Lean Manufacturing

How to Reduce Tooling Cost and Maximize Manufacturing ROI

George Krauter | Apr 07, 2020

Before your company makes a significant investment in tooling, it pays to calculate the potential return on investment (ROI) your purchase could bring. What's the best way to calculate an accurate ROI? MRO expert and author George Krauter offers some real-world examples.

Your tooling choices can have a significant effect on your costs and product margins. They can also influence your competitiveness and the amount of investment your company receives from shareholders.

Analyzing the potential return on your tooling investments is therefore vital. But it's not always as straightforward as it seems.

Joe Knight, author of ***HBR Tools: Return on Investment*** and a finance and business literacy expert, notes that one fundamental error many managers make is assuming cash and profit are the same. They are not, and many profitable businesses have failed because they didn't pay sufficient attention to managing their cash.

> **"If you mistake profit for cash, you're probably going to show a far better return than you can expect in reality."**

What does this mean for an ROI analysis? Knight points out that confusing cash and profit will reduce the accuracy of an ROI calculation, potentially leading to business decisions that are harmful to a company's product margins. If you mistake profit for cash, you're probably going to show a far better return than you can expect in reality. That's why you need to calculate true ROI to arrive at an optimal decision for a major investment and understand where your tooling cost savings can be found.

Understanding Your Costs of Ownership (TCO)

How is this achieved? First, ***calculate the total cost of ownership***, or TCO, of the tooling under consideration. Calculating TCO is a way of measuring a product's long-term value to a company and is

defined as the purchase price of an asset plus the costs you expect to incur during the lifetime of the product, such as service and repair.

Other cost sources may include:

- Requisition creation and approval
- The purchase order process
- Distribution functions
- Receiving
- Storeroom costs (inventory, personnel, etc.)
- Invoice control and payment
- Costs incurred as a result of stockouts, lost worker time, and rush order expenses
- Opportunity costs related to unrecognized process improvement

By defining these costs, you will have identified potential cost reductions that will benefit your ROI and provide a more accurate number upon which you can make decisions about your tooling investments.

Read more about handling MRO costs and spending: "Better Supply Chain Management: Take Control of MRO Spending."

Methods of reducing your TCO vary from a total outsourcing of your MRO stores operation to single parts category cost reduction programs ("vendor-managed inventory" variations, for example).

TCO reductions for many tooling categories can be best achieved by using ***vending machines***, if properly managed by your supplier.

Here are two cases where company decisions on tooling investments had a positive impact on product margins and net profit:

No. 1: A Manufacturer of Household Appliances in the Midwest Reduces TCO by 28 Percent

This company (let's call it MHA Corp.) spends heavily on carbide inserts used on production lines to remove metal and shape products.

Carbide inserts are normally supplied by a local authorized distributor using a purchase order or blanket order process. In the case of MHA, because of the volume of product consumed, the carbide manufacturer sold its products directly to MHA and assumed the cost of distribution. The carbide manufacturer placed a representative in the plant every day to make sure the inserts were operating properly and to solve any technical problems that would occur. The price of the inserts was never in question because of the perceived value of the daily visits from the carbide manufacturer's rep, who ensured that high levels of inventory would be available to MHA when required.

When management decided to do an analysis on carbide insert tooling, they found that the insert TCO did have an effect on product margins, and that they could improve margins by altering their tooling choice.

They achieved an agreement with an expert national cutting tool distributor to:

- Bring in alternative brands for approval
- Place the distributor's inventory on site so that MHA paid for the parts after they were used
- Eliminate the sub stocks without downtime
- Require the new manufacturers to provide technical support
- Issue a monthly invoice for parts consumed at favorable terms

The outcome: a 28 percent reduction in tooling TCO, resulting in a direct contribution to product margins.

No. 2: A Manufacturer of Metal Consumer Products Saves $748,000

This company (let's call it MCP) used 24 machines to form metal strand into products for sale. The process involved a pulley/gear system, which required tooling considerations. Engineers at the company reported that replacing the tooling was "expensive" and that the company's practice was to make the tooling last until the "machines stopped working." Machine speeds averaged 350 rpm, quality was good until it wasn't, and unplanned maintenance was a daily reality.

MCP analyzed one of its machines and learned the following:

An investment of $2,000 in replacement tooling, plus six hours of maintenance per machine (and six hours of downtime) would result in a three-times improvement in sustained machine speeds (the machine in question went from 350 rpm to 900-1,000 rpm). The results were so dramatic that MCP decided to replace tooling for all its machines annually. The total investment cost per machine was $3,200, just under $77,000 annually for all 24 machines.

The outcome: increased speeds allowed MCP to recover 30,000 labor hours and 6,000 overtime hours for a total net savings of $748,000 annually and a reduction in unplanned downtime of 80 percent.

These two real-world examples show that investigating your tooling applications and TCO can provide substantial opportunities to improve your ROI and boost your product margins. If these improvements inspire you, take the first step now and ask your MRO supplier to provide their expertise to uncover similar opportunities at your shop.

Where have you found ways to improve the returns on your tool investments? Are there approaches you can share that have boosted your shop's financial performance?

