Manufacturing Insights

5 Workforce Challenges and How Top Organizations Solve Them
Manufacturing has long been the backbone of the U.S. economy, and Americans remain optimistic about its role in job creation after the recent recession. In his 2014 State of the Union address, President Obama pushed for more domestic manufacturing, and announced plans for the creation of six high-tech manufacturing hubs in the U.S.¹

Today’s manufacturers, whether they’re making cars, oil rig equipment, chemicals, or computer chips, are looking for innovative ways to find and develop future workers—but they face two critical challenges.

First, the rapid development of manufacturing technology is leading to a severe shortage of skilled labor. For example, while 3D printing and machine-to-machine technology offer unprecedented opportunities for supply chains, they require different skills than those of a traditional line worker.² Last year, skilled trade positions topped the list for the most difficult to fill for the fourth consecutive year, and experts estimate that the situation is only going to get worse.³

Second, the industry has an image problem. Younger workers associate manufacturing with operating dangerous equipment in some hazardous factory, when in reality many of the jobs have moved away from mills to high-tech, safer mechanized sites.

The convergence of these two issues makes it incredibly difficult for manufacturers to attract and manage talent. We’ve identified five key areas where manufacturing managers face challenges, along with solutions to overcome them.
For years manufacturers have reported a skills gap between the workers they need and available candidates. In a recent survey, 67% of manufacturers reported moderate to severe talent shortages, according to research from Deloitte and The Manufacturing Institute. As many as 600,000 manufacturing jobs in the U.S. went unfilled in 2011 due to a shortage of workers with necessary skills.

Of survey respondents, 56% said that they anticipate the problem will worsen in the next three to five years. ¹

The nature of work is changing, too. Motivated by advances in technology and globalization, most manufacturers have streamlined their production lines and implemented process automation. This trend increases the demand for skilled labor roles like machinists, technicians, craft workers and distributors, yet the talent shortage is most pronounced in these jobs. Seventy-four percent of manufacturers say shortages in skilled production roles have a significant impact on their ability to expand production and improve productivity. ⁵
What can be done?

Move beyond informal feedback. To combat the skills gap, managers not only need to recruit talent, but they also need to help develop skills among their current employees. The vast majority (81%) of them rely on informal feedback. Switching to a competency model, which consists of a series of behaviors and skills used to rate an employee’s capability in specific job functions, is a good place to start. This enables managers to measure the impact of their training efforts.

Collaborate for training opportunities. Companies don’t always have the resources to singlehandedly provide the training their workers need. That’s why innovative ones like Ball Corporation and BMW are partnering with community and technical colleges to provide advanced worker training. Companies can similarly leverage grants and programs at local institutions to expand their training capabilities.

Capture and share existing knowledge. Technology makes it possible to document and spread knowledge that already exists within the organization among more experienced workers. It’s relatively cheap and easy to produce “how-to” videos of veteran workers sharing best practices, or to set up internal social collaboration forums where workers can post pointers, for instance.

Streamline training enrollment. To expedite the training process, innovative manufacturers use “proxy enrollment,” a process in which they can automatically assign training to individuals or groups of employees based on specific roles or machines they will be operating, so they don’t waste valuable time.
Few industries face as many compliance risks as manufacturing, where errors in safety procedures and assembly line operations are dangerous and costly. GM recently incurred $35 million worth of fines for failing to report a defect in its ignition switches that was linked to 13 deaths. The most costly consequences that manufacturers can experience from non-compliance are business disruption and productivity losses, on top of the fines, penalties and other settlement costs. As manufacturers participate in increasingly global supply chains, country-specific regulations complicate matters even more.

To avoid potential lawsuits and fines, companies must train and track employees on all OSHA standards and other industry-specific regulations. Compliance poses significant challenges to company expansion. In a recent survey from PwC, 47% of industrial manufacturers said that legislative and regulatory pressures are the biggest potential barriers to growth over the next twelve months.
How can manufacturers tackle compliance better?

Invest in compliance. Companies that run compliance programs spend an average of $3.5 million on these plans, while the average cost for companies being non-compliant is $9.4 million. That’s 2.65 times the cost. Learning management systems help manufacturers effortlessly deliver and track compliance training. The best training tools enable managers to target and disseminate training by variables like department, location and role.

Assess skills on the job. A worker’s ability to eliminate workplace hazards can’t always be measured on a typical rating scale or evaluated during an annual review. Cutting-edge manufacturers systematically assess and monitor employees’ knowledge of regulations in real time using automated tools like observation checklists.

Create acceptance at all levels. Regulatory compliance is often approached through a top-down method. Among top management executives, 68% express a positive perception of compliance systems, but this level drops to 19% among lower management. Manufacturers need to ensure the importance of compliance is communicated in a way so that workers of all levels take it seriously.
Although manufacturing has long been a mainstay of the U.S. economy, the next generation of workers is looking to other industries for career opportunities. Research shows that younger workers maintain a stubbornly poor perception of manufacturing jobs. A survey of 18-to 24-year-olds shows that this group ranks manufacturing dead last among industries they would choose to start their careers. Further, only 43% of Americans believe a manufacturing career is secure and stable, while 80% believe manufacturing jobs are the first to be moved to other countries.

To make matters worse, technological advances are quickly changing the skills that current workers need to stay relevant and succeed on the job. 82% of manufacturers have a moderate to serious shortage of skilled production workers, and only 49% feel students today are qualified to pursue careers in manufacturing.

“It used to be that a factory owner would say, ‘I need 20 guys,’ and pull them right off the street,” P.J. Thompson, president of Trans-Matic, tells The Washington Post. “Now it’s: ‘I need 20 guys with very specialized technical skills.’ There’s a mismatch.”
How can you find and keep skilled workers?

Hire for aptitudes. With the rapid pace of technological change, hiring managers might not even know the next computer language that machine operators and programmers will use in the next 10 years. At the new Siemens plant in Charlotte, N.C., the director of operations says that the company already knows it won’t find people with the right credentials off the street, so it hires untrained workers with an aptitude for learning those skills.14

Participate in strategic programs. The Northeast Wisconsin Manufacturing Alliance, which consists of manufacturers, schools, chambers of commerce and workforce development boards, surveys its members about which jobs are hard to fill. It teams up with a technical school to provide classes and pathways to jobs in those careers. KI Furniture, a manufacturer of contract furniture, finds many of its younger workers through its involvement in the NEW Alliance.13

Provide career mobility. To retain top employees, manufacturers must help them learn the skills they’ll need to succeed in a 21st century workplace. Managers will need to work closely with individuals to create learning plans that will help them transition to different roles within the company and stay engaged with their work.

Use diverse recruiting tools. Recruiting tools that work for one pool of applicants might not work for another group. The job descriptions, perks and language vary greatly between line worker positions and white-collar engineering roles, for instance. Manufacturers need to use recruiting tools that accommodate these diverse applicant groups.
Exacerbating the talent crunch, the manufacturing sector is disproportionately feeling the ramifications of the aging workforce. With the majority of their workforce falling within the 40-54 age bracket and 2.7 million employees 55 or older likely to retire in the next 10 years, manufacturers have some serious challenges ahead. This trend will hit skilled labor especially hard as 75% of manufacturers say that’s where pending retirements and an aging workforce will have the most significant impact.

For example, at Boeing, 28% of the company’s 31,000 machinists are older than 55 and are eligible for retirement.

With the skilled retirement tidal wave on the horizon, manufacturers have some serious concerns. 30.3% are concerned with knowledge transfer from experienced employees to less experienced employees. Despite the labor and skill shortage however, only 17% of manufacturers have projected overall retirement rates and only 26% have developed succession plans.
What can manufacturers do?

Create knowledge management plans. Manufacturing employers have developed fewer succession plans than their peers in other industries. When expertise exists solely in an employee’s head, that information disappears when he or she retires. Knowledge loss results in longer time-to-market, reduced quality and increased costs. Manufacturers should capture critical information through technology and make it available to younger workers.

Make transitions gradual. Manufacturers can scale back older workers’ hours so those individuals phase into retirement, instead of disappearing overnight. Some could work part-time to help younger colleagues acquire the right knowledge and skills.

Leverage technology to build talent pools. Using unified talent management technology, manufacturers can measure employee performance and competencies. They can get a dashboard view of which employees, in which plants or departments, have the performance capabilities to take on future roles, and which ones need help developing the skills to advance. These analyses can also include information about employee preferences for relocation and future career paths.
No matter how great a product is, faulty supply chains can interfere with delivery, and then it’s game over for the manufacturer. In an increasingly global market, supply chains are becoming more diverse, and the risk of disruptions is higher. In 2011, floods in Thailand affected the supply chain of computer manufacturers and Japanese auto manufacturers with plants located in the country.\(^{20}\)

Most managers know they should protect their supply chains from serious disruptions, but comparatively few take action to do so.\(^{21}\) At the same time, today’s supply chains must be nimbler than ever before.

“In the past, organizations addressed supply chain challenges primarily through cost reduction and operational efficiency efforts,” says Scott Sopher, principal at Deloitte Consulting LLP and the leader of its Supply Chain & Manufacturing Operations practice. “Today’s global supply chains require a new focus on technology and innovation as well as a willingness to invest in these areas for the long term.”\(^{22}\)
How can you protect your supply chain?

**Collaborate with suppliers for innovation.** Supply chain professionals rank collaboration highest among ways that supply chain functions can help drive innovation. Procter & Gamble, which calls its suppliers “external business partners,” regularly shares its business practices and product development plans with these parties. Sometimes R&D professionals from both companies work together in the same location.

**Educate suppliers on compliance.** Manufacturers face penalties when their external suppliers fail to follow industry regulations. They’re also in the media spotlight when things go wrong. Brands like Wal-Mart and Gap took heavy criticism for failing to do enough to prevent a series of fatal accidents and fires in supplier garment factories in Bangladesh. To avoid legal and financial penalties and negative publicity, manufacturers should provide training on compliance policies to all the links in their supply chain.

**Use smart technology.** Machine-to-machine (M2M) technology is changing the way supply chains run. For example, sensors embedded in shipping containers can update manufacturers on the location of a parts shipment and expected arrival time, allowing them to plan production accordingly. High-performing manufacturers are using these technological innovations to communicate throughout their supply chains and increase responsiveness.
A Bright Future

In order to keep pace with huge industry shifts, manufacturers must rethink the way they find and develop their people. The talent shortage is only going to worsen as aging employees retire and younger workers opt for careers elsewhere.

Manufacturing is viewed as the most important industry for maintaining a strong national economy, according to research from The Manufacturing Institute. Companies that update their methods for recruiting and managing talent will keep this image alive and strong as the industry charges ahead into a globalized, high-tech future.

Learn more at http://www.csod.com/manufacturing.
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6 Ibid.
13 USA Today
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23 Mike Hales, Javara Perrilliat, and Neeti Bhardwaj, “Key supplier collaboration: New way to drive value,” Supply Chain Management Review, July/August 201.

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