



Attracting the Next-Generation Workforce Starts With You

Solving manufacturing's chronic shortage of skilled workers requires manufacturing leaders, government, and the educational establishment to revamp an outdated perception of the industry.



By Daniel J. Kern



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INDUSTRY LEADERS DON'T NEED to look very far to relate to various news reports about America's economic recovery, the need for good paying jobs, and how new technology is changing the way we do business. Today the U.S. manufacturing industry faces a workforce crisis as the need for skilled workers increases and many workers head toward retirement. The result is a staggering 240,000 manufacturing job openings left unfilled, according to a December 2013 report by the U.S. Bureau of Labor Statistics.

So why aren't the eligible, unemployed masses jumping to fill these positions? For one, the next-generation workforce is a hard one to attract. And two, an outdated perception of the manufacturing industry discourages qualified candidates from pursuing a manufacturing career.

In order to change this perception, manufacturing leaders, governments, and school educators must work together to inspire the next generation of workers to a career in what is now a modern, high-tech manufacturing industry. The old perception of manufacturing as a dark,

dirty, and dangerous place to work must finally be consigned to the dustbin of history.

Innovation: From Manual Labor to Machine Automation

In the 1950s, long, tedious business and production processes created a labor-intensive industry. The workforce had little to no education, a hardened skillset, and a fluctuating pay rate. Not only were employees often disgruntled, they also worked in difficult, often hazardous, environments day-in and day-out. Due to the unsteady and undesirable conditions, the industry suffered a decline in employment interest.

But as technology advances, so does manufacturing. The plant floor today looks a lot different than it did 50 years ago.

An industry once driven by manual labor is now moving forward at a much faster pace thanks to machine automation, information technology, and increased plant-floor communications. Overall, the industry is more productive, efficient, and poised for new technological advances to promote further transformation.

A recent and relevant example of new technology that has the industry buzzing is 3D printing. Because of its ability to quickly take design concepts and rapidly produce goods that can be sold as finished products, 3D printing is seen as one of the next “new

things” for manufacturers. In addition, emerging areas of manufacturing, such as nanomanufacturing and flexible electronics manufacturing, are not only increasing demand for jobs, but requiring a whole new skill set in the next generation.

These innovations are just the beginning of the new types of manufacturing jobs that require more technical ability and critical thinking from employees who will operate computer-driven equipment, manage automated processes, and work in increasingly technologically intensive environments.

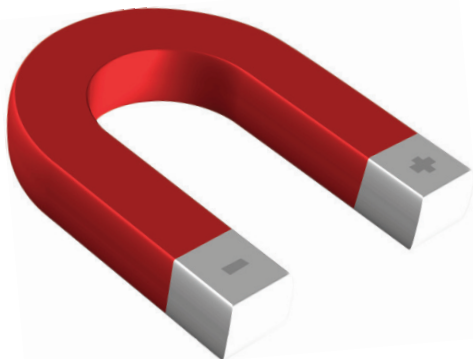
New Skills and New Mindset for the New Hires

There are really good, well-paid positions that need to be filled across the industry. This innovative workplace welcomes both millennials and the existing skilled workforce as manufacturers fill the jobs the momentum of our trillion-dollar industry has left open. And yet many students and new graduates fail to consider the manufacturing industry on their quest to find a career path. Many manufacturing jobs are not the traditional assembly line roles anymore. There is an increased need for more educated and trained employees to join the manufacturing workforce.

Today, operators require advanced knowledge of computers, software, science, and math to program machines that control manufacturing processes. It’s important to note that as manufacturing employment re-



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covered from its cyclical low in January 2010, manufacturers have shown a strong preference for workers with academic-track associate degrees or some level of skilled training, according to the 2013 CSR Report on Job Creation in the Manufacturing Revival prepared for Congress. For example, from 2010 to 2012, the manufacturing sector added 90,000 workers with academic-track associate degrees, and the number of manufacturing jobs held by workers with occupational degrees rose by 10,000.

Whether next-generation workers seek a traditional college experience or vocational schooling, students must be exposed to the various options and training opportunities that are available in the manufacturing industry. Parents, school teachers, and counselors can help students realize which career path might be best for them by better understanding the skills that are well-suited for a career in manufacturing. This type of advocacy is best accomplished when manufacturing industry leaders and organizations reach out to students and new grads, and encourage government leaders to invest in the right kind of training experiences in school curriculum.

The misperception of the manufacturing industry can be a catalyst for change—and that change must start with you.

Advocacy Starts with Manufacturing Leaders

When we think of educators, we are quick to exclude ourselves. However, we should not underestimate our influence on the future workforce. It is our responsibility to help the manufacturing industry succeed and encourage the right kind of workers to join our ranks.

Richard Sade, Vice President of S&S Hinge Company and Chicago District

Chairman of the Precision Metal Forming Association (PMA), has been advocating for the growth of manufacturing and encouraging students to consider a career in the industry for over 10 years. As his company and PMA members struggled with finding qualified, skilled workers, they realized that the traditional ways of advertising and reaching out to potential hires were quickly becoming outdated.

“Our group realized we were going about this the wrong way,” said Sade, who is also a member of the Board of Governors of the Manufacturing Leadership Council. “Our human resources departments were thinking in an old way. For example, a guy comes in, takes a math test, a drug test, and if he is mechanical enough, you hire him. We still had job descriptions and fulfillment packages based on requirements from the 1960s. So, we had to change. We went through a revolution.”

This type of internal evaluation can have tremendous impact on attracting the right kind of job candidates. For example, S&S Hinge Company updated job descriptions, fulfillment packages, testing materials, and more in order to prepare for the next generation of workers. The company even optimized employment ads to link to job descriptions. After employees are hired, S&S links to performance reviews in fulfillment packages to make all documents easily accessible and trackable for employees.

Once the internal tools are ready, organizations and their HR departments can be empowered to begin a targeted approach for reaching potential employees. For example, HR leaders can attend school career fairs, have quality face-time with future employees, and share the benefits of this type of career path and other success stories of the industry. They can also strengthen and develop relationships with key colleges. By reaching out to high school guidance counselors, manufac-



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turing leaders can begin to have conversations with students and parents about all available options for future employment. Another idea to consider is for manufacturing organizations to sponsor community activities and encourage employees to attend.

While many of these recruitment tools are in the public eye, manufacturers also have to find ways to personally attract the always-connected, touchscreen-minded young person. The next generation of workers expects to always be connected. They have multiple mobile devices and interact with peers in new ways all the time. This inherent skillset can be a great asset to the manufacturing industry.

Manufacturers must appeal to this target group and harness their innate techno-



Manufacturing Automation and the Need for Skilled Workers

As the manufacturing industry deploys more automation technology and the need for skilled workers increases, how can finding the right people and keeping them engaged contribute to your success?

When Chicago's S&S Hinge Company installed a million-dollar automated hinge line, the company staffed the new tool with two young, skilled workers who were comfortable with the automation because of their experience with mobile devices and computers. Armed with these skills, the workers are empowered to make real-time decisions, calculations, and adjustments to ensure productivity.

As the company determined which workers to staff the new line, Richard Sade, vice president of S&S Hinge, said that he looked for those with the ability to use processors, learn the equipment, and make decisions on a

moment's notice.

"When we built this new line, we had the two workers involved with the development team," said Sade. "We asked them how to design the work center and they had better ideas than the engineers."

With a background in computer skills, the workers also had the ability to read gadgets, understand them, and apply those skills to a mechanical, electrical environment. Sade agrees that by finding the right people, compensating them well, and offering incentives, the trend towards automation can be a win-win for employees and manufacturers.

"Through automation we can counteract older equipment, become better than our competition, and eventually provide real-time visibility to our customers," said Sade. "We can also enable our workers to be leaders."

logical prowess. Creating manufacturing-focused Facebook pages, Twitter handles, and sharable videos and other content can put the manufacturing world in touch with many millennials and increase the coolness factor of manufacturing jobs that are very much in demand. A mobile mentality can continually open the doors for further progress and innovation in our area, which is why we must use mobile tools to help advocacy efforts.

We must be better at communicating the aspects of manufacturing that will appeal to the next generation of workers. Some future employees will be impressed with the fact that a certain company allows employees to do some or all of their work on any device, wherever and whenever they want, resulting in a workspace that moves with its employees. Others might be interested in knowing that a traditional nine-to-five job can still leave plenty of time for family, friends, and other interests. All future employees would be interested in the advancement opportunities and compensation breakdowns of the industry, so they can better plan their future.

Organizations should position themselves as go-to resources for prospects looking for jobs in manufacturing. They should offer internships and be able to connect future employees to employers. Hosting workshops, seminars, and conferences are also good forums to make connections.

Above all, manufacturing leaders need to band together and commit to creating a successful network of professionals to better inform and influence the next generation of workers.

Changing Perception in Schools

Changing the perception of the manufacturing industry also needs to begin as students reach high school.

Educating parents, school administra-

tors, and the students themselves is critical. For example, many of the students' influencers don't realize that there are other options when it comes to higher education and fulfilling careers. A result of this lack of knowledge has contributed to the decline of shop class and other hands-on learning facilities in middle and high schools.

Schools must do a better job of informing students about today's manufacturing careers before they embark on post-high school plans. Educators must help students realize there are many job openings for them based on the skills they've learned in computer science, business, and science classes. Many students don't realize they can apply those skills to anything other than a traditional "carpeted-office" job. How can students decide if the manufacturing industry is for them if they don't even know it's a choice that could be worth making?

To reform this process, school curricula need to mirror the knowledge needed in the professional world. Are students taking textbook-driven classes? Why not give them hands-on experience? Are they learning about the newest technologies like 3D printing? Why not let them experiment with some of the technologies that are revolutionizing the industry? Think outside the box. Class doesn't have to be restricted to the four walls and a desk.

Teachers need to work collaboratively with school counselors. Counselors need to work with hiring managers at future places

of employment, whether it is a manufacturing plant or a corporate office.

For example, counselors and manufacturing organizations can work together to give students the opportunity to tour manufacturing locations and hear first-hand about the manufacturing industry from the workers themselves.

"It's amazing when you walk them through and they see the automation and the technology, clean environments, safe environments, and where we are on a pay scale," said Sade of S & S Hinge. "School counselors especially walk away with the understanding that there a lot of kids who can't go to a four-year school or are more mechanically adept to do these types of jobs."

Through these types of experiences, we can allow students and educational professionals to build passion for the manufacturing industry. In turn, the necessary skill sets will follow. We must let students and educators see that their perception of the manufacturing industry is inaccurate and outdated. The next-generation techniques and technologies on the plant floor will entice the tech-savvy students.

Make an Impact

We need solutions now for the workforce of tomorrow. We are the advocates of manufacturing's next-generation workforce. Together, we can make a difference. **M**

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