

KEYNOTE INTERVIEW

Unlocking value through automation



*The key to successful automation is in relying on, and integrating, the people that make manufacturing processes work, says **John Dotson**, managing director of operations at MiddleGround Capital*

Q How would you describe MiddleGround's approach to automation in the manufacturing and industrials sector?

For us, automation is all about improving our portfolio companies and the lives of our manufacturers. We approach it a few different ways.

One of the first things we look at is whether there are any safety or ergonomic issues that automation can correct. If a team member operates a piece of equipment that requires lots of bending and twisting, it creates wear and tear on the body. If it is possible to automate such processes, they will be a priority for us.

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Second, we look for repeatability. If you have good repeatability without a high level of variation, that lends itself well to automation. That is not to say we cannot address high variation processes, but it takes more work and needs to be done in a way that is manageable and can be maintained. Standardized designs allow us to minimize the costs of projects while maximizing impact.

After that, we look to address pain points across our portfolio companies. For example, it is sometimes difficult to find people power to fill vacancies.

So, if there are simplistic processes that can be automated, it may be possible to move employees who previously were tethered to monotonous processes into roles that challenge their thinking while solving for those vacancies.

Then, because we are a private equity firm, we heavily focus on equity value creation. If we can automate a process, not only is it often better for the manufacturer, but it is also a process that allows us to make better use of our existing workforce while improving throughput. A machine can run through breaks, lunches and multiple shifts, maximizing output and equity value creation.

So those are the ways that we really

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focus on automation in our portfolio companies. We launched our automation division in May 2022 and have built that out to a point where it now has 11 highly experienced team members. Not only are we supporting our portfolio companies, but we can also get involved in the due diligence processes prior to acquisitions to identify value creation opportunities before we make an investment.

Q How does your team go about executing typical automation projects?

The first thing we do is have MiddleGround team members run the process at the portfolio company facility. The most valuable person when it comes to automation and manufacturing is the line worker, and oftentimes they have been doing the same motions so long that the current flow is second nature. By having our team go in as newbies, they pick up on nuances and make sure we address everything.

Then we develop the automated solution using 3D software, build it and make sure it operates correctly. Next is getting a second opinion, we have the portfolio company send team members down to our automation facility and we walk them through it, giving them the chance to ask questions. We want companies to be able to maintain the equipment we build and to start thinking about where else there might be automation opportunities, so it also is another touchpoint to engage those team members.

Finally, we take the machine to the company, do the installation, and stay for a few days to train people on all the shifts in how it operates. From start to finish, developing a customized machine can take upwards of six months. However, as a team, we are increasingly looking for ways to standardize designs and use the same equipment and processes on other projects.

Q What kinds of challenges do these projects typically



Q Can you give examples of ways in which you have been able to add value to facilities with automation installs?

I'm going to focus on a company called Race Winning Brands, which has a division up in Detroit, Michigan. They make the wristpins that I mentioned, and they make pushrods that also go into engines, both in cars and in Harley-Davidson motorcycles.

We looked at several issues and prioritized one that we deemed a safety issue. In the production of the push rods, line workers would hold them in induction heaters until the first three inches of the rods, which are around 10 inches long, would glow red. They would then place the rods into a cooler. Not only is this work mind-numbing and sedentary, but there was also a risk that at any time their hand could slip, and they would have a serious accident.

We were able to resolve this quickly by building a hopper that holds 300 push rods and a robot that picked push rods up, put them into the heater, and then cooled them. The team member was moved to a more fulfilling role, we eliminated a safety issue and improved the throughput. In that case, the expenditure was around \$85,000 with an estimated value creation of \$1.05 million.

encounter, and how does MiddleGround address those?

One of the biggest hurdles we face is variation. We do have ways to overcome that. For example, we had a product that we were producing called a wristpin, which marries the piston to a rocker arm inside a car engine. Those wristpins are all different sizes, but we were able to design a tray that can center-line any diameter of wristpin to

overcome that. The capital expenditure on that wristpin machining process was around \$100,000, with the estimated enterprise value creation being \$1.27 million.

When such variation occurs, most automation companies will immediately turn to a vision system that uses cameras to identify parts and tell robots to pick them up to accommodate different shapes or sizes. Those vision systems

are very expensive and typically slow down processes. I have challenged my team to use vision systems only as the last resort – we prefer to rely on what we can do mechanically.

Q What does the human element of these projects look like? How do you drive effective collaboration and communication with workers?

It is human nature to be concerned when we talk about automation, it evokes “iRobot”-esque fear or thoughts of robots replacing human labor. This is far from the truth, so much of the beginning of our projects is about reassuring our manufacturers that our goal is to help them improve output and safety, not to replace them.

The first thing we do on a project is talk to the team members about the process. Oftentimes, hourly workers aren’t taken seriously by management, but I believe that they are the most knowledgeable people about the processes. They’re often excited to be asked for their opinion and listening to their feedback goes a long way in earning buy-in.

Then, when it comes to talking about automation and what will happen to their jobs, we explain that we want them to be part of helping us to design the equipment and then maintain it once it’s installed. When we do that, we see those team members get engaged and that trend continues when we inform them of our \$25 by 25 initiative! Our goal is to enforce a minimum compensation package of \$25 per hour for all our workers by the year 2025. So, we aren’t just focused on creating value for our investors, we are committed to giving that back to our manufacturers as well.

As an automation team, we are aware that people will always be central to manufacturing and dedicate our time and energy to ensuring that automation integrates seamlessly into people-driven environments. Building our solutions on a foundation of respect and collaboration.

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Q What should LPs look for when selecting managers to lead on automation strategies?

I don’t know of any other private equity firm that has an automation division. Most private equity firms focus on pulling levers on the financial side to create equity value. Others use third parties instead of having in-house automation capabilities, but we find that those providers prioritize the project rather than the portfolio company. Oftentimes, they don’t take the time to understand the end-to-end production flow to evaluate the best automation opportunities. Plus, most of the projects we work on don’t meet the scale of what a large automation company would be interested in taking on, which is often a minimum of \$1 million capex.

So, we differentiate our firm from others through our automation division because that puts a spotlight on our portfolio companies and that allows us to excel when it comes to creating sustainable equity value.

On top of that, because this division is staffed by people with engineering and manufacturing backgrounds when a portfolio company has an issue with equipment, we can dispatch people to help. I have a long background in maintenance and engineering. I know how to manage a breakdown, and how important it is to address that quickly to get a machine operational. If executed poorly you can exacerbate the downtime and that can be really costly.

There have been multiple occasions where we have gone into portfolio companies and helped them with equipment issues and that is because of the strength and depth of our team. We have mechanical engineers with many years of experience in design, we have electrical engineers, controls engineers who spend a lot of time on robotics, fabricators, and experts in equipment maintenance. That breadth of skillset is extremely valuable to our portfolio companies. ■