

Determination of changes between Lean management and Lean 4.0

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Abstract

The term Industry 4.0 originated from the German term Industrie 4.0. This next industrial revolution is based on intelligent manufacturing. Intelligent and flexible processes characterize the manufacturing companies of the future. The main goal of Industry 4.0 is a smart factory that will connect production units by the Cyber-physical system (CPS). This system will allow machines and sensors to communicate with other machines or sensors. This will create a coherent system that will be able to decide independently, manage the assigned technological units and independently optimize the production process based on the collected data (Big data) from the production machines and sensors. Other new technologies such as Autonomous robots, Internet of Things (IoT), Cloud computing, Cybersecurity, Additive manufacturing and Augmented reality will be used in the smart factory. These new technologies will affect the current production process management such as Lean management or Six sigma. Lean 4.0 is a term for a new concept of production management that will combine lean production and digitalization. The article describes traditional Lean management and its methods. Lean is based on several basic principles. Firstly, it is the effort of the entire organization to continually improve in all areas and avoid unnecessary waste. The second principle is to satisfy the customer's needs. The next part of the article describes Lean 4.0 and its methods. The main aim of this article is the determination of changes between traditional Lean management and Lean 4.0 and assessing whether Lean 4.0 can be used in the smart factory. At the end of the article there is an analysis of the risks that may arise when Lean 4.0 will be implemented into the company.

Keywords

Industry 4.0, Smart Factory, LEAN 4.0, Lean management, Risk management

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