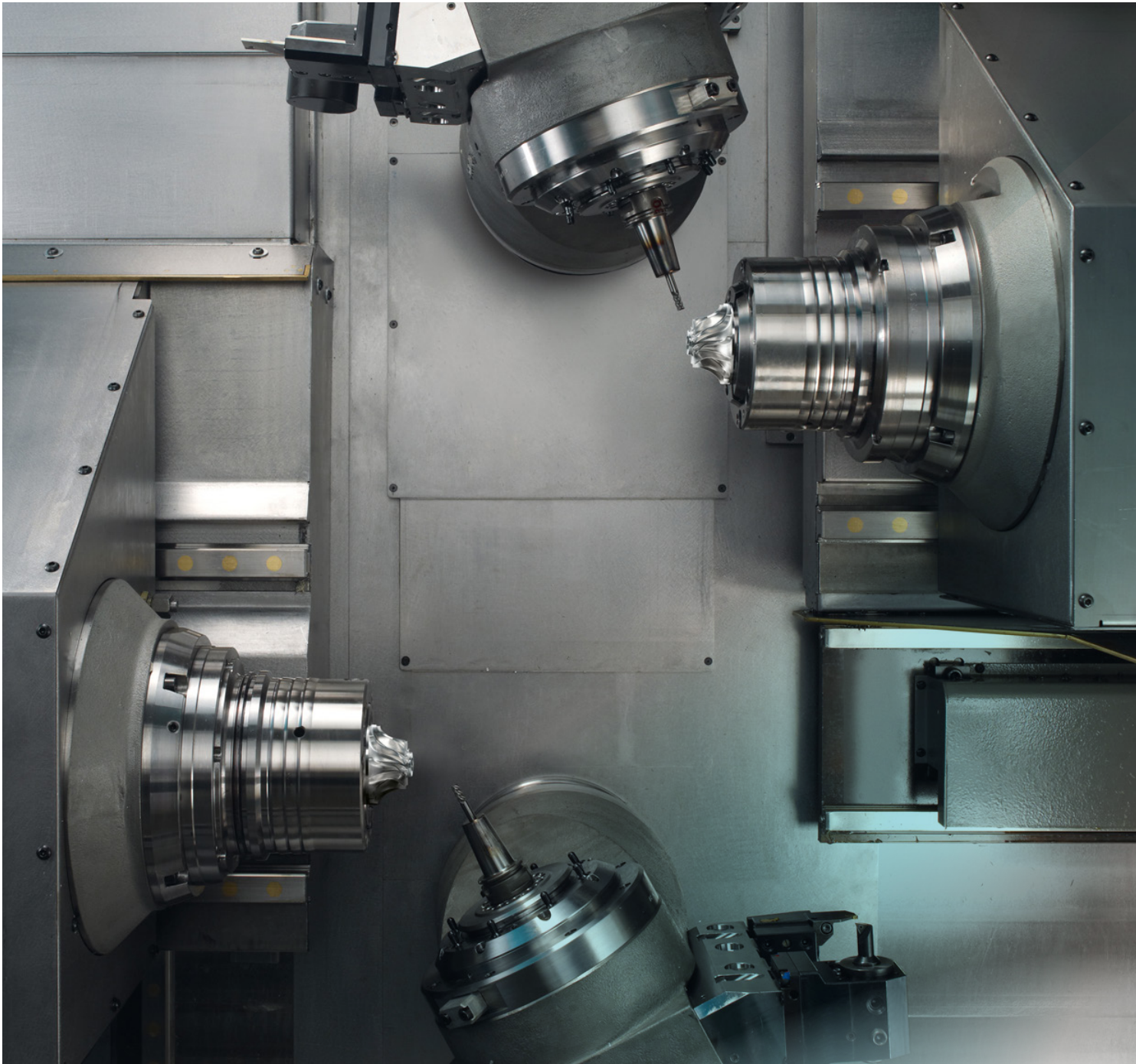


THE PITFALL OF STEADY, SIGNIFICANT GROWTH

Sometimes, doing something the way you've always done it isn't the most efficient method. How do you prevent a boon from becoming a burden?



DON'T BE A VICTIM OF YOUR OWN SUCCESS

Tips and tricks to navigate the critical balance of expanding customer demand with diminishing returns.

When you win a job that you can knock out in several hours, its profit margins won't have a significant role in your overall success. That ceases to be the case when it grows to take weeks of machine time and operator hours.

While most companies think of contingency planning as preparing for when something goes wrong, it can also be applied to tremendous benefit for when something goes right.

PLAN FOR PROFITABLE GROWTH

Setting the stage

- A cautionary tale
- A practical example

Invest in a lifeline

- Avoiding the trap
- Three solid tactics





THE PITFALL OF STEADY, SIGNIFICANT GROWTH

A cautionary tale

There's a familiar story that many successful shops fall prey to. They win a small job from a new customer, say maybe just 5,000 parts in its first year. Since it's not a terribly significant amount of work, the shop determines the best way to make the part on machines with available capacity, as opposed to seeking out the absolute best possible way to produce it.

Rapid growth at the customer results in larger orders for the shop in the second year. The total annual quantity of parts produced jumps to 20,000. To keep pace with the growing demand, the shop invests in one or more additional machines. It purchases the same make and model that it's already been using to produce the part.

Demand continues to surge in the third year, leading to an annual order quantity of 30,000 parts. Again, the shop invests in more equipment. Again, it goes with what it has already been using. The processes and resulting cycle time and throughput, which were never really optimized at the beginning, have now been scaled up significantly.

The stage has now been set. Once in this situation, many shops will continue with the status quo, even in the face of a customer demanding price reductions or inflation-driven increases to the costs of raw materials and labor. It's not uncommon to end up with this type of job consuming significant resources, even as it adds very little to the shop's overall profitability.

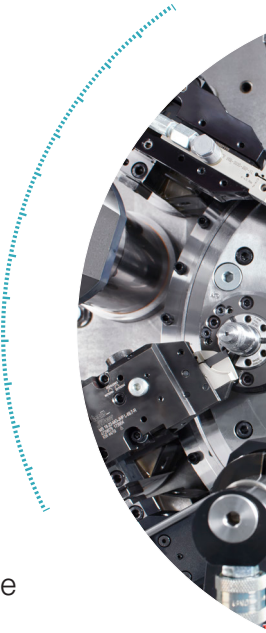
If this sounds familiar, you're not alone. Thousands of shops go through this scenario. Because of the advanced, disruptive nature of the machines that INDEX produces, we often work with customers who are looking to dramatically change how they produce these types of jobs. Our team gets immense satisfaction from helping shops restore margins to jobs that have been contributing little to their bottom line, but it's even more rewarding when we can help them avoid getting in the situation to start with.

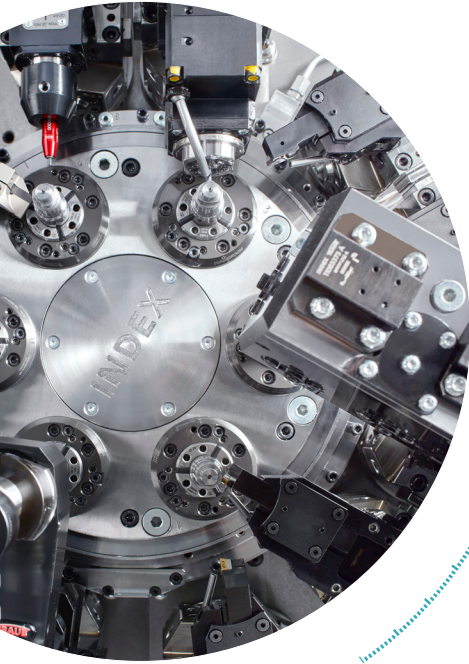
A practical example

Let's take a look at a specific part as an example of what can happen with machine and process optimization.

Originally machined on a twin-spindle CNC lathe with 20 mm capacity, this hydraulic component requires turning, milling and cross drilling. The interior diameter ranges from 6 mm (0.24") to 6.9 mm (.27"), requiring a tolerance of 0.01 mm (0.0004"). Surface finish must be held to 20 Ra. As it was originally being machined, the cycle time came to 52 seconds.

As order sizes grew and profitability stagnated, the shop producing the part reached a crossroads. Purchase another twin-spindle CNC lathe or invest in a CNC multi-spindle. They selected the latter, which cut cycle time to just 10.2 seconds, an 80% reduction. Despite the multi-spindle costing a little more than three times the twin-spindle, cost per piece fell by 30%, giving the shop a cushion to





maintain its margins while accommodating future price reduction requests from the customer.

Beyond the obvious benefit on that specific part, the acquisition of the CNC multi-spindle enhanced the shop's efficiency in other ways as well. The multi-spindle provided approximately five times the capacity of another twin-spindle, accommodating not only the part in question, but a variety of other parts from throughout the shop. This increased throughput and agility, while requiring fewer operator hours and dramatically boosting the efficiency per square foot of floor space.

This isn't to suggest that every part would be best produced on a multi-spindle, but to illustrate a larger point. While it may be economical to initially run a small job on whatever machine has the capacity and capability to produce it, when quantities grow, process optimization becomes absolutely essential to maintaining profitability.



THE PITFALL OF STEADY, SIGNIFICANT GROWTH

Avoiding the trap

While steady growth of specific jobs can erode long-term profitability, there are steps that shops can take to sidestep this problem. Here are three general approaches that shops can use to stay on the right track, with specific tactics that can be implemented for each.



1. Plan for growth

Most obviously, be aware of the potential that small jobs will eventually become large ones. Incorporate it into your planning. When you're initially figuring out how to quickly produce a lot of 1,000 pieces for a customer, ask yourself how your approach would change if it was 10,000 pieces. Or 100,000. By proactively thinking about how you might approach a job differently if it were larger, you'll be more prepared to adapt when needed.

Beyond making a habit of this type of thought exercise, identify and note milestones that will lead to concrete action. If you can, a quantity driven approach is ideal. When you think you might process a part differently if you were producing 10,000 of it, commit to reevaluating it if and when you hit that order quantity. If that proves too cumbersome, you can keep a schedule and evaluate jobs at specific intervals. For example, note the date you first win a job. Every quarter, identify all jobs having their anniversary with your company and give them a quick, cursory review, then dig deeper into the ones that have undergone significant growth.

2. Optimize your existing work

Too often, shops only perform cost justifications for new work. Don't get stuck in the mindset of, "If I had this work, I'd buy this machine." Instead, focus on if a new machine could make your existing work more profitable. For many shops, optimization of existing jobs will increase profits far more than winning new ones.

When it comes to process optimization, many manufacturers struggle to identify where to begin. Modern data capabilities make it much easier than in the past. For a quick and relatively easy start, determine the percentage of your total machine and labor capacity consumed by your current jobs, as well as the percentage of profits generated by each. This will likely prove to be an eye-opening experience. If a job is taking up 2% of your capacity, but only creating 0.5% of your profits, it deserves closer examination.



3. *Rely on partners*

Lastly, realize that your team doesn't have to take on all of the responsibility for optimizing your processes and profits. With today's rate of technological advance, putting that burden solely on internal staff could quickly lead to burnout.

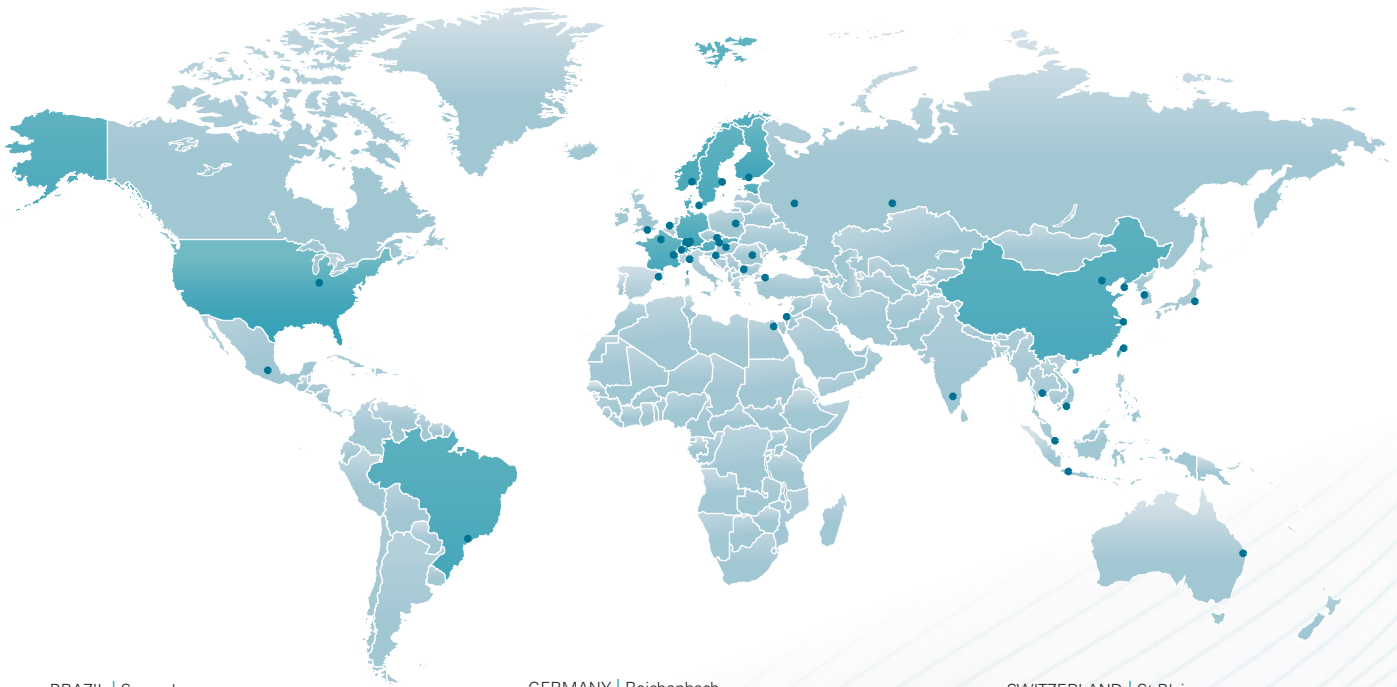
Instead, select suppliers who you trust and who possess both extensive expertise and a willingness to help. Ideally, include at least one machine tool builder or distributor and one cutting tool provider. Invite them into your facility on a regular basis and ask them to make suggestions where they see opportunities for improvement. Not only do they understand the latest technologies, but they also routinely visit shops like yours and have likely helped some of them improve parts and processes similar to your own.

In conclusion

While we're conditioned to always view growth as good, it presents shops with a distinct set of challenges. Especially when specific jobs start small and then steadily expand, a lack of optimization at the outset can limit profitability for years to come. By being aware of this possibility, planning around it and partnering with expert suppliers, it can turn from a potential drain to a true opportunity to increase profits.

At INDEX, we are extremely invested in acting as true partners to our customers. Our experts are always available to discuss specific jobs, or simply walk through your shop floor with an eye towards potential areas of improvement.





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