responsiv

BRIEFING

Calculating Return on Investment for Robotic Process Automation

This brief is for business professionals who are considering investing in Robotic Process Automation (RPA)

WWW.RESPONSIV.CO.UK

Table of Contents

responsiv

Introduction

Return on Investment (ROI) is used by organisations to clarify the financial impact of an investment on the business value it returns.

To determine the ROI for Robotic Process Automation (RPA) it is necessary to measure how automating manual tasks and actions will impact processes and human workloads and thus, the broader business value.

When used appropriately, RPA provides businesses with an attractive time to value and a 'high' ROI. Organisations need to know how to maximise this[1].

RPA is an automation tool used to reduce operational costs, improve data accuracy, and enhance productivity.

Software bots are used to communicate with business systems and applications in place of manual human intervention.

Choice of automation solution must be based on a written set of requirements and use cases. The approach allows you to define what is needed before you see what is available and helps to avoid being dazzled by the first option.

This is where return on investment (ROI) should be considered.

Calculating ROI for RPA allows your business to quantify the expected and actual ROI that RPA can provide.

It sets a measurable benchmark for investment and the business case, allowing success to be accurately measured and to recognise when investments are generating profit or costing the organisation more than it is worth.

> Average RPA ROI is 250% nine months from implementation[2].

Using software robots to automate processes reduces burdens and streamlines processes. Some of these things are difficult to value.

Candidate processes and tasks for RPA are those human-centric, data heavy, and repetitive tasks that are usually critical for daily business but are not hugely value-add.

> This briefing outlines benefits, considerations, and example return on investment (ROI) for implementing robotic process automation (RPA)

Return on Investment (ROI)

Return on investment measures the profitability of an investment.

It is a formula used to calculate how much you have spent compared to how much you have made on an investment[1]. This is usually calculated financially, but there are other soft factors that are measured, such as staff and customer satisfaction, and time.

ROI can be expressed in multiple ways:

- percentage
- ratio
- a multiple

The higher the percentage, the more profitable the investment.

[1] Quantifying the ROI of RPA: Free Calculator (udig.com)

[2] https://www.automationanywhere.com/company/blog/company-news/now-next-the-state-of-rpa-your-guide-to-the-cloud-native-era

responsiv

Key Terms

The Breakeven Point: Breakeven is the point where revenue and total costs are the same. The organisation is not making profit or a loss[3].

Identifying the breakeven point helps us to understand the revenue, costs, and potential profit to inform business decisions.

Breakeven can be calculated by finding out the contribution per unit (robot) minus the cost per unit (robot) minus variable costs per unit.

The breakeven output is calculated by dividing fixed costs by contribution per unit.

Time to Value: Time to value (TTV) is a metric that measures the length of time an investment takes to breakeven.

Measured from the time of purchase to when revenue matches or exceeds costs[4].

Budget Cycle: A budget cycle is the process organisations go through to create, evaluate, approve, and audit their budgets.

Typical budget cycles have four phases:

1. Preparation
   to provide a budget plan that can be passed through the approval phase[5].
2. Approval
   from management or committees, requiring a lot of discussion.
3. Execution
   phase usually runs from the start and end of the fiscal year, with frequent monitoring to manage and adjust where necessary. When the fiscal year ends, internal and external audits take place to evaluate whether financial projections and budgeting periods were accurate.
4. Audit / Review
   The audit phase ends the year's budget cycle[6].

[3] What is break-even and how to calculate it - Revenue and costs - Eduqas - GCSE Business Revision - Eduqas - BBC Bitesize
[4] https://www.thinkific.com/blog/time-to-value/
[5] https://bizfluent.com/facts-7226149-afe-stand-finance-.html
[6] https://bizfluent.com/facts-7226149-afe-stand-finance-.html

responsiv

Robotic Process Automation

Robotic Process Automation (RPA) is software that emulates human interaction with digital systems to complete data-driven, repetitive tasks.

RPA bots perform a wide range of defined actions more efficiently than humans with a reduced rate of error (assuming they are programmed correctly).

> Check out these 8 steps to successful RPA implementation

RPA streamlines workflows and can be implemented quickly to accelerate productivity as part of strategic IT and digital transformation initiatives.

Benefits include:

- Improving business metrics like cost savings
- Resilience to changing workloads
- Increased capacity and hours of operation
- Increased accuracy compared to manual work
- Improving compliance due to the decrease in errors
- Employee satisfaction increased as focus is moved to higher value tasks

These benefits are industry and department agnostic, from financial services to retail in operations, IT, finance, and customer service. RPA is universally applicable in processes that are repeatable, high volume and rules driven.

RPA is not a one size fits all solution, and should be developed in accordance with defined process requirements to ensure effective automation is being implemented. Because of this, pricing can vary between organisations.

Deploying RPA relieves employees of time consuming, tedious tasks, allowing them more time to focus on other value-add activity. Repetitive, rule-based tasks like comparing and gathering data, reading and writing to databases, or reformatting data into reports can all be automated with RPA.

Reduce human error that arises from inputting data incorrectly across systems, and accelerate the time to task completion, and improve collaboration.

RPA bots can be attended and unattended. Attended bots work alongside humans and are part of workflows that cannot be fully automated. Unattended bots need no human involvement from start to finish and work based on either a schedule or event trigger. Unattended bots can run 24x7 to increase operational efficiency, this includes any of the mentioned activity or used in customer facing interfaces such as chat bots.

Supply Chain Partner Portals

Many organisations provide portals for the supply chain partners to share invoices, purchase orders (POs), and other important documents and agreements.

RPA can be used to complete these activities; accessing the portal to upload and download documentation as a human would.

Data Sharing and Reporting

Use RPA to compile data from different and decentralised systems of record across an enterprise.

This data can then be inputted into a standard report format before being distributed to the necessary stakeholders to streamline the process of generating and distributing information.

Automating this process reduces human error from copying data across systems, and saves time spent trying to access and compile data. This also improves security by limiting staff need to access systems across an enterprise for the purpose of reporting.

Ideal Candidates for Automation

Start your automation journey with a small task that visibly delivers value. Acceptance is augmented amongst stakeholders as they can quickly see the benefits of automating.

The process/task:

- must be rule-based
- must be repeated at regular intervals or have a pre-defined trigger
- must have defined inputs and outputs
- should have sufficient volume

responsiv

The Cost of Implementing RPA

The cost of implementing RPA depends on the complexity of the bot and the necessary service preparation required to outline the scope of the bot responsibility and functionality.

Cost variables include:

- bot scope - a singular process or multiple conditions
- development process
- infrastructure changes
- maintenance and support

Preparation costs come with identifying the process(es) that aim to use RPA and building the requirements. This may also include conducting process discovery workshops to define and fully comprehend the process requirements.

Documenting process requirements will ensure stakeholders and developers are aware of the design requirements including the necessary data and systems of record, desired outcomes for testing and implementation, and any future implications of the use of automation on the process and organisation.

Comprehensively understanding the processes and tasks you seek to automate will significantly improve the likelihood of successful implementation and provides the opportunity to identify areas to optimise.

> Automating inefficiency will amplify the inefficiency

Development costs are dependent on the scale and complexity of implementation. Choosing a simple and visible process or task to start your automation journey will showcase the value to stakeholders.

Many processes can be automated simultaneously but the recommendation is to start small and scale up to improve adoption.

Infrastructure costs vary depending on whether you choose an on premises or cloud-based, self-hosted or managed service RPA solution. These come with their own ongoing cost and management considerations.

It is important to take account for multiple factors affecting cost ahead of calculating the ROI of RPA.

Cloud-Based or On-Premises?

Determining whether to choose an on-premises or cloud-based RPA solution should be part of the decision and a cost consideration when investing in RPA.

Each hosting option comes with its own benefits.

On-prem means the RPA software is run on an owned server that is typically self-hosted and managed in-house.

Cloud computing normally involved renting server space from a third-party provider, and software installations can be self-hosted or a managed service.

> Read more about self-hosted and managed services

Whether you choose cloud or on-prem for implementing your solution, you should be aware of all the possible costs and optimisations, including:

- energy costs
- security costs
- support costs
- self-hosting vs. managed service
- future scalability
- business risk and continuity

Calculating ROI

$$ROI = \frac{Net\ Return}{Cost\ of\ Investment}\ x\ 100$$

responsiv

Stages of Implementation and Operation

There are things to do and consider at different stages of implementing and managing RPA.

Planning

When planning to implement RPA, make sure you have reviewed the process and associated tasks to ensure it is an ideal candidate for automation.

1. identify task/process candidate
2. set project timeline and budget
3. outline roles and responsibilities (including partners)
4. address and record potential risks

The planning stage is where businesses should choose their partnership model; whether you want to buy an out the box solution or use consultants to develop, implement, and support a bespoke solution.

Testing

The testing phase is when the RPA developer creates different test scenarios against expected outcomes for the bots to carry out to ensure they work as expected. Iterations of the bot(s) can be fine-tuned until it is ready for release.

Having a defined test case that can be monitored against will ensure you are on track against the initial design and process requirements. If this is not the case, you risk a failed project delivery against stakeholder expectations and increased costs in remediating the bot development.

This can only be done with defined test case and expected outcomes to measure success against.

Monitoring

Having a monitoring strategy in place to ensure your RPA solution is working as expected is essential to catching any issues as they occur.

Monitoring will also ensure that the RPA solution continues to be effective over time with regular reviews to functionality. With the help of analytics, those involved can observe the success of RPA, aiding in the acceptance of the solution and changed to working practices.

Should there be any red flags, troubleshooting tools are able to inform those responsible to fix the issue.

Measuring

Most metrics for measuring RPA success are represented as a percentage.

- Bot success rate: the percentage of cases that a bot has covered.
- Downtime rate: the percentage of time a bot is not completing a process[7].
- Exception rate: measures the number of cases that are not completed. The two errors highlighted with this metric include *business exceptions* such as missing data, and *system exceptions* such as timeouts or login errors[8].
- Value of Time Gains: the difference between the cost of the process completed manually versus the cost of the process carried out by the RPA bots.
- Soft metrics: less quantifiable but important outcomes that include employee satisfaction and improved team collaboration. These play a large role in stakeholder adoption.

Value of Time Gains

(EC-AC)/ACx100%.

EC is the cost of employee delivery.

AC is the cost of bot delivery including licence fees, development, support.

**This metric will help calculate ROI.*

[7] https://flobotics.io/blog/rpa/rpa-successs-metrics/

[8] https://flobotics.io/blog/rpa/rpa-successs-metrics/

responsiv

Determining ROI for RPA

Return on Investment is a critical metric, showing whether an investment is making a positive impact on productivity and cost reduction.

With the understanding of the benefits and actions that RPA delivers and the value of time gains, you can calculate the ROI of RPA.

Step 1: Identify your RPA Objectives

Before implementation, consider the strategic objectives you want to achieve with your automation project (tactic). Specific objectives are crucial as they be a benchmark for measuring tactical success and calculating ROI.

Strategic objective: Reduce manual data entry across systems; improve data accuracy and customer experience; accelerate process lead times.

Tactic: Implement RPA

Step 2: Implementation and Operating Costs

To determine ROI you will need to calculate implementation and operational costs including:

1. Hardware costs – is there a need to procure additional servers or computing power?
2. Software and licences – how many bots will your vendor provide? What is the cost of licencing?
3. Implementation – is the RPA development and deployment completed through professional services?
4. Training – are you looking to develop expertise inhouse?
5. Support and Maintenance – Software updates and support from a vender.
6. Third party integration fees – Do you need other software licenses to integrate certain systems?

Step 3: Benefits and Savings

Now you have the cost of implementing and operating your RPA bots, consider how the software will provide benefits and savings throughout the organisation.

Linking this to the goals set in step one will show how acting on this tactic will achieve your strategic objectives.

Consider:

- Reporting and measuring the reduction in error and subsequent consequences, including compliance or rework.
- Calculating the reduction in labour required when RPA replaces it.
- Estimating the increased productivity that comes with automation.
- Accounting for the savings of mitigating compliance risk using RPA.

1

2

3

4

5

responsiv

Step 4: Add Monetary Value to the Above Benefits

Ensure that the monetary values are as accurate as possible so that your calculations are reliable[9].

In figure 1, total benefit income and total costs have been labelled and defined, with the year-on-year uplift considered. These are then used to calculate the cumulative benefit. Calculated by total cost of RPA subtracted from total benefit (income).

RPA Project to automate supply chain integration					
Inflationary Uplift year on year	5%				
Living Wage Hourly Rate (2024)	£ 11.44				
Internal Hourly Rate	£ 21.63				
Current Business Revenue from RPA candidate departments	£ 400,000.00				
Time to configure a robot depends on the situtation (Small)	£ 2,350.00	2 day			
Time to configure a robot depends on the situtation (Medium)	£ 5,875.00	5 days			
Time to configure a robot depends on the situtation (Large)	£ 21,150.00	18 days			
year:	***1***	***2***	***3***	***4***	
Income					
FTE Savings on 2 x fulltime min wage staff member	£ 47,590.40	£ 49,969.92	£ 52,468.42	£ 55,091.84	
Increase in business by extending trading hours. est. 15%	£ 80,000.00	£ 84,000.00	£ 88,200.00	£ 92,610.00	
Improved Audit and reduced auditing team effort by 4 days/quarter	£ 2,769.23	£ 2,907.69	£ 3,053.08	£ 3,205.73	
Reduced sick and holiday cover, management time, personal equipment and training c	£ 22,000.00	£ 23,100.00	£ 24,255.00	£ 25,467.75	
Savings in Rework caused by human error in other departments (40%=8 days/month)	£ 8,307.69	£ 8,723.08	£ 9,159.23	£ 9,617.19	
Expenses					
[RA00C1Q] Responsiv Cloud Robot Service Annual Subscription for 3 Robot Workers	£ (11,424.00)	£ (11,995.20)	£ (12,594.96)	£ (13,224.71)	
Service Preparation	£ (2,350.00)				
Robot 1 (Small) Configuration	£ (21,150.00)				
Robot 1 (Medium) Configuration		£ (5,875.00)			
Robot 1 (Large) Configuration	£ (2,350.00)				
Total Cumulative Income	£ 160,667.32	£ 329,368.01	£ 506,503.74	£ 692,496.25	
Total Cumulative Expense	£ (37,274.00)	£ (55,144.20)	£ (67,739.16)	£ (80,963.87)	
Total Cumulative Benefit	£ 123,393.32	£ 397,617.14	£ 836,381.71	£ 1,447,914.09	

Figure 1: Calculating Income versus Costs to find Cumulative Benefit

[9] Calculating ROI for RPA: Economics of Business Automation | ElectroNeek

responsiv

Step 5: The Calculation

Once net benefit has been calculated Divide net savings by total cost of the investment and multiply by 100.

Total Cumulative ROI%	**331%**	**721%**	**1235%**	**1788%**
Saving in this model after 9 months	**248%**			

Figure 2: ROI calculated year on year and within 9 months.

The calculation of ROI can be done before implementation to estimate results and should be continuously monitored to track the change in ROI over time. This allows businesses to make changes when needed to ensure the best results[10].

Key Terms

Net Present Value (NPV): a budgeting technique used to show the perceived profitability of an investment, calculated using the equation: NPV = Cash Flow / $(1+r)^n$. This should be considered to understand the value of an investment in the present, rather than over time.

Weighted Average Cost of Capital (WACC): a financial ratio that calculates a company's cost of financing and acquiring assets by comparing the equity and debt structure of the business. Investors use this to decide whether a company should use debt or equity to finance new investments.

Cumulative income: the amount of income retained by a company.

Cumulative costs: the sum of all expenditures used within a project.

[10] Calculating ROI for RPA: Economics of Business Automation | ElectroNeek

responsiv

Figure 3 illustrates the benefit and ROI of implementing RPA.

Cumulative costs describe the investments made to complete an RPA project whilst cumulative income describes the total benefit that will go back into the business year on year.

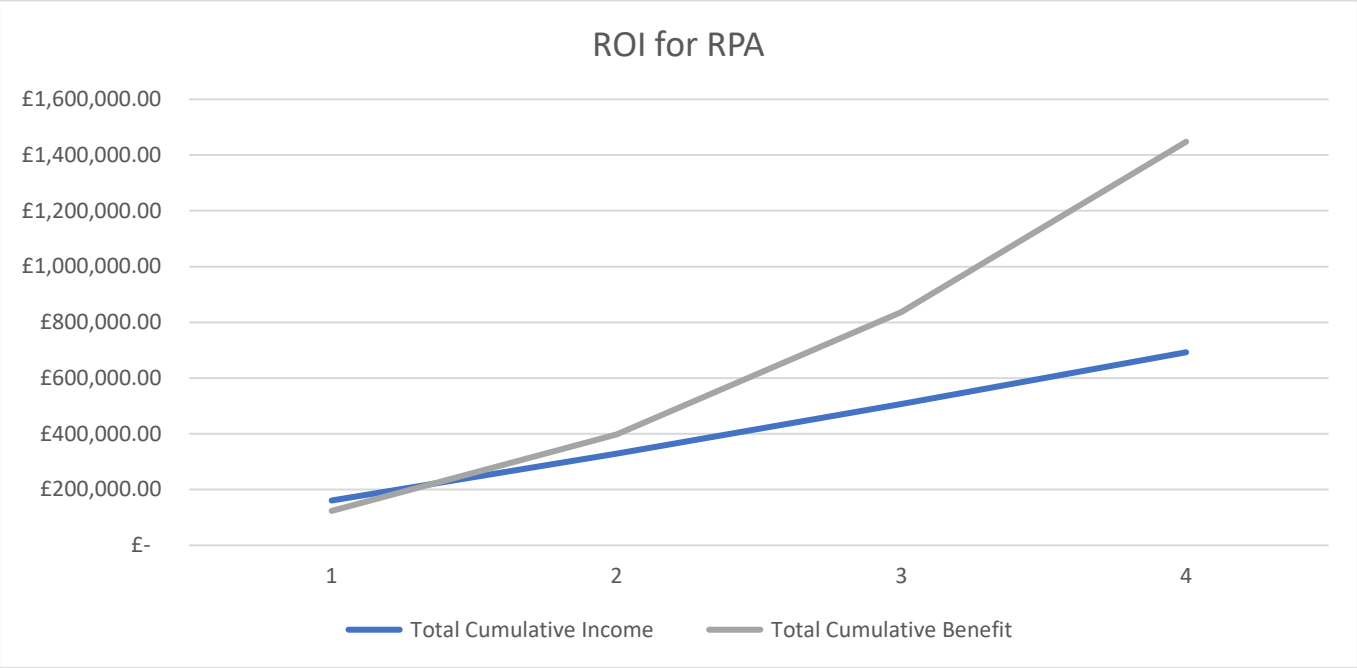

Figure 3: RPA Project ROI

responsiv

Conclusion

The structured nature of Robotic Process Automation (RPA) means eliminating human error from repetitive tasks, providing significant cost savings and increases in employee and staff satisfaction.

RPA can utilise complicated digital systems intended for human use, complete workflows, and perform a variety of programmed actions more efficiently and accurately than humans.

With use cases such as uploading and downloading documentation in a service portal to data sharing and reporting by copying data across systems, RPA is widely adopted by organisations.

When implementing RPA, organisations should understand the key metrics needed to measure the ROI of RPA accurately before adoption, considering the costs of deployment and ongoing support and management.

These considerations include:

- cost of configuration
- the type of RPA service
- training
- support and maintenance

Once deployed, it must be a priority to quantitively measure and validate the business impact of RPA to ensure that ROI is not decreasing. If numbers do fall, it is important to review and refine strategy to ensure the solution is working efficiently and effectively.

Organisations with a thorough understanding of the expected ROI will be able to make efficient decisions and justify investments to stakeholders involved. With strategic planning, delivery, and maintenance of the project, organisations can maximise the impact RPA has on their business.

Responsiv x RPA

Responsiv Cloud Robot Service is a scalable solution that is reliable and centrally controlled. It is quick and easy to configure bots making implementation and ongoing operations efficient.

Users can build and use the bots to automate repetitive tasks, respond to triggers, and contribute to high quality and reliable operations. Bots are configured and secured on the Responsiv Cloud but can be used to complete tasks within other cloud platforms including OneDrive and Google Cloud, as well as any other applications intended for human use such as Xero, Workday, and Salesforce.

Responsiv Consulting provide the skills needed for RPA project delivery, from process definition to software implementation and support.

> Get in touch for more information about Responsiv and RPA

responsiv

More Information

Check out these insights for more information about Robotic Process Automation and how you can successfully and efficiently apply it to your business.

- What is Robotic Process Automation?
- BAW vs. RPA: What is the Difference?
- Popular Benefits of RPA in SMBs
- Use RPA – Three Ways to Respond to Spikes in Demand
- Use RPA – Improve Customer Experience with Trust
- 8 Steps to Successful Robotic Process Automation
- Why You Should Use Process Automation to Deliver a Self-Service Portal
- Let Robotic Process Automation Take the Strain

Products

- Responsiv Cloud Robot Service
- IBM Robotic Process Automation

> Get in touch to get started on your RPA journey with Responsiv

responsiv

responsiv

Disclaimer

Observations and recommendations documented in this briefing are based on our opinions, experience, and research at the time of publishing. They are as objective and representative as we can reasonably be, however, Responsiv makes no representation as to accuracy or fitness for purpose. Once you have chosen a course of action, it should be thoroughly evaluated to ensure its fitness for purpose.

About Responsiv

Responsiv Solutions is a UK based company that specialises in delivering business integration across the enterprise, including API management, Business Process Automation, and Digital-SOA platforms. We work across many industries, including Retail, Financial Services, and Government.

Responsiv provide fully commissioned solutions that include all the software and professional services needed to deliver an integration platform to support your business plan and grow with your business.

01344 266 980

sales@responsiv.co.uk

https://www.linkedin.com/company/responsiv/

Scan for digital copy