

A wide-angle, high-angle photograph of a large industrial manufacturing facility. The space is filled with various pieces of machinery, workbenches, and materials. Several workers in hard hats and work clothes are visible, engaged in different tasks. The lighting is a mix of overhead industrial lights and natural light from the side. The overall atmosphere is one of a busy, large-scale production environment.

Future-Proofing Manufacturing's  
**SKILLED TRADES  
TALENT NEEDS**



**Aerotek**<sup>®</sup>

Our People Are Everything.<sup>™</sup>

In an age of disruptive change from a shifting global economic and political landscape, rapid integration of technology in the workplace and changing labor force dynamics, manufacturing companies face evolving challenges in the world of workforce management. Deloitte's 2017 Human Capital Trends Study identified "building the organization of the future" as the top challenge for 2017 (Schwartz).

Further, acquiring and retaining quality talent remains employers' top concern, particularly in the face of an ongoing talent war that some contend is only just getting started. Businesses are increasingly seeking to future-proof their talent acquisition strategy, not only to inoculate against fluctuating future market conditions but also to capitalize upon them. While the broader war for talent endures across industries and professions, a closer examination of skilled trades in manufacturing, which has suffered a decade-long talent gap and is experiencing steady and anticipated growing demand, highlights the dynamics of developing a future-ready human capital strategy.

## What's Driving Demand?

In the past few years, the skilled trades vocation has begun to emerge as a more viable, even lucrative choice of professions. With the country firmly embedded in extended economic recovery, the demand for skilled trades talent continues to increase, without corresponding growth in the talent pool. Factors that complicate this issue include the growing gap when skilled tradesmen retire or leave the profession and the lack of emphasis on skilled trades in middle and high school in favor of professions like information technology, law and medicine.

In the manufacturing industry, projected demand compounds the challenge of managing a scarce skilled trades talent pool. A joint Deloitte-Manufacturing Institute report on the "Skills Gap in U.S. Manufacturing, 2015 and Beyond" noted, "Over the next decade nearly 3.5 million manufacturing jobs likely need to be filled. The skills gap is expected to result in 2 million of those

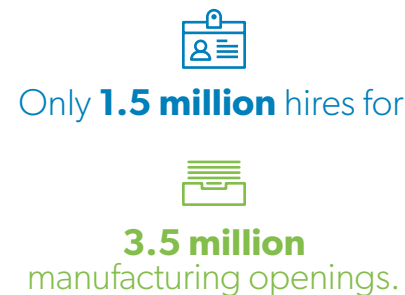
The past year saw an average of nearly **20,000 MANUFACTURING JOBS ADDED EACH MONTH**

jobs going unfilled." The demographics and requirement for certain skill sets further emphasizes the scope of the talent gap. For example, the American Welding Society projects a shortage of 400,000 welders in the U.S. by 2024. Additionally, the Bureau of Labor Statistics reports current unemployment remaining below 5 percent in the manufacturing industry. The past year saw only 4.5 hires for every 5 manufacturing openings, and July 2017 alone marked the addition of 16,000 jobs. Further, with the

### WIDENING SKILLS GAP



BY 2024



Sources: Bureau of Labor Statistics; Deloitte-Manufacturing Institute, "Skills Gap in U.S. Manufacturing, 2015 and Beyond"

U.S. Department of Labor estimating that approximately 7 million construction jobs will need to be filled by 2024 (BLS), expansion in non-residential and utilities construction and local and state infrastructure investment substantially increases competition for skilled trades professionals.

In addition, advances in 3D printing, robotics, renewable energy and the Internet of Things will continue to drive demand for advanced automated production skill sets (World). In fact, the proliferation of e-commerce business and automation has become a huge influencing factor in the demand for specialized skill sets, particularly in maintenance. With the increased use of automation creating more efficiencies in manufacturing, the traditional maintenance skill set is evolving to a much more diagnostic, computer-based, sophisticated skill set. Automation has dramatically changed requirements for maintenance skill sets:

Assembly-line workers now need to run, operate and troubleshoot computer-directed machinery. Manufacturers maintain complex websites with thousands of product and pricing options to be updated and maintained. And where forklifts are still driven by people, drivers often use software programs that track inventory.

There are more computers on the manufacturing floor than machine tools and other types of equipment

— Judy Marks, CEO of Siemens USA (Sewell and Rugaber)

Aerotek Executive Director of Sales Bill Ruff notes, "We're starting to see a more diverse level of skill sets with a higher acumen needed in the manufacturing segment. As companies are increasing investments in design for a higher end product and optimized speed-to-market, the market is experiencing a healthy demand for all skill levels, from entry to semi-skilled to professional."

Further, there has been a notable downshift in the practice of off-shoring, with U.S. companies now increasing efforts to keep high-level, specialized positions in country. With the trend anticipated to continue, the most successful companies are experiencing increased profit from the investment in skilled, customized manufacturing solutions (Lohr).

THE MOST IN-DEMAND INDUSTRIAL SKILLED TRADES POSITIONS IN 2016 WERE MAINTENANCE AND REPAIR WORKERS, ELECTRICIANS, INDUSTRIAL MACHINERY MECHANICS AND MACHINISTS, WITH THE TOP SKILL SETS IN REPAIRING (COMPUTER SYSTEMS) AND MAINTENANCE. ACROSS MULTIPLE INDUSTRIES, **AEROTEK EXECUTIVES NOTE THE MOST REQUESTED SKILLED TRADES POSITIONS CURRENTLY ARE MAINTENANCE MECHANICS AND TECHNICIANS, WELDERS, MACHINISTS, ELECTRICIANS AND MILLWRIGHTS**, WITH THESE SKILL SETS IN HIGH DEMAND FROM ENTRY-LEVEL TO MASTER CRAFTSMAN.

— EMSI

## Strategies to Attract Talent

In order to compete for talent, wages are slowly rising to match demand across all regions, with some areas experiencing significantly higher growth.

*"In Raleigh, **manufacturing earnings rose 33.4 percent from 2012-2016**, nearly three times faster than all private-sector earnings. Trenton, New Jersey; Corpus Christi, Texas; Columbia, South Carolina; and San Jose, California, experienced the next-highest increases in manufacturing compensation among the largest 150 metros" (Wright, qtd in Emsi).*

Given healthy compensation levels and continued rising demand, many manufacturers realize the necessity of offering competitive wages for positions no longer considered less desirable, low-paying career options.

Yet despite modestly successful early initiatives to shift perceptions and spur growth in the trades'

profession, many companies still think of the recruit in a traditional sense and continue to set unyielding expectations for a certain individual at a certain pay rate. With talent scarce across the board but particularly at more tenured experienced levels, companies should look beyond their "ideal candidate" models to exercise a degree of adaptability.

More than ever before, today's skilled trades professionals can be selective in their choice of employers. Beyond competitive wages, candidates are looking for employers that make employee development a top priority. Today, tech-savvy trades professionals are progressively seeking opportunities to work with advanced applications. In identifying solutions for addressing the considerable trades talent gap, Nathan Coin, Aerotek manager of Commercial Divisional Operations, asserts, "It's an all hands on deck effort to get the problem solved. There is no magic formula; when you articulate a dynamic Employee Value Proposition, invest in training and apprenticeships, prioritize employee development and partner with a staffing company, you can make great strides to address the issue effectively."

The most successful approach involves a partnership of staffing experts and companies working together to attract viable candidates early, sharing experiences and communicating information on career paths to promote the message that quality, sustainable jobs are thriving in the skilled trades. More companies are engaging in apprenticeships and internships, developing and promoting employees from one level to the next and paying them competitively — creating a culture of continuous improvement. And in the long-term, the most accomplished of these businesses also receive the most referrals, further easing recruiting challenges and enabling them to attract the best talent.

## BEST PRACTICES: RETAINING TALENT

Investing time and energy in collaboration at the front end can be truly transformative in the end result. A major industrial manufacturer recently found itself struggling to acquire and retain quality employees. Previous recruiting efforts yielded inadequately experienced candidates, a lack of open communication between employees and management and challenges with candidate screening — resulting in issues with attendance, high turnover and workplace safety concerns. The company partnered with Aerotek, which created a customized screening policy, consulted on market conditions and recommended pay adjustments to enable the client to compensate competitively within its industry and market. Aerotek also streamlined communication with all company stakeholders to ensure two-way feedback on performance. The company experienced an

# 80% reduction in attrition,

workforce stabilization and increased productivity, ultimately surpassing its annual profit goals for the first time in years.

## Filling the Pipeline with Innovative Partnerships

Industry leaders are looking to create partnerships that provide additional recruiting scope. In the course of Aerotek's associate membership in the National Tooling and Machining Association (NTMA), staffing experts get the opportunity to interact with mid-level manufacturing machining and tool and dye companies, gaining insight on their top concerns and enabling more effective talent management. Coin notes, "Internally, the most effective companies are really looking at hiring and developing talent from the ground up."

In other initiatives, Aerotek teams sought ways to foster key partnerships to address the skilled trades gap:

### Collaboration with Technical Schools

Aerotek teams tapped into a Minnesota technical school's local workforce development program to create a 20-hour training course that familiarizes staffing professionals serving the manufacturing and industrial sector with the skilled trades program — from CNC machining to welding to sheet metal fabrication. In this program, account executives and recruiters actually learned how to operate machines and at a high level, take the same classwork as skilled trades students. Results included:

- Enhanced recruiting expertise and insight in screening for quality talent
- Improved communication with companies about strategies for acquiring talent
- Collaborative advances in pipelining through training and development programs beyond what exists in-house for companies

### Recruiting Diverse Talent

Aerotek partnered with a major manufacturing company to diversify its talent pipeline. Aerotek team members engaged with military bases in Kentucky, Tennessee and Texas to recruit veterans and their spouses, as well as partnered with Getting Hired to develop disability recruitment solutions. Results included:

- Notable success in using community outreach and networking
- Significant increases in recruiting talent from many different cultures
- Collaboration to remove barriers and foster inclusivity

### Apprenticeship Programs

Aerotek can partner with economic development councils and trade groups such as NTMA to develop multi-week, hands-on, mid-level apprenticeship programs, including:

- Facilitate career counseling, transition support and resume/interview preparation to ensure students' readiness to enter the workforce upon completion of their education
- Ensure a smooth transition to career centers and/or local colleges and universities to allow students to continue their education and complete their associate's or bachelor's degree
- Investigate the potential for Department of Labor grants that provide job transitioning support to students and candidates
- Prioritize program retention with a potential to work with Aerotek clients after completion of the program

If employers, industry experts and staffing professionals work together to replicate or apply comparable initiatives across varying markets, regions and high demand professions, there is great potential to finally future-proof the skilled trades professions.

## Investing in the Future

Over the past several years, a number of high-level initiatives have surfaced in support of education and training for the next generation of skilled craftspeople. Industry leaders have testified before Congress to spotlight the need to inspire young people to join the trades profession. The Manufacturing Institute implemented its National Association of Manufacturers (NAM)-endorsed Manufacturing Skills Certification System in various community colleges across the nation. In 2014, an annual National Manufacturing Day was established as “a collective effort to educate visitors about manufacturing careers and improve public perceptions of manufacturing (National).” Such prominent attention has been modestly successful in increasing awareness, from the highest levels of government down to county public schools, of the challenges of the skilled trades talent gap (Connors).

Similarly, trade industry associations have taken the lead in focused campaigns. The United Association union of plumbers, fitters, welders and service technicians engages in targeted recruiting in high schools. The International Brotherhood of Electrical Workers (IBEW) and National Electrical Contractors Association (NECA) work with principals and have launched a social media campaign to promote alternatives to a traditional four-year college degree (Connors, 66).

In addition to national collaborative efforts, specific industries have also begun to take modest steps to strategically address the talent gap. The National Robotics League, for example, declares a “vision... for every student in the United States to understand, explore and consider manufacturing as a viable career option.” The league regularly sponsors innovation competitions nationally at the high school and community college level to encourage development of engineering skills (National Robotics, DiscoverE).

Further, universities are reevaluating their curriculum in order to better match real-world employer needs and expectations with the foundational skills of new graduates, promising to improve the future-readiness of the talent pool. In five years, the demand for certain skill sets will change considerably, and within another five years will change yet again. Both companies and staffing professionals can engage in continuing dialogue with colleges and vocational schools to discuss evolving and emerging requirements for skilled trades training and education. The education system, from the earliest levels, is positioned to play a significant role in addressing the skills gap and moving from reactionary talent management to a proactive, strategic approach that is more impervious to the forces of change.



## Conclusion

The growing need to address the talent gap in manufacturing skilled trades has given birth to a host of programs and initiatives by varying organizations. Ultimately, the most successful endeavors will engage a holistic approach where government and business leaders, industry experts, staffing professionals and educational institutions work creatively and collaboratively to prepare emerging talent. Together, they can meet the challenges of automation and evolving technology, the shifting economical landscape and other factors in order to conquer disruptive change, both today and in the future.

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