

## Machinery Replacement Decisions:

### A COST ANALYSIS APPROACH - PART 1

Picture this: You're managing a manufacturing business, and your trusty old machine that's been churning out products for years is starting to show its age. It breaks down more frequently, consumes more energy, and can't keep up with newer technology. The question that keeps you up at night is simple yet complex: Should you repair it or replace it? This decision isn't just about buying new equipment – it's about understanding which costs truly matter in your decision-making process. Welcome to the world of significant cost analysis for machinery replacement, where smart business decisions are made by focusing on the costs that actually impact your future profitability.

This is Part 1 of a series representing those times when old or broken-down machinery should be considered for replacement or repair. We are not sure at this time how many parts there will be because we want to be as complete as possible in our assessment. Please stay with us...



What makes a cost "applicable" in machinery replacement decisions? When businesses face machinery replacement decisions, not all costs are created equal. Applicable costs are future costs that differ between alternatives – in this case, between keeping your old machine versus buying a new one. Think of significant costs as the financial factors that will actually change based on your decision.

Let's take a look at a simple example. For the sake of illustration, let's say you have a heat-treating machine that forms metal discs. The machine still works, but it is much less energy efficient than newer models.

### Significant Costs Include:

1. **Future operating costs:** The electricity bill, future maintenance expense, and repair costs for each step in the operation
2. **Purchase price of new machinery:** The actual cost of buying the new equipment
3. **Installation and setup costs:** Expenses for getting the new equipment operational
4. **Disposal costs or value:** What is the disposal cost or how much can you get if you sell it?

### Insignificant Costs Include:

1. **Original purchase price of old machinery:** This is the cost of the machinery that has already been incurred and cannot be recovered.
2. **Depreciation:** The allocation of the cost of a tangible asset over its useful life. It reflects the wear and tear or reduction of value of an asset over time.
3. **Fixed costs that do not change:** Rent, insurance, or salaries that stay the same no matter what your decision is.

Successful machinery replacement isn't just about comparing purchase prices. Several factors influence whether replacement makes financial sense for your business. Next time, we will take a look at key factors that drive decisions regarding machinery replacement.

# Understanding the Role of “MRO” in Procurement and Operations



In the ever-evolving landscape of procurement and operations, the term “MRO” frequently emerges. But what exactly is MRO, and why is it critical for the successful operation of any company?

Maintenance, repair,

and operations (MRO) are often misunderstood, neglected until a crucial part runs out, and the production line halts. In these moments, its importance becomes painfully clear. I have often said that maintenance is sometime so lax that nothing is maintained until the machinery starts making a strange noise or just stops.

From my experience, the term, MRO, serves as a generic label covering all those miscellaneous expenditures involved with running a business that doesn't neatly fall into other established categories. If you asked a room full of people what MRO stood for, you'd likely get blank stares or different answers.

According to [businessdictionary.com](http://businessdictionary.com), MRO encompasses supplies consumed in the production process that do not become part of the end product or play a central role in the firm's output. Items under MRO include consumables like cleaning supplies, industrial equipment such as compressors and pumps, and computers and office necessities. Here's a more exhaustive list of things typically included in MRO: chemicals, lubricants, gaskets, cleaning supplies, office supplies, repair and hand tools, safety equipment, various workwear items, fasteners, batteries, furniture, fixtures, and industrial machines like compressors, valves and motors, etc. The list goes on and on.

Why, then, is MRO management crucial? Often making up about 5-10 percent of cost of goods sold (COGS), it's easy to overlook this expenditure. But if you fail to manage it you face significant operational risk. Running out of a critical chemical or tool can bring a production line to a halt, resulting in idle employees, missed deliveries, revenue loss, and costly downtime. Moreover, neglecting safety equipment could endanger lives. Clearly, MRO is a lynchpin of operational stability.

Having an efficient MRO management system can prevent these crises. Various companies employ different strategies

for MRO management, and in my career, having a dedicated procurement person tasked with MRO has proven invaluable. This individual or team should gain insights into a variety of products, enhancing their expertise—a rewarding challenge.

It's also essential to implement a strong Supplier Relationship Management program. With potentially thousands of suppliers, focusing on mission-critical MRO items is practical. Track key metrics like downtime costs, inventory levels, delivery lead times, supplier performance, and spending levels to guide MRO management effectively.

For businesses with significant MRO demands, some have adopted inventory vending machines. Employees retrieve items as needed, with suppliers restocking based on electronic alerts. A strategic approach to stocking and managing critical MRO items can diminish downtime, cut costs, ensure customer deliveries, and save management efforts.

Maintaining spend control and compliance is paramount, as rogue buying may occur when personnel act beyond their responsibilities out of urgency. This pattern indicates a lack of resources and guidelines necessary for proper MRO management.

In conclusion, MRO is a vital component of every operations and procurement organization. Building the right processes and infrastructure for MRO management is essential. Investing in this area—regardless of your organization's size—will prevent the fires and disasters resulting from inadequate management.

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