

Action is needed



Colleen Crum discusses closing the skills gap in US manufacturing

The state of manufacturing in the United States has grabbed headlines. Is it dead or not?

It has fueled political calculation. What federal and local programs are needed to bring manufacturing – and jobs – back to our shores?

It has also called into question the labor force. Do workers have the skills to fill the jobs that US manufacturers need both today and in the future?

The debate in considering these questions is vigorous at times. Something to consider:

What is happening today has happened before. New technology spawns new businesses, new ways of production, and changes in the economic equation for companies and workers. As these transformations take place, how work gets done changes and skill gaps are created.

Let's look back in time for perspective. The threshing machine ushered mechanization into agriculture. The first machines were horse drawn and then eventually engine powered. The threshing machine evolved into both binding and threshing; hence, the development of the combine. Today, most combines are self-propelled.

Farmers had to learn new skills. They no longer tended horses; they had to acquire the skills (or hire mechanics) to keep the machines in working condition. Fewer people were needed to plant and bring in crops.

While there was less demand for farm workers, there was a greater need for workers in manufacturing and other trades. Innovation created novel products and businesses, like the telephone and refrigerators. Electricity made possible new processes in

manufacturing, such as moving assembly lines for making cars.

These developments created new types of jobs for the American workforce.

The right talent

In 1880, 48 per cent of the workforce were farm workers. By 1920, only 25 per cent of the workforce labored on farms. Demand for workers in manufacturing nearly doubled over the same time period from 14 per cent to 25 per cent.

The shift from farming to manufacturing meant people had to learn new skills.

The same is true today. Innovation is transforming our culture and businesses – and labor needs. We now have a digital economy as well as a manufacturing economy. The energy economy has expanded to include 'clean' technologies, like solar panels, wind turbines, and energy storage devices.

Technology has upended the way work gets done in all types of businesses. Yet, as in the past, the skills of workers to support transformation lag behind the developments that give rise to the transformation itself.

Take the advent of robots and automation used to manufacture a wide range of products, such as automobiles, solar panels, and medical devices. Called by some advanced manufacturing, this technology requires workers with advanced skills and higher education, such as engineers, technicians, and software programmers.

These skilled manufacturing jobs by and large did not exist ten years ago. As many as 3.5 million people will be needed to fill these jobs in the US over the next decade, according to the Manufacturing Institute. The Institute also warns that lack of workers may leave two million of those jobs unfilled.

Businesses are finding it hard to attract the right talent to

these positions. High school and college graduates do not see manufacturing as a career path. They recall the millions of lower-skilled manufacturing jobs that were taken off-shore over the past 20 years. It may be too big of a leap of faith that skilled manufacturing jobs in the US will be secure in the future.

The focus on production-specific jobs has obscured the labor skills needed for other aspects of a manufacturing business. Only 40 per cent of workers in manufacturing companies are directly engaged in production, according to a Congressional Research Service report.

Level of skills

Most manufacturing companies also require the following: Product and service innovation, sales and marketing, operations, procurement, distribution and logistics, supply chain management, process innovation, financial management, and business strategy. Skill gaps exist for these jobs, too.

A recent study by Oliver Wight Americas found dissatisfaction with the skills in these areas. Dissatisfaction ranged from 22 per cent to 57 per cent of the respondents, depending on the business function.

One reason for dissatisfaction with the current level of skills: Fewer experienced people are participating in today's workforce. Retirements have decimated labor pools in America.

Another cause of the dissatisfaction may be lack of investment in skill development. The bulk of training and education money spent annually by companies is devoted to senior leadership and mid-level

management, according to a 2016 benchmark study by Training magazine. Only 17 per cent of 'individual contributors,' like line workers, receive training valued at \$1,000 or more.

Urgent action

Collaboration with colleges and universities is another way to invest in skill development. Tesla and Panasonic are partnering with Western Nevada College in my community to develop workers in advanced manufacturing. Models being used in other communities, like the Makers City program, need to extend into a national effort.

Closing the skill gap also requires standards for production and non-production jobs as well as individual processes in a manufacturing company. Operation to industry standards builds skill retention. Performance to standards is measurable, making standards vital to developing the skills of new people who join a company.

Standards create common expectations for the performance of workers, business processes, and specific business functions. They also create a common language for communicating across internal functions as well as with suppliers and customers.

Urgent action is needed to close the skill gaps in the U.S. labor force. Nearly 400,000 US manufacturing jobs were unfilled in April 2017, according to labor reports.

What if the US is unable to provide the 3.5 million skilled manufacturing workers needed over the next decade? Will manufacturing companies be forced off-shore to fill those positions?

As history suggests, these challenges are not insurmountable. 

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