



Machining

IMTS 2018: Optimize Your Parts-Making Process, Gain ROI

Don Sears | Sep 12, 2018

Parts manufacturing is a competitive endeavor. To outdo your competition, you have to fully understand your costs. So the question is: Do you understand your costs enough to know where you can improve? Process optimization may help.

Process optimization. Return on investment. Value stream mapping. Machine burden rate. Cost per unit. These are terms you will hear bandied about at IMTS every two years, but what do they mean?

These terms are not just fancy ways of reporting information to your accounting department. They are, in fact, what you need to understand to find the areas within parts processing that can become more efficient—and effectively profitable, contends Bob Goulding, a machine tool business manager for Seco Tools, who presented “Achieve Full Process Optimization” at an IMTS 2018 conference session. We spoke with Goulding after his session to get a better understanding of process optimization and the role tooling costs play in efficiency metrics.

Being profitable in manufacturing means being better than your competitors—and that means understanding all the factors that affect efficiency and the total cost of your operation. From the supplier of raw materials to the cutting tools in your CNC machines, what does it all cost?

“The myth traditionally is that the tooling is the pointy end of the operation, so it gets all the focus and all the attention to cost,” Goulding says. “What manufacturers often fail to do is take into account the overall overhead. When you break down the real contents and true value of tooling, it’s usually only around 3 to 5 percent of the cost.”

So there's a huge opportunity to trim costs by making performance improvements in other areas, such as setup time, total cycle time and waiting time. But you need data, and you need to know your machine burden rate—which is typically the total hourly cost of running the machine including the labor.

"Just running a machine doesn't mean it's running right," he says.

During his conference presentation, Goulding showcased several examples of reducing a part's cost per unit, or CPU, to show big value gains. He detailed one example of a company that ran seven machining operations and reduced its CPU from \$2.01 to \$1.15 by using newer tooling. If you are making thousands of parts each week, that can translate to big savings and more output.



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The Value of ROI from Tooling

A machine is theoretically available 24 hours a day, seven days a week. The variable is labor. Can you put more people on more machines to help make parts? It seems simple, until you want the return on investment in real dollars with real employees.

Bob Goulding of Seco Tools asks: If you spend \$1, are you going to get \$1 back? Be considerate of every time you have to spend money—and of the cost-effectiveness of the tool. When it comes to ROI, time is literally money.

"I think that's one of the things relating to tooling in our industry that is frustrating because people focus on the cost of the tooling itself: 'It cost me \$10, and I want to borrow that from you for \$9.75,'" Goulding explains. "Saving 25 cents is a false economy. ... It does nothing for your business. However, if you focused on optimizing the process and can improve the operation by 10 percent, that has got a significant impact on the overall cost."

Before Tooling Costs: Understand All of Your Processes

Before getting into the nitty-gritty of tooling costs, it pays to do your homework—and to better understand the time, energy and decisions in parts making that can influence the outcome.

"I'm sure you've come across applications in your history where you've looked at a particular component that's being machined and it probably isn't clamped as firmly as you'd like it to be," Goulding told session attendees. The tool itself is doing what it's supposed to, but the poor clamping could be negatively affecting the output even though the speed and capabilities of the machine have already been figured out in the parts-making design. It behooves manufacturers to review the full parts-

making process to optimize it—and become more efficient.

“It really makes sense that people look at the whole process and do a value stream map of what the whole process is for a component,” Goulding tells Better MRO. “Typically when you do that, you will find bottlenecks. From that bottleneck identification, there is opportunity to tune in and improve that process.”

But there is one of those terms: value stream mapping. What is it?

“Value stream mapping is about looking at all the elements in manufacturing from the beginning to the end of the plant to find your overhead costs,” Goulding says. “It’s looking at it all and asking: How much of your time is spent picking up the part moving into the machine? How much time is spent loading it into the machine? How much of that time is spent finding the right tools to machine that part before you’ve even got to the process of machining the component itself?”

It’s the same with post-machining finishing. Do you have to take that part off the machine to deburr it? With high-speed machining that uses tools designed to cut smooth parts, you may be able to eliminate finishing steps from the parts-making process altogether—saving time, adding more parts to your output and freeing up dollars toward profit and investment in other processes.

“If you’re genuinely interested in what the real costs of your parts’ operations, especially if you are an owner, you need to be aware of how much money you’re making,” Goulding says. “If you don’t learn that information, you really don’t know where to focus to find the easiest places to improve.”

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