

Skills Gap

Creating the 21st Century Manufacturing Workforce

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An industry regarded as dirty, loud and dangerous must do more to attract young people with the skills needed for modern manufacturing, while companies should promote their technology in the 21st century as exciting, cutting-edge, clean, safe and fun, according to a panel of experts.

Manufacturing businesses must also address a gender imbalance that sees a dearth of female workers across the country, while also focusing on recruiting tech-savvy kids who can be convinced of a future in the industry, the experts said.

Meanwhile, recent research on public perceptions of the industry suggests that although many Americans believe it to be vital to the economy, and that jobs of the future will be high-tech and involve using innovative renewable energy sources, they still hold negative perceptions of manufacturing generally.

The survey, "A Look Ahead: How Modern Manufacturers Can Create Positive Perceptions with the US Public," is published by Deloitte, the National Association of Manufacturers, and the Manufacturing Institute. It suggests only one in every three parents would consider encouraging their child to go into manufacturing, and that many people have inaccurate perceptions of the industry. Plus, schools are not preparing children with adequate skills and up-to-date knowledge for such careers.

It's no wonder then that industry conferences and trade shows have workforce development near the top of the priority list. Discussions center on the skills gap, recruiting top talent, and improving public perception of manufacturing. At Houstex 2017, an expert panel did just that, coming together to talk about the Future of the Manufacturing Workforce.

Panel moderator was Nick Graff, executive director of the Advanced Manufacturing Technology Centers for Dallas County Community College District and president-elect of National Coalition of Advanced Technology Centers. The three panelists were Dan Turner, vice-president of global talent and sourcing at Kelly Services, John Hindman, director of learning and performance improvement at SME Tooling U, and Mike Moncada, CEO of 3D Veterans.

(Un)Skilled Workforce

Positions left vacant by retiring baby boomers was one of the first talking points. The panel explored what steps the industry needs to take to address the problem.

Another survey, "The Skills Gap in US Manufacturing 2015 and Beyond," published by Deloitte, the National Association of Manufacturers, and the Manufacturing Institute, noted that manufacturers continue to report sizeable gaps between the talent needed to keep their businesses growing and the talent they can actually find, with the two major contributing factors being baby boomer retirements and economic expansion.

"There is a gap that really exceeds what we're seeing from the baby boomers," said Turner. "But there is more to [the skills gap] than just baby boomers retiring. I think we're lacking the interest from people who would then go get those skills."

But it's not only a lack of interest. There seems to be an intimidation factor—modern manufacturing uses cutting-edge technology, and people can be fearful of this. Therefore, it is tough to find people with

the appropriate attitude and skill sets to work in the industry.

Graff said, "When we talk about advanced manufacturing these days, we're obviously talking about additive and 3D printing. We're talking about use of lasers. We're talking about robotics and automation. We want to recruit people who are tech savvy. To them, technology isn't a smartphone anymore. They're way past that."

According to Moncada, companies need to excite people with the new technologies being advanced in the manufacturing space. He said, "The skills gap is why 3D Veterans—an organization creating and improving the narrative that military veterans are a perfect fit for advanced manufacturing opportunities in the workforce—was created. Veterans have the proper background and skill sets to be recruited into the manufacturing industry."

Turner, who served in the military, said veterans are trained for leadership roles and have the right skills and attitude. "Our military folks today are working with truly cutting-edge technology unlike anything I ever experienced," he said. "I think there is a perception that veterans don't know how to use cutting-edge technology, and that couldn't be further from the truth. We have a ton of veterans getting out right now that would be fantastic in a manufacturing environment."

The so-called millennial generation also has the interest in technology needed for a successful career in manufacturing. Technology is a daily recruiting tool for the younger workforce. "You want to talk about a generation enamored with technology? One of the ways we attract top talent to manufacturing is to talk about all of the technology they're going to be able to work with," said Turner.

Also, despite being great candidates for industrial jobs, women are rarely seen in the manufacturing workforce. "The fact that there are no women on this panel should tell us something," Hindman pointed out. "I know personally. I have worked across the country with some amazing women in manufacturing, some highly skilled production women as well. So they are out there. I am working on a number of US Department of Labor apprenticeship programs across the country and some of those apprenticeship dollars are actually earmarked for women."

Manufacturing Refit

The panel also discussed how to rebrand the image of manufacturing to make skilled workers aware of what careers the industry can offer them. It's also about education and showcasing the cutting-edge technology being invented and used.

"There is a perception around what manufacturing looks and feels like: it's dirty, it's loud, it's dangerous," said Turner. "The other thing is, I think people remember what happened in 2008 and 2009 when the recession hit. And I think all of us probably had a friend or a relative that was impacted by the significant layoffs that took place during that time in the manufacturing space. I think there's an opportunity to change the perception around manufacturing to talk about it being an exciting opportunity and there's also some brand awareness that needs to be modernized."

Besides improving public awareness of what modern manufacturing is, it's also important to show how lucrative a career in the industry can be, the panel members said. "As the VP of recruiting for North America, I'm a to quite a few Fortune 250 organizations," said Turner. "We not only place folks in the manufacturing space, we place IT professionals, nurses, lawyers, scientists. So, a year ago I wanted my four kids to be nurses because of the talent gap there. I will tell you right now, I want all four of my children to be engineers now."

Communication and outreach are keys to dispelling misperceptions about manufacturing. The industry must strive to get away from the outdated stigma of manufacturing being a dirty business that kids shouldn't consider having a career in. "One of the big things, I think, is to start messaging around Manufacturing Day [which occurs in the US each year in October]," said Hindman. "It is important for the industry on a local level to reach out to the communities, reach out to the schools, and open the

doors for students to come in and say 'Hey, I have a career opportunity in manufacturing'."

According to Turner, the landscape and culture of manufacturing continues to improve, but the message that manufacturing is modern, clean, safe and fun needs to be better communicated. A great example of carrying a positive message comes from Turner's recent visit to his children's elementary school.

"I have children in third and fourth grades, so I had two career days back to back. I go in to do the career day. I've got a suit on and I really want to make a good impression for my son and his classmates. Of course, I go after the firefighter who has all of his gear with him. And then I stand up there with a suit on, talking about recruiting, and it was the most boring presentation. I basically got booed off the stage," said Turner.

"I went home and I told my wife that I failed miserably," he continued. "But I had another chance. I roll in to my daughter's fourth grade career day and, of course, I'm behind a policeman. So, when it was my turn I told them, 'I find people that make the macaroni and cheese that you eat.' I got a standing ovation from the kids. And I was the coolest dad of the career day because I made the macaroni and cheese. We just have to make manufacturing fun again."

Local Partners

Education is imperative for workforce development. At the moment, people can embark on many different manufacturing programs. However, traditional education is not realistic anymore, according to Graff. "We have to be able to have short-term programs to turn people out into the workforce quicker," said Graff.

Hindman said today's young people wanting to develop their professional skills are looking for continuing education from their employers.

"The whole idea of micro-credentialing from the educational side allows for students to get stackable, quick credentials in order for them to get degrees over a period of time, but also still be able to apply their micro-credentials to the work that they're doing every day," explained Hindman. "I think there is going to be a continuing need as these manufacturing folks develop within the organization itself."

Both work and education-based apprenticeships are available where there are related training instruction hours (that could or could not be actual degrees) from participating schools. "I think education needs to be flexible in a way where they can look at those micro-credentials, and look at more competency-based programs that can include both the education side and the work side of the programs," said Hindman.

Companies can also partner with schools and communities to help fill the skills gap. "From an educational perspective, there are opportunities to donate equipment. There are internship opportunities. There are ways to get on advisory board panels. You can influence the curriculum," said Graff.

According to Hindman, outreach on the local level is extremely important: "You've got to get involved with the community, to make sure everyone knows what you make and how you make it, and how well you make it."

Developing Employees

Companies should have a strategy to develop their employees. In the past, many in the industry thought that if they trained their workers, they would leave. But the future of manufacturing is different. Training is now a must.

"We always said train them and they'll leave, train them and they'll stay," said Graff. "So you take a 50-50 shot there. Continuing education is crucial, because if we talk about 2008 and the recession that

hit, the majority of the people that got let go in that time were what we call button pushers. The people that weren't skilled. The people that couldn't set up good programs. The people that weren't cross-functionally trained. You weaned out the people that you knew were easily replaceable."

According to Graff, the government has millions of dollars for industry training, and apprenticeship programs often create a two-way loyalty between employer and apprentice. "The employee is loyal to you because they know you're going to give them three years at least to finish that program, and you're loyal to them because you're saying 'I'm going to commit to you'."

Hindman added that for any company to be a success, it must have a strategy for training. "If you do not have your infrastructure in place, you do not have your development strategies in place, you don't have a way for [employees] to succeed within your organization. The attrition will still continue. That skilled person is going to go in and they're going to say 'This company does not care enough to develop me towards the performance that they're holding me accountable for'."

Sometimes a company can partner with another organization for opportunities to grow their employees' skill sets. "We talk about building strategy because I think there are opportunities to build and develop internal talent, but then it's important to partner with the right organization to make sure that you can bring in the right talent," said Turner. "If your talent-acquisition strategy is to post a position on a national contracted job board then that's a strategy that, in my opinion, will fail. It's a matter of where your partnerships are and really being robust in your strategy."

According to Moncada, talking about it is one thing, but acting on it is most important. "You just can't discuss and talk about the challenges that manufacturers have. You have to go out and create those partnerships."

For Moncada, it's imperative 3D Veterans understands what its client companies are doing, and the processes, training and company standards the placed veterans must meet.

It's important to follow up with clients to see if the company is happy and also follow up with the veteran to see if they are happy with the job. "I think you have to make it innovative in a way that you can continue to work with the people that you placed, but also reach out to the employers and see how the veterans are translating their skill sets during a training program to the job," Moncada added.

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