

ROBOTICS AND AUTOMATION DRIVE HIGHER REVENUES *AND* PROFITS

As rising demand continues, manufacturers are trying to squeeze more from their manufacturing footprints. But many firms — especially small and mid-market manufacturers — struggle with skills shortages and inefficient processes that impair quality, limit production capacity, and delay deliveries.

Process improvements and best practices can alleviate some capacity issues, but can't fully revitalize outdated production environments. But technologies are available for dramatic improvement at manufacturers large and small — if leaders know how to cost-effectively apply *robotics and automation*.

The 3DS Technology Barometer Robotics & Automation¹
(conducted by The MPI Group, an independent research firm) examined the impact that robotics has on manufacturers'

abilities to improve performance, expand production, and grow — regardless of size. The research found that most manufacturers have applied robotics and automation to some extent, but many have room to expand:

- ***Complete application of robotics and automation: 8% of manufacturers***
- ***Extensive application of robotics and automation: 38%***
- ***Moderate application of robotics and automation: 28%***
- ***Some application of robotics and automation: 12%***
- ***Little or no application of robotics and automation: 15%***

Manufacturers with at least some application of robotics and automation are most likely to apply them to sorting (49% of manufacturers), stamping (46%), fabrication (44%), assembly (43%), and material handling (42%) processes. These companies often contract externally for a wide range of services, topped by preventive maintenance and installation and equipment integration services (*Figure 1*).

Unfortunately, many companies encounter challenges with robotics and automation, including:

- *Capital/investments necessary to purchase robotics and automation: 39% of manufacturers*
- *Frontline skills/talent to operate robotics and automation: 32%*
- *Integrating robotics and automation with manual machining and processes: 28%*
- *Coordinating actions of multiple robots working together: 28%*
- *Quality and reliability of robotics and automation: 28%*

Yet despite these issues, manufacturers are embracing robotics and automation to solve skills shortages and improve employee performance and satisfaction (*Figure 2*). Robotics are particularly helpful in remote monitoring and control, which then allows managers and frontline associates to work across entire facilities in real time.

Figure 1. Contracted robotics and automation services (% of manufacturers)

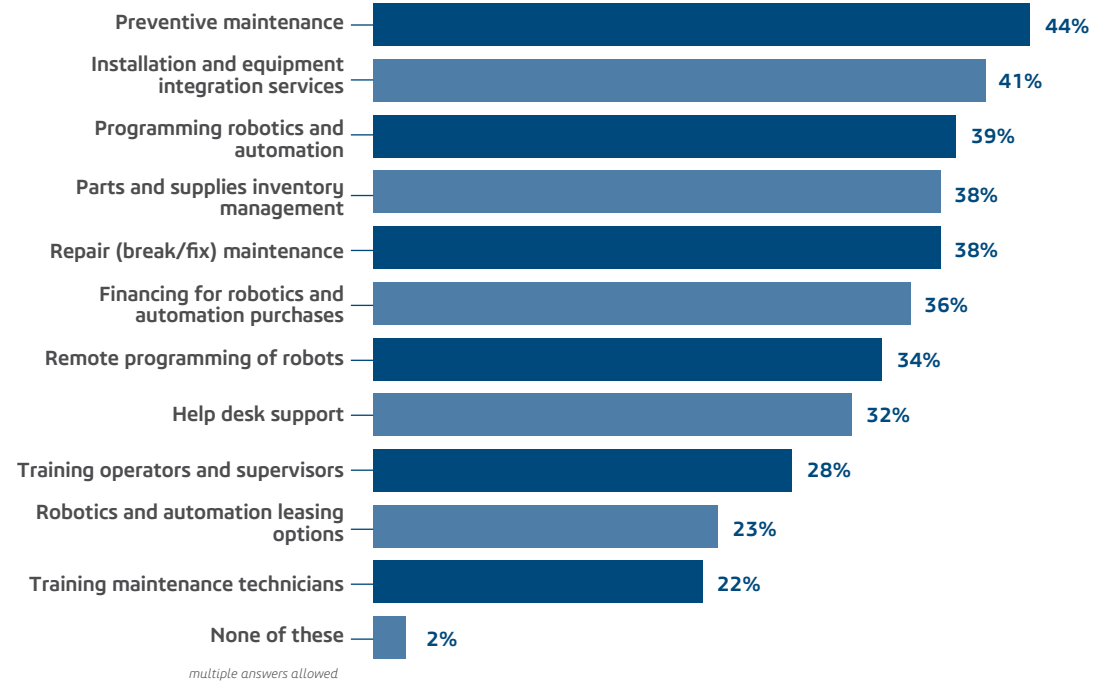
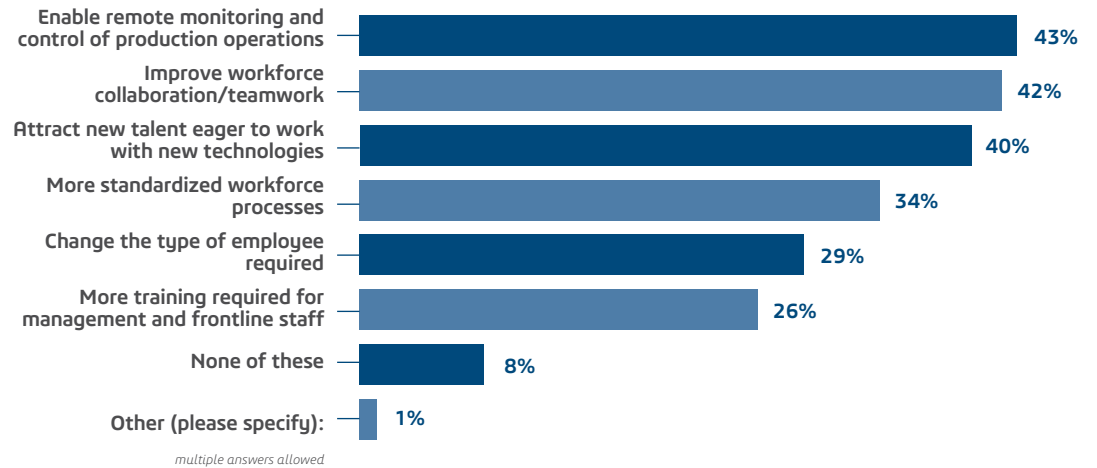


Figure 2. Impact of robotics and automation on the workers (% of manufacturers)

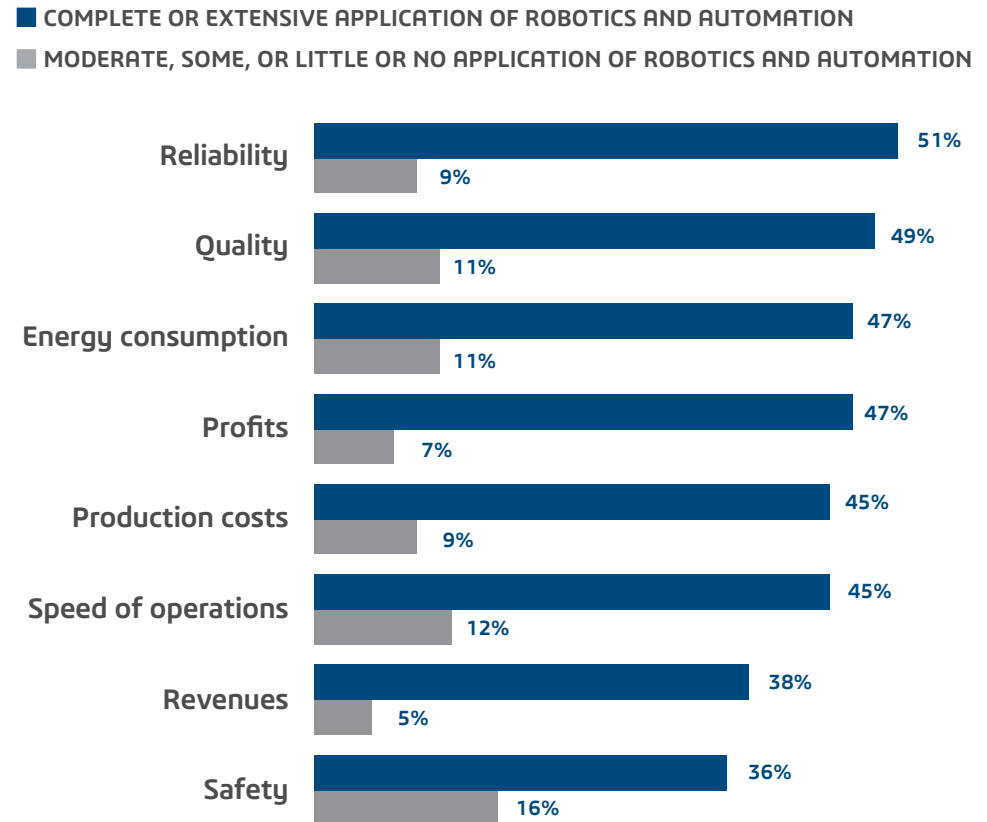


¹ 3DS Technology Barometer: Robotics & Automation, 3DS, September 2023, 104 respondents.

The *3DS Technology Barometer Robotics & Automation* also found that manufacturers have significant opportunities to improve production metrics — in fact, many reported no change or even declining performances in the past year. But among manufacturers with complete or extensive application of robotics and automation to end-to-end operations, nearly all improved performances. For example, 87% improved profits, vs. just 46% of other manufacturers. And manufacturers fully leveraging automation are far more likely to have significantly improved performances than others (Figure 3).

Among manufacturers with complete or extensive application of **robotics and automation** to end-to-end operations, **87% improved profits**, vs. just 46% of other manufacturers.

Figure 3. Significantly improved performance metrics in past year



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