



Maintenance Management: MES or ERP?

BY LUIGI DE BERNARDINI | TUE NOV 18 2014

✖ Anyone can see that the maintenance of production lines, machinery and devices in a manufacturing plant is important. A little less obvious, perhaps, is how maintenance can significantly minimize quality issues, waste and other sources of loss. Given these realities, why then is maintenance management often given so little attention? Instead of managing it as a critical business process, many companies suffer through it and consider it an unavoidable cost.

The need to reduce all forms of inefficiency and reduce capital investment by maximizing the use of existing assets rather than acquiring new ones is leading many companies to pay greater attention to maintenance and consider the possibility to manage it as a business or production process. This, however, opens an organizational debate: Is maintenance a business process or an operations process? Should maintenance need to be part of enterprise resource planning (ERP) or the manufacturing execution system (MES)?

I personally believe that the current organizational trends bring maintenance nearer to operational processes (MES) than business processes (ERP).

There are some who take the position that a single system should be able to address everything related to maintenance, from setting the parameters of machine operation directly from the ERP system to printing invoices from the MES. I personally believe that current organizational trends bring maintenance closer to operational processes (MES) than business processes (ERP). The three main reasons I believe this are:

1. Many manufacturing companies are increasing the responsibility of the operations staff, making them responsible for their own workstation and tools, including their maintenance. This shortens the chain of control and responsibility and reduces response times, helping to shift intrinsically from an approach of scheduled maintenance to proactive or predictive maintenance. The common tool for these personnel is the MES that integrates operations with maintenance management functions to provide a single interface to manage both processes. These systems provide a number of key support features, such as verification that the operations are carried out by staff with appropriate expertise, providing lists of checks to be carried out along with detailed instructions for execution, as well as managing activities timing integrated with production.
2. MES systems are often connected directly to the field and contain data and information about the use of machines and lines. These data can be used in raw form or appropriately processed to provide information and feed the maintenance processes. Process data, produced item counters, waste, information on the causes of waste or line stops can be crucial to optimize the planning of maintenance activities and make it as compatible as possible with production activities. On the other hand, to have all the information related to scheduled maintenance or activities that are emergency-activated allows the MES system to inform operators in real time about its impact on production performance, enabling them to take the most appropriate steps to minimize this impact.
3. The correlation of maintenance data with production data allows the integration of the normal metrics managed

by MES (for example, overall equipment effectiveness and downtime) with additional dimensions to provide a more complete and significant perspective on the production processes dynamics. This makes it possible to take action in a more timely and informed manner regarding the causes of the efficiency loss, thereby creating an immediate return on investment—both in terms of plant availability and product quality.

Even with these clear alignments to MES, some typical functions of a maintenance management system are relevant to ERP systems. For example, the inventory management of spare parts and reordering them according to the planning and the evaluation of the cost of maintenance activities rather than managing the expiry of the warranty terms of each component.

Despite this, when you approach the question from a functional point of view, it is clear how a maintenance management system is much closer to operation processes than business processes. As a result, they can be more linearly integrated in a MES system.

As this question (whether maintenance is more closely related to ERP or MES) continues to get asked by more companies, expect a massive war between business software and operations software providers to take control of the middle ground—sometimes to the detriment of the effectiveness of the product offered to the customer.

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