

# Lessons from the skills gap in manufacturing



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A grayscale photograph of a worker's gloved hand operating a precision tool, possibly a drill or a screwdriver, on a manufacturing assembly. The background is blurred, showing industrial equipment and components. The text is overlaid on the left side of the image.

Rather than being just a buzzword in the industry, the skills gap presents a dire situation in manufacturing: there are more job openings than workers ready to fill them. A new study by Deloitte and the Manufacturing Institute predicts that around 2.1 million manufacturing positions will be unfulfilled by 2030, costing the whole industry 1 trillion US dollars. The pandemic has accentuated this crisis, contributing to another 1.4 million jobs lost, out of which only 63 per cent have been filled by employees returning to work.

The crisis seems to persist, with no magical spin to reverse it. However, it can be mitigated if manufacturers understand the problem in context. Learning and improving is necessary not only for students, but for company owners as well, who need to constantly learn how to deal with the challenges of the trade and how to take appropriate action to solve them. So, let's see some of the main causes of the skills gap in manufacturing and potential solutions to tackle them.





# The causes

Pointing out the causes of the skills gap is not easy, since the problem stems from a combination of factors.



## Outdated perception of the job

It's the year 2021 and industrial robots are now decorating Christmas trees and learning parkour, yet manufacturing is still seen as an unexciting and undesirable industry. Young people might envision the work from the viewpoints of their parents and grandparents who worked long hours in less satisfactory conditions. They might believe the job entails standing in a dark and dusty factory floor, assembling products on a constantly moving conveyor belt.

Young generations are looking to break away from outdated working patterns and to abolish the nine to five work mentality. Their false perception of the manufacturing industry makes them disinterested in pursuing a career in the field.

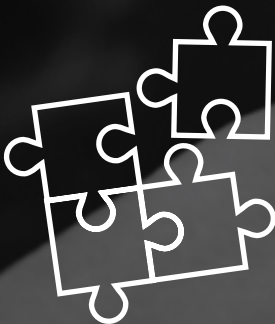


## Retiring senior workforce

Experienced workers have often spent their entire career with one manufacturer, learning all the tricks of the jobs and bringing in extensive knowledge and hands-on experience. Finding a replacement will be extremely difficult for manufacturers for two reasons.

Modern curricula tend to focus on the importance of digital, data-driven technologies, in an effort to prepare students for Industry 4.0. Young workers could therefore be unable to work with legacy equipment, which is still present in many factories.

Secondly, a large part of manufacturing knowledge is tacit, meaning that it is not documented in any external resource and is only available in the mind of its owner. If this is not passed on in a systematic way, this knowledge will be lost.



## Limited skill sets

Despite years of studies, new workers will also require a unique skill set that encompasses not just technical notions, but also problem-solving and strategic thinking.

The "new world" of work requires skills like mechanical reasoning, logic, troubleshooting and spatial visualisation, on top of a high operation ability of computerised machines.

Previously, technical knowledge might have been enough to hire a good candidate. Nowadays, despite a wide variety of technological skills, employees also need a great pool of trade and soft skills.



# What can be done?

The main conclusion that can be drawn from this is that the manufacturing industry requires an immediate revitalisation and a more in-depth focus on its main asset: people. The first thing manufacturers can do to tackle these challenges is changing their training methods.

## Changing perceptions

While you can't force someone to love a particular job, you can shift their perception of it by promoting positive initiatives. Manufacturing is no longer the industrial grind of the past, but constantly moving towards the birthplace of innovative technologies where forward-thinking technicians come together to solve practical challenges. Training for future employees should reflect that by incorporating some of these innovations as studying tools.

Take as an example the idea of gamification, which involves the implementation of game mechanisms, strategies and visual elements to make trainings more interactive and fun. One possibility is the use of interactive HMLs. Not only do they present information in a graphically appealing way, but they can also help simulate manufacturing scenarios and offer visual and auditive feedback in response to a trainee's action. For example, the system can reward the trainee with points after a correct action, measuring them against the team's average score.

However, if manufacturers want to attract young talent, besides a more interactive training, they also need to start looking at things from their perspective. Let's take a look at the mentality of young workers. For them, a good salary is no longer the only motivation. According to Workbright, they are increasingly self-aware and desire a career with a positive workplace culture that values inclusion, diversity and attention to social concerns.

What this can teach manufacturers to implement diversity programmes in their workplace and focus more on fair representation. The abovementioned report by Deloitte calls this tactic "an imperative to closing the gap". A Diversity, Equity and Inclusion (DEI) training is the way to go to encourage representation and participation of diverse groups of people. A research conducted by Training Industry, the expert in the business of learning, found that a DEI approach to training increases financial results, organisational and team performance, innovation, and other areas of the business.





A woman with blonde hair tied back, wearing safety glasses and a dark jacket, is focused on working with a large industrial machine. The machine has various components, including a large circular dial and a complex assembly of metal parts. The background is slightly blurred, emphasizing the worker and the machine.

## Mentorships

You can't stop people from retiring, but you can make them feel valued by allowing them to inspire younger colleagues. Senior workers know the ins and outs of the job and could pass that knowledge down to younger generations. For an efficient generational shift, manufacturers need a succession plan. The operational know-how of workers in senior positions must be turned into information that everyone can access, and that newer generations can act upon.

For example, mentorships could be set up where senior workers can train younger generations on legacy equipment and older processes, while young workers can contribute with their knowledge of new technologies. This would create a continuous learning process, prepare new employees for the job and re-hire retired personnel as independent consultants or mentors.

A temporary solution to facilitate this transition could be offering incentives for senior workers to stay. According to the 2021 Retirement Confidence survey, more people are adjusting their retirement age, with 17 per cent planning to postpone their retirement. With the right benefits, such as better healthcare options, shorter hours or flexible work arrangements, these people could continue to work if they wish to. This would give manufacturers a few extra years to make the most of their senior employees' skills and train the younger generation.

## Apprenticeships

Some positions in manufacturing require a unique set of technical and soft skills. One way to address that is to implement apprenticeships for younger people to get hands-on experience.

Soft skills like effective communication and time management should be learnt as soon as possible, ideally during the high school years. For this reason, apprenticeships are a great way for students to get the necessary skills to succeed in the industry, but also for manufacturers to "mould" the employees according to company values.

Due to the remote working conditions imposed by the pandemic, apprenticeships can follow a flexible structure, including both online learning and in-house training. This way, when the apprenticeship ends, employees can start work with a more comprehensive skill set.



# The ROI of training

While these initiatives seem like a good idea for tackling the skills gap in manufacturing, is it really viable for manufacturers to implement them?

Manufacturers should consider a few elements before embarking on a training shift. Firstly, they need to be aware of the costs involved, which may include things like educational material or hiring external experts. The temporary loss of productivity, due to the fact that employees are learning instead of working, is often the most expensive aspect of training and should be factored in as well.

Manufacturers should then analyse the forecasted benefits and desired results. Having quantifiable data will help them decide whether or not a new training programme will deliver a substantial return on investment (ROI). For example, don't just assume that further training will allow workers to do the job faster. How much faster? If you aim to cut lead times by five per cent, how much will the plant save?

However, cutting costs and increasing profits are not the only benefits of training. Studies show that employees with long-term goals experience greater job satisfaction. Training could help employees understand how to improve their performance by helping them pinpoint specific goals and give them the tools they need to achieve them. This can lead to increased job satisfaction and consequently to increased staff retention, saving plant managers the cost and headache of hiring new staff.

After the training programme has been delivered, it's important to review the initial forecasts by comparing productivity before and after training. Are trainees working more efficiently? Do they feel more confident and less stressed about their job? Answering these questions with quantifiable data will allow plant managers to have a clearer picture of what was successful about the training and what needs to be improved.

Depending on the results, manufacturers can choose which training programmes are more beneficial for their company and put in place a strategy to respond to their unique issues.





# Conclusions

The manufacturing sector deals with a serious skills gap that could cause huge economic losses. If this issue is to be resolved, manufacturers need to first understand the causes of this issue and then take proactive steps to address them.

The main advantage is that they don't have to face with this problem alone – at EU Automation we provide a wealth of resources and tips for manufacturers in all industries on how to respond to the challenges of their field. Whether it's the skills gap, rapid technological advancements or industry-specific issues, our online **Knowledge Hub**, informative and easy-to-grasp materials to help manufacturers make informed decisions.

For more tips on manufacturing and to find out more about EU Automation, visit [www.euautomation.com](http://www.euautomation.com).

