

Management and Monitoring of production experience history

TO GUARANTEE A BETTER PRODUCTION THROUGH DATA COLLECTION



OMS Group is a company founded in the 60's, in the course of the expansion polyurethane development, with the intent to manufacture continuous production lines for flexible polyurethane foam block together with dispensing machines of two or more components for moulding flexible and rigid PU foam of various densities.

In less than 20 years the Company has achieved the first positions on the marketplace and today it is amongst the leading world manufactures of polyurethane processing machinery and integrated manufacturing plant for the expansion of polyurethane, which is a benchmark for the sector.

OMS Group has been growing gradually having more than 100 employees, with a high percentage of exports (80%).

The technological innovation and the attention to the quality of its own products and guaranteeing the quality of the products of its own clients, have always represented a "must" for OMS Group.



The high technology applied to the software systems for the direct control of the operation of all the "critical" components of plant has allowed to OMS Group to improve and to realize reliable machines of first quality, by re-investing in the R&D in order to make the production range better.

Thanks to the flexible organizational structure, the Group is capable of following from the very beginning all the stages involved in the design, manufacturing, in-house testing, installation and commissioning of machinery at the customer. A post-merchandising network is available to the customers to solve possible technical problems quickly by supplying all the necessary exchanges.

The achieved results, in terms of quality standards, have permitted to OMS Group to obtain the ISO 9001:200 Certification that guarantee the system of quality in compliance with the UNI EN 9001 legislation.

At the beginning of 2005, OMS has moved to the research of a solution of data collection to connect at the own machines and own plants. The demand was that to endow the machines with a commercialised software to support the phases of control and of the production. All that is guaranteed to the clients is an additional functionality capable of aligning the procedures of control by abandoning the paper completely, through a clear solution and of simple use. Besides, this system gives the possibility to the OMS to verify the functionality of own products, through the real data collection of production so as to permit a following optimisation of the machines both in phase of design and assemblage.

The solution, after a careful analysis of the market offerings, has been identified in the advanced form of MES by Inspiring Software. It handles the data well in the collection, the visualization, the data entry concerning the production with full functionality, which is demanded from OMS. It has been renamed **PDS - Production Data Storage**.

THE COLLABORATION WITH INSPIRING

OMS was in need of providing its own machines with a solution of supervising the production lines and handling the data collection "on the field" related with the machine or line. The purpose was to guarantee an additional service to the customer to have the visibility of the own production, through a solution that exploited all the potentialities of the available technology.

The electronic management of the production data of each machine has been becoming a fundamental requirement for the OMS' customer.

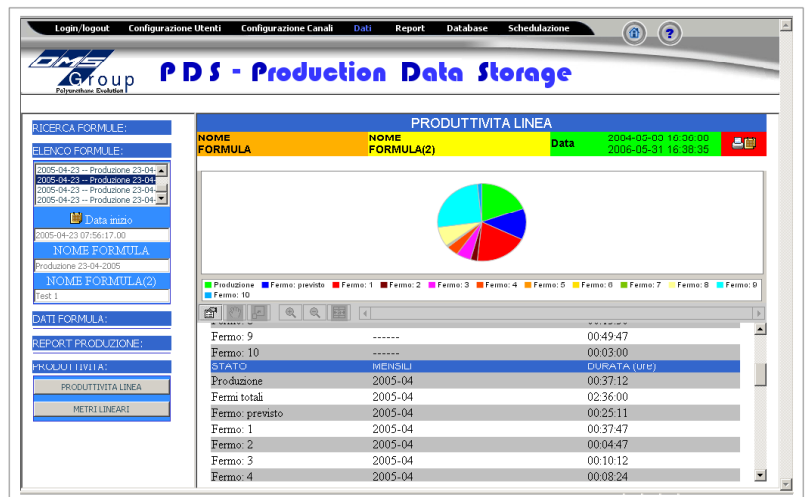
Also, it could be interesting to keep trace of the loaded recipes in production, building a real complete archive of all the necessary data to appraise every production parameter.

The data collected of the machine are of two kinds: analogical, like temperature, the pressure or the towing velocity, or digital tightly connected to the functioning state of the machine, like an alarm. The objective sought with the software could be a set of the same machine that enhances with precision the impact of its performance on the overall client company's production.

Great attention was paid in the possibility to register the external environmental factors, like the temperature and humidity, so that one would appraise the incidence on the production performance. Indeed, the same kind of activity, that they forecast the

employment of chemical materials, are influenced by the environmental factors, conditioning the performance of the machines and the quality of the finished products. Before the implementation of this solution, OMS had its own machines and lines, only controlling the tools of the machines and the customers had to deal with only paper data related with the loaded recipes for every lot in production.

Implementing the data collection system, **PDS - Production Data Storage** is guaranteed the marking of the production and with proper tools of visualization. They have major information available on the operation of the machines and on the volumes of the realized production.



THE INFORMATION AS THE SOURCE OF IMPROVEMENT

The first step was realising the prototype of the system with standards configuration, the data and the variables available from the machines to supervise. Then the next step has been realized with a kind of configuration on a machine with the production and functioning data that they could be collected. Besides, the production is made more efficient with recipes data for production on that machine in that moment. The drivers in charge of the data collection are installed on board of the PC and they collect the information regarding OPC (Ole Process Control) register protocol via a PLC. At this point, the data are filed from the server of the application that it elaborates them and it makes them visible through the browser web.

It has been realised a particular visualization like the specifics provided from OMS in order to make the data functional and researchable from the user in the simplest way possible.

The data make reference to the recipes, too, based on the type of production, at the processing date, at the lot...

Finally, **PDS - Production Data Storage**, takes the role as a proper visualization to extract the just "processed" data according to formulas and indexes. It helps visualize the data in graphical or tabular format. In this way, in relation with the register parameters, it is possible to make considerations during the machines' working, based on the external environmental conditions, too. Naturally, the real comparison on the information made available by the system is a plus which is of benefit to the OMS firms clients'.

Certainly, the possibility of a toll specifying the performance production values with certainty could be a valid support in the choice of the activities of improvement and optimisation for the company that must reckon to increase and to guarantee a competitive advantage.



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