



FUTUREPROOF:
HOW UPSKILLING CAN
EASE THE SKILLS
GAP DILEMMA

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EXECUTIVE SUMMARY

The skilled labor shortage is the dominant barrier to growth affecting North American businesses. Businesses must replace a generation of skilled workers approaching retirement and avoid burdening less experienced employees with additional work. They must also address new in-demand skills created by advances in automation. Plummeting trade school enrollment is constricting an already narrow talent pipeline. New methods are needed to ensure roles are filled and production goals are met. Proactive companies are beginning to invest more resources into upskilling strategies designed to close the talent gaps in their workforce.

This white paper will identify the industries most affected by the evaporation of skilled labor and offer guidance on how to launch an upskilling strategy for your company.

THE CURRENT STATE OF SKILLED TRADES TALENT

For years, the impending skilled trades talent shortage has been a well-known yet lightly addressed threat. Over 22% of the current skilled trades workforce is expected to retire in the next 10 years¹. This is creating a tremendous number of opportunities for talent, but there aren't enough experienced workers to take on the roles.

Furthermore, the competition for entry-level talent is heating up. Minimum wage increases across industries is eroding the pay advantage many employers previously enjoyed. Attracting talent that businesses can invest in long term is becoming equally as complex as finding immediate replacements for skilled talent approaching retirement.

In the construction industry alone, nearly 100,000 jobs go unfulfilled annually². This not only creates a problem with finding talent and meeting business goals — it also burdens existing staff with extra work. This presents both safety and retention concerns as workers battle fatigue and occupational burnout.

Hiring electricians, technicians, maintenance workers and other skilled trades professionals will be key to keeping projects on schedule and orders fulfilled over the next 5-10 years.

¹ Occupation by Age and Top 10 SOC codes, Construction (EMSI 2021)

² Monthly construction job openings in the United States. Retrieved from <https://fred.stlouisfed.org/series/JTS2300JOL#0>

TOP 10 IN-DEMAND SKILL SETS³

SOURCE: EMSI LABOR MARKET ANALYTICS, 2021

Maintenance & Repair Workers, General	> 301,491
Automotive Service Technicians & Mechanics	> 122,380
Electricians	> 48,071
Heating, Air Conditioning, and Refrigeration Mechanics & Installers	> 45,695
Industrial Machinery Mechanics	> 39,408
Carpenters	> 35,525
Welders, Cutters, Solderers, and Brazers	> 30,478
Plumbers, Pipefitters, and Steamfitters	> 26,128
Machinists	> 27,447
Operating Engineers & Other Construction Equipment Operators	> 14,050

upskilling workers is a known solution in the skilled trades space. According to a recent survey, 74% of companies acknowledge that upskilling the workforce is critical to their success over the next 18 months. However, only 10% of businesses state they are well prepared to act⁴. The challenge of launching an upskilling program is daunting, and companies are responding in various ways.

³ The Top 10 SOC Codes by Unique Job Postings Across the United States from January 2021 to July 2021 (EMSI)

⁴ Staffing Trends 2021. Staffing Industry Analysts. Retrieved from <https://www2.staffingindustry.com/site/Research/Research-Reports/Americas/Staffing-Trends-2021>

AUTOMATION IS CREATING A DEMAND FOR NEW SKILLS

The rise of automation has further complicated the search for skilled trades professionals. Not only are companies looking to replace retiring workers, but they also need talent with the skills to operate and repair rapidly advancing technology. This creates new opportunities for skilled workers to transfer their talents to new practices.

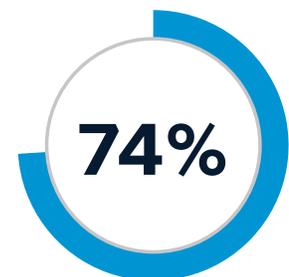
“The sophistication level of mechanics is increasing because you are dealing with more computerized elements and software programs,” states Aerotek Strategic Account Executive Stanley Johnson.

The robots are not taking over, but they are becoming more prevalent. Companies need the talent that can maintain these incredibly expensive investments. The demand for technicians experienced in working with graphical interfaces and other means of technological interaction is rapidly increasing. Employers must take new approaches to employee education and training to expand their talent pools.

“These positions in the automation and robotics field typically are not available to an entry level or untrained candidate so training and upskilling is necessary,” says Recruiting Practice Lead Blake Poore.

INDUSTRY UPSKILLING TRENDS

The idea of



of companies acknowledge that **upskilling the workforce is critical**

How you upskill your workforce will depend largely on your industry and the specific skill gaps that need to be addressed. Aerotek’s experience and expertise across industries has given us insight into their specific upskilling challenges and emerging skill demands.

AUTOMOTIVE

Automotive companies are responding to changes on several fronts. Advances in technology and stricter emissions regulations are forcing a shift towards electric vehicles (EVs). Consumers are not the only ones demanding EVs. The e-commerce boom has prompted delivery companies to invest more in creating an electronic fleet of delivery vehicles.

Meeting existing consumer demand for non-electrical vehicles is a lingering pain point for many companies. Meanwhile, former luxury options are becoming standard and new features like Adaptive Cruise Control are gaining in popularity. Building and repairing these features requires finding talent with new skills.

CONSUMER AND INDUSTRIAL PRODUCTS & MANUFACTURING

The ongoing rise of consumer demand propelled by e-commerce has been a boon for manufacturers, but the rising prices of materials, shortage of labor and scarcity of computer chips and semiconductors has stalled production and delayed shipping. Production levels are stabilizing, but ING economy specialist, Iris Pang, says we may still be years away from fully restoring the supply chain⁵.

Compounding the challenge to source raw materials — the shortage of skilled talent remains

a significant barrier to growth. Along with the challenge of finding skilled workers to replace the aging Baby Boomer generation — businesses are finding fewer young professionals that have an interest in the skilled trades.

FACILITIES AND MAINTENANCE

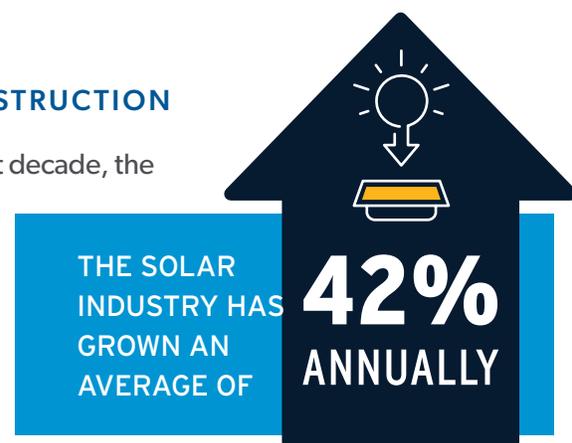
E-commerce has not only increased the demand for manufactured goods. It is also a big reason for the increase in new warehouse and distribution centers⁶. The growth of new facilities has pushed efficiency boosting technology to the forefront as companies seek to streamline processes and shorten delivery times. However, the allure of cost-saving technology complicates the growing skills gap for maintenance professionals.

“Nobody turns down technology because technology makes the process cheaper.” says Aerotek Managed Resources Program Manager Michael Stollsteimer. “As mechanical and electromechanical pieces of equipment age you have to figure out who is going to maintain it.”

The challenge for companies is figuring out how to maintain equipment in a cost-effective manner. Both manufacturer support and developing in-house talent have their pros and cons.

SOLAR CONSTRUCTION

Through the last decade, the solar industry has grown an average of 42% annually⁷. Buoyed by federal assistance,



5 Taiwan’s Worst Drought in Decades Deepens Chip Shortage Jitters. Industry Week. Retrieved from <https://www.industryweek.com/supply-chain/article/21161812/taiwans-worst-drought-in-decades-deepens-chip-shortage-jitters>

6 CBRE. Retrieved from <https://www.cbre.us/research-and-reports/North-America-Industrial-Big-Box-Review--Outlook-2020>

7 Solar Industry Research Data. Retrieved from <https://www.seia.org/solar-industry-research-data>

corporate clean energy initiatives and relatively stable manufacturing and installation costs, solar is estimated to expand at a compound adjusted growth rate of 17.32 percent by 2025⁸.

One of the biggest challenges solar construction companies face is completing the projects on schedule. Failing to do so typically can result in financial penalties and losses. Delays caused by material shortages, weather, civil/engineering issues and lack of qualified skilled laborers can all result in financial losses.

Solar energy's future is bright but finding the volume of workers needed to support its growth is a major challenge. Solar is a highly technical space, but automation is not the main culprit behind the solar construction skills gap. The stronger driver may be attributed to competition from other industries.

"What we are seeing in general is a population of people that traditionally may have gone into an apprentice program or into higher education to serve the power industry — now they are moving to tech and telecom. That is creating a skills gap where we are not seeing as strong an appeal in skilled trades as a career path," states Business Development Executive Mike Mulheron.

To complicate matters further, most solar construction companies want and need to utilize a local workforce to be cost competitive on bids which can lead to retention issues due to the lack of an experienced solar workforce in certain areas/markets that do not have a high presence of solar farms. The "want" is to be cost competitive, the "need" is to meet state/local contractual requirements (i.e. to lower unemployment or tax incentives). With retention issues it takes more time and money to retain backfills or new hires.

AVIATION

Strong military spending, a booming e-commerce sector and the return of commercial travel are reasons for optimism when looking into the future of aviation. Manufacturers and MRO (maintenance, repair and overhaul) companies are projected to experience record demand over the next 10 years. However — without access to skilled maintenance talent — companies risk losing business.

"From a supply and demand perspective — the demand from openings is far exceeding the supply of available talent."

John Piver, Strategic Delivery Executive

According to the U.S. Department of Labor's Job Openings and Labor Turnover Survey (JOLTS), the transportation, warehousing and utilities sector recorded more job openings in February, March, April and May of 2021 than in any months in the past decade. Meanwhile, hires in the sector for the same months stayed on par with recent years⁹.

The scarcity of Airframe and Powerplant (A&P) and aviation mechanics continues to threaten growth for companies in every sector of aviation. As demand grows, employers must outbid their competitors for talent and that has caused wages to rise.

"A lot of our clients are offering sign-on bonuses and asking for help to staff higher salary positions. Their investing more from a financial standpoint," says Senior Account Recruiting Manager Michael Del Bianco.

Becoming an aviation mechanic requires a certification and significant time and financial investments. This makes employers hesitant to promote their employees towards these positions.

⁸ The United States solar energy market is expected to grow at a CAGR of 17.32% during 2020-2025. Intrado. Retrieved from <https://www.globenewswire.com/news-release/2020/08/31/2085905/0/en/The-United-States-solar-energy-market-is-expected-to-grow-at-a-CAGR-of-17-32-during-2020-2025.html>

⁹ Bureau of Labor Statistics, U.S. Department of Labor, Job Openings, Hires and Total Separations by Industry, Seasonally Adjusted, <https://www.bls.gov/news.release/jolts.a.htm> visited 8/9/2021.

Additionally, FAA regulations call for specific requirements which complicates transferring talent from one aviation sector to another. This especially affects military veterans interested in taking their skills to commercial or cargo aviation. It is a complicated role to fill and employers are learning that throwing money at the problem is not a long-term solution.

DIFFERENT INDUSTRIES, SIMILAR REMEDIES

Filling the skills gap is a complex challenge, but not unique.

“Your classic skilled trades shortages are similar within multiple industries. There is not one skill set shortage — at an industrial level — that is more unique to one industry than another,” states Aerotek Director of Strategic Sales Dan Stiles.

With industries facing similar challenges — solutions developed in one industry may be effective for others. Companies can focus on the following ideas to expand their talent pool in the short and long term.

Seeking advocacy from your local and state government – Reintroducing skilled trades education at the high-school level is a long-term strategy to closing the skills gap. Strategic Account Executive Stanley Johnson sees potential in working with your local government to increase funding and awareness for educational programs that focus on the skilled trades.

“To really take care of the issue we need to bring it back to the high schools,” states Johnson. “That would be the most comprehensive, long-term strategy to increase this labor pool. The trades used to be in the schools, but as manufacturing went away from America, so did these classes. As we are now seeing manufacturing come back to the states, we must bring trades back to the high schools. You will get new students who would

naturally go that route because now it is available. Manufacturing is becoming more sophisticated, more automated and has a wide variety of skill sets that many students will enjoy.”

With four-year colleges being the goal for many high school students — employers and local governments need to coordinate their efforts to reignite interest in the skilled trades at an early age. The often-overlooked advantage is the ability to focus efforts on specific regions.

Leveraging training from equipment manufacturers – To stay competitive, companies must modernize and introduce new equipment when necessary. Where can companies find the talent to maintain their new technology?

“People and companies are going to be loyal to their region. Let’s come together and focus on increasing the funding for skilled trades education in the region. This way everyone benefits.”

Stanley Johnson, Strategic Account Executive

“The key is to utilize the equipment manufacturers’ training program,” states Michael Stollsteimer.

Once a company purchases new technology, the manufacturer will often offer various levels of support or training at an additional cost. Many companies rely on their higher-level technicians to learn the specifics rather than seeking additional support from the manufacturer. This approach saves money and fills a skills gap in the short term but adds additional work and reliance on higher-level techs who are approaching retirement or who could pursue new career opportunities. Extending manufacturer training to mid-level technicians not only prepares them to operate or maintain the equipment should higher-level technicians move on. It also gives them the ability



to train new hires on the equipment. Capturing and sharing knowledge is not a new technique for upskilling but leveraging support from the equipment’s manufacturer is a great way to launch a knowledge sharing program that pays dividends for years to come.

Partnering with organizations focused on skills development – To ensure they have access to talent in the future, companies are becoming more involved in the early education phase of talent outreach.

“Solar equipment/component manufacturers have recently started partnering with local educational institutions or workforce development programs to provide training courses to combat the skills gap within solar construction,” states Managed Resources Senior Manager Andy So. “There are organizations out there that produce the panels and racking systems that will partner up with a local community college or trade school to get them prepared.”

Working with an experienced organization creates new opportunities to engage talent at the beginning of their career. Groups like SkillsUSA are creating local and national programs that allow high school students to display and grow their skills¹⁰. Through campaigns like “National Signing Day” they promote careers in the skilled trades for high schoolers and postsecondary students.

Create trade school and early education outreach strategies - One of the best sources of quality talent has been critically downgraded due to several factors. Trade and technical schools were suffering from low enrollment prior to the COVID-19 pandemic, and the virus only compounded the issue as students and workers were less likely to have access to hands-on learning.

There is reason to be optimistic about the long-term future of trade schools. The need for skilled talent is beginning to inspire employers to put more focus on early education and nurturing interest at an early age. However, employers must play a more

¹⁰ Now There’s a National ‘Signing Day’ for Career Programs. SkillsUSA. Retrieved from <https://www.skillsusa.org/now-theres-a-national-signing-day-for-career-programs/>

consistent role in reaching potential talent at the high school level now to ensure they have the talent in the future.

CREATING THE IDEAL UPSKILLING ENVIRONMENT

Upskilling can be a vital part of your strategy to close the skill gaps in your workforce. It is also a major investment in an individual or selected group. Therefore, companies cannot afford incurring too many missteps. Before launching an upskilling initiative, you need to ensure your current company culture and staff are prepared.

CULTURE

Are you creating a space where employees feel they can grow? Is your current staff the right group for upskilling?

Workers want to work where they feel comfortable and secure. Companies are beginning to respond by investing more into employee engagement strategies. These initiatives make it easier for workers to voice their concerns and for businesses to find solutions that create a better place to work.

Upskilling can be an effective retention tool that allows workers to grow with the company. Though if your culture is not conducive to employee growth, then a company may find itself upskilling talent for their competition.

One way to create a better environment for upskilling is to get creative with shift schedules. This may be difficult for many companies but establishing a weekly shift schedule that allows for at least one day of focused training instead of normal duties provides a constant path for

workers to increase their knowledge and value while boosting retention.

“The first thing workers ask when they get to a shop is ‘when/how do I get a raise’. If you do not have that path for newer talent you risk losing workers,” says Stollsteimer.

Employers should also consider where their upskilling program will take place. Both on-site and virtual upskilling programs present benefits. Being flexible with how each is incorporated into your strategy will make your program more attractive and realistic to employees.

IDENTIFYING THE RIGHT WORKERS TO UPSKILL

There are several soft skills and traits employers can target before they launch an upskilling program. Companies should aim to identify the workers with these skills as early as possible to have a better chance at retaining them throughout their career.

Emotional Intelligence – When approaching an employee with an upskilling opportunity, keep in mind that you will likely also

be creating a new trainer or manager in the process. The ability to manage interpersonal relationships and display empathy towards others is difficult. Identifying workers with this soft skill will allow companies to upskill someone who can more easily relay their learnings to others and work towards a leadership position.

“Emotional intelligence is always good because communication skills are important. Not only for becoming an upper-level technician but then as you slide into the lower levels of management, you will want those soft skills. You want to be

“The first thing workers ask when they get to a shop is ‘when/how do I get a raise’. If you don’t have that path for newer talent you risk losing workers.”

Michael Stollsteimer, Managed Resources Program

understanding of other's issues and be able and willing to help other people come up to your level," states Stollsteimer.

This soft skill is especially valuable given many skilled trades workers would rather guard their knowledge to preserve their value to the company. Employers must guide workers away from this attitude to clear a path for effective knowledge sharing.

"I think some of the old mentality is 'If I know it, I am not going to teach it because you will take my job,' but you really have to be the other way and open to teaching everybody everything." states Stollsteimer.

Devotion to craft and company – A worker with excellent communication skills should be considered for additional training. Workers who also continuously improve at their craft and demonstrate their interest in your business are prime candidates for upskilling. These can be traits that take time to sufficiently evaluate, but keep in mind devotion is a two-way street. Workers want to know that you are committed to them just as much as you want to find the worker best suited for the upskilling opportunity.

"Many people coming to the skilled trades, especially those fresh out of trade school, they are hungry to learn. Have the mindset that the people you hire will want to continue to move up in the company and move to different levels," says Johnson.

Create a consistent schedule for performance reviews and one-on-one discussions between supervisors and workers. Allowing for more touchpoints provides better information on an employee's concerns and ambitions which makes it easier to determine if they are right for a long-term investment.

CONCLUSION

The widening skilled trades gap and rise of automation will only continue to disrupt a complex labor landscape. Many companies have already started to take on the challenge by creating their own training/scholarship programs and establishing stronger relationships with local trade schools and government departments. Whether employers are looking for workers with traditional skilled trades experience or those who can address new demands created by automation, upskilling will provide a path that can help companies find the workers needed to maintain growth.

The best time to start investing in upskilling was several years ago. The second-best time is now.

To learn more, visit:

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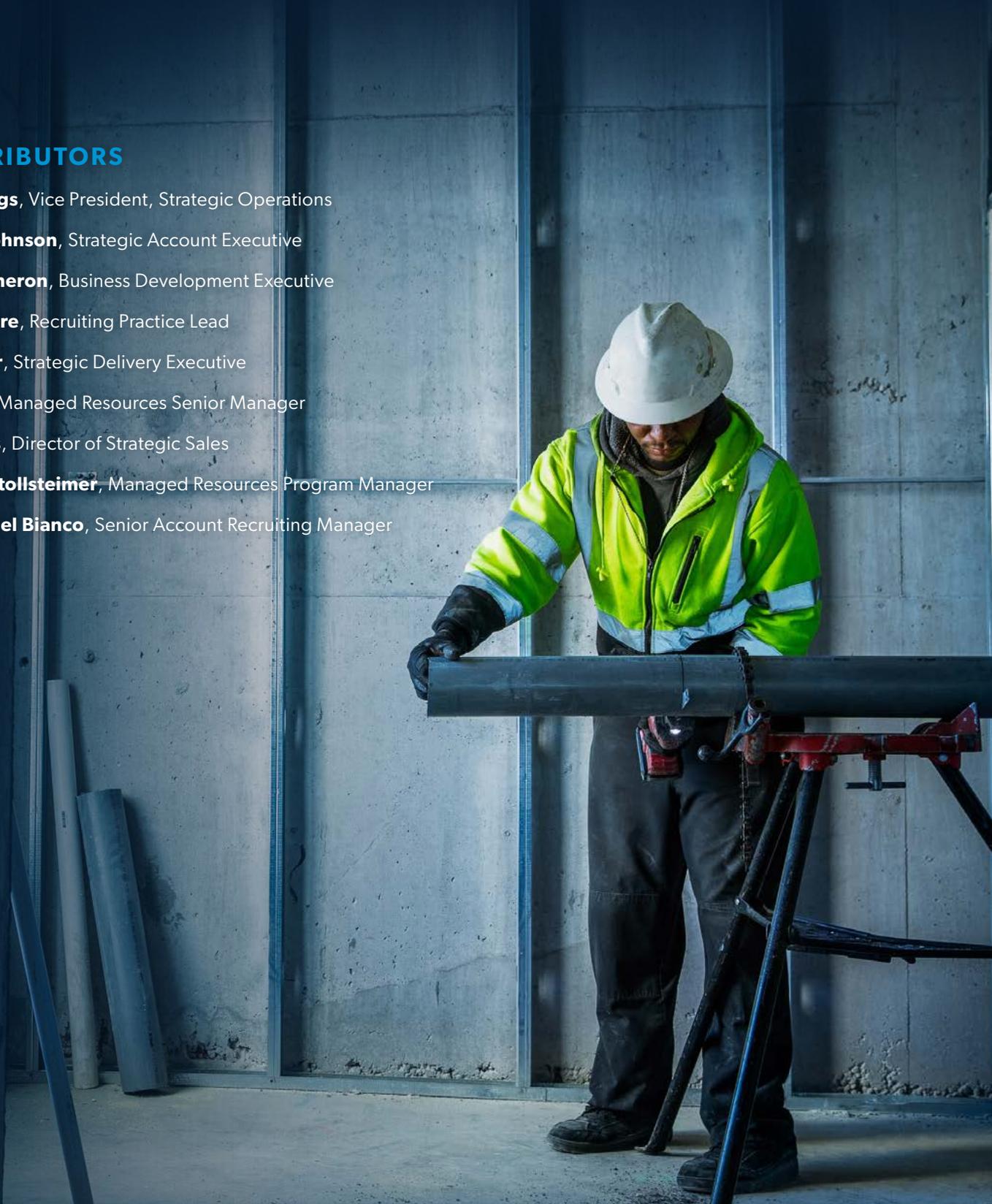
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