Moving towards smart manufacturing

How transparency through Industry 4.0 tools drives changes in company culture

An almost fully automated production process operated by isolated computer systems only maintained and supervised by human operators, is currently standard in our industry. The vast increase in data storage capability, computational power and networking bandwidth triggered the ongoing fourth industrial revolution, denoted as Industry 4.0, and it will transform every step of the steel production process. While industrial revolutions are initiated by inventions, the implementation and adaptation is driven by people. New technologies tend to fail early on not because they are not capable of delivering the promised results, but because the workforce does not trust in its benefits and therefore embrace the changes that come along with it. Value emerges as a combination of technology and the acceptance of people who use it to increase efficiency.

The progress in adaption of Industry 4.0 compliant tools differs hugely across steel producers. Companies embracing the changes early will emerge with the competitive advantage in changing market conditions. Being able to quickly react to ever increasing customer demands at low or no additional cost through smart manufacturing, is key for continuous business success. Companies must undergo a transformation not only at a technological level but also adapt their business strategy and culture.

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Trends in process and product quality, events and cost factors need to be visible within the company. That means data needs to be available and easily accessible. Full transparency to decision makers and operators is key. So aggregation, long term storage and provisioning systems become the foundation for all Industry 4.0 solutions. Network connectivity between production lines allows for a variety of technical solutions. We see centralised and decentralised data warehouses and hybrids of those two as dominant, while cloud-based approaches are just starting. Data availability translates to visibility of performance across operators, maintenance teams and management. This eradicates finger pointing and allows people from different areas to work towards the common goal of business success, since issues can clearly be identified and traced back to the root cause. This creates understanding, which is the foundation for acceptance of new technologies under the Industry 4.0 umbrella.

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