

Attracting the Next Generation of Industrial Automation Engineers and Technicians

By Winn Hardin

Good help is hard to find, especially if you're in the high-technology automation field. Veteran engineers and technicians are comfortably planted in their current positions, and their recent-graduate counterparts barely register manufacturing automation as a career option. The resulting worker shortage is prompting automation distributors to rethink hiring strategies and methods to promote the industry to the next generation of engineers.

The first challenge to overcome is that young engineers simply don't know what automation entails in a modern manufacturing facility. That misconception starts at a young age. In a 2016 survey of parents on their views related to careers in manufacturing, half of respondents didn't see manufacturing as an exciting, challenging, or engaging profession. More than 20 percent of parents surveyed viewed manufacturing as an "outdated and/or dirty work environment."

Once at the college level, engineering students receive little exposure to the subject of industrial automation. Core curriculum typically doesn't cover fundamental industrial automation concepts, which is problematic because the field employs specialized tools and equipment not used by other industries. What's more, students may be well-versed in designing a circuit, for example, but they lack the skills in troubleshooting existing control systems.

Compounding the automation misconceptions and missing curriculum, according to executives in high-technology automation, is a lack of "soft skills." These include verbal and written communications, multitasking, critical thinking, and creativity. Manufacturers and automation distributors want to hire self-starters with strong interpersonal skills but have found that some candidates prefer to have someone else create their schedule and assign them every single task.

On the opposite end of the spectrum, however, are young employees who take self-reliance to the extreme and fail to consult their supervisors on their actions or have difficulty working as part of a team. But managers also need to meet their millennial workers halfway. At the end of the day, young engineers and technicians want a coach or mentor rather than a traditional boss — and a relationship that goes beyond the yearly performance review.

Despite the challenges, early-career engineers shine in many areas. They boast a strong entrepreneurial spirit and willingness to learn, and they want careers that provide opportunities for both. They thrive in dynamic environments like those provided by high-technology automation. They want to do meaningful work.

When an automation company does find the right candidate, the focus shifts to retaining that talent — a mighty task considering that the average millennial worker only stays in a position for two years. Manufacturers and distributors are meeting the challenge by providing training and advancement opportunities, keeping the work engaging and interesting, and creating an environment where employees can share ideas or voice frustration without a fear of punishment.

Tips for Snagging Talent

High-technology automation companies recognize the importance of appealing to early-career engineers and technicians without sacrificing the quality and reliability their customers have come to

depend on. That means creating awareness of — and interest in — the industry through a variety of means, including:

Supporting K-12 STEM (science, technology, engineering, and mathematics) programs. For example, partner with a local middle school to demonstrate cool applications enabled by motion control. Whenever possible, give students opportunities for hands-on learning; the ability to perform an automation task will have more impact than a simple factory tour.

Promoting, sponsoring, or participating in student competitions. Using input from industry representatives, the recent Agile Robotics for Industrial Automation Competition from the National Institute of Standards and Technology (NIST) presented teams with various agility challenges while autonomously completing pick-and-place kit assembly tasks. Find, or even create, similar competitions through local high schools and technical and engineering colleges.

Makes friends with college instructors and professors. While it is ideal to get students interested in industrial automation in their formative years, find every opportunity possible to teach about automation technologies that typically don't make the college curriculum, such as machine vision or industrial pneumatics.

Automation distributors and integrators that prepare for the realities of the next-generation workforce, especially as demand rises for industrial automation, will be better equipped to service existing customers and attract new ones.

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