by enhancing patient care through telemedicine. With RPA, healthcare providers can automate routine tasks such as appointment scheduling, patient data entry, and insurance verification, freeing up more time for doctors and nurses to focus on patient care. Additionally, RPA can improve the accuracy and speed of medical record keeping, ensuring that patient information is up-to-date and easily accessible. Telemedicine, which allows patients to receive medical care remotely, can also benefit from RPA by automating the process of scheduling virtual appointments and sending reminders to patients. Overall, RPA can help healthcare providers deliver more efficient and effective care to patients, improving outcomes and reducing costs.

### **Improving accuracy in medical diagnosis**

Robotic Process Automation (RPA) has been a game-changer in the healthcare industry, especially when it comes to medical diagnosis. RPA can help healthcare professionals to improve the accuracy of their diagnoses by automating repetitive tasks

such as data entry, data analysis, and report generation. This technology can also help to reduce the risk of human error, which is a significant concern in the healthcare industry. With RPA, healthcare professionals can focus on more complex tasks that require human expertise, such as patient care and treatment planning. Additionally, RPA can help to improve patient outcomes by providing faster and more accurate diagnoses, which can lead to earlier treatment and better health outcomes. Overall, RPA is a valuable tool for healthcare professionals looking to improve the accuracy and efficiency of their diagnoses.

## **Banking and Finance**

### **Automating data entry and processing**

One of the most significant benefits of robotic process automation (RPA) is its ability to automate data entry and processing. This is particularly useful for industries that deal with large amounts of data, such as finance, healthcare, and retail. RPA can help reduce errors and increase efficiency by automating repetitive tasks such as data entry, data validation, and data processing. This not only saves time but also frees up employees to focus on more complex tasks that require human intervention. Additionally, RPA can help organizations comply with data privacy regulations by ensuring that data is accurately and securely processed. Overall, automating data entry and processing with RPA can lead to significant cost savings and improved productivity for businesses across various industries.

### **Improving fraud detection and prevention**

Robotic Process Automation (RPA) has proven to be a valuable tool in improving fraud detection and prevention in various industries. By automating repetitive tasks and analyzing large amounts of data, RPA can quickly identify suspicious patterns and anomalies that may indicate fraudulent activity. This technology can also help organizations to monitor transactions in real-time and prevent fraudulent activities before they occur. In the financial services industry, RPA can be used to detect fraudulent transactions, while in healthcare, it can help prevent medical identity theft.

Overall, RPA has the potential to significantly reduce the risk of fraud and save organizations time and money.

### **Enhancing customer service through chatbots**

Chatbots are becoming increasingly popular in the customer service industry, as they provide a quick and efficient way for customers to get answers to their questions. With the help of robotic process automation, chatbots can be programmed to handle a wide range of customer inquiries, from simple requests to more complex issues. This not only enhances the customer experience by providing instant support, but it also frees up customer service representatives to focus on more high-level tasks. Additionally, chatbots can be available 24/7, ensuring that customers can always get the help they need, regardless of the time of day.

## **Retail**

### **Automating inventory management**

Automating inventory management is a crucial aspect of many industries, especially those in manufacturing and retail. With the help of robotic process automation, businesses can streamline their inventory management processes, reduce errors, and improve efficiency. RPA can automate tasks such as inventory tracking, stock replenishment, and order fulfillment, allowing employees to focus on more strategic tasks. Additionally, RPA can provide real-time data on inventory levels, enabling businesses to make informed decisions about production and sales. Overall, automating inventory management with RPA can lead to cost savings, increased productivity, and improved customer satisfaction.

### **Improving supply chain management**

Robotic process automation (RPA) has proven to be a game-changer in the supply chain management industry. By automating repetitive and time-consuming tasks such as data entry, inventory tracking, and order processing, RPA has significantly improved the efficiency and accuracy of supply chain operations. With RPA, businesses can

reduce lead times, optimize inventory levels, and improve customer satisfaction by ensuring timely deliveries. Moreover, RPA can help businesses identify and mitigate supply chain risks by providing real-time data insights and predictive analytics. Overall, RPA has become an indispensable tool for businesses looking to streamline their supply chain operations and gain a competitive edge in the market.

### **Enhancing customer experience through personalized recommendations**

Robotic Process Automation (RPA) has revolutionized the way businesses interact with their customers. By leveraging RPA, companies can provide personalized recommendations to their customers, enhancing their overall experience. RPA can analyze customer data and provide insights into their preferences, behaviors, and purchasing patterns. This information can be used to create targeted marketing campaigns, personalized product recommendations, and customized offers. By providing a more personalized experience, companies can increase customer loyalty and retention, ultimately leading to increased revenue and profitability. RPA has become an essential tool for businesses looking to stay ahead of the competition and provide exceptional customer experiences.

## **Insurance**

### **Automating claims processing**

Automating claims processing is a crucial area where robotic process automation (RPA) can bring significant benefits. Insurance companies, healthcare providers, and other organizations that handle large volumes of claims can use RPA to automate repetitive tasks such as data entry, document processing, and verification. This not only saves time and reduces errors but also improves customer satisfaction by providing faster and more accurate claims processing. RPA can also help organizations comply with regulatory requirements by ensuring that all claims are processed consistently and according to established guidelines. Overall, automating claims processing with RPA can help organizations streamline their operations, reduce costs, and improve the quality of their services.

## **Improving risk assessment and underwriting**

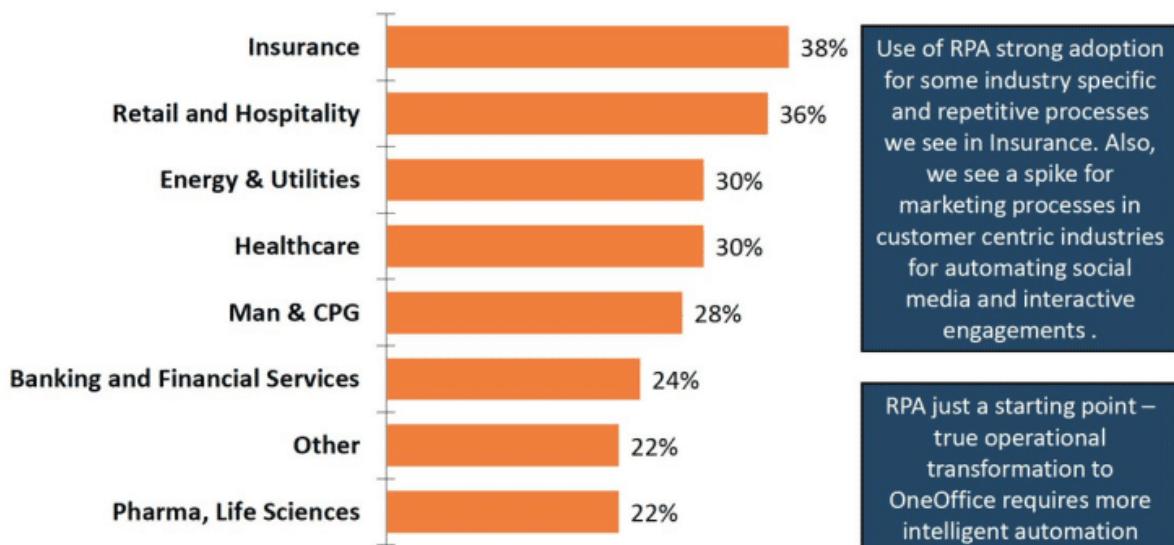
Robotic Process Automation (RPA) has proven to be a game-changer in the insurance industry, particularly in improving risk assessment and underwriting. With RPA, insurers can automate the entire underwriting process, from data collection and analysis to policy issuance. This not only saves time but also reduces errors and improves accuracy. RPA can also help insurers to identify potential risks and frauds by analyzing large volumes of data and identifying patterns that may indicate fraudulent activities. By automating these processes, insurers can improve their risk assessment and underwriting capabilities, leading to better decision-making and improved profitability.

## **Enhancing customer service through chatbots**

Chatbots are becoming increasingly popular in the customer service industry, as they offer a quick and efficient way to handle customer inquiries and support. With the help of robotic process automation, chatbots can be programmed to understand and respond to customer queries in a natural language, providing a personalized experience for each customer. This not only enhances customer satisfaction but also reduces the workload of customer service representatives, allowing them to focus on more complex tasks. Chatbots can also be integrated with other systems, such as CRM software, to provide a seamless customer experience. As a result, industries such as retail, banking, and healthcare are adopting chatbots to improve their customer service and gain a competitive edge.

## Use of RPA across Industries

Thinking about the use of RPA within the following business functions,  
what stage of maturity have you reached?  
(The average use inc 4&5 across functions)



Source: "Intelligent Operations" Study, HFS Research 2016  
Sample: Buyers = 371

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Proprietary | Page 50



## Risks & Challenges with RPA:

### RPA strategy risks:

RPA is a powerful technology that drives innovation, improves customer service, and maximizes competitiveness for its organizational adopters.

However, businesses often fail to deliver its full value by setting up the wrong goals and expectations, or misusing it for one-off, isolated areas. These can lead to under-resourcing the RPA initiative, inhibiting it from reaching its full potential.

Examples of some of the worst strategies are when RPA is seen as a way to reduce costs by reducing FTEs instead of using it to innovate and improve how work is done. This ultimately leads to an unhappy workforce and a bad external reputation for the organization.

- Missed value
- Lack of strategic intent
- Absence of end-point design
- Isolated/one-off goals
- Under-resourcing your RPA projects
- Damaged reputation

### **RPA Sourcing risks:**

**Using the wrong sourcing model can lead to excessive costs.**

This can happen if organizations decide to do everything internally but lack the required skills to govern, develop and execute.

- Lack of internal skills for DIY automation solutions
- Selecting the wrong consulting partner
- Bringing external advisors too late
- Cloud data / compliance risks

### **Tool selection risks:**

**Just like cloud-washing, RPA-washing can be a real risk due to market hype.**

Many tool vendors claim automation capabilities that lack basis. For example, some vendors just offer screen-scraping which can lead to high maintenance for error correction or changes if it lacks full screen automation features. Due to its nuance, companies can end up often choosing the wrong tool/s for their needs.

- Selecting the wrong tool
- “RPA washing”
- Crowded vendor offerings

### **Stakeholders buy-in risks:**

**Implementing an RPA initiative requires stakeholder buy-in at different levels across the enterprise.**

Typically buy-in from the executive suite, IT (Information Technology) department, business unit employees, and external stakeholders such as customers and service partners. It is common for IT departments to write off RPA as a hyped-up technology with low value and potential to threaten stability and security. There would also be risks of the organization's grassroots to view RPA as a threat to their jobs, hence actively stalling or derailing its implementation.

The key is to understand that ALL stakeholder's active engagement is integral to a successful RPA delivery.

- Employee pushback
- Non-cooperative IT
- Union backlash
- Lack of visible progress and results

#### **Launch/project risks:**

**To mitigate risks of a project launch failure, organizations need to prevent technical, financial, and political failures.**

For example, companies that choose to adopt RPA in departments with the most headcount to generate more savings often fail due to a large load of changing processes and exception handling. Companies that aim to reduce headcount for immediate FTE savings fail because they did not have the resources required to build a robust RPA solution, bought the wrong tool, made wrong assumptions, took shortcuts, and jeopardized security and compliance.

- Wrong use cases
- Unrealistic expectations
- Aim for too much automation
- Bad shortcuts – testing, documentation, etc.

#### **Operational/execution risks:**

**Operational risks occur when robots get deployed into operations without a proper operating model.**

If enterprises do not define roles, and rush into training, responsibilities can be blurred when bots go into production, humans can find themselves confused on their roles.

- Robots stop working or do not function as intended
- Not enough bot force
- Costly maintenance

#### **Change management risks:**

**Change management strategy is key to the success of a disruptive implementation such as RPA.**

A poor communication plan and lack of executive and grassroots buy-in, and lack of operational models. Underestimating and under-resourcing change management activities can jeopardize a proper alignment between the strategy, processes, technology, and people in the implementation lifecycle, leading to HR (Human Resources) issues, delays and missed opportunities.

- Not building a Change Management strategy into RPA
- HR messaging not aligned
- Blurred roles
- Lack of expertise
- Lack of communication plan

#### **Maturity risks:**

**When companies reach maturity with their initial deployment and begin expanding RPA across different business units and geographies.**

Sustainability risks, such as rapid proliferation of automation requests, duplicated efforts across divisions, and under-utilization of bots. Other risks can include unchanged labor and process silos, lack of preparation for automation progress into cognitive technologies, shortage, or shortage of RPA talent, etc.

- Momentum stalls
- Underutilization of bots

- Duplicated efforts
- Skills shortage
- Lack of integration

In conclusion, innovative solutions are meant to be disruptive and along with their benefits come risks. Having a realistic view of RPA and preparing for such risks mitigation can make a big difference in reaching its maximum potential.

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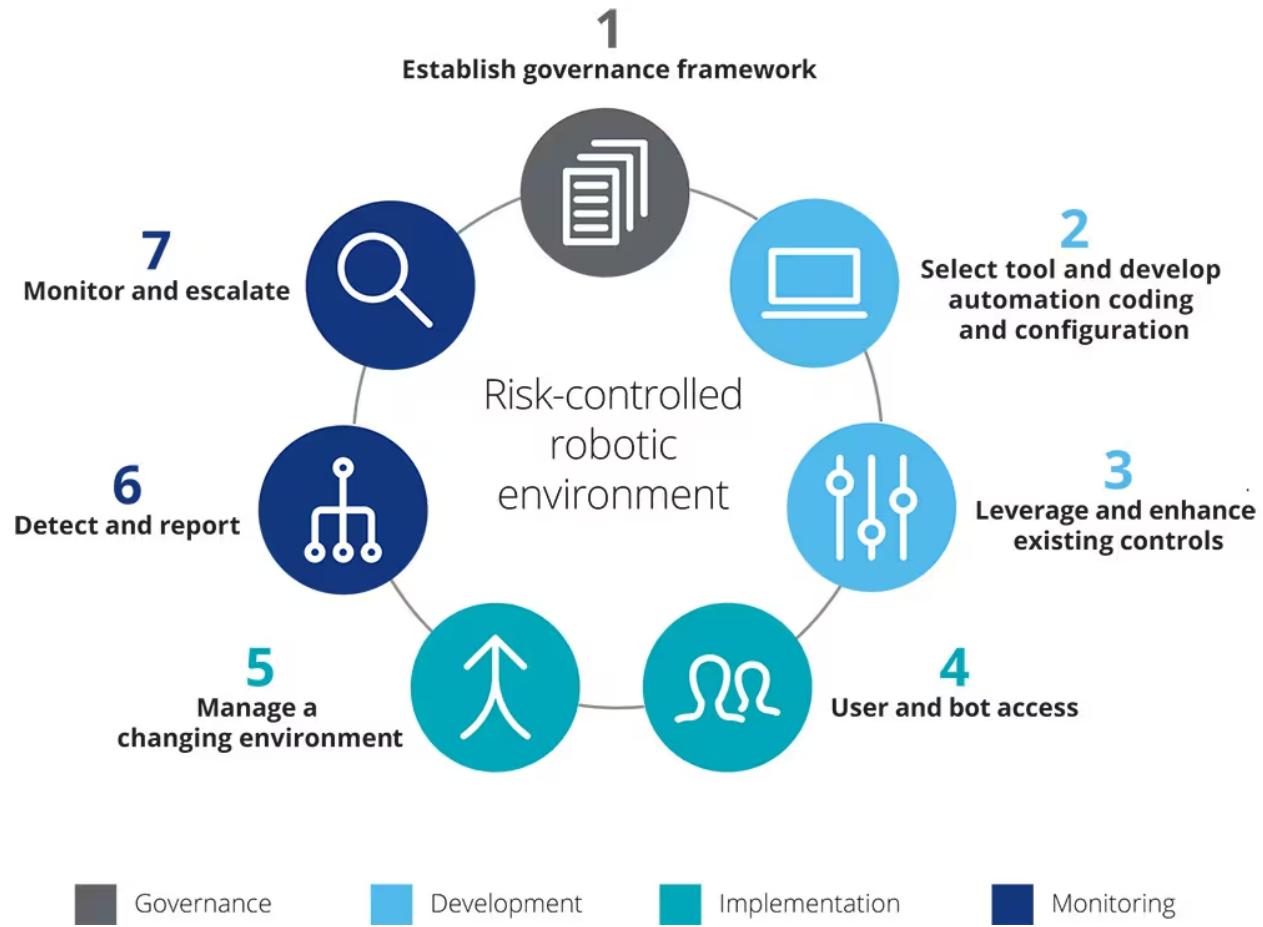
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In conclusion, innovative solutions are meant to be disruptive and along with their benefits come risks. Having a realistic view of RPA and preparing for such risks

mitigation can make a big difference in reaching its maximum potential.



## RPA Challenges

### Shortage of Skilled resources

We all agree that RPA is booming with the increase in the requirements of today's market, but, however, there is a shortage of skilled resources in the RPA market. Procuring resources while starting a new project and backfilling a key resource in case of attrition poses a great threat to the success of any project. Also, RPA professionals with extensive experience expect lucrative packages which might not be financially viable for some of the companies.

### Unable to automate end to end use cases

In some of the processes, not all the steps can be automated directly by using rule-based RPA tools. Instead, it would require integration with Machine learning algorithms, and OCR engines. However, these additional technology components will cost extra money and skill-set which might not produce the expected results to the business leaders.

### **Lack of required support from Business**

For an RPA project to be successful, it is important that the business use cases are provided with the necessary workflow diagrams, possible workarounds for potential failure scenarios, business rules for different kinds of data to be processed by the Bot and technical exceptions faced by the operations team during manual processing.

If the business is not really inclined to provide the required support, RPA projects will thus face challenges in getting a comprehensive Process Design Document created, during the user acceptance tests. These tests require businesses to provide critical feedback regarding the Bot execution.

### **Lack of proper team structure**

Dedicated teams with clearly defined roles for each and every individual to ensure the hand-offs happen on time with the expected standards. Lack of adequate knowledge about the processes to be followed and sharing of resources between multiple projects poses a risk in achieving the set milestones for RPA projects.

### **Vaguely defined business continuity plans**

The expectation about RPA projects is set in such a way that once the Bots are deployed in production, there should be minimal to no maintenance required to ensure smooth delivery. However, the reality is that it does require maintenance in terms of identification of new unhandled scenarios during Bot execution, issues faced in production environments, defining Bot execution schedules based on requirements from multiple business units operating from different time zones, and mitigation plans during major failures.

## **Culture shock**

Typically organizations implement any new process/technology either using '*Top-Down approach*' or '*Bottom-Up Approach*'. In a top-down approach, senior leadership identifies that RPA has to be implemented across the organization. However, without the lack of awareness about the impact of new technology, RPA automation will create a negative impression among the employees as it might spark fear of losing jobs and unclear responsibilities after automated Bots are deployed.

## **Incorrectly identified Use cases for automation**

Identification of use cases that can provide a good ROI is critical to get the business's buy-in, as it would be enough budget allocation for the next set of processes to be automated. Incorrectly identified use cases will only produce a low ROI, and would not improve the process efficiency as expected by the business or even the metrics proposed to the Business. The complexity of processes identified for automation plays an important in producing the expected ROI.

## **Not following best practices**

If the team does not follow the best practices, it would be hard to debug the code, difficult for other team members to understand and re-use the flow. In case of transitions, the time taken for the new members would be longer than expected. When there is a need to upgrade the solution, it will be a daunting task to decode the logic.

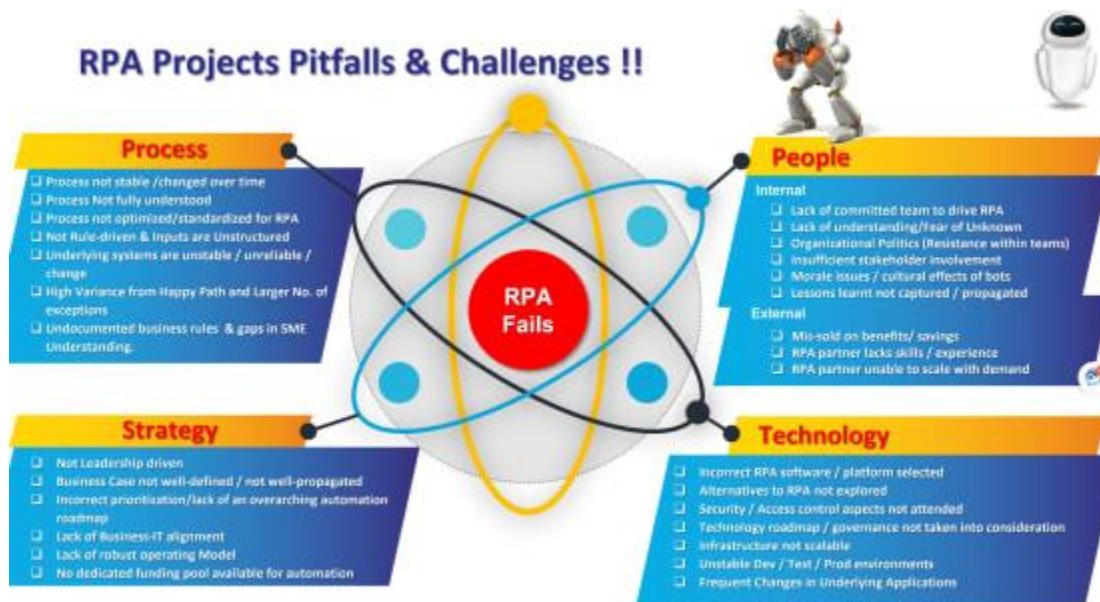
## **Not enough support from the RPA platform vendor**

In almost all the RPA projects, we will come across situations where there would not be a straightforward solution. In this case, if the team members are unable to automate a particular step, it is important to ensure there is enough support from the RPA platform vendor as they have the expertise in using the tool features and would also have seen the implementation of these features in multiple ways by different customers. More can be learned from this RPA Certification Program.

## Post-Implementation Adoption

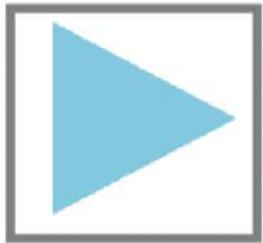
Businesses often take all the measures required before the adoption of RPA. However, they fail to take care of the pushbacks, which might come after the automation is deployed into the production.

So, we can conclude by saying that, knowledge of the challenges faced by different projects provides a checklist for being prepared to not fall into one of the categories mentioned above. It also helps in creating a knowledge pool of possible resolutions for each challenge identified, different approaches of solving them and how to improvise on each solution once they are implemented.



## RPA and an emerging ecosystem:

Robotic Process Automation (RPA) is evolving as part of an emerging ecosystem of technologies, frameworks, and practices that complement and enhance its capabilities. This ecosystem includes the following elements:



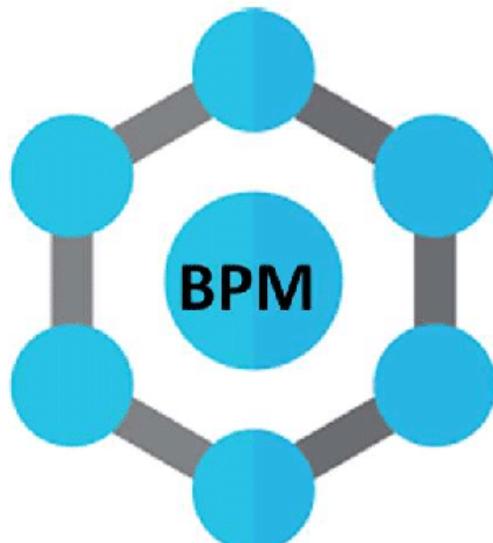
RPA



AI



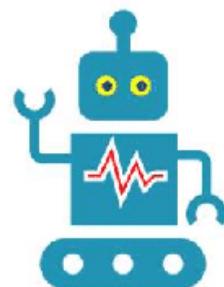
People



Analytics



OCR

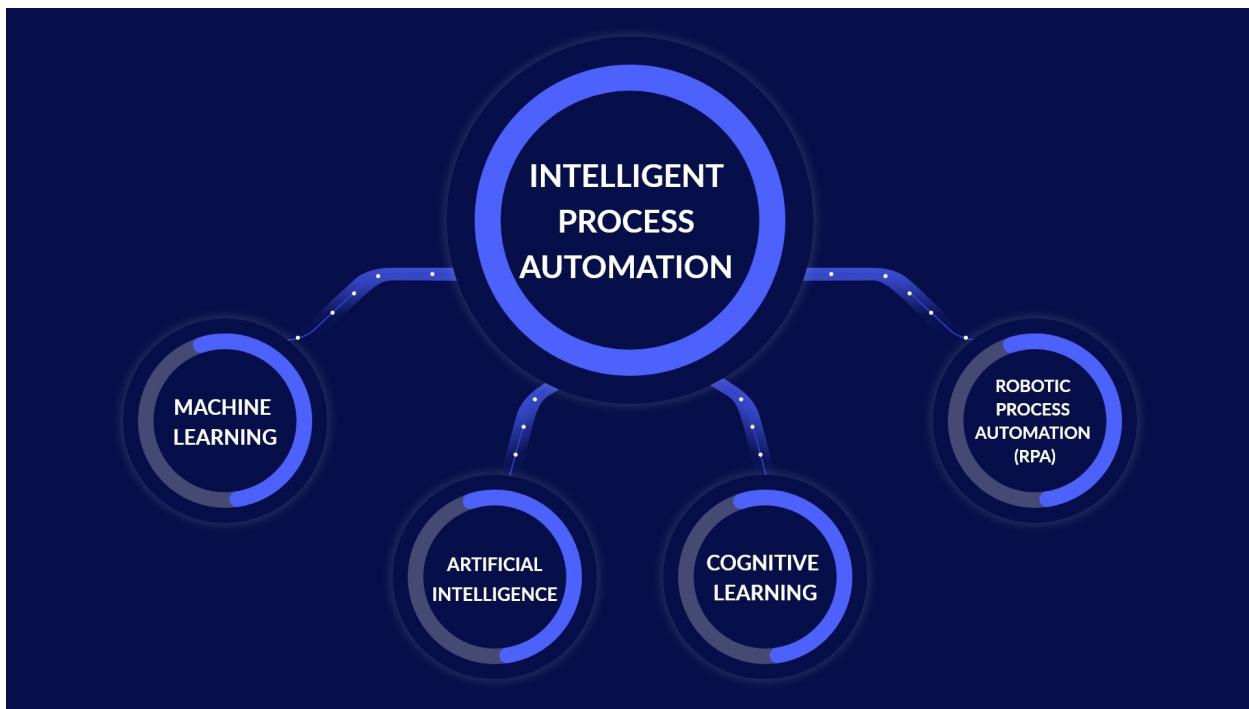


RaaS

### Intelligent Automation:

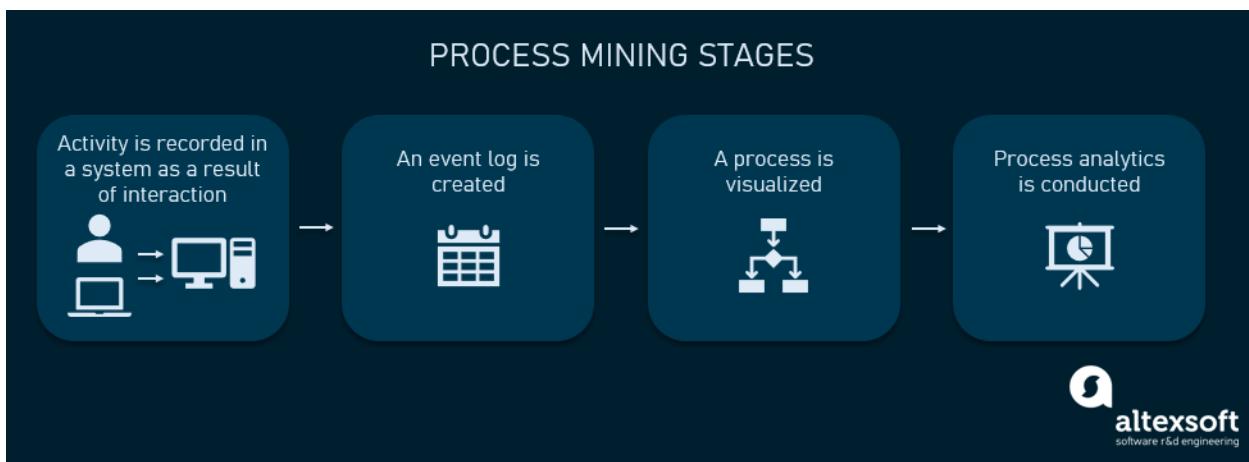
RPA is often combined with other intelligent technologies such as Artificial Intelligence (AI), Machine Learning (ML), Natural Language Processing (NLP), and Computer Vision to enable more advanced automation capabilities. Intelligent automation can enhance RPA by enabling cognit

ive capabilities, intelligent decision-making, and handling unstructured data.



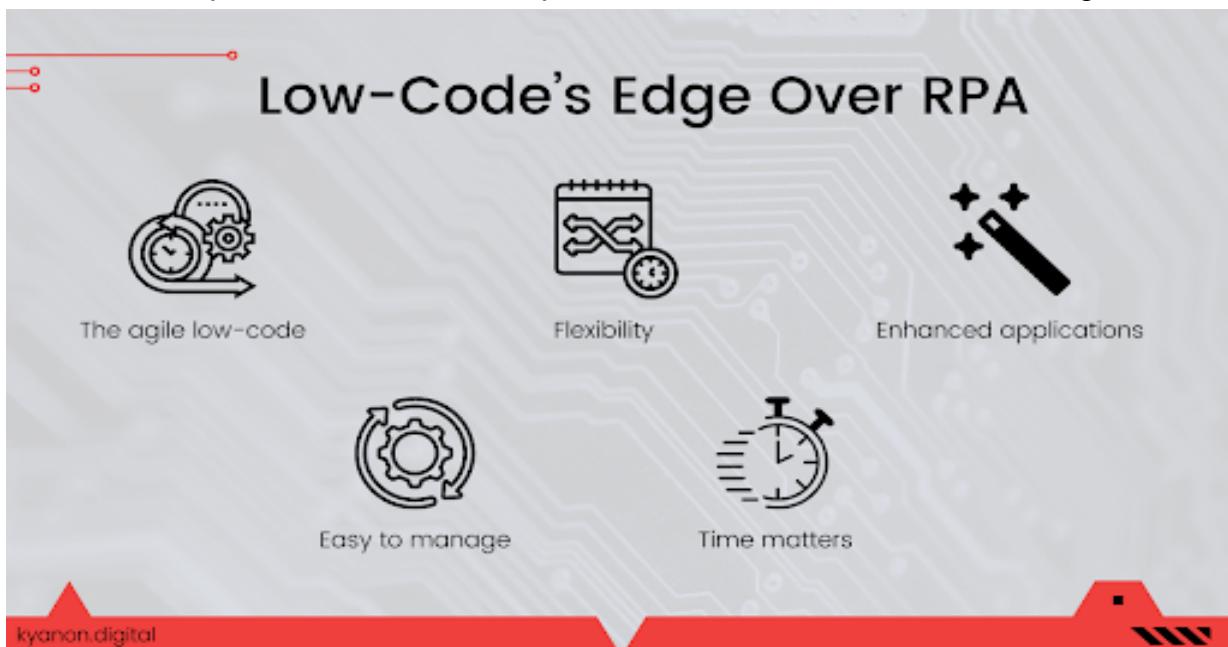
### Process Mining and Analytics:

Process mining tools and techniques allow organizations to analyze and visualize their existing processes, identify bottlenecks, and uncover improvement opportunities. By integrating RPA with process mining and analytics, organizations can gain deeper insights into process performance, automate repetitive process discovery tasks, and optimize their automation initiatives.



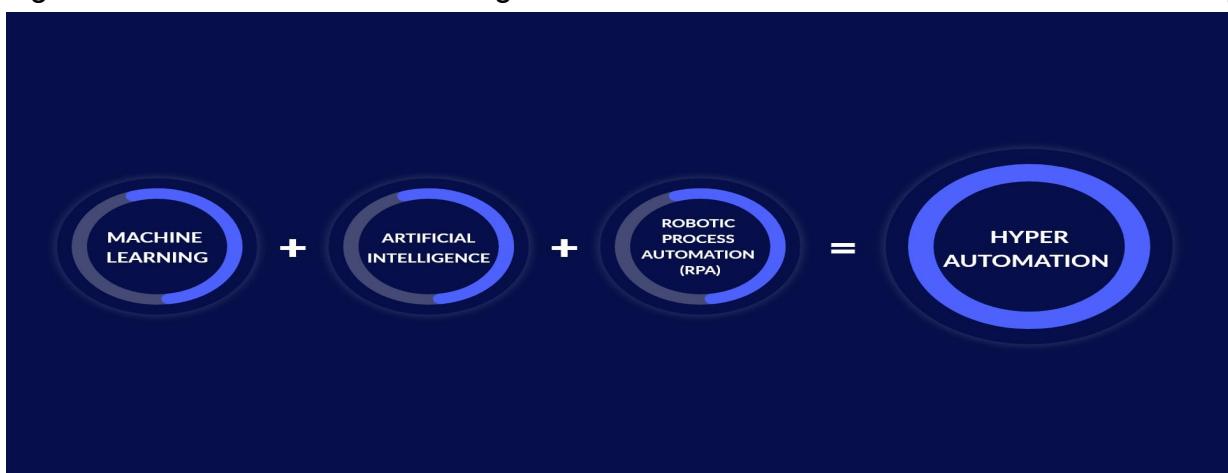
## **Low-Code/No-Code Development:**

The emergence of low-code/no-code development platforms simplifies the creation and deployment of RPA solutions. These platforms allow business users and citizen developers to build automation workflows with minimal coding knowledge, accelerating the development and adoption of RPA within organizations.



## **Hyper Automation:**

Hyper Automation refers to the comprehensive automation of business processes using a combination of RPA, AI, ML, process mining, and other technologies. It aims to automate end-to-end processes, from data collection to decision-making, enabling organizations to achieve higher levels of automation and efficiency.



### Automation Marketplaces:

With the growing popularity of RPA, automation marketplaces have emerged where organizations can find pre-built automation components, reusable automation templates, and plug-and-play automation solutions. These marketplaces promote collaboration, accelerate development, and provide access to a wider range of automation capabilities.

### Governance and Compliance Tools:

As RPA implementations become more widespread, governance and compliance tools are emerging to ensure proper control, management, and auditability of automation processes. These tools offer features such as access controls, version management, audit logs, and compliance reporting to meet regulatory requirements and maintain a high level of governance.

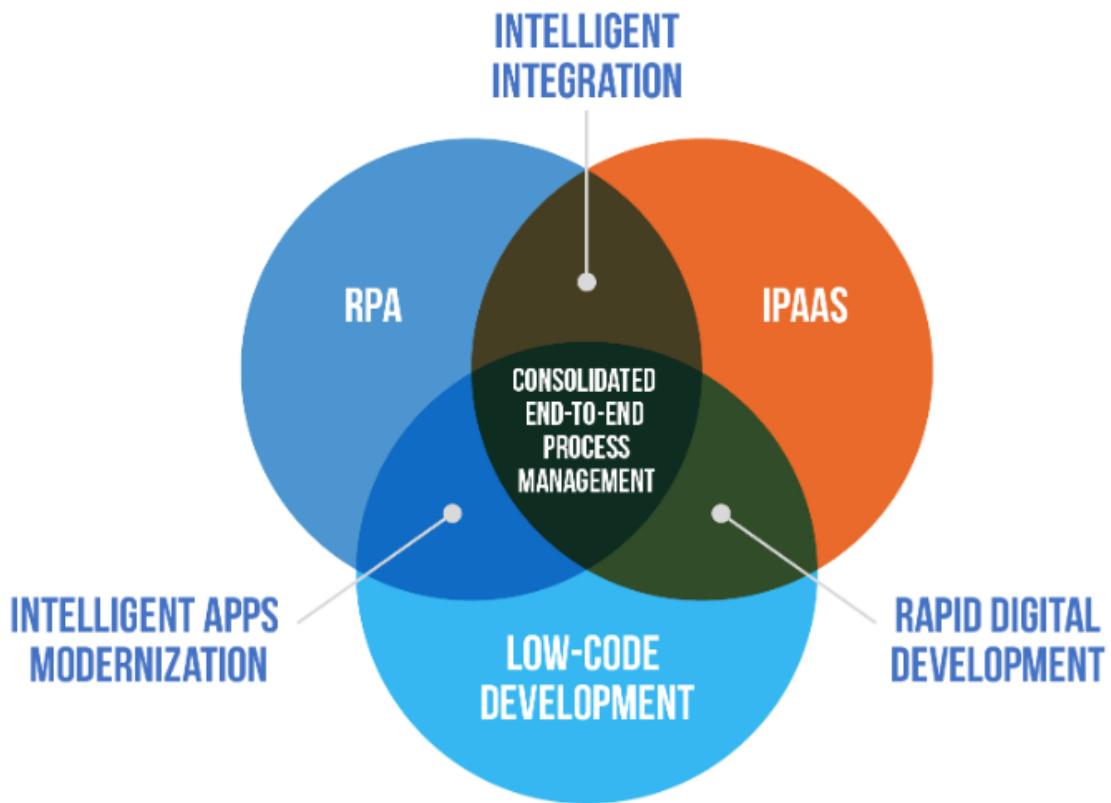
### Digital Workforce Management:

With the increasing number of software robots, digital workforce management tools have emerged to provide centralized management, scheduling, monitoring, and reporting capabilities. These tools help organizations efficiently manage and orchestrate their automation workforce, ensuring optimal utilization and performance.

### Collaboration and Integration Platforms:

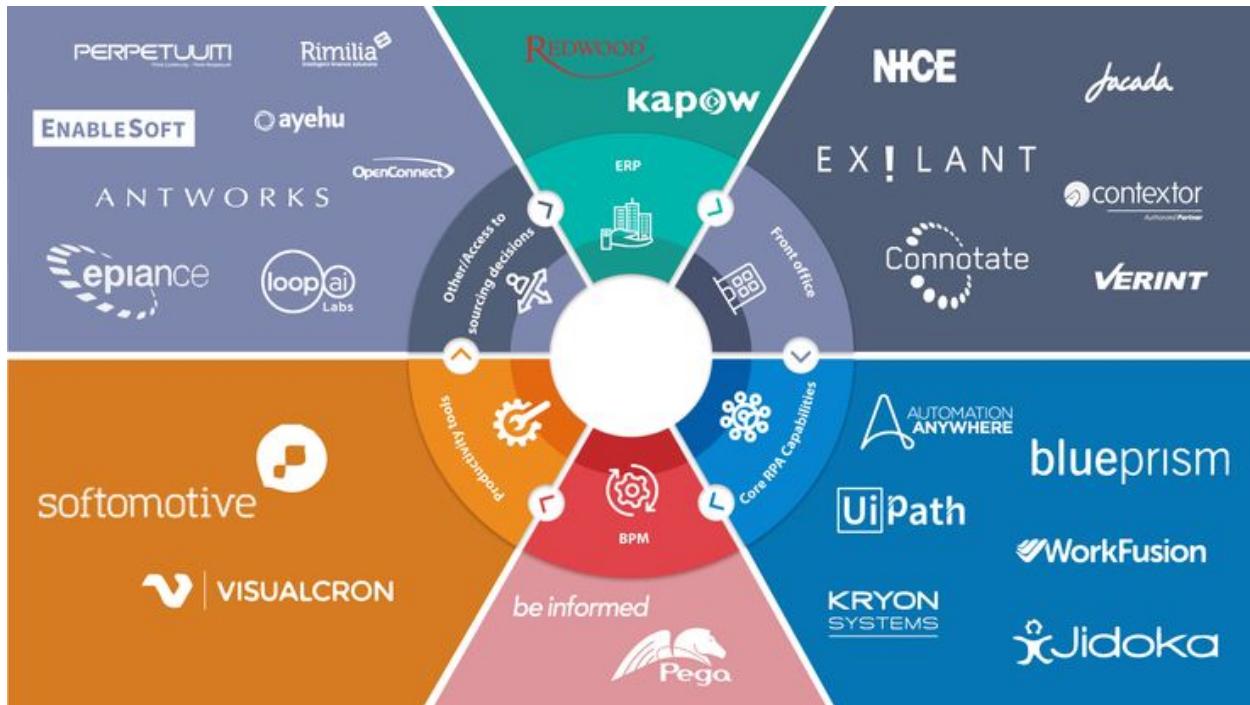
To enable seamless collaboration and integration between RPA and other systems, platforms and frameworks are emerging that facilitate communication, data exchange, and workflow integration. These platforms ensure interoperability between RPA solutions and other enterprise applications, enhancing process efficiency and reducing integration complexities. The emerging ecosystem surrounding RPA enhances its capabilities, extends its scope, and addresses key challenges. By leveraging these complementary technologies and practices, organizations can unlock greater automation potential, achieve higher productivity gains, and drive digital transformation

initiatives more effectively.



#### **Leaders in RPA:**

Several companies have emerged as leaders in the Robotic Process Automation (RPA) market. Here are some prominent players in the RPA space:



### UiPath:

UiPath is one of the leading RPA vendors, offering a comprehensive RPA platform with a wide range of features and capabilities. It provides an easy-to-use interface, robust automation capabilities, and a strong developer community. UiPath has a significant market share and is recognized as a leader in several industry analyst reports.

### Automation

Anywhere: Automation Anywhere is another major player in the RPA market. Their platform offers features such as intelligent automation, cognitive capabilities, and a scalable architecture. Automation Anywhere has a large customer base, including enterprises from various industries, and is known for its strong customer support and training programs.

### Blue Prism:

Blue Prism is a well-established RPA vendor, known for its enterprise-grade RPA platform. Their solution offers advanced automation capabilities, including AI integration, process analytics, and centralized control. Blue Prism has a presence in multiple sectors and has built partnerships with several technology providers.

**Microsoft Power Automate (formerly UI flows):**

Microsoft Power Automate is a part of the Microsoft Power Platform and offers RPA capabilities. It enables organizations to automate repetitive tasks using a low-code approach, integrating with other Microsoft products and services. Microsoft's strong market presence and ecosystem make Power Automate an attractive choice for businesses already using Microsoft technologies.

**Pega Systems:**

Pega Systems provides a comprehensive automation platform that combines RPA, case management, process orchestration, and AI capabilities. Their solution focuses on intelligent automation and provides tools for building, deploying, and managing RPA bots. Pega Systems is wellregarded for its ability to handle complex processes and compliance requirements.

**Kofax:**

Kofax offers an intelligent automation platform that includes RPA, cognitive capture, and process orchestration. Their solution enables end-to- end automation, from data ingestion to process execution. Kofax has a strong presence in industries such as banking, insurance, and healthcare.

**NICE:**

NICE (NICE Ltd.) provides a wide range of solutions, including RPA, workforce optimization, and customer experience management. Their RPA platform offers features such as attended and unattended automation, analytics, and process discovery. NICE has a significant customer base and is known for its focus on customer service and contact center automation. It's worth noting that the RPA market is dynamic, and the competitive landscape can change over time. These companies are recognized leaders based on market presence, product capabilities, customer base, and industry recognition. However, it's important to evaluate the specific needs of your organization and conduct a thorough assessment when selecting an RPA vendor.

**Future of RPA:**

Automation technology changes by the minute, making it challenging to understand which innovations can benefit your business today and in the future. At qBotica, our goal is to help you discover cutting-edge tools that are worth your investment and explain precisely how they work. To keep your business ahead of the curve, let's take a look at the top automation trends for 2022.

## 1. COMPANIES WILL INVEST MORE IN AUTOMATION

In a recent Gartner survey, more than 80% of organizations said they'll "continue or increase" automation spending in 2022. And those companies are poised to optimize performance and productivity radically. Companies that invest in a framework linking AI-based and traditional automation to connect a hybrid workforce of human and digital workers will gain a competitive advantage.

Survey respondents said they plan to focus on how automation systems can support revenue growth, new business opportunities, and innovation. They plan to invest in systems that include robotic process automation (RPA), digital process automation (DPA), intelligent document processing (IDP), and artificial intelligence (AI). General Electric and BMW, for example, plan to use 3D printing to revolutionize construction, while Amazon will start delivering packages via autonomous vehicles and drones.

## 2. RPA WILL WIN AS THE "SOUL" OF AUTOMATION

Automation may seem like a strictly technical field. Still, in 2022, robotic process automation (RPA) will stand out among other platforms as the heart and soul of how businesses start to implement their automation systems. RPA technology allows computer robots or "bots" to learn and perform repetitive tasks, such as filling out forms and processing paperwork, which frees up valuable hours for workers.

Most businesses implement RPA first to streamline their workflows, saving time and money. RPA technology integrates with complex automation systems, including intelligent document processing (IDP) and AI. For instance, businesses can incorporate RPA to process order forms and deliveries and add AI functionality to suggest products to customers. In 2022, RPA will take on platforms that require richer user interfaces and

higher levels of AI, allowing companies to integrate RPA into their established processes better and use it to manage their existing technologies.

### 3. INTELLIGENT AUTOMATION WILL HELP RPA EFFORTS

RPA may be the soul of automation, but it can't skyrocket businesses into the future and automate everything all on its own. Companies also need to automate tasks that require a human touch, such as reading an email, answering a customer question, or deciding on loan approval. This is where intelligent automation such as IDP and AI will come into play. While RPA can complete rule-based tasks with speed and efficiency, intelligent automation uses machine learning (ML) to achieve more complex operations.

Machine learning is the science behind AI that allows computers to analyze data and recognize patterns similar to humans. With ML and AI, computer software can become more accurate and understand and make decisions. Experts say AI capabilities can lead to numerous innovations over the next year, from virtual healthcare platforms through CVS and Walgreens to digital baristas via Nestle Nespresso and Starbucks. In 2022, companies will expand their automation scope, focusing on adaptive and creative endeavors.

### 4. OUT-OF-THE-BOX AND SEMANTIC SOFTWARE WILL REVOLUTIONIZE RPA

Implementing RPA and intelligent automation into an organization can be complex, even for people familiar with machine learning (ML) and computer science. In a recent study of AI professionals, 64% said they spent at least a month implementing new models, and 20% said they spent six months or longer. The reason is that automation developers must tell computer bots every step of what to do and include every keystroke, such as "open file," "type name," "close page," etc. In 2022, arduous implementation models will start to wane. They will be replaced by out-of-the-box and semantic software robots that can observe and copy activities without step-by-step instructions. So, anyone, from developers to untrained professionals, can simply ask a bot, either verbally through voice recognition or physically through one click of the mouse, to perform a task or complete an action. qBotica's DokumentAI software product is an example of this seamless automation process. Using DokumentAI, business software can extract and understand data from any document type—even data it has never seen before—without a long and labor-intensive setup. All it takes is a point and a click, and you're on your way.

## 5. AUTOMATION ASSISTANTS AND VIRTUAL ASSEMBLY LINES WILL REIMAGINE WORKPLACES

If you work in a large company, your team toggles through an average of over 170 different applications every day, from Word to Slack to Salesforce. This “swivel-chair” work takes valuable time away from more critical tasks.

In 2022, expect to see more organizations address this problem through digital desktop assistants. These software robots help employees automate repetitive tasks, like inputting data, while opening and closing programs and queuing tasks appropriately to eliminate wasted time.

In this automated virtual assembly-line system, instead of navigating across separate applications, software assistants will tee up a flow of just-in-time tasks for workers, with all the required programs already open and ready to use. What manufacturing assembly lines did for productivity, virtual assembly lines will do for the digital workforce.

## 6. COMPANIES WILL INTRODUCE ROBOT WORKERS

Personal assistants won't be the only jobs going digital in 2022. Expect to see service companies including restaurants, warehouses, and retail outlets invest more in robot workers, especially in locations and departments with the most demanding working conditions. For example, a robot worker can quickly scan inventory in cramped aisles or eliminate sanitation issues from food prep processes. Whether in physical robot or software bot form, automation will also help solve worker shortages and allow businesses to focus hiring and recruitment on higher-level positions.

## 7. AUTOMATED DISCOVERY WILL HELP MINE NEW PROCESSES

Pipeline development is essential To implement any new process on a large scale, and automation is no exception. Businesses must answer questions like, What areas of the company could benefit most from automation? And How will automating paperwork for the sales team affect the accounting department? By 2022, this process of learning how to automate effectively will take a new turn with automated process discovery technologies.

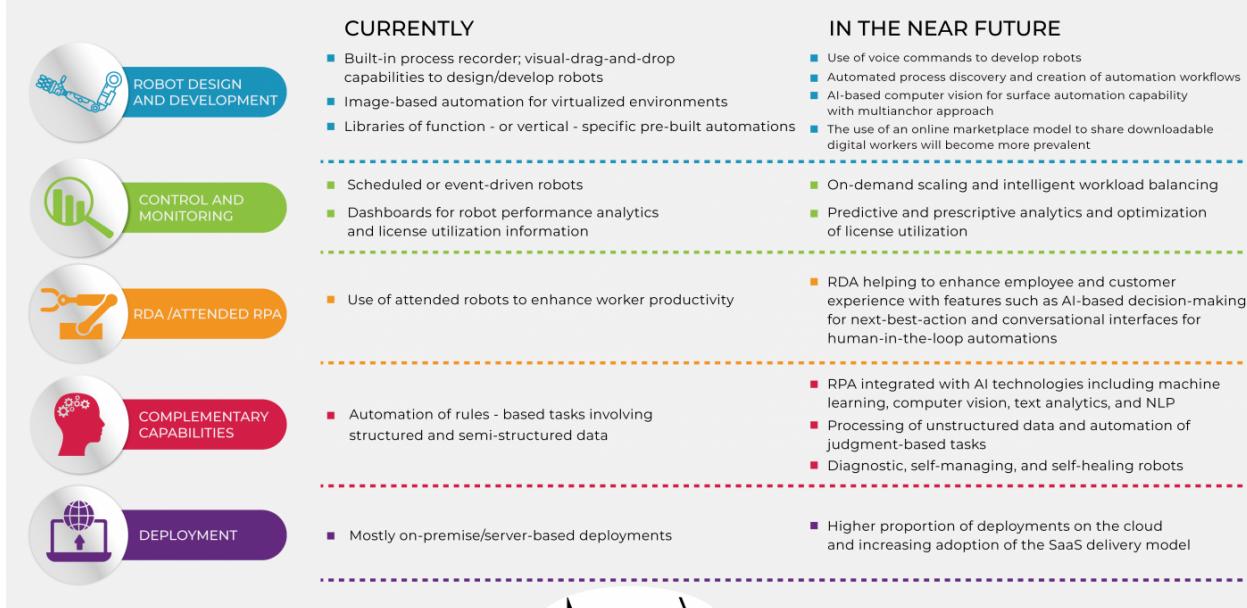
One example is qBotica's Disqover tool. Intelligent process discovery using Disqover helps companies with process mining and analysis to drive efficiency and get the most out of automation. Disqover can:

- Uncover most common processes automatically and quickly.
- Adapt to its environment and work with several third-party applications.
- Allow businesses to break down and visualize workflows in a computer setting—no rocket science or coding experience required.
- Detect hidden issues in data and investigate where and why problems occur through the AI-driven Disqover Root Cause Analysis Program.
- Gain objective certainty for more clarity and perspective on inefficiencies.
- Improve processes and take advantage of user interactions in real-time.

## 8. A NEED FOR MORE AUTOMATION

The world of technology moves fast, and automation is the key to staying ahead of the curve. Businesses over the next year will work to identify new avenues where automation and machine learning can help them reduce costs and innovate their current processes. The taxi industry might see ride-hailing services powered by autonomous vehicles, and medical companies could provide companion robots to assist the elderly. There are limitless possibilities to where continued growth in automation can take the world next.

## RPA PRODUCT CAPABILITY: FUTURE TRENDS



Source: Everest Group | Infographic design by Antonio Grasso

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