

Industry 4.0: Pillars of Technology that Deliver Productivity Improvement in Manufacturing

Industry 4.0 embraces the use of modern technology in industrial applications to improve production. The Forbes reports (#1) have confirmed that 88% of manufacturers anticipate Industry 4.0 technologies will deliver productivity improvements.

For any manufacturer, considering and planning their Industry 4.0 implementation to help future-proof your competitiveness is highly recommended. Core to the transformation is to move from a business with isolated operational and data silos to a fully integrated one with improved production intelligence. This new knowledge drives a focus on meaningful objectives and supports the required optimised allocation of resources for production outcomes.

While there are minor differences promoted relative to the elements of Industry 4.0, these are mostly variations based on what market the writer supports. We apply our solutions around nine technologies.

Nine Key Technologies

- **System/Data Integration** – Increased the sharing of information both vertically and across operational levels. Increasing production needs to include the OT (Operational Technology) layer needs.
- **Process Automation** – For some markets, robotics is the nominated technology, however in our market, PLC mostly replaces these, DCS and other automation systems.
- **Industrial Internet of Things (IIOT)** – Acquisition of additional information from sensors and adding sensors using smarter/cheaper technology.
- **Augmented Reality** – The use of mobile devices to distribute and gather information is a key element to achieve productivity improvement.
- **Cybersecurity** – There is a need to open and integrate production and management systems, commonly termed the OT/IT interface. There is also a higher need for robust access, engineering and change management processes.
- **The cloud** – There is a need to connect and integrate the manufacturing process to other cloud-based systems and share information more globally.
- **Big Data/Advanced Analytics** – The challenges of understanding the larger volumes and higher resolution are well supported by new innovative industry 4.0 technologies.
- **Process Digital Twins** – These are virtual representations, often 3D, that serve as the real-time digital counterpart of a physical object or process that spans its lifecycle.
- **Simulation** – Sometimes referred to as the modelling of processes and targets. The use of Artificial Intelligence to define models and alert potential production issues is included in this technology.

Each business will get different values from implementing these technologies. How you implement the technology is a subject for other articles, but noteworthy is the need to consider people. Nokia's Industry 4.0: "Think value, not tech" is a recommended read.

For more information visit our website at www.triplei.com.au/operational-performance/.

#1 Industry4_0 #AutomationTrends

Credit: <https://www.forbes.com/sites/sap/2020/07/01/how-industry-40-boosts-productivity-and-profitability-in-intelligent-factories/>.