

Industry 4.0 and Smart Manufacturing

Future of manufacturing



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The COVID-19 pandemic has created a havoc and has disrupted the supply chain of many manufacturers. Very few manufacturers have made it through 2020 without significant economic disruption. Manufacturing organisations have faced significant operational challenges due to the impact of Covid-19, with some suspending production altogether in response to government restrictions or falling demand.

As the COVID crisis wreaks the economic turmoil, modern supply chains face unprecedented stress and are drawing an increased level of scrutiny. With the reduction in the demand, most of them had to cease the production, and with the global recession looming, those who have fragile supply chains, insufficient agility, and overdependence on human assets have been left behind. The need for manufacturing industries is to step up performance and invest in smart factory production, otherwise known as Industry 4.0. The pre-COVID era was focussed on cost reduction, competitive advantage, productivity, innovation, and sustainability. On the positive side, COVID-19 is giving manufacturers an opportunity to transform their factories and supply chains.

The needs and requirements are changing so rapidly, many manufacturing & infrastructure companies are hesitant to deploy entirely new solutions that may not stand the test of time. Fortunately, there are proven technologies that exist today that rely on devices already deployed in electrical solutions & security systems that can meet these changing needs. If you already have a physical security system built on open architecture components, you are better prepared to meet the coming challenges. For example, when it comes to meeting the health and safety requirements related

to COVID-19, an electrical and building management solution can be easily deployed on your existing system to standardize, digitize and automate SOPs. And, as the environment and the nature of the threat changes, you can update your SOPs to reflect the new requirements.

At present the focus for many manufacturers is survival, damage limitation, recovery, and business as usual in the new normal. To achieve all these they will have to leverage the benefits that industry 4.0 and smart factory offer. In the past few months many manufacturers have become more digitized, with the adoption of smart factory and other advancements further sped up by the effects of the pandemic. With social distancing becoming a prominent norm in factories, there's also the pressing need to invest in automation equipment that improves efficiency and reduces emergency interruptions and downtime.

Some of the salient features of Industry 4.0 that can speed up the manufacturing sector :

- ❑ **Internet of Things** – more devices connected to a central controller, allowing manufacturers to gather more data as well as efficiently streamline and digitize their processes
- ❑ **Big Data** – data comes in from various sources enabling manufacturers to make well-informed, real-time decisions
- ❑ **Machine to Machine Communication** – real-time visibility into the availability of raw materials, works in progress, finished goods, and other assets

Safety – assistance with skills shortages due to social distancing and self-isolation. Technologies enable more virtual working and remote setups to help with the issue of lockdowns and quarantine protocols.

Supply chain disruptions, irrespective of cause or scale, generally have temporary effects on businesses. Companies respond to disruptions by deploying either existing business continuity plans or additional measures or a combination of both. The ongoing pandemic is a supply chain disruption without a contemporary parallel. Unlike any other disruption, the cause of the pandemic – a virus – does not directly affect manufacturing facilities or distribution and sales channels. Instead, the highly contagious and potent virus afflicts humans at a rapid pace which eventually disrupts entire supply chains from sourcing through consumption stages.

Companies world over are investing in smart factory advancements and have discovered that it has led to a spur and hasten their comebacks after the COVID-19 pandemic. Manufacturers will see that dependence on high-tech innovation will make operations stronger and more efficient within weeks or months, as well as in the long stretch. In order to succeed manufacturers will have to adopt digital manufacturing methods. They must have a robust digital strategy with clearly defined financial and performance goals. These goals must be linked to real business needs.



Despite its devastating effects on businesses and societies, the pandemic can act as a catalyst for companies worldwide to rapidly innovate their business models to make their supply chains more agile and resilient to future disruptions. The primary enabler of this global revolution will be digital technologies. Fortunately, India has a copious supply of bright minds who are not only conversant with cutting-edge digital technologies but also highly adaptable to the ever-changing technological landscape. Furthermore, the Indian diaspora is one of the few ones who are omnipresent across the globe. They are a potentially extremely powerful medium through whom India can better understand global cultures of societies and businesses. The combined potential of India's resident workforce and expats presents the nation with an incredible opportunity to play a huge part in redefining global operations in ways that would vastly improve both efficiency and responsiveness of businesses. This is also the best way that India's economy will recover, stabilise, and grow in the post-Covid world.