Estimating Total Cost of Ownership

When you're looking at new equipment, have you ever felt like the initial cost is too high?

If you answered, "yes," you're not alone. The price tag can cause much confusion because it reflects one small part of the big picture. Some sources say that the amount on the price tag represents less than 10 percent of the total cost spent on a piece of equipment over its lifetime. In fact, energy costs, maintenance, and repair fees are predicted to have at least five times more relevance than the upfront cost. But few end users consider these factors as part of the price during their selection process.

To fully understand what you are paying for equipment, you need to evaluate the Total Cost of Ownership. TCO is an estimation of all the collective expenses associated with purchasing and operating a piece of equipment. The TCO will provide a way to compare pieces of equipment "apples to apples."

The next time you are selecting new equipment, try using this formula:

$$TCO = I + O + M + D + P - R$$

I = Initial Cost: This is the number that appears on the price tag. As previously stated, this is less than 10 percent of the TCO.

O = Cost of Operation: This is the cost to install the pump, test the pump, train employees to run the pump, and the cost of energy to operate the pump. If the pump is complicated to use, the cost of training will increase.

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M = Cost of Maintenance: This includes the cost of regular repairs such as cleaning, inspecting, lubricating, and adjusting the pump to make sure it is in optimal condition. This also includes reactive maintenance when the equipment breaks down unexpectedly.

D = Cost of Downtime: While you could include downtime along with the cost of maintenance, it is often so large that it warrants its own category. Downtime involves the labor costs of employees whose work is delayed, indirect labor costs from supervisors who address the issue, lost production, and lost customers from inability to meet time expectations. (See our suggestions to reduce downtime.)

P = Cost of Production: Two different pumps will likely have different levels of output, produce different qualities, and have different environmental implications.

R = Remaining Value: This has to do with the pump's longevity. How much will the pump be worth in 5 years? 10 years? It can be a big difference.

Start Simple

For this example, we will start with three variables to compare two hypothetical pumps: Pump A and Pump B. The variables chosen are initial cost (I), maintenance costs over 5 years (M), and the remaining value after 5 years of depreciation (R).

Pump A has a very affordable upfront cost.

Pump B has twice the upfront cost as Pump A.

Based on this information alone, Pump A would be the clear choice. However, the TCO can tell us a lot more about which option is best.

$I + M - R = TCO$

Pump A

I = $10,000

M = $5,000

R = $2,000

TCO = 13,000

Pump B

I = $20,000

M = $2,000

R = $10,000

TCO = $12,000

In this example, the TCO of Pump B is less than Pump A even though its initial cost was twice as much. However, the gap is only $1,000, which is a slight difference.

Now add a fourth variable, estimated downtime (D). We will go with a conservative estimate and of $50,000 per hour even though downtime will likely be a lot more.

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$I + M + D - R = TCO$

Pump A

I = $10,000

M = $5,000

D = (3 hours at $50,000/hr) or $150,000

R = $2,000

TCO = $163,000

Pump B

I = $20,000

M = $2,000

D = (1 hour at $50,000/hr) or $50,000

R = $10,000

TCO = $62,000

$163,000 − $62,000 = $101,000 in Savings

Pump B costs $101,000 less than Pump A, which is a much wider gap. The price gap becomes wider with every variable that you add, giving you a clear choice for cost value.

Graco Products

Many Graco products offer cost savings that cannot be seen on the price tag.

- [E-Flo DC](#) Circulation 4000 provides two complete motor and fluid sections that can run separately when maintenance is required. This feature minimizes the cost of downtime (D), which can easily be the highest cost for finishing companies. By calculating the estimated cost of downtime from their current equipment and comparing that to the amount of reduced downtime provided by the E-Flo DC, end-users have a much more accurate prediction of the TCO than simply by looking at the upfront cost.

- [Pro Xp Electrostatic Spray Gun](#) increases productivity (P) with a lighter and well-balanced gun body that reduces muscle strain and a built in power supply that eliminates heavy power cords that slow the operator down. It also has an ergonomic handle designed to fit comfortably in the sprayer's hand. All of these features greatly influence the cost of productivity involved in the TCO.

- [ProMix PD](#) Proportioning System is designed to reduce solvent and material waste by moving the mixing point closer to the gun. This design feature ensures that the material is mixed precisely before it is sprayed. This means that more of the expensive materials and solvents can be used for their intended purpose rather than incinerated. This especially impacts the TCO for companies who change colors multiple times per day.

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