

HEAVY EQUIPMENT INDUSTRY

SOLUTIONS FOR THE SKILLS GAP IN THE HEAVY EQUIPMENT INDUSTRY

February 2016 . Knowledge Brief . Part 2 of 2 . Industry Workforce Solutions

Part two of this knowledge brief will highlight strategies for the heavy equipment industry to bridge the skills gap and prepare for the future.



SKILLS GAP AND THE HEAVY EQUIPMENT INDUSTRY

For those in the manufacturing and heavy equipment industries today, the view of the American labor force is less than encouraging. On one shore stands an aging workforce with the embedded knowledge that has fueled the trade industries for decades; on the other, a sparsely populated offering lacking the skills needed to keep companies moving confidently into the future.

The current skills gap and its impact on the American labor force have deepened the resolve of many to find solutions to ensure the health of businesses and the U.S. economy in the years ahead. However, while relationships between trade industries, academia and the government have formed to help recruit and develop skilled workers—the hardest vacancies to fill—immediate solutions are few. As workforce demographics continue to shift, businesses will be forced to embrace new strategies to help close the ever-widening gap.

CHANGE THE PERCEPTION

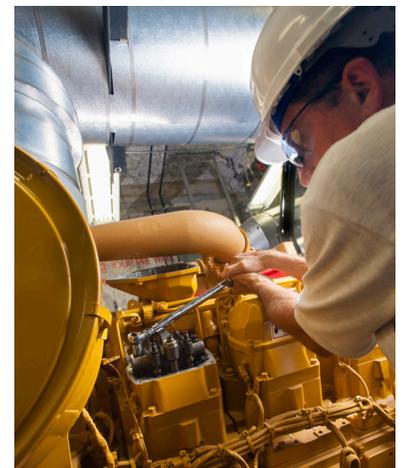
For many experts, the key to closing

the talent gap lies first in changing minds about the vocational trades. For almost five decades now there has existed a negative perception of the trade industries—that blue-collar jobs were inferior to white-collar positions.

In fact, the Foundation of Fabricators & Manufacturers Association conducted a poll in which 52 percent of teenagers admitted having no interest in a manufacturing career at all. Why? Two-thirds considered trade jobs dirty and dangerous, requiring little thinking or skill and no opportunity for personal growth or career advancement. In their 2015 Skills Gap Report, the Manufacturing Institute (MI) and Deloitte noted that Gen Y (those aged 19–33) ranked manufacturing as their least preferred career destination.

So how do businesses un-ring the bell that has tolled such negativity for the trade industries? Changing a long-standing perception takes a village—in this case, the trade industries themselves. Those very teenagers with no interest in manufacturing must be educated about the viable and fulfilling careers available. Promoting the best of the trade industries can help to counter the negative perceptions.

The digitization of the supply and production chains and the increased use of automation in factories offer prospective employees the opportunity to work with next-generation smart devices and machines.



Perception: Trade jobs are dirty and dangerous.

Reality: Trade groups such as the Association of Equipment Manufacturers (AEM) have been providing programs to promote safety-conscious attitudes and performance for 45 years. In addition, the development of new technologies is bringing about increased safety and reliability in the workplace. A great number of jobs in the manufacturing industry are positions that require the same high-tech skills utilized in professional arenas.

Perception: Trade jobs are boring and require little skill or thinking.

Reality: The digitization of the supply and production chains through smart technology and the increased use of automation in factories offer prospective employees the opportunity to work with next-generation smart devices and machines.

Perception: Trade jobs are low-paying.

Reality: According to a National Association of Manufacturers 2014 report, the average U.S. manufacturing worker earned \$79,553, while the average worker in all industries earned \$64,204. According to the MI and Deloitte survey, 80 percent of executives are willing to pay more for talent, including 68 percent who are willing to pay 1–10 percent more; 10 percent who are willing to pay 11–25 more; and 2 percent who are even willing to pay 25 percent more for right talent match.

So how can businesses convey these realities to youngsters, parents, teachers and school counselors? There are numerous associations and organizations that actively promote the benefits of trade careers, They work with community and technical schools to encourage the next generation of skilled workers.

- The Manufacturing Institute has the **Dream It Do It** program, which serves to dispel misperceptions about the manufacturing industry and inspire younger generations to pursue careers in it. The initiative works with local manufacturers, schools and community-based organizations to engage youngsters in summer camps, ambassador programs and local competitions. In 2015, more than 426,000 students participated in the program.
- **Nuts, Bolts & Thingamajigs.** the Foundation of the Fabricators & Manufacturers Association offers



scholarships to students pursuing manufacturing careers. It also has manufacturing summer camps for middle- and high-school students to learn more about the industry.

- TV host Mike Rowe of Dirty Jobs fame has long been an advocate for vocational careers and has been very outspoken about the skills gap in the U.S. labor force. His foundation, **mikeroweWORKS**, supports the skilled trades through scholarships.

Businesses can take advantage of the resources from these organizations and foundations, such as online job postings, and work with them and other stakeholders to present the benefits of the industry and to recruit new workers.

CREATE COMPETITIVE ADVANTAGES THROUGH TECHNOLOGY

Additional responsibilities and constant overtime to meet production levels can negatively impact workers and, ultimately, the business itself. The “do more with less” mantra cannot always support the long-term goals of organizations. Businesses need more workers, and with Baby Boomers retiring, attracting younger generations into the skilled trades is even more critical.

Without question, Gen Y and technology go hand in hand. Those born in the 1980s and after have grown along with the advances in web-based technologies and mobile communications. Companies can replace their paper, email and spreadsheets in favor of technologies that appeal to the need of Gen Y for instant communication while allowing executives to gain much-needed visibility into service operations.

Cloud computing, big data solutions and predictive maintenance technology currently help businesses with efficiency and productivity, and with the Fourth Industrial Revolution upon us, the next generation of trade workers will witness breakthroughs in cyber-physical systems that could transform entire systems of production:

- The Internet of Things (IoT) – a network of physical objects— such as mobile devices,

vehicles and buildings—that will be able to collect and exchange data, allowing trade industries to identify failures in machinery and production lines and resolve problems in real time.

- Nanotechnology – faster computer processing and smaller memory cards that will allow for super-precision manufacturing.

- 3-D printing – advances in the ability to produce objects using metal, plastic, concrete or mixed materials. Also known as additive manufacturing systems, this technology is used for rapid prototyping before mass production, and has been implemented by companies such as G.E.

For small businesses, in particular, where reputation is everything, these competitive advantages can help to strengthen employee relationships by empowering workers to transition seamlessly between jobs and resolve issues in the field as well as create enhanced customer experiences. For larger companies, executives can react to new opportunities instantly through new technologies that complement their offerings and allow for new services.

The skills gap and the technical nature of work in the manufacturing industry have led many manufacturers to redesign, automate and streamline production processes. However, while technology is certainly playing a pivotal role in moving companies forward, the use of it actually increases the need for more skilled workers.

ACCESS UNTAPPED DATA POOLS

Seventy-five years ago World War II created a gaping hole in the U.S. industrial labor force. With millions of young men overseas, women went to work in shipyards and munitions factories—represented by the iconic Rosie the Riveter—to support the war effort and keep the economy strong. In the aircraft industry, the percentage of female workers in pre-war years was 1 percent; by 1943 it was 65 percent.

With the current shrinking talent pool in many industries, we may witness the emergence of similar Rosies—women entering traditionally



male-dominated fields such as construction and heavy equipment to fill vacancies.

While women have worked in such skilled trades for decades, there is now a movement to introduce these fields to a new generation. An example is the joint effort between the Iowa Workforce Development, IowaWORKS and Hawkeye Community College. In January 2016 they set up a simulation trailer for women to run virtual heavy equipment such as excavators, road graders, bulldozers and welding equipment. The event was part of the PROMISE JOBS program that provides women with the opportunity to learn non-traditional construction jobs.

CONCLUSION

Dr. Charles Blankenship, President and CEO of GE Appliances and Lighting, stated that, “We cannot fully realize the renaissance of U.S. manufacturing unless and until we solve the manufacturing skills gap. Manufacturers are the key to solving this problem. By aligning together and clearly defining their needs—and speaking with one voice—they can work with secondary and post-secondary schools and government to create a system that attracts, develops, and retains skilled manufacturing talent.”

For the manufacturing and heavy equipment industries, recruiting and retaining talent will require new strategies, new business approaches and new alliances that can speak to the value of careers in the trade industries. As Klaus Schwab, Founder and Executive Chairman of the World Economic Forum stated in January 2016, “I am convinced of one thing—that in the future, talent, more than capital, will represent the critical factor of production.”

Those very teenagers with no interest in manufacturing must be educated about the viable and fulfilling careers available in the trade industries. In many cases it is simply promoting the best of the trade industries to counter the negative perceptions.

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