

Industry 4.0 at the Heart of Recovery in New Virtual Normal



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I am not the first person to say this, and I won't be the last, but the global coronavirus outbreak has changed our lives and our world forever. Enough and more has been written about how, apart from the havoc it wretched on healthcare, it brought businesses and economies to a standstill, accelerating the disruption already underway in key sectors such as manufacturing, supply chain logistics, healthcare and retail.

So, what was driving this disruption in these key sectors? Experts in industry and academia argue that this disruption was triggered by the onset of the fourth industrial revolution or Industry 4.0, as it is popularly called. This Industry 4.0 influenced the adoption of new technologies such as automation, augmented reality & 3D simulations, artificial intelligence, big data analytics (BDA), Internet of Things (IoT), Cloud Computing, Machine Learning and so on.

Industry 4.0 is about focusing on increased productivity as much as on increased production by leveraging the different technologies and processes around that. It will help to take out people or labour dependency from many of the processes, thereby enhancing the probability of consistent outcomes.

The advances that Industry 4.0 brings, would be across the value chain leading to better market penetration, better product development, the ability to launch new products faster, create collaborative ecosystem for innovation around products & services etc. Simply put, this is an approach that uses automation and data sets to make manufacturing processes intuitive and interconnected enabling production lines to meet the requirements of changing industrial and market needs. Today, digital, IoT and BDA based solutions are being deployed across a range of use cases spanning a wide range of sectors such as agriculture, telecommunications, pharmaceuticals and retail, among others. There are already solutions

delivering interesting outcomes right from customer touch points to internal process efficiencies and output improvements.

To take advantage of the possibilities that Industry 4.0 presents, it is imperative that the data sources are digitalized. For example, product quality attributes from production lines, quality control parameters, utility consumption data, supply related information, customer feedback etc. The architecture of the systems should consider data to be at the core, leading to a sustainable mechanism for the data leveraged outcomes.

This could be a combination of Industrial IoT platforms, data lakes, visualization layers, appropriate network and security layers etc. This should be supplemented by a human machine interface layer which enables decision making and enhances the learning capability of the algorithms. As these technologies become a central gateway to the way we live, play, and work sooner rather than later, they will influence or even completely change our businesses, industries and societies. The lines between our physical and digital worlds have already blurred significantly, creating what marketing pundits call the 'phygital'. This is soon emerging as an alternate universe that is likely to expand as newer and more intuitive technologies become more pervasive. This is demanding organizational capability building around the new technologies and posing a challenge because there is a scarcity of talent and hence there must be a thought-out strategy on how to build versus source the capabilities.

These changes are having a profound impact on our workforces, skills, leadership and on the quality of human capital. While automation and other digital technologies might play a significant role in raising productivity, accuracy and quality of manufactured goods and services, complex tasks still need human capital for their cognitive and social skills. The need to find a balance with automation and human capital co-exist, has never been greater.

The future of Industry 4.0, or Pharma 4.0 and Healthcare 4.0, will depend on the maturity of founding technologies and how our industry and businesses use them to integrate and combine intelligent machines with human actors

It must be noted that nowhere is the impact of industry 4.0 more relevant and complicated than it is in healthcare and pharma. Complicated, as no single technology, platform, or application will work across the complex maze of challenges that multi-stakeholder ecosystems like healthcare face. Industry 4.0 technologies and applications must be able to adapt to the needs of patients, healthcare providers, pharmaceutical companies, hospitals, public agencies, among others.

The world truly saw the impact of this unfold over the past two years. At the height of the pandemic, the supply of vaccines, life-saving drugs and essential goods came under unprecedented demand-side pressure. While there has been ad-hoc solutions put in place to deal with such unexpected dire situations, it should open our eyes on how advanced collaboration and IoT based communications systems could have made us better prepared to deal with the uncertainties using real time data. It is heartening to note that there have been inroads made into such solutions which allows crucial logistics networks to operate with visibility on their goods all along the network. In this post Covid global economy, the

internet and the many intelligent digital technologies it has spawned is set to take the pharma sector on a transformation journey much faster than ever before, with companies across the board looking at rapidly adopting digital technologies.

These advances create a much larger responsibility on ensuring the information security and data privacy is given the highest priority while creating the connected ecosystem. It also calls for equipment manufacturers, solution providers, organizations, customers and consumers to take a Security and Safety-first approach. Here as well, the combination of the appropriate technology platforms and the human orchestration layer must come together to safeguard these interests. This is crucial from regulatory compliance and data protection points of view.

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