

# Overcoming ROI barriers with IBM Robotic Process **Automation:** A Qualitative Total Value of Ownership (TVO) Assessment

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## The promise and peril of RPA

Automation holds great promise for organizations to rapidly streamline their processes and operations to gain efficiency and deliver better outcomes to all stakeholders. RPA (Robotic Process Automation) is a key enabling technology that currently receives a lot of attention.

RPA is “robot or bot” software that partially or fully automates tedious, manual, rule-based, and repetitive human activities. It is often positioned to introduce and bridge the gap between manual interaction and automation and quickly gain ROI at low cost with almost no risk.

RPA can amplify business value when integrated with other advanced technologies such as artificial intelligence (AI). For example, insights from AI can be directly acted on by bots that execute tasks via other systems with immediacy or no human intervention, resulting in even better efficiency, customer and employee experiences.

Consequently, RPA software revenue is projected to reach \$1.89 billion in 2021, an increase of 19.5% from 2020, and is still expected to grow at double-digit rates through 2024<sup>1</sup> despite economic disruptions caused by the COVID-19 pandemic.

Automating cumbersome manual processes with RPA sounds great in theory. However, in practice RPA has been a mix of success and disappointment. While organizations are relatively satisfied with their automation investment, they have yet to fully benefit from the ROI promised by RPA software vendors. Scaling RPA to attain the expected ROI is a major barrier.

IBM Robotic Process Automation solutions are designed to overcome these challenges and deliver a good return even at scale.

### IBM Robotic Process Automation with AI insights scales

IBM Robotic Process Automation helps customers automate more business and IT processes at scale with the ease and speed of traditional RPA. It mimics human behavior to perform repetitive business tasks such as data extraction, data transfer, data computation, and data input by integrating with a business application's graphical user interface. Bots can also act on AI insights to complete tasks with no lag time.

With IBM Robotic Process Automation, organizations can automate tasks and make their operations and employees more efficient and productive by enabling a focus on higher value activities. Key capabilities include:

- **Bot authoring:** Select from hundreds of prebuilt commands to assemble bot scripts.
- **Recorder:** Use a low-code approach to record user interactions to automatically generate bot scripts to accelerate time to value.

<sup>1</sup> <https://www.gartner.com/en/newsroom/press-releases/2020-09-21-gartner-says-worldwide-robotic-process-automation-software-revenue-to-reach-nearly-2-billion-in-2021#:~:text=RPA%20Market%20Forecast%20to%20Grow,latest%20forecast%20from%20Gartner%2C%20Inc.>

IBM Robotic Process Automation delivers a range of high value capabilities

- **Bot scheduling:** Manage the time periods in which unattended bots are to be run.
- **Workload management:** Intelligently distribute work across multiple bots to optimize throughput.
- **Concurrent execution:** Reduce cost of ownership by running multiple bots on the same virtual host.
- **Unattended bots:** Use a digital workforce to automate repetitive tasks without human intervention.
- **Attended bots:** Enable a human workforce to augment work using bots to perform repetitive tasks on demand.
- **Optical character recognition:** Process documents by extracting structured data from unstructured content.
- **Dashboards:** Gain business insights into business operations.

In addition, IBM and Business Partners offer customers lab-based software technical skills, and the business consulting, project management and infrastructure expertise of IBM Global Services to overcome RPA implementation obstacles at scale.

## How IBM addresses RPA implementation challenges

Figure 1 depicts a high-level view of the numerous RPA deployment challenges organizations must overcome, and the corresponding IBM solutions across Business, Operations, Applications/Data and IT dimensions.

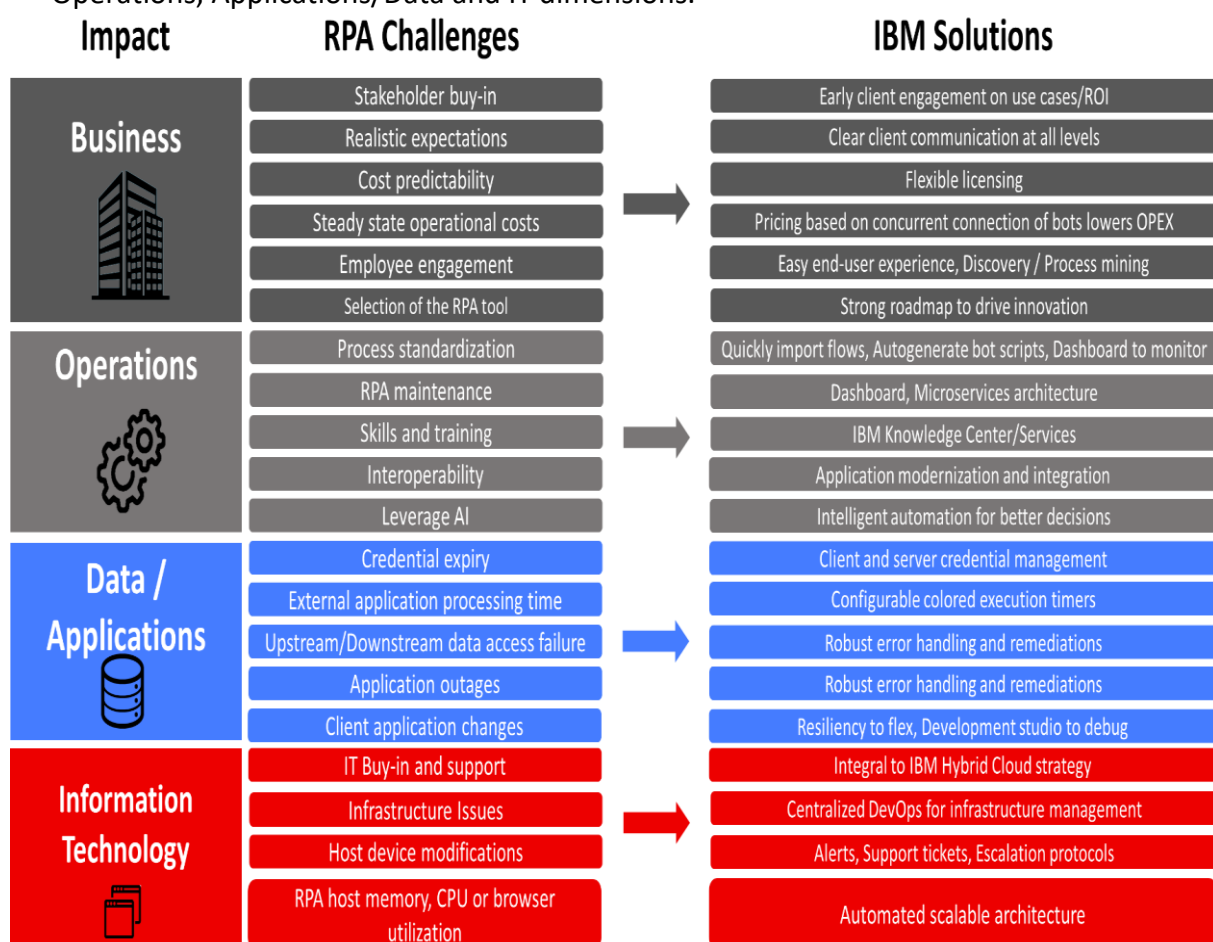



Figure 1: RPA implementation challenges and IBM solutions

Next, is a deep dive on how IBM solutions address some key RPA challenges:

How IBM Robotic Process Automation overcomes Business challenges


**Business (Table 1):** The purpose of any RPA implementation is to improve efficiency by automating repetitive tasks, improve accuracy and help the bottom line of the company financials. For the project to succeed, both the executive team and rank and file members need to be on board and the project should be consistent with the company's strategy.

 Business Challenges	IBM Solutions
<b>Stakeholder buy-in</b>	To overcome the Stakeholder buy-in challenge, the IBM solution engages them early in the project, helps in the discovery of Automation use cases and develops project justification assets like ROI and quick demos, built around a center of competency.
<b>Realistic expectations</b>	IBM believes that candid communication is key to setting realistic expectations in RPA adoption, with a clear message at all levels of the business that Automation is not meant to replace people. The purpose of IBM Robotic Process Automation is to augment the capabilities of knowledge workers and free them up from low-level, repetitive tasks in order to focus on higher-value, cognitive aspects of their jobs. To do this, IBM helps organizations provide a preview of the expected productivity and user experience.
<b>Steady-state operational costs</b>	IBM's approach to automation is based on continuous improvement and value-add. Constant monitoring and enhancements to processes is part of the lifecycle of the automation project. The IBM solution integrates RPA with other capabilities such as Workflow, Capture, Content and Decision management in addition to IBM Cloud Paks. IBM Robotic Process Automation has flexible license models and provides concurrent connection as a pricing metric for both attended and unattended bots, which lowers operational costs for customers.
<b>Employee engagement</b>	Rapid scaling of RPA requires employee engagement and an understanding of how RPA can help manage processes. The IBM approach is to provide an easy end-user experience so that the adoption of the technology is almost natural. IBM intends to automate the adoption of the technology by embracing discovery/process mining technologies. The use of citizen developers and low-code tooling help to scale RPA development and leverage the business community and users to build RPA capabilities.
<b>Selection of the RPA tool</b>	RPA technology is in its nascent state. Much innovation is yet to come and therefore, customers should look to the roadmap and the ability of the suppliers to drive innovation. Several factors are considered in selecting the right RPA solution - RPA capabilities - chatbots, process mining capabilities, pricing model, delivery model, Integrated end-to-end Automation solutions, etc. IBM's goal is to make RPA as a utility by providing free bot authoring tools to create bots and drive business value through the adoption of RPA across business and IT operations, and its continuous usage to replace low-level tasks.

**Table 1: RPA business challenges and IBM solutions**

**Operations (Table 2):** Process and operations are fundamental to any Robotic Process Automation implementation. Process standardization prior to Robotic Process Automation implementation is the most crucial first step. Maintenance (often unplanned) is also key to operate Robotic Process Automation efficiently.


How IBM Robotic Process Automation overcomes Operations challenges

 Operations Challenges	IBM Solutions
<b>Process standardization</b>	IBM Robotic Process Automation can import flows, encode the RPA quickly, and for complex processes, use an orchestrator that integrates with other RPAs to provide operational insights. For cases with no mapped processes (BPMN), IBM Robotic Process Automation provides recording capabilities to autogenerate bot scripts and low-code tools to remove technical complexities. It is possible to identify improvements in the process by monitoring the process execution through the Dashboard.
<b>RPA maintenance</b>	The dashboard helps with monitoring. Preventive actions can be performed automatically to correct a problem or failure. IBM Robotic Process Automation as a microservice makes maintenance quick and easy by reducing the cost of support.
<b>Skills &amp; Training</b>	IBM Robotic Process Automation has a training track on the platform that provides 5 training sessions with basic development experience from advanced to online (15 hours). Several types of training resources are available to deploy and maintain automation processes such as IBM Knowledge Center, live and on-demand online courses, community forums, and training videos. IBM Services can be used to help organize the deployment of bots and help with knowledge transfer so that customers can be self-reliant.
<b>Interoperability</b>	The interoperability of RPA with other products and services is a key operational challenge as many processes that will benefit from automation reside across multiple platforms. IBM's approach to address it is through innovation, application modernization and integration of automation solutions.
<b>Leverage AI</b>	IBM enables clients to achieve digital transformation using RPA with intelligent automation capabilities that allow bots to communicate well with people (chatbots, IVR, NLP), and teach bots to handle tasks that typically requires human intelligence (AI, ML) to make sound decisions.

**Table 2: RPA Operations challenges and IBM solutions**




**Data and Application** (Table 3): A complex RPA implementation and steady state operation involve numerous applications and data sources. Any change (even elementary) can affect RPA functionality. A client's Business and IT teams need to proactively collaborate to provide technical and business updates to the Robotic Process Automation support team to alter scripts, once they are in the production. This may create additional challenges if many applications/data sources are involved.

 Data/Applications Challenges	IBM Solutions
<b>Credential Expiry</b>	IBM Robotic Process Automation allows for credential management at both the server through a web based portal as well as through the client via a local credential application.
<b>External Application Processing time</b>	IBM Robotic Process Automation has configurable Green/Yellow/Red execution timers that can be utilized to control bot execution tolerances and there are a variety of commands to ensure the bot is resilient to external application constraints.
<b>Upstream/Downstream Data access failure</b>	IBM Robotic Process Automation has native robust error handling to protect against complete access failures. Within partial access failures, IBM Robotic Process Automation can apply fuzzy logic concepts to data actions and remediations.
<b>Application Outages</b>	IBM Robotic Process Automation handles application outages using its native error handling and page detection constraints when identifying expected windows. The software can allow follow up actions to remediate the application outages and leverage desired follow up actions.
<b>Client Application Changes</b>	IBM Robotic Process Automation has a number of resiliency components embedded within the tool to flex as underlying applications change. The software can use a number of different identifiers to interact with elements along with more AI powered actions such as optical character recognition (OCR). A unique differentiator within this domain is the ability to use the development studio to debug runtime executions to monitor the underlying application and script for proper execution.

**Table 3: Data/Applications RPA challenges and IBM solutions**

**Information Technology** (Table 4): The success of an RPA implementation depends on the seamless integration and coordination between IT and the business function. Once RPA is implemented, ongoing Bot management requires clarity of how issues will be handled for an effective solution. Also, a defined set of Key Performance Indicators (KPIs) is critical for measuring and monitoring the ongoing efficiency and effectiveness.

 Information Technology Challenges	IBM Solutions
<b>IT Buy-in and Support</b>	RPA solutions are integral to IBM's Hybrid Cloud strategy. It is integrated in IBM's framework of AI-powered automation, the Automation dial (Discover, Decide, Act, Optimize). IBM Robotic Process Automation has a hybrid approach well connected to any customer cloud environment that can be easily integrated.
<b>Infrastructure Issues</b>	IBM Robotic Process Automation has a centralized DevOps team that manages the infrastructure and monitors the critical processes. It also provides training of the infrastructure team to solve platform problems (verification guide), speeding up the restoration of the environment in the event of failures in the infrastructure where the IBM Robotic Process Automation Studio application is installed.
<b>Host Device Modifications</b>	Existing infrastructure tools are used to send alerts and open support tickets with clear, established support processes and escalation protocols. IBM Robotic Process Automation provides alerts on monitoring tools, whenever there is any type of change in the physical or logical environment.
<b>RPA host Memory, CPU or Browser Utilization</b>	IBM Robotic Process Automation overcomes the challenge of provisioning through automation and using scalable architecture. It monitors local services (processing / disk / memory / network) in the infrastructure.

**Table 4: IT RPA challenges and IBM solutions**

How IBM Robotic  
Process Automation  
overcomes  
Data/Applications  
challenges

How IBM Robotic  
Process Automation  
overcomes  
Operations challenges

These four dimensions of IBM Robotic Process Automation differentiation are included in a Total Value of Ownership (TVO) framework.

## The TVO framework for IBM Robotic Process Automation with cost/value drivers

The TVO framework (Figure 2) quantifies and compares the Total Value (Total Benefits – Total Costs) of AI-infused automation (i.e., IBM Robotic Process Automation) compared to traditional RPA methods. It categorizes the interrelated cost/value drivers (circles) for RPA by each quadrant: Costs, Productivity, Revenue/Profits and Risks.

Along the horizontal axis, the drivers are arranged based on whether they are primarily **Technical** or **Business** drivers. Along the vertical axis, drivers are arranged by ease of measurability: **Direct** or **Derived**.

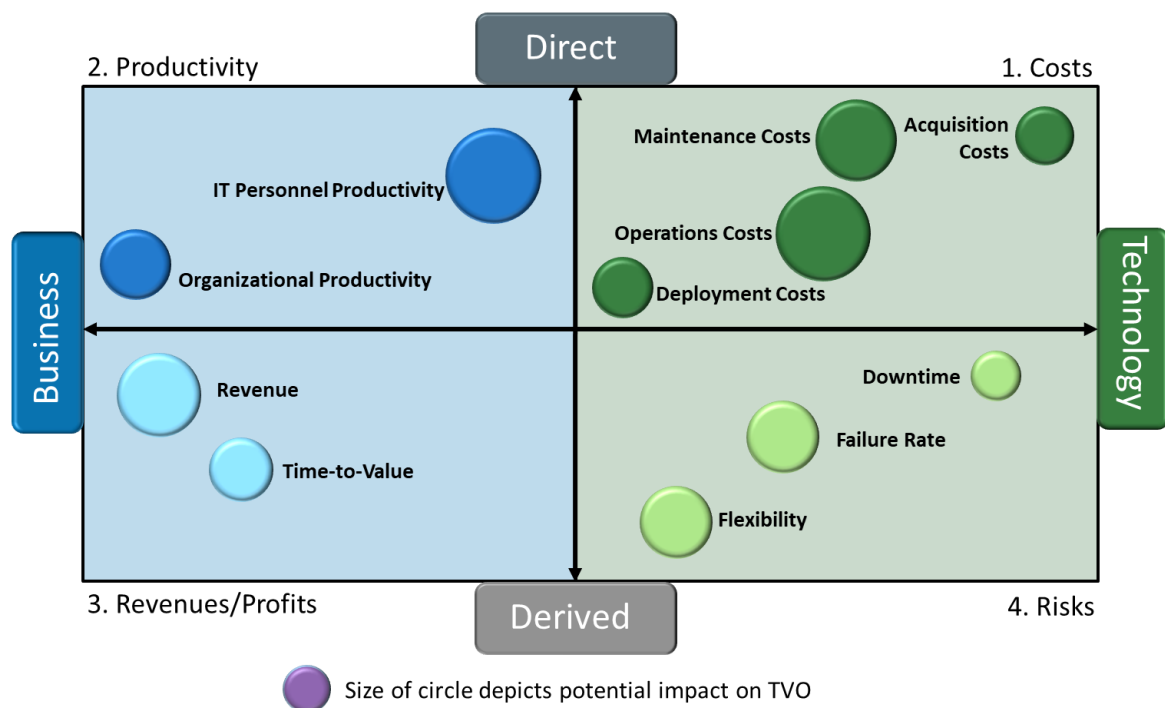


Figure 2: TVO framework for RPA with cost and value drivers

For each quadrant, the cost/value drivers for RPA are depicted as circles whose size is proportional to the potential impact on a client's TVO. IBM Robotic Process Automation differentiation by quadrant includes:

- Reduced Costs:** Typical costs include one-time acquisition costs for the RPA solution and deployment, and annual costs for software, maintenance and operations. IBM Robotic Process Automation includes:
  - Flexible license models and concurrent connection as a pricing metric for both attended and unattended Bots lower acquisition and operations costs.
  - A hybrid cloud-based scalable architecture and automation overcome the challenge of provisioning. This and constant monitoring of local services (processing / disk / memory / network) in the infrastructure help reduce operating costs.

TVO helps quantify Costs, Productivity, Revenue/Profits and Risks.

Flexible licensing models and concurrent bot connection pricing

Watson AIOps and centralized DevOps improve productivity and lower TCO

Constant innovation and application modernization/integration increase revenues/profits

- Configurable Green/Yellow/Red execution timers can be used to control bot execution tolerances. There are also a variety of commands to ensure the bot is resilient to external application constraints. This helps reduce maintenance and operations costs.
- Embedded resiliency components to help flex as underlying applications change. This and the use of a development studio to debug runtime executions to monitor the underlying application and script for proper execution also help reduce maintenance and operations costs.
- A dashboard that helps with monitoring and preventive actions can be performed automatically to correct a problem or failure. IBM Robotic Process Automation as a microservice makes maintenance quick and easy by reducing the cost of support.

**2. Enhanced Productivity:** Key drivers of gains in productivity of administrators, users and the organization from IBM Robotic Process Automation include:

- Ability to import flows to encode the RPA quickly, and for complex processes, the usage of orchestrator that integrates with other RPAs to provide operational insights. This and recording capabilities to autogenerate bot scripts and low-code tools to remove technical complexities for cases where there are no mapped processes (BPMN), improve IT productivity.
- Watson AIOps which enables IT users to self-detect, diagnose, and respond to IT anomalies in real time and to intelligently automate IT tasks for efficiency and make their IT processes and infrastructures more resilient to future disruptions resulting in greater IT productivity.
- A centralized DevOps team that manages the infrastructure and monitors critical processes. It also provides training of the infrastructure team to solve platform problems (verification guide), speeding up the restoration of the environment in the event of failures in the infrastructure. This helps improve IT productivity.
- Optical Character Recognition (OCR) helps process documents by extracting structured data from unstructured documents to improve user productivity.
- Integration with other capabilities such as Workflow, Capture, Content and Decision management in addition to IBM Cloud Paks provides an end-to-end solution to enhance organizational productivity.
- Leveraging citizen developers, the business community, low-code tooling and embracing process mining technologies help scale RPA development to improve organizational productivity.

**3. Higher Revenue and Profits:** IBM Robotic Process Automation delivers faster time to value with early client engagement and clear communication, and greater innovation capabilities to spur growth, revenues and improve profits. IBM enables:

- Early client engagement and clear communication at all levels on use cases/ROI and provides IBM Knowledge Center/Services for faster time to value.
- Application modernization and integration of automation solutions to deliver faster time to value.
- Constant innovation with key capabilities – chatbots, process mining capabilities, pricing model, delivery model, integrated end-to-end automation solutions, etc. IBM's goal is to make RPA as a utility by providing free bot authoring tools to

create bots and drive client revenues/profits through the adoption of RPA across business and IT operations, and its continuous usage to replace low-level tasks.

- Digital transformation with intelligent automation capabilities that allow bots to communicate well with people (chatbots, IVR, NLP), and teach bots to handle tasks that typically require human intelligence (AI, ML) to make sound decisions that increase revenues.

**4. Mitigated Risk:** A streamlined process, lower system downtime and better business and IT collaboration with applications suppliers minimize cumbersome iterations in rework and delays. This and improved flexibility and lower failure rates mitigate risks of poor outcomes. IBM Robotic Process Automation does this by:

- Managing credentials at both the server with a web-based portal and through the client via a local credential application.
- Robustly handling errors natively to protect against complete access failures. Within partial access failures, fuzzy logic concepts are applied to data actions and remediations.
- Addressing application outages using its native error handling and page detection constraints when identifying expected windows. The software can allow follow-up actions to remediate the application outages and leverage desired follow-up actions.
- Using existing infrastructure tools to send alerts and open support tickets with clear, established support processes and escalation protocols. The software provides alerts on monitoring tools, whenever there is any type of change in the physical or logical environment.

This qualitative TVO analysis can be supplemented with a rigorous quantitative TVO analysis to arrive at specific financial metrics such as ROI, Payback, etc. This analysis can also be extended to include other innovation features of IBM Robotic Process Automation that are expected to be in the roadmap.

## Conclusion

While RPA is still in its infancy especially at scale, it is very promising. However, there are many challenges with implementation that cause ROI erosion. With its recent acquisition of WDG Automation and with its other related Cloud, Automation and AI offerings and services, IBM is providing solutions to address these challenges holistically across several dimensions.

These IBM Robotic Process Automation solutions and the strong innovation roadmap will enable clients to unlock value and achieve a good ROI in their Automation journey. The Total Value of Ownership (TVO) methodology outlined here can be used to quantify this value and the associated ROI.

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Robust error handling  
and clear support  
protocols minimize  
risks/failures

IBM Robotic Process  
Automation's strong  
innovation roadmap  
will deliver solid ROI  
for clients





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