How Industry 4.0 can help India achieve its strategic objectives?

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The phenomenon of industry 4.0, with its roots in Germany, has been around for about 8 years now with fairly substantial literature written on the topic and discussions held worldwide. Industry 4.0 as it is generally understood, is a phenomenon which lets the digital world communicate in real time with the physical world, resulting in disruptive innovations such as self-driving cars and metro rails. This phenomenon, when combined with big data analytics, AI, robotics, 3D printing and cloud computing, has the potential to fundamentally alter the business landscape, especially manufacturing landscape, thereby bringing in a revolution of sorts.

Another way to comprehend Industry 4.0 is to think of it as lean manufacturing and methods on steroids. As lean methods have become widely used, accepted and implemented over the last few decades across industries and geographies, there are only marginal productivity improvements possible with further process and systems improvements. With Industry 4.0 however, productivity related improvements could be fairly substantial. This is on account of real time information sharing between digital and physical potentially leading to pre-emptive maintenance, rapid post-event resolutions and production streamlining like never seen before.

Given the enormity of the possible changes, Industry 4.0 is not just a technical development having tactical implications, rather Industry 4.0 has grave strategic implications for organizations as well as nations. At an organizational level, organizations the world over, would need to rethink their established business models, not only to effectively leverage industry 4.0 potential but also to survive from competition which has better mastered the art and science of Industry 4.0. At a country level, Industry 4.0 presents formidable challenges as well as opportunities. For India, Industry 4.0 could be a platform and opportunity to help realise its short- and long-term strategic objectives. Specifically, the country could leverage the opportunity (and challenges) presented by Industry 4.0 to help solve our unemployment problem (by reviving the Indian manufacturing sector) and thereby simultaneously helping achieve the $5 trillion economy target the current federal government has set up for itself. Manufacturing sector is an obvious candidate to provide jobs on a mass scale. However, it is no secret that India’s manufacturing sector has been a laggard compared to the likes of China, USA, Japan and Germany. All of these countries, except China, have a much lower population base compared to India. Given the size of our population and of our future ambitions, we need to urgently reform and upskill our manufacturing sector and its workforce. Industry 4.0 presents that opportunity.

With a population of 830 million below 35 years, out of a total population of about 1.25 billion, India’s demographic dividend is much talked about. India needs to leverage this advantage within the next 20 to 30 years after which the total working age population is expected to start declining. More importantly, if quality jobs are not created in sufficient quantities, this demographic advantage could eventually turn into a demographic nightmare. Large number of unemployed young working population is a matter of serious concern.

So how can Industry 4.0 be leveraged to make the Indian manufacturing sector competitive vis-à-vis the powerhouses like China, USA, Japan and Germany? Well for starters, India could use the opportunities presented by Industry 4.0 to partly overcome its obvious disadvantages (primarily quality physical infrastructure like roads, ports and goods trains) vis-à-vis manufacturing powerhouses like China. The substantial efficiencies associated with Industry 4.0 are primarily technology and skills related, something India can master with some effort. They are not capital, political and time intensive to the extant, which the creation of physical infrastructure entails. Furthermore, even though Industry 4.0, associated with automation and robotics, is often linked to large-scale loss of human jobs, due to potential mass deployment of smart robots able to communicate with each other in different value chains, across geographies, the good news is that this prediction of a job-loss scenario may not actually realise. This is because, if we look at past data and trends, technology has ended up creating more
jobs than it has wiped out. It is just that the nature of jobs undergoes a paradigm shift. With Industry 4.0, it is generally agreed that low to mid-skill level jobs would be affected the most with minimal impact on high-skilled jobs. Therefore, we need to prepare for the new age skills that are going to be in demand in the near future.

Although the extant of the impact of Industry 4.0 is a matter of debate, the changes are well underway and almost certainly will change the way firms do business currently. Therefore, long term strategic plans need to be put in place to be industry 4.0 ready at a country level. This is necessitated to provide jobs to a burgeoning working population, to help alleviate absolute poverty prevalent throughout the country and ultimately to help achieve the $5 trillion economy target in the near future. Given the role the size and growth of an economy plays in a country’s overall power projection internationally, as we have seen in the last few months, we can ill afford to fall behind.

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