rotork®

Keeping the World Flowing
for Future Generations

Justifying Investment in Reliability Services

Part 1 – Justification Strategies

Helping you manage the risk associated with ageing assets

Contents

This document is supplied in two parts containing the following sections:

Part 1 - This document

We provide strategies and guidance for building an investment case for a Rotork Reliability Services package.

Challenge

The challenge of justifying investment.

Asset management primer

A primer on asset management which is a foundation of justifying investment into operational assets.

Justification strategies

How to create a strong business case, justify investment, influence decision makers and create a sense of urgency.

The case

What is included in the business case and where to find the information.

Part 2 - Click here to download

We discuss preparing a business case to take to senior management and we include an illustrative case study to show how to successfully justify an investment in a Rotork Reliability Services package.

The business plan

How to prepare a business case for management assessment.

Case studies

Example case study demonstrating the principles in this document.

Each of the areas described above build on each other with a strong justification case being based on strong foundations.

Justifying Investment in Rotork Reliability Services

Rotork's actuators have exceptional reliability in the face of even the harshest conditions. But as with all devices, regular maintenance is essential to keep them operating at peak efficiency and with the longest possible lifespan. Engineers and site staff will immediately recognise how regular inspections and maintenance are key in maintaining an asset at peak performance. Yet it may be unclear in times of tightening budgets how to convince senior management to spend money maintaining assets that are already working perfectly well.

On many sites the proper functioning of individual, or groups of, actuators may be of critical importance to the sites continuing safe operation. Failures may impact end processes, production volumes and efficiency. They could also have legal and regulatory effects such as impacting on a sites ability to deliver contracts on schedule, a failure to meet regulatory standards, or lead to reputational damage (e.g., if a failure leads to the invoking of an unpalatable emergency procedure).

Rotork's Lifetime Management programme has been designed to help customers manage their assets throughout their life cycle. As part of our Lifetime Management programme our Rotork Reliability Services offer are a range of tailored maintenance products that are designed to increase asset reliability and to help customers ensure that their equipment is kept at the highest level of availability.

We have introduced three tiers or levels of service to fit the needs of most customers:

Basic – Health Check

Standard – Planned Maintenance

Premium – Enhanced Maintenance

See inside the back cover for details of the tiers.

Remember: you can have different assets on the same site under different levels of service depending on your assessment of that asset's criticality to your business.

The fundamental advantage of Rotork's Reliability Services is the guarantee that Rotork's expert engineers will ensure that your assets always perform at their best and that the risks of failure and sub-optimal performance have been reduced to the minimum level possible. Options such as including the cost of parts within the headline price or analysis of the assets datalogs give the customer the chance to get the cover that they want for their assets.

While many customers will justify the cost of a Rotork Reliability Services package simply in terms of the tangible gains of improved uptime, production volumes and efficiency, this is only part of the overall value of the service. It is with the addition of the value that comes from more intangible benefits that the full investment value of the service should be assessed. Excluding these benefits weakens the justification case, making the case for investment more difficult.

The fundamental advantage of Rotork's Reliability Services is that Rotork experts will ensure that your assets always perform at their best.

The Justification Challenge

Justifying an investment is a challenge for all companies at all levels. But no matter what the proposed product, the principles of justifying an investment remain the same.

Rotork's Reliability Services can provide significant benefits to end users. However, building an investment case to prove this is not always as simple as it may seem. When the costs of these services exceed the signoff authority level of the local manager, or if the service agreement spans several years, upper management will need to be involved. The proposal may be competing with proposals from other parts of the business for both funding, and for management time and effort. Under such circumstances it is necessary to justify the investment by building a robust business case that clearly demonstrates the value of the Rotork Reliability Services contract to the business.

An investment in Rotork Reliability Services can provide many benefits in the short-to-medium term, such as increased uptime, but this alone is not the whole value picture. A more rigorous maintenance programme is likely to have other positive outcomes, such as extending the asset's working life and making it less prone to breakdowns at inopportune moments. However, as the investment is not a direct capital investment and may not provide a direct financial benefit at the level needed to gain approval, justifying the investment to senior management can be difficult.

When looking to gain approval for the investment in Rotork Reliability Services try to look beyond the obvious benefits and find other ways in which the investment can add value to the business. For example, it may also become easier to comply with local regulations (such as limits on discharges of waste) or improve the likelihood of contracts being delivered on-time (thus avoiding financial penalties). It is with the addition of these other value elements that the strongest investment case for Rotork Reliability Services can be built.

KEY TIP: It is not always possible to justify investment based purely on financial metrics.

The aim of the justification process is to get management to approve the contracting of the service. This is usually done by preparing a business case that sets down the benefits of the service and how these can benefit the company which allows management to make an informed investment decision. In the following pages we discuss what to include, and some strategies that can be used to build a successful business case. Writing the business case itself is discussed in Part 2 of this document, where we draw on the experience of senior managers who have successfully secured funding for projects at Rotork and elsewhere.

Asset Management

Justifying investment in any maintenance programme is inherently different to justifying the purchase of plant and equipment. Instead of a capital investment decision, it is an asset management decision.

To help define how asset management is applied many companies will have a Strategic Asset Management Plan (SAMP). Underneath the SAMP a set of asset management plans are usually developed to manage the individual assets. These asset management plans usually cover some, or all, of:

- Asset inventory
- Life cycle costs
- Levels of service
- Short-term plans
- Long-term financial planning

When building any business case for maintenance of assets it is useful to refer to the SAMP and detailed asset class strategies and/or asset management plans. By aligning with these central business documents, the business case can be built with a clear justification aligned to the defined business strategy.

KEY TIP: Locate your companies asset management plans.

Asset criticality

Underpinning all asset management decision making is an understanding of asset criticality; this knowledge is essential when looking to justify the investment.

Asset criticality can be used to define which assets are important and to define their level of business risk. The most important assets can then be monitored and maintained, and plans can be drawn up for their replacement.

Asset criticality covers four key areas:

- Failure mode
- Cost
- Risk
- Importance

This assessment is the key to putting together a successful justification and securing funding for the project.

Failure mode

Understanding the potential failure mode(s) of an asset is fundamental to assessing its cost and risk of failure. It is easy to focus on physical failures such as a worn-out motor, but a reduction in service level or capacity, or a sharp increase in operating cost can also represent an asset failure. Review the asset operational data, and if possible, refer to the original design specification to identify any service level failures where the stated specifications are no longer being met.

Obsolescence may also be a failure mode - if an asset is obsolete spare parts may not be available, with a potential high risk to the wider business if it were to break down.

When evaluating failure modes, focus on critical failure modes and then expand to non-physical failures. This allows an assessment of the maintenance and capital investment needed within the business case.

Failure Mode Effect and Criticality Analysis (FMECA) can be used to assess failure modes. It looks at a failure mode and compares it to the severity of the consequence, prioritising investment where it can produce the greatest value to the business.

KEY TIP: Understanding the mode of failure is an important step towards understanding asset risk.

Asset Management

Cost

When evaluating asset criticality an important consideration is the cost of failure. Cost typically takes three forms:

- Cost of repair/replacement
- Cost of loss of service
- Regulatory/legal cost

When considering the cost of repair/replacement remember to consider not just the cost of the part needed but also the associated costs such as procurement and installation, as well as decommissioning and disposal of the failed parts.

Loss of service costs can be viewed simply as the costs associated with lost uptime. On a per-hour basis the cost of lost uptime is likely to be far higher for an unplanned emergency shutdown than for a planned maintenance event.

Often the cost of downtime varies with outage duration. For example, a breakdown of short duration may be worked around by lowering the level on a feeder tank or reservoir and the associated costs could be zero. However, when the feeder tank is empty and an outage occurs, there will be much higher associated costs.

There may also be a cost to catch up from outages. If a cargo needs to be ready for loading on a set date, an outage may mean that after the repair the plant will need to work harder to catch up the lost time. This could increase asset deterioration (wear) on the wider plant. To catch up, the whole plant may need to work harder, shortening the life of other assets across the site.

The final area of cost is regulatory or legal costs. There are many areas which need consideration including, but not limited to:

- Environmental
- Health and safety
- Legal liabilities
- Regulations

Health and safety, and environment costs should be considered at the forefront of asset investment. A health and safety incident or environmental incident not only carries financial costs but also reputational costs. Assessing these costs should be undertaken within a framework that is specific to your country and end market.

Legal liabilities are more complex and specific to individual businesses. An example could be a failure to meet delivery deadlines, incurring contractual penalties or waiting costs as set out in an individual contract.

Finally, regulatory costs relate to penalties associated with missing targets set by a regulator or government entity. For example, in the UK water industry missing leakage or contamination targets may be met with a financial penalty from the regulator.

Asset Management

Risk

KEY TIP: Risk = Probability of Failure x Cost of Failure

Determining the risks associated with the failure of individual assets allows maintenance spend to be prioritised to where it can mitigate the highest risks. A simple risk score can be calculated by multiplying the probability of failure by the cost of failure.

The probability of failure for an asset will differ depending on various factors such as:

- Asset type
- Design life
- Historic maintenance
- Operation
- Environment

For example, if there are two identical actuators on the same site in the desert but one is in an air-conditioned building and the other outside, we should consider that the different operational environments may have a significant impact on the probability of failure. Likewise, the level of historic maintenance will affect asset deterioration with more frequent maintenance probably resulting in a lower deterioration rate and reduced risk.

The calculation of detailed asset deterioration curves is outside the scope of this document, and not usually something that a customer could produce. Instead, we recommend a simple 'low-medium-high' type score be assigned to each actuator based on these factors.

If this score is combined with an estimate of the possible cost incurred were that particular actuator to breakdown, a simple 'asset criticality' score can be assigned to each asset on your site.

This asset criticality score can be used to define the level of monitoring, maintenance and replacement required by each asset.

We recommend translating this score into bands which link to a specific Rotork Reliability Service:

Criticality	Reliability Services
High criticality and/or high cost of failure	Enhanced Maintenance
Moderate criticality	Planned Maintenance
Low or unknown criticality	Health Check (with option to upgrade)

For Rotork's customers this means that the investment is targetted to the right place at the right time.

Justification Strategies

The key strategies for success when building an investment case for Rotork Reliability Services work best when used in combination. When two or more of these strategies are used the power of the argument increases and has a higher chance of success. Whichever strategies you employ they will be most powerful if you can rationalise the proposed investment as a way to mitigate the risk of issues specific to your business.

Cost reduction

How can Rotork Reliability Services lower your costs?

- The site survey assesses the health of your assets, and you can then focus spend where it will do the most good.
- Both our Standard (Planned Maintenance), and Premium (Enhanced Maintenance) plans include labour. You do not need to hire contractors and your site engineer is freed up to focus on other issues.
- There is no need for 'stand by resource' that is only used when there is an issue – this particularly relevant to companies with smaller dispersed sites.
- Preventative maintenance reduces the risk of costly breakdowns and gives a higher rate of uptime.
- Our Premium (Enhanced Maintenance) plan includes all parts so the price you see is the price you pay.

Reduced risk

While cost reductions are relatively simple to understand and put a monetary value upon, reducing risk in the business is more complex. Healthy and well-maintained actuators are less likely to be compromised and the risk of any associated event will be lower. The event could be anything from a health and safety issue to a missed deadline for producing a product, to a breach of regulatory standards. Putting a financial value on reducing these risks is not always simple but doing so adds weight to the investment case.

Address current issues

If the justification includes ways that the investment can address issues that are or have recently been brought to the attention of management, it will become more powerful. Here we are looking to solve problems that the business is already aware of and has accepted as fact. Because management will be expecting some expense to solve these issues, we can leverage this expectation to the benefit of our investment case. Real life issues could vary from: problems recruiting and retaining qualified, experienced engineers, issues getting spare parts delivered in a timely manner, frequent breakdowns, or issues getting contractor availability that aligns with your scheduled downtime. If a Rotork Reliability Services contract will help to address any of these issues it will be a powerful argument in its favour.

Factor in other benefits

Other benefits can be company specific or may be benefits that drop out of some of the other strategies. For example, if you are using a lot of your site engineers' time maintaining actuators, then signing up for a Rotork Reliability Services package that includes labour will free your site engineer up to do other things.

Other benefits could include a lower chance of reputational damage to the company. If sites discharge waste too often, a regulatory cost may be incurred. But even if there is no regulatory cost this time, the company could suffer reputational damage particularly if it is widely reported in the media. Remember that online news stories can still turn up in search results years later, and regulatory limits tend to tighten over time. Reputational damage is very difficult to put a financial figure on, but ultimately it could harm investor trust, lead to lower demand for your products, lower morale among some workers and make it harder to recruit and retain staff. If more regular maintenance could reduce this risk, be sure to mention it (even if it is difficult to determine its financial value).

When two or more of these strategies are used, the power of the argument increases and has a higher chance of success.

Building the Case

Investment decisions will often require a business case to be produced. Preparing a business case setting out the costs, benefits, and risks of an investment in Rotork Reliability Services is the best way to justify the investment.

Preparing a compelling and engaging business case that will influence the right people takes time and effort, but the more effort put in the better received it is likely to be. Many companies have their own internal business case templates and guides detailing how to produce them. If this is the case, refer to these documents and any associated guidance.

When developing the business case, be sure to tailor it to the intended audience. Think about how you will engage your decision makers and keep their attention. For example, if there are any 'hot issues' in your business, be sure to consider them in your business case as this will help to keep their attention.

Aim of the business case

The aims of the business case should be clearly stated, and it should only contain information which is related to these aims. The business case should always remain specific, and you should not move into broad generalisations.

Case components

While there is no ideal structure, a typical business case is likely to have five core sections:

- Strategic context
- Economic analysis
- Financial case
- Commercial approach
- Management approach

Strategic context provides a reason for the case; this is the "why" behind the case. It places the investment in the current business context and brings in aspects relevant to investment.

Economic analysis covers the cost and benefit assessment. This is where asset criticality is brought in to help define benefits and risks associated with action and inaction.

Financial case considers the affordability of the case within a business context over a specified time frame.

Commercial approach considers procurement and defines what is to be purchased/contracted and how this is to be carried out.

Management approach considers the internal business method and impact of delivery. It states what the effects of this proposal will have on current business as usual. It may also state what resource is needed to manage the scheme and where it will come from. It should also cover necessary governance and a brief overview of the proposed management programme.

Where to start

As a first step, identify the key decision makers within your organisation. Discuss the proposal with them and ask what they expect to see. Refer to past business cases for examples of both successful and unsuccessful cases to understand what you need to include.

Did you know that Rotork can help you to prepare a business case for Rotork Reliability Services?

Contact us to find your Regional Business Development Manager.

What are the key measures of success?

Many business cases will be based purely on financial measures of success. These could include a minimum payback period, a minimum IRR, or a minimum NPV. Discuss what is the correct financial measure with your Finance Department. They may also be able to help with some of the calculations and suggest how best to present your results.

Sometimes other measures of success can also be required. These range from positive impacts on health and safety through to an improvement in regulatory performance metrics. There will usually be a named person in the business responsible for ensuring compliance with external regulations — find out who it is and consult with them.

Additional metrics may be needed to cover wider business impacts. Refer to old business cases for examples from your company and check with Finance and other departments for other metrics that are used in your company.

At what point does the business case stop?

This depends on the scale of investment and the complexity of the underlying business processes. Costly projects may need additional financial considerations such as debt financing, changes in revenue profiles etc. Discuss the project with your Finance team who will be best placed to provide appropriate advice as to whether any further considerations are required.

Building the Case

Inputs

Once you have decided upon the key outputs, you can begin to gather the inputs required to generate the outputs needed.

The location of the input data may be included in the company's asset information plan. If this is not the case, there could be nominated data owners who will be able to provide the information. If all else fails data should be gathered from named and validated sources and potential error margins noted in the business case.

A common complaint with business cases is that the lack or poor quality of data prevents a good business case from being built. When poor quality data is the only option, its limitations should be clearly stated in the business case and referring to wider knowledge and experience can also be used to supplement the poor-quality data.

Costs

The best option is to use known cost curves and/or cost databases. Many businesses maintain cost databases and cost curves for operational and capital expenses, giving a simple methodology for cost estimation. If these are not available check with your Procurement or Finance teams to understand alternatives.

Did you know that all Rotork's Reliability Services tiers include a Health Check? This ensures that customers have the data needed to make informed decisions before maintenance begins.

Risks

Discuss the best approach for risk and benefit quantification with the appropriate teams in your organisation. They will be able to assist with developing an approach which follows internal processes and guidelines and assist you if more complex methods are required.

Benefits and disbenefits

The benefits of contracting for a Rotork Reliability Service have already been discussed and should always be the main focus. However good business cases can fail by only focusing on benefits and not considering wider linkages to 'disbenefits'.

A 'disbenefit' is the opposite of a benefit— it is usually an added cost that is incurred by changing a process or procedure. An example could be that installing electrically operated actuators has the disbenefit of higher electricity usage and costs, even though overall the project saves the company money by reducing other fuel costs and making processes more reliable.

Including these 'disbenefits' shows the decision makers that you have considered the impact of the project fully, and that you have included potential impacts on other parts of the business. This builds greater confidence in your business case.

Next steps

Once the outputs have been reviewed and the required inputs identified and collated, it is time to prepare the business case document.

Many companies have their own templates for business cases that need approval. If your company has such a template, then make sure to use it.

However, if there is no standard template, and you are not sure where to start, we have prepared Part 2 of this document to give you some pointers.

Conclusion

Justifying an investment in Rotork Reliability Services is complicated; it is important to prove that the investment is worthwhile to those who make the investment decisions.

We know that every situation is different, and we hope that the guidelines and strategies that have been presented help you to create a solid business case for your proposed investment.

We firmly believe that Rotork Reliability Services represents outstanding value for money and with four different tiers of service as well as a comprehensive list of optional add-ons, we believe that we will have a solution available that meets your business needs.

Our current Rotork Reliability Services offering is detailed on the next page. Please contact us now for your bespoke quote.

For further information about Rotork lifetime management, products and services please contact:

LifetimeManagement@rotork.com

To find your local Rotork office please use the global locator on our website here.

Reliability Services

	Basic Health Check ■ □ □	Premium Enhanced Maintenance ■ ■ ■	Standard Planned Maintenance ■ ■ □
Site Survey[1]	✓	✓	✓
Asset Register	✓	✓	✓
Health Check Report	✓	✓	✓
Maintenance Log	✓	✓	✓
Functional Test	✓	✓	✓
Responsive Labour[2]		✓	✓
Performance Review		✓	✓
Maintenance Record Review		✓	✓
Intrusive Inspection		✓	✓
Corrective Maintenance		✓	✓
Consumables[3]		✓	✓
Benchmarking of Application Data		✓	✓
Optimise Configuration/Set Up		✓	✓
Parts[4]		✓	+
iAM Report - Annually[5]		✓	+
Priority Scheduling Service		✓	
Priority Technical Support		✓	
Customisable Spares Management		+	+
Resident Engineer (part/full time)		+	+
Valve Inspection/Maintenance		+	+
iAM Report - Quarterly[6]		+	

Contractual minimum term applies

✓ Included + Optional extra

Health Check Report

- Non-intrusive observational condition of your asset(s)
- Utilises the experience of our expert engineers
- Delivered in a simple-to-understand format

Intrusive Inspection

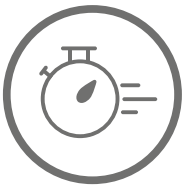
- Internal check completed by a Rotork engineer
- Maintenance performed as per customer direction
- Consumables changed as necessary

Consumables

- Genuine Rotork OEM consumables
- Includes seals, O-rings, battery and oil only
- Replaced as needed by a Rotork-certified engineer

Parts

- Genuine Rotork OEM parts
- Includes all non-consumable parts[a]
- Rotork Standard Terms and Conditions[b] apply



Responsive Labour

- Includes full 'on-site' time of Rotork engineer[c]
- Gives reassurance of an OEM repair to your asset
- Timely availability to minimise your site disruption[d]

iAM Report (Intelligent Asset Management)

- Predictive diagnostics with actionable insights
- Annual report gives snapshot of asset(s) condition
- Quarterly reports give rolling view of asset(s) condition

Notes

1. For Premium and Standard tiers Rotork will undertake an initial Site Survey. The initial Site Survey will check that your assets do not have any pre-existing faults. If we find that the asset has a pre-existing fault we will tell you what needs to be done to fix it and provide a quote. These repairs must be completed to a satisfactory standard for the asset to be eligible for a Premium or Standard tier Reliability Services Plan.
2. Excludes time taken to repair defects caused by; damage, out-of-specification working conditions, alteration, incorrect installation or 3rd party commissioning etc. Repeat callouts for the repeat fault covered solely at Rotork's discretion.
3. Includes consumables required during routine maintenance – limited to; environmental O-rings, oil seals, battery (9v PP3) and top-up oil only.
4. All parts that are not 'Consumables', excludes; motor, drive bush, centre column, worm shaft/wheel. Fair wear and tear rules apply. Replacement of non-OEM parts not covered.
5. Assumes data collected at time of annual visit. Rotork reserves the right to remove printable reports at any time. iAM not available for all asset types – please check with Rotork for a list of compatible asset types.
6. Assumes data for one report collected during the annual visit. The remaining data is to be collected by the customer and made available to Rotork. Data collection by a Rotork engineer is available at an additional cost. Includes priority report delivery and support from Rotork specialists who can assist with data collection, interpretation of iAM reports and corrective action advice. Rotork reserves the right to remove printable reports at any time. iAM not available for all asset types – please check with Rotork for a list of compatible asset types.

a. Excludes motor, drive bush, centre column, worn shaft/wheel.
b. https://www.rotork.com/en/about-us/terms-and-conditions/customers.
c. Does not include travel costs to/from the customer's site.
d. Fair usage policy applies.

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www.rotork.com

A full listing of our worldwide sales and service network is available on our website.

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