

6 Tips to Help Manufacturers Get Automation Right

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The promise of increased productivity, cost savings and greater efficiency is a powerful driver in the rush toward digitization and automation in manufacturing. This is especially true right now as COVID-19 has forced many organizations to find new ways to work with leaner staff and supply chain issues.

While it's true that implementing automation and IIoT technologies can deliver significant cost reductions and performance enhancements, it can also be a huge waste of time, money and resources if it's not done with a thoughtful approach and smart strategy. To help manufacturers get the most out of their automation programs, here are 6 tips that can make the difference between a big win and a major flop.



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- 1. Understand what drives performance.** Before you rush to install sensors and software on every piece of equipment in the plant, first start by determining exactly what drives your [KPIs](#). In order to improve performance, you must first make sure you're measuring the right things. Borrow a page from the Six Sigma playbook and examine $Y=f(x)$: what are the variables for which you can test and control? What can you reasonably change and what are the key metrics you can use to evaluate whether your process has improved? We often see customers who want to slap a sensor on equipment that's already running flawlessly at peak capacity. There's not much improvement that can be made there. But there's often a huge opportunity to improve material handling—it's one of the most overlooked automation opportunities in the plant.
- 2. Tap into data you already have.** Before implementing a new system, make sure you're first leveraging what you already have. In one situation, we saw a customer that had all of its process control data being displayed to an operator, but none of it was being saved anywhere. That's a huge, missed opportunity. Start with getting the data you already have off the machines and into an [analytics system](#) to analyze it and correlate it to productivity and scrap. Once you have a baseline, then look at other key variables that could impact quality and productivity and install sensors on the process components that are most likely "breaking" the system.
- 3. Focus on the non-value activities.** In manufacturing, there are generally only two ways to create value: by producing a product that a customer will buy, or by reducing costs. In general, value-added activities are the smallest portion of your process and costs—only about 5-10% of what you do transforms material into a product. The rest is non-value added, and that's where the big automation opportunity lies. For example, in a metal milling operation, the speed of the spindle head on the lathe is likely not the weak link, so why measure it? The real problem is in the downtime of the machine during the time it's being loaded and unloaded. Therefore, the goal should be to automate that process to make sure that the machine never stops.
- 4. Adopt a change-ready attitude.** Organizations often have a hard time distinguishing between value-add and non-value-add activities because they simply accept that the status quo is the only way. They accept that having 20 people on the line to move material is the only option. Instead, the organization as a whole has to be willing to look at everything—their entire process—with an attitude and willingness to change. Even with the most state-of-the-art solutions in place, the best automation strategies will fail



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if there's a lack of motivation to change. But you also have to be reasonable: sure, material handling is ripe for improvement, but if you're only moving something 10 yards, is it really worth putting in a complex automated moving system? It could transform your process, but it could also be overkill. Only you can make that determination.

5. Prove and move. You've heard the saying "don't try to boil the ocean," and that certainly applies to an automation project. Too many organizations start off overly optimistic about the scope of what they can reasonably implement and roll out at once—they want to do it all, now. This creates a huge potential for things to go wrong. Instead of building and implementing a monstrous system all at once, you should automate in the smallest increments possible. Pick one thing, prove that it provides value and then move on to the next. Biting off more than you can chew can result in a massive interruption that completely shuts everything down, and that's certainly not efficient at all.

6. Take stock of your talent. Having the right people in place is always a critical factor in any project, and that's especially true in automation, which requires a specific technical skillset. We often see organizations underestimate the level of software and programming knowledge required, which causes major hurdles both during implementation and after the fact. Before you begin, take time to truly understand the requirements and be honest about whether you have that capability internally. From a process engineering perspective, automation requires the ability to operate the system, troubleshoot and program the software for different types of equipment. And on the maintenance side, you'll want to have the resources on staff to handle any issues that arise so that you're not totally reliant on the vendor if something goes wrong—again, that's not very efficient and could bring your entire operation to a halt. Avoid that mistake by [taking stock of your talent](#) and training up as needed before your implementation begins.

Digitization has become increasingly relevant in the midst of COVID-19, and many manufacturers are seeing tremendous improvements to their process efficiency as a result of implementation. But failure to plan properly, choosing what to automate and when, and putting the right people in place can quickly erase any expected benefits of automation. Working with an automation partner that can walk you through the entire planning process and create a custom implementation scheme based on your specific needs and resources can make all the difference.



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About The Author

Ken Koenemann is the VP of Technology and Supply Chain at [TBM Consulting Group](#), which includes [Dploy Solutions](#). After joining the company in 2006, Koenemann has been responsible for driving TBM's technology strategy, creating value-added technologies and services for client business operations. Koenemann is widely recognized for his expertise in translating lean principles to supply chain and customer-facing processes in manufacturing and service organizations. He has a Bachelor of Arts degree in management from the University of Missouri-St. Louis.