Automate Now to **Thrive** in a Post-**COVID-19** World

As recently as a few years ago it seemed that labor savings was the driving factor in leading manufacturers to investigate automation. Return on investment was largely calculated by the number of people that the automation would replace. And if that ROI was less than a few years, automation projects were often greenlit. More recently however, we started seeing that labor scarcity was quickly becoming more of a motivating factor for manufacturers to consider automation. The lack of available workers was preventing some manufacturers from scaling production or keeping up with ever-changing customer demand. The COVID-19 outbreak has shone a bright light on some of the dreadfully out-of-date, manual manufacturing practices that will prevent so many companies from recovering quickly when restrictions are lifted.

Help Wanted

By: Mark Proud
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Suppose a large, distribution warehouse opens down the road from a manufacturer. They need to hire 500 workers to get up and running quickly. To fill those jobs, manufacturers are offering higher pay, full benefits and paid vacation time because business is booming. If you were working for a manufacturer doing tedious, repetitive work, would you remain at that job? Or would you go to the new, bright, clean warehouse down the road? True, the work may not be any less mundane. But you would be compensated better and there would be a perceived "cool" factor to your employment there.

This exact scenario is happening to manufacturers all over America. And not just those in rural areas where labor is scarce, but also in major metropolitan areas as factory workers are looking for better opportunities. This situation leaves the manufacturers in a constant cycle of hiring and training, only to have the best employees leave for better work elsewhere.

This has been the reality for most manufacturers over the last few years. A 2018 study by Deloitte revealed that 2.4 million manufacturing positions will go unfilled between 2018 and 2028 as a result of the skills gap. When you couple the added complexity of manufacturing while adhering to social distancing guidelines, manufacturers are left with an almost impossible task of growing their businesses while relying heavily on humans to perform the work.

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Role of Automation

Today's automation and robotic technologies are still limited in their ability. There are simply many, many tasks that people are better suited to perform. Manufacturers need to focus their human talent on those jobs or tasks that require critical thinking, complex manipulation or a personal touch.

Amazon's e-commerce fulfillment centers are a terrific example of a how a company has leveraged technology to perform trivial tasks and the result has been explosive sales and employment growth. According to reports, Amazon has deployed over 200,000 robots in their distribution centers while adding over 300,000 jobs to meet demand. Mobile robots move across their distribution centers like an army of ants operating in concert bringing goods to employees that then verify the products and place them into boxes to fulfill orders.

So, what are the most common applications that manufacturers are automating today?

The tasks below are broken down by the technology that enables the automation and is followed by the benefit to the manufacturer.

Machine Vision:

- **Product Inspection** Preventing defective product from reaching customers
- **Packaging Inspection** Ensuring product quality, quantity and accuracy, prior to shipment
- **Barcode reading** Providing tracking and traceability information for compliance or recalls

COBOTs & Robots:

- **Machine Tending** Reducing repetitive loading and unloading of product into machines
- **Packaging** Reducing labor cost associated with placing product in cases or cartons
- **Palletizing** Reducing workplace injuries from repetitive handling of heavy boxes or cases

Autonomous Mobile Robots:

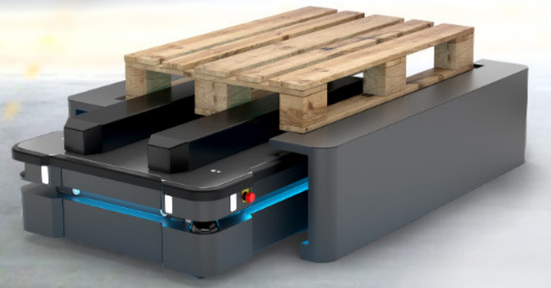
- **Goods to line delivery** Enabling just-in-time delivery of goods to the line without human labor
- **Intralogistics of raw materials and finished goods** Increased safety and lower labor cost by reducing fork truck traffic

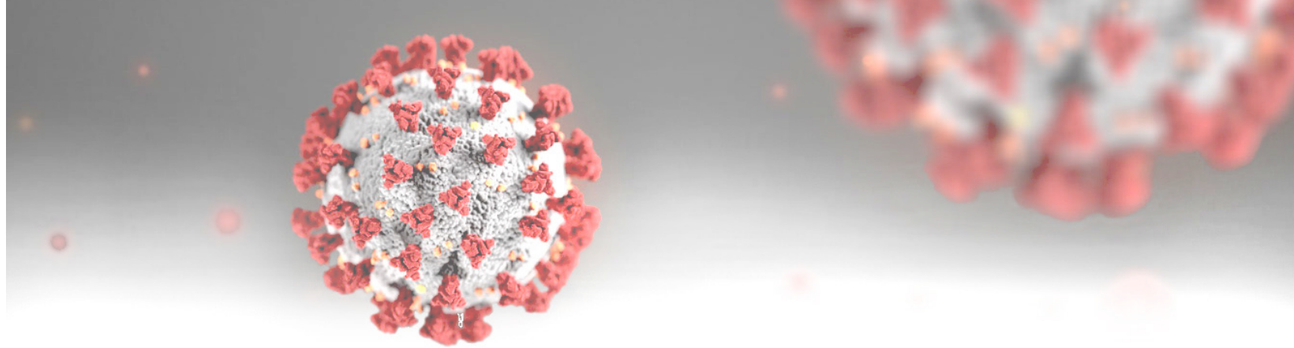
Automation Trends

If you haven't been paying attention, in the last few years a lot of things have changed for both automation providers and automation users alike. Let's take a quick look at some of the trends that are pointing towards the likelihood that further adoption of automation is on the horizon.

For Manufacturers:

1. Labor shortages
2. Increased reliance on overseas suppliers
3. Desired ability to produce customized products and to scale production up and down quickly
4. Increase of low volume, high mix production
5. Increased expectations for product quality
6. Desire for manufacturing to occur as close to the customer as possible (on-shoring)
7. Establishment of Industry 4.0 and IIoT initiatives to deliver real-time data to the Cloud





For Automation providers:

1. Increase in technology capabilities while prices of those technologies have dropped
2. Advancements in sensors, AI and machine learning that have opened new potential applications
3. Flexible COTS (commercial off-the-shelf) items with improved ease of use that allow automation deployments in weeks
4. Additive manufacturing allows quick prototyping that reduces project risk
5. The proliferation of Robots-as-a-Service (RaaS) and other business models that reduce upfront investment
6. Open communication standards that unlock machine-to-machine connectivity eliminating islands of information

Complications for automation adoption post-COVID-19

In recent weeks, essential manufacturers have experienced significant workforce backlash as a result of potentially dangerous work environments due to a lack of safety supplies and manufacturing processes designed around close human interaction.

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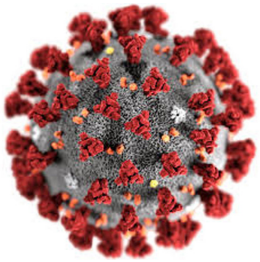
Worker safety, combined with the strong headwinds of labor scarcity leads us to believe that COVID-19 will be an accelerant to increased adoption of automation technologies. Now is the time for everyone in the supply chain to evaluate and test new technologies that could eventually roll out company-wide and fundamentally change how goods are produced and delivered. Even retailers like Walmart® and Kroger® have been testing robots in limited fashion for years and have plans to scale deployment in the coming years.

There will be a tidal wave of automation companies bringing robots and other technologies to market designed to automate tasks that we hadn't needed until the COVID-19 outbreak. For example, disinfecting areas of the plant floor where workers congregate.

In addition to new technology offerings, there will be many new applications for existing automation technologies. Could we see more robots deployed in less industrial settings like retail and fast food? We suspect we will. As they struggle with the same challenge of attracting low wage workers while abiding by social distancing guidelines.



Summary:

Work from home mandates, increased e-commerce activity and home delivery requests as a result of the COVID-19 pandemic call for a critical review of all facets of manufacturing. Most notably they draw attention to areas of robotics, supply chain and digital transformation. Automation will not solve all problems for manufacturers and other companies that seek to thrive in a post-COVID-19 world. We do not believe that widespread adoption of automation is the answer for all companies. We do, however, expect to see a steady replacement of monotonous, manual tasks with automation in the coming years. Allowing employers to redeploy skilled employees to tasks better suited for humans, and sourcing additional workers to manage and maintain the automation once it's deployed.

Automation technology will continue to drop in price and become simpler to apply and simpler to support. **Companies that are planning to wait for better, cheaper technology may find themselves years behind their competitors that are figuring out how to leverage automation today.**

Sources:

1Pajula, S. (December 1, 2018) 2018 Manufacturing Skills Gap Study from https://www2.deloitte.com/us/en/pages/manufacturing/articles/future-of-manufacturing-skills-gap-study.html

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