



Is Digitalization Different From MES?

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In the past six months, we have been talking about digitalization almost every day. Going digital has become the main initiative of many manufacturing companies, and task forces and funds have been allocated to achieve the goal.

Digital transformation seems set to disrupt the way companies operate, creating totally different organizations. Frequently, the digitalization initiative is related to the adoption of some new and promising technologies like cloud computing, the Industrial Internet of Things (IIoT) or machine learning. All of them promise to solve in an easy and cheap way problems that have affected companies for years—creating new opportunities along the way. Smart sensors and improved data availability will enable new technical solutions and business models, and any company that does not leverage these new opportunities will have a difficult time competing with those that adopt them faster.

Not only is this all true, but it's already happening. We have several examples in the B2C market, and it's quickly impacting the B2B space as well.

However, in all this discussion, there's an important point that is often overlooked: Achieving digitalization does not require implementation of all of these new technologies; even old-style implementation of manufacturing execution systems (MES) or manufacturing operations management (MOM) systems is enabling the digital initiative. In fact, in some ways, I would say that MES/MOS is the real enabler of a digital transformation and that all the other technologies are just new tools to implement simple or more sophisticated MES functionalities. It's not even necessary to try to give MES new names in an attempt to make it more appealing or modern, at least from a marketing perspective. I've heard of Super-MES, Hyper-MES, MES 4.0 and Smart-MES—all ways to try to capture the attention of clients that simply need to implement a good and reliable MES or MOM system.

Implementing an MES is basically implementing an IT system for operations.

It supports with a computerized approach the most important functions and processes that characterize the life of a specific plant. It essentially digitizes the production process, collecting, transferring and manipulating data in a digital way in order to provide information to the right people, at the right time in the right place. It is going digital! And you can do it using the best, most functional and cost-effective technology you have available: smart sensors to collect data from sources that would not be available otherwise, cloud to store data and make it easily available without self-growing a complex and risky IT infrastructure, machine learning or artificial intelligence to enhance data and understand its complex correlations to create usable information, and analytics and visualization to present the information in a format that is more intuitive and effective for humans to consume. In the end, you are creating an MES solution.

It's important to understand that, because there's a significant difference between talking about MES/MOM and talking about all the other approaches. Many clients have the idea that MES is an old term and that the new

digital approach makes it useless—that they could achieve better results with the new technologies. This is confusing and risky. Manufacturing companies need to understand clearly that operational improvement comes through the implementation of a solution that helps them to better manage what happens in the plant, in terms of both production processes and organizational processes. It needs to be a solution that digitally and seamlessly connects the strategy defined at the C-level with the implementation on the shop floor; a solution that potentially enables the connection and coordination not only of the processes inside the plant, but of the processes of the company's entire supply chain.

This is why a serious digitalization initiative in manufacturing starts from considering the implementation of a good MES/MOM system. The technology to be used is just a collateral decision—important, but collateral.