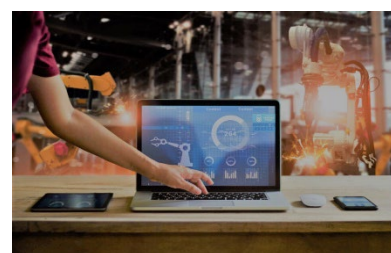


Digitalisation with a human touch: transforming production planning

Background

In today's demand-driven industrial business environment, companies are seeking to introduce advanced systems to achieve excellence in production organisation and quality. The most widely used tool is a MES (Manufacturing Execution System), a software that interposes itself between the management system (ERP) and the factory, collecting and managing large amounts of data related to the entire production process.

Our client, a leading family-owned company producing agricultural machinery, was seeking to improve production efficiency by saturating production capacity and reducing production batches, with the ultimate goal of offering better service to customers with the full involvement of key users.



Case study

To ensure an effective introduction of the new software, the preparation phase consisted of:

1. remapping of production cycles to ensure the quality of the information provided to the system;
2. drafting a document with the functional requirements for the MES software: this document was crucial in guiding meetings with potential software suppliers and allowed competing softwares to be compared based on the company's specific requirements in terms of flexibility, adaptability to the wide range of needs and capacity for integration with existing information systems. This avoided time being wasted on generic demos of the different products viewed.

Software selection was followed by installation and a period of testing, during which two "pilot" workstations were used to put the system to the test: one for the "Machine Tools" department and one for the "Assembly" department. This intermediate step made it possible for key users to test all of the software's features in a working environment and to make the last necessary customizations.

This "trial" period was indispensable and of great value. It allowed operators to learn in detail how the MES works and to evaluate all of its aspects, both positive and negative. Thereafter, the focus was on making activity records more fluent and intuitive, thus maximising the chances of user acceptance. The opinion and cooperation of the operators were key to building a system that was simple, effective, and within their expectations.

Once the final structure was determined, it was possible to complete the installation in all production areas and to train all users, thus bringing the system up to full capacity.

Results

With the introduction of the MES software, accurate information on production progress has been obtained in a paperless way, allowing for complete tracking of downtime in "real-time."

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The data generated daily by the 15 computers installed in the different departments allows for in-depth analysis aimed at reducing major downtime (such as set-ups or breakdowns), in particular in the 2 departments:

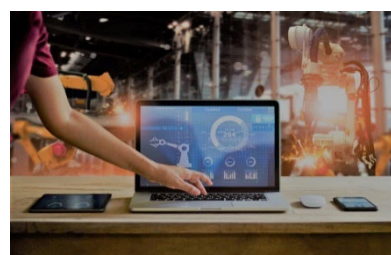
- **Machine tools department:** the MES enabled the company to analyze downtime related to set-ups in great detail. To do this, the frequency and average duration of set-ups were evaluated. This study made it possible to improve production scheduling as well as machine tooling operations using SMED (Single Minute Exchange of Die) techniques.
- **Assembly department:** the data created by the system are now aggregated by assembly areas and discussed weekly by the Kaizen Team, consisting of the foreman, operators, and production manager. These meetings are aimed at examining the main issues that generate inefficiency in operators' work and proposing possible ideas for improvement.

Here are some of the benefits that have resulted from the application of MES in the Company:

- real-time monitoring of production, thanks to instant progress of production orders
- increased efficiency and reduced stress
- reduction of downtime and scraps
- improved product quality
- improved customer service
- creation of a database full of useful information for improvement analysis
- fast and seamless information transmission thanks to a huge reduction in paper use in the company
- sharing of paperless information in all production departments

Conclusions

For the company, the adoption of an advanced system such as a MES has allowed for important progress to be made in terms of computerization and process efficiency improvement. Given these benefits, the implementation of a scheduler is already being studied with the same software house to improve the management and organization of production for a further increase in the quality of the product and service provided to customers.



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