Automation Alley®

CASE STUDY: Shaping the Future of the Manufacturing Workforce

ManpowerGroup®

Manpower Shares Improved Training & Recruitment Techniques to Develop the Technical Skills of Tomorrow

Problem

The manufacturing sector is set to produce 3.5 million new jobs over the next decade, but 2.5 million workers are on pace to retire, leaving U.S. manufacturers with a 6 million shortfall in available talent for jobs that are evolving rapidly—a double squeeze.

Today's reality is low unemployment and high talent shortages—the percentage of employers having difficulty filling jobs in the U.S. has tripled in a decade with 69% of employers struggling to fill positions, up from just 14% in 2010.

Solution

New jobs require new skills

ManpowerGroup's perspective is that the Digital Era will rush in new jobs that require new skills. Our research shows that over 90% of employers expect to be impacted by digitization in the next two years, 75% believe that this will require new skills in their workforce; 87% of employers plan to increase or maintain headcount as these new technologies evolve their products and services, 4% are unsure of the impact and only 9% plan to decrease their workforce.

In the Manufacturing sector, the majority of roles are in the general, entry level production workforce that consists of roles such as picker/packer, assembler, operator, and helper/laborer. Our research with DMDII shows that as U.S. manufacturing transitions to an increasingly digital model, there will be an increase in higher skilled roles such as: analyst, specialist, tester and technician—28% of evolving roles are on the production floor.

Implementation

It could take 1-2 years to train the skilled manufacturing workforce for roles of the future, and much longer to train the unskilled population. Individuals will move from the direct operation of tasks to using technology to facilitate those tasks, and in some cases, operating bundled technology to complete many more operations than they could if they were completing the tasks manually. The speed at which evolved roles and skills are required is highly dependent on the speed of the uptake of technology inside of organizations. There is no crystal ball on timing, as organizations make the decision to make capital investments in new technology based on what they believe their return on investment (ROI) will be and over what timeline it will be achieved. This ROI can be measured in terms of increased productivity (faster time to market, lowered costs, etc.), an evolved product offering that opens up new consumer markets and thus drives up revenue growth, or a complete reinvention of their playing field, and many points in between.

This case study originally appeared in Automation Alley's 2020 Technology in Industry Report

Many organizations are on the sidelines, waiting to jump in as the price of technology drops, others are first adopters, and many more are operating legacy technologies in one plant and the newest, cutting-edge technologies at another. A tipping point will be reached in terms of the percent of labor tied to manual and transactional tasks and the percentage of workers with the skills to operate and cooperate with the newest digital technologies—and it will likely come sooner than the pace at which we are preparing our workforce.

An example of improved training for a skilled technical workforce can be found in our work with military veterans. Veterans share many technical and soft skills that are critical in the digital economy, but often have difficulty representing their skills in terms employers understand. This is increasingly prevalent in high-tech manufacturing jobs where electro-mechanical skills are at a premium and where large numbers of military personnel are working on industrial computer systems.

We looked at skills adjacencies and the concept of learnability using in-depth assessments and identified veterans who'd benefit from the Academy of Advanced Manufacturing. In partnership with Rockwell Automation, we invested in an academy to upskill and reskill veterans for higher-paying, in-demand jobs within the digital manufacturing industry. The program continues to be a win-win. We're helping service men and women earn more—the majority of academy graduates have doubled; some even tripled their previous salaries—and stay employable for the long term while helping employers address their skills gap.

We need to reimagine partnership between individuals, education and employers and become systems thinkers. Talent strategy has evolved from a historical high-growth, highly stable environment, where companies had time and resources to be builders of talent. Individuals joined organizations for life and stayed long enough to provide a strong return on investment.

Globalization brought shrinking margins and cost-cutting. Companies responded by labor cost reduction and just-in-time recruitment. Wages, once set by the enterprise, are now set by the market, and the bifurcation of the workforce began. Higher skilled people enjoyed pay increases, lower skilled people did not. Companies became consumers of talent and minimizers of overall labor costs.

Now, companies need to quickly adjust to what is happening in the marketplace to get a quicker return on investment and grow. Talent cycles are shorter, so people need to upskill in short bursts. Training has to impact more quickly and present a faster time to value. Even with low unemployment, wages are rising for people with in-demand skills.

Outcome

Digitization, automation and transformation are impacting every industry, disrupting skills and creating new jobs. Manufacturing is the vanguard, with new roles appearing as fast as others become obsolete.

Manufacturers are reporting growing talent shortages as they struggle to find the right blend of technical and soft skills to fill new positions. The catalyst for the early stages of this skills shift was automation—machine strength. Now, sector-wide transformation has been turbocharged by the Internet of Things, the digitally connected enterprise, the relentless expansion of data and Artificial Intelligence (AI) to handle the scope of the challenge—machine thinking.

The potential outcomes for manufacturing to transform industries and drive economic growth has never been greater, thanks to the rapid advancement of new technologies. Against the backdrop of an existing skills shortage and with skills needs evolving so rapidly, we can only reach this potential with new and evolving skills for the current and future workforce. Talent is the most renewable resource on our planet: ready to learn, adapt and thrive in new environments. Employers can no longer go to market to buy new skills when they want them. We need to all become builders of talent to develop a workforce with the skills employers and individuals need to remain competitive.

About Automation Alley

Automation Alley is the World Economic Forum's Advanced Manufacturing Hub (AMHUB) for North America and a nonprofit Industry 4.0 knowledge center with a global outlook and a regional focus. We facilitate public-private partnerships by connecting industry, education and government to fuel Michigan's economy and accelerate innovation. Our programs give businesses a competitive advantage by helping them along every step of their digital transformation journey. We obsess over disruptive technologies like AI, the Internet of Things and automation, and work hard to make these complex concepts easier for companies to understand and implement.

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