

DIGITAL SHOP FLOOR MANAGEMENT: THE BACKBONE OF THE SMART FACTORY

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A core management instrument in the context of lean production is shop floor management, because however sophisticated a lean strategy may be and whatever added value it may offer, it initially means a significant break with some of the structures, learned processes and cultural framework of production that have been around for decades. Shop floor management is therefore the key to the long-term viability of lean production. Without 'local leadership', lean initiatives such as the introduction of Kanban are restricted to cosmetic process-related and technical changes whose operational effectiveness and long-term existence are anything but certain. IoT technologies that are currently available offer extremely interesting possibilities of organizing shop floor management more effectively and efficiently. Data in real-time, visualization and intelligent apps make it possible to set up a more agile and transparent system of management.

Actual management presence and communication at the place of production are of course as difficult to replace as the experience and intuition of a long-serving manager. The process can, however, be significantly optimized and simplified. The most important levers in this process are, first, the intelligent capture, aggregation and clustering of all collected process and object data and, second, accessible visualization and provision of the most important indicators



to match the relevant target groups and tasks, making the data – and only those data – available that an actual job requires. This allows the benefit of Industry 4.0 architecture to be used without information overload paralyzing management's ability to act.

An example of how this approach can work in practice is the "ActiveCockpit" production information system developed by Bosch Rexroth AG. The solution continuously captures, filters and visualizes data and ensures that managers and employees can monitor all the indicators they need at all times. At the same time, ActiveCockpit is also a platform for interaction allowing, for example, decisions from a team meeting to be communicated directly. Essential information like production data, load parameters and failure alerts can be accessed over a number of channels in real time: via employee smartphones, large screens in the production building or on digital CIP boards. This allows fast, coordinated and precise intervention whenever required.

Visualizing and supplying the most important indicators that match the relevant target group make highly efficient shop floor management as well as fast and precise control interventions possible and make management processes logical and transparent for employees (and for the managers themselves). However, this is just one side of the coin. Systematically digitalizing the entire factory – or even a global production network – opens up previously unknown possibilities to compare processes, to document especially effective problem-solving methods and, as a result, to initiate lasting continuous improvement processes. Such changes have a definite revolutionary character, as they not only make conventional shop floor management more efficient and transparent, but also more scalable beyond the boundaries and the actual shop floor.



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