

# As automation spreads through the manufacturing sector, many companies struggle on where to begin

Fifteen years ago, **Micron Manufacturing Co.** made a bold gamble. The Walker-based manufacturer invested substantial resources into replacing more than 60 lathes and other outdated equipment with 19 state-of-the-art CNC lathes featuring autonomous capabilities. At the time, the new automation equipment was relatively unknown, and represented a big step toward what company executives thought would be the future of manufacturing for their business.



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"It was quite the role of the dice," said Dan Vermeesch, Micron's plant manager. "Basically, we saw the equipment that was coming out. We saw what our customers were demanding: products that required tighter tolerances and smaller volumes. So we geared the equipment purchase to what we believed the future demand of our customers was going to be."

The bet has paid off handsomely. The company finished

transitioning to the new machines in 2011 and, since 2013, has invested an additional \$2 million in automation equipment. Sales have grown significantly for Micron, as the automation equipment, which Micron can run unattended overnight, raised productivity while avoiding increases in labor costs.

While Micron began its quest to automation over a decade ago, many of West Michigan's small manufacturers are just now approaching a similar decision point where they're facing little choice but to automate or lose ground to competitors.

Yet when smaller manufacturers start to look into replacing processes previously completed through human dexterity, pen-and-paper tracking and manually operated production lines, they're confronted with an overwhelming number of questions on where to start.

"There's so much information out there about automation," said Justine Burdette, vice president of technical services and regional director of the **Michigan Manufacturing Technology Center - West (MMTC-West)**. "A lot of the examples that are talked about today are focused on very large manufacturers. For most manufacturers in West Michigan that doesn't really resonate with them. As a smaller organization, it's hard to know where and how to start with automation."

Automation experts suggest that companies first ensure their plant floors are running in ways that promote maximum efficiency, long before investing in automation equipment.

"Anytime we have a conversation with a client about adopting automation, the first thing we tell them is, 'Remember: automation isn't the goal. Productivity is the goal,'" said Joe Dyer, team leader of manufacturing technology at Disher Corp, an engineering, consulting and product development firm based in Zeeland.

Disher created a productivity assessment program to help manufacturers determine where to make production process improvements in preparation for automation. The assessment includes a walkthrough by Disher engineers, who then sit down with company executives to determine the best solutions going forward.

"Blanket applying of automation isn't going to cut it," Dyer said. "You have to apply it in a way that makes sense, that's going to give you an ROI and isn't going to complicate your process further, which is a distinct possibility if you do it wrong."

Instead of investing in complex and expensive automation equipment, Dyer advocates small manufacturers choose the simplest option to fit the task at hand, particularly since many times those simple solutions prove to be the most reliable.



Micron Manufacturing Co. Courtesy photo

In some circumstances, small manufacturers may not need to immediately turn to sophisticated automation technology to realize improvements in productivity and return on investment. For example, Micron recently incorporated automated conveyor belt systems that funnel waste material away from their automated CNC machines.

"A lot of people may think that's not particularly intelligent automation, but it's crucial because it takes away a menial-labor-type job and allows our people to continue to focus on their education and the improvement of the system," Micron's Vermeesch said.

Small manufacturers also need to have a clear understanding of the entire cost that incorporating automation will have on their operation, experts said.

Additional maintenance costs, increased power requirements and utility costs, space planning, service contracts, downtime in production due to breakdowns and other considerations all need to be weighed and measured when considering automation equipment, experts said.

Most times, manufacturers calculate a two-year period to see returns on their investments in automation, assuming that equipment lasts between seven and 15 years, Disher's Dyer said.

While the costs of automation can still be high for some manufacturers, changes to the U.S. tax code under the Trump Administration promise to help cushion those expenses.

To help connect manufacturers interested in automation equipment, MMTC-West created an automation user group. The group is facilitated by engineers from Disher and meets monthly to discuss best practices for incorporating automation technology, challenges, pros and cons to certain equipment and other automation-related topics. ■



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