Things That Won't Change In Times of Uncertainty

Using Automation To Prepare for the Future of Manufacturing

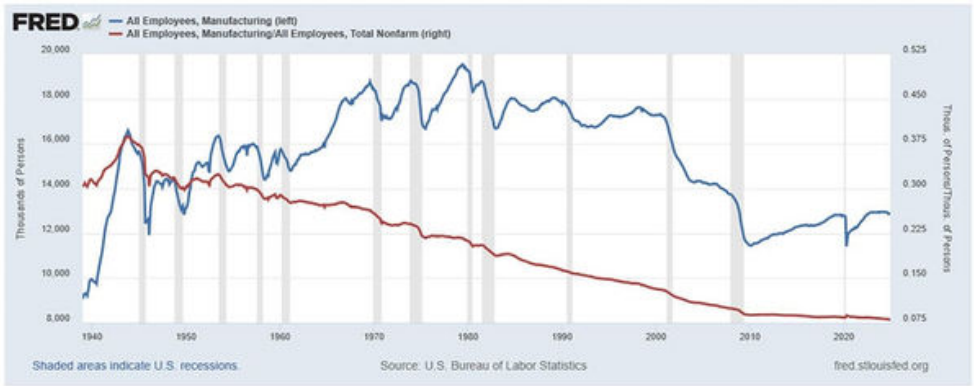
There's no denying that we're in times of uncertainty. Not knowing if supplier prices will be the same tomorrow as today has prompted many industrial operations to tighten the purse-strings and postpone significant decisions until things clear up. We don't believe this to be the best approach.

While it's true that Cross doesn't have a crystal ball for predicting price changes, we do have the benefit of experience. Having been in manufacturing for decades, we can confidently say that even if purchasing is currently unpredictable, there are several challenges manufacturers will face, no matter how up or down the tariffs go.

These challenges include the tight labor market, the decline of the manufacturing knowledge-base, and rising costs. Industrial automation has been and will continue to be an effective way to address these challenges.

1. The Labor Market Will Remain Tight

According to the US Bureau of Labor Statistics, hiring in the manufacturing sector is down since the start of the year and job losses have outpaced gains for the last 4 quarters. Furthermore, over the next decade, about 3.8 million manufacturing jobs will likely be needed with almost 2 million of those positions expected to be unfilled (National Association of Manufacturers). Knowing this, we can reasonably expect it to continue to be difficult to fill manufacturing jobs.



Source: Federal Reserve FRED Database; Bureau of Labor Statistics

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A scarce labor supply isn't an entirely new obstacle to the manufacturing world. In fact, it has been a persistent issue for decades. In 1980, manufacturing employment made up a little more than 21% of total employment. However, by 2024, manufacturing employment had settled at around 8% of total employment . This general trend isn't one that's likely to change drastically in the near future (or even possibly the not-so-near-future), making automation not just a strategic advantage but a necessity for maintaining stable operations, even in the face of hiring difficulties.

The pervasive nature of this issue can also be seen on a more macro scale. When looking at demographics in the United States more broadly, the potential for more future labor sourcing difficulties becomes apparent. The overall yearly growth rate of the US population over the next 3 decades is projected to be ~0.2%. This is less than a quarter of what it has been from 1975 to 2024.

2007 was the year US births peaked (at 4.3 million) and we've seen falling birth numbers every year since. Furthermore, the number of students completing high school in the US is expected to fall from its record high by next spring. So for the future (should trends hold), not only will it become more difficult to find good, qualified applicants for manufacturing jobs, it will become more difficult to find good, qualified applicants for American jobs in general.

As new employees remain difficult to find, having trained people performing the mission-critical tasks is increasingly imperative. That employee performing pick-and-place actions or palletizing boxes off the line could add significant additional value to the operation in a more strategic role if those tasks were to be automated.

2. The Declining Manufacturing Knowledge Base

Another consideration for the future of American manufacturing is a declining knowledge base. The US Bureau of Labor Statistics estimates that a high percent of service engineers are over the age of 55. As more and more engineers and manufacturing workers begin to retire, it becomes harder and harder to make up for the experience lost (especially considering the tight hiring pool).

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Occupation	2024								
	Total, 16 years and over	16 to 19 years	20 to 24 years	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 years and over	Median age
Industrial engineers, including health and safety	268	1	16	87	62	45	49	9	40.3
Marine engineers and naval architects	20	0	5	3	2	5	4	0	-
Materials engineers	48	0	3	10	16	7	9	3	-
Mechanical engineers	389	1	23	128	84	73	61	20	40.4
Mining and geological engineers, including mining safety engineers	7	0	1	3	3	0	0	0	-
Nuclear engineers	7	0	0	2	2	0	1	2	-
Petroleum engineers	23	0	0	5	10	3	2	3	-
Engineers, all other	697	2	33	209	146	143	121	42	42.2
Architectural and civil drafters	38	0	3	7	10	5	8	6	-
Other drafters	92	1	6	19	27	20	13	6	42.1
Electrical and electronic engineering technologists and technicians	85	2	3	17	24	19	14	7	43.9
Other engineering technologists and technicians, except drafters	355	6	28	71	73	67	91	19	45.2

Source: US Bureau of Labor Statistics Labor Force Statistics from the Current Population Survey

A declining manufacturing knowledge base impacts more than just hiring, however. As less experienced workers are now expected to maintain and fix increasingly complex machines, downtime has become an even more serious concern. A report from Siemens shows that complete recovery after downtime has increased significantly over the past five years. Five years ago, it took ~49 minutes to get production back up after downtime. Today, it takes ~81 minutes. Siemens attributes this to lost skilled maintenance labor in the post-COVID environment, which created a "skills and knowledge gap, [leading to] longer recovery times"

While many of these statistics and future projections may seem dire for US manufacturing, there are ways to future-proof your operations and set them up to thrive in a more lean future manufacturing environment. If there will only be so many potential workers in any given plant and sourcing new, qualified workers will be prohibitively difficult, then it makes sense to use your people as effectively as possible. Introducing industrial automation into existing manufacturing processes allows you to place employees in more important or fulfilling roles. Workers performing packaging jobs could be transitioned into new roles while a collaborative or industrial robot is able to perform the packaging. This way, you're being smarter with labor decisions while preparing for the future.

3. The Rising Costs

While supply chain issues have lessened since the height of COVID, many prices remain high and other difficulties linger. For example, though the average lead time for necessary parts has dropped significantly since peak-2022, prices still remain significantly higher than pre-2020 levels. Even as of 2025, manufacturers are expected to continue to face supply chain issues such as delays, disruptions, and increasing costs. And these trends haven't shown major signs of reversing any time in the near future. Still in 2025, the Manufacturing Prices Paid Index has surged to its highest point since June of 2022.

Say the supply chains unexpectedly shore up in the coming months/years and we see more of a return to past normalcy. Even if global trade were to completely resume unimpeded, it is not likely prices would drop. Though we've seen inflationary pressures lessening, that doesn't mean prices will reflect that. "If inflation goes down, it means that the rate at which prices increase is slowing down, but it generally is not going to mean that prices are going down." That means manufacturers may be stuck with higher prices for the foreseeable future.

There are remedies to this issue. One means of navigating the increased cost of tariffs and other imports is to work with companies who have significant inventory stateside. Many manufacturers anticipated tariff-related costs and took steps to ensure that they had a sizable inventory stored within the US for distribution. That sizable inventory then may not be affected by unexpected price surges.

At Cross Company, we've done much of the research necessary to determine which suppliers are holding inventory in the country or are otherwise mitigating price increases through similar methods. And we take that into account when pricing an application or solution. That means companies who work with Cross stand to benefit from that knowledge and those partnerships.

Automation To Prepare for the Future

As the American manufacturing ecosystem continues to evolve, industrial automation will become increasingly necessary to compete. Jobs that are dull, dirty, or dangerous will become more and more difficult to fill (or to retain people), and prices will stay high (or continue to rise). Implementing automation solutions is an antidote to being left behind in the changing industrial marketplace. Automation increases productivity, improves quality,

reduces risk and waste, and creates an overall safer work environment. It helps operations compete on a global stage and translates to a better ROI for the manufacturer, a safer job environment for the worker, and a better product for the consumer.

Implementing automation solutions used to spur fears of layoffs and job displacement. However, the World Economic Forum has shown that automation actually creates new job opportunities while improving the jobs of operations in which it's implemented.

While many people think of large industrial robots as "automation for manufacturing," the truth is far more broad. While industrial (or collaborative) robots certainly have a definitive place in manufacturing, automation can also take less-apparent forms. For instance, this relevant application note from a project of Cross Automation:

"A manufacturer of conveyor equipment was using an electrical solenoid to sort products by activating a mechanism that opened the bottom of the conveyor to drop its contents into the appropriate bin. The electric solenoid didn't generate enough force or speed, which led to repeated errors and missed sorts on the conveyor. Every time there is a missed sort, the customer is charged by the end-user for the error. This led the customer to search for an alternative method to operate these actuators." Read the full application note here

If you're uncertain about the future of manufacturing and how to best position your operation for future success, Cross Company can help. We've worked with industrial operations across a wide range of applications, providing automation solutions that reduce risk, enhance efficiency, increase safety, and improve quality. Contact one of our automation experts today to learn more or to start the process of implementing industrial automation into your operation.