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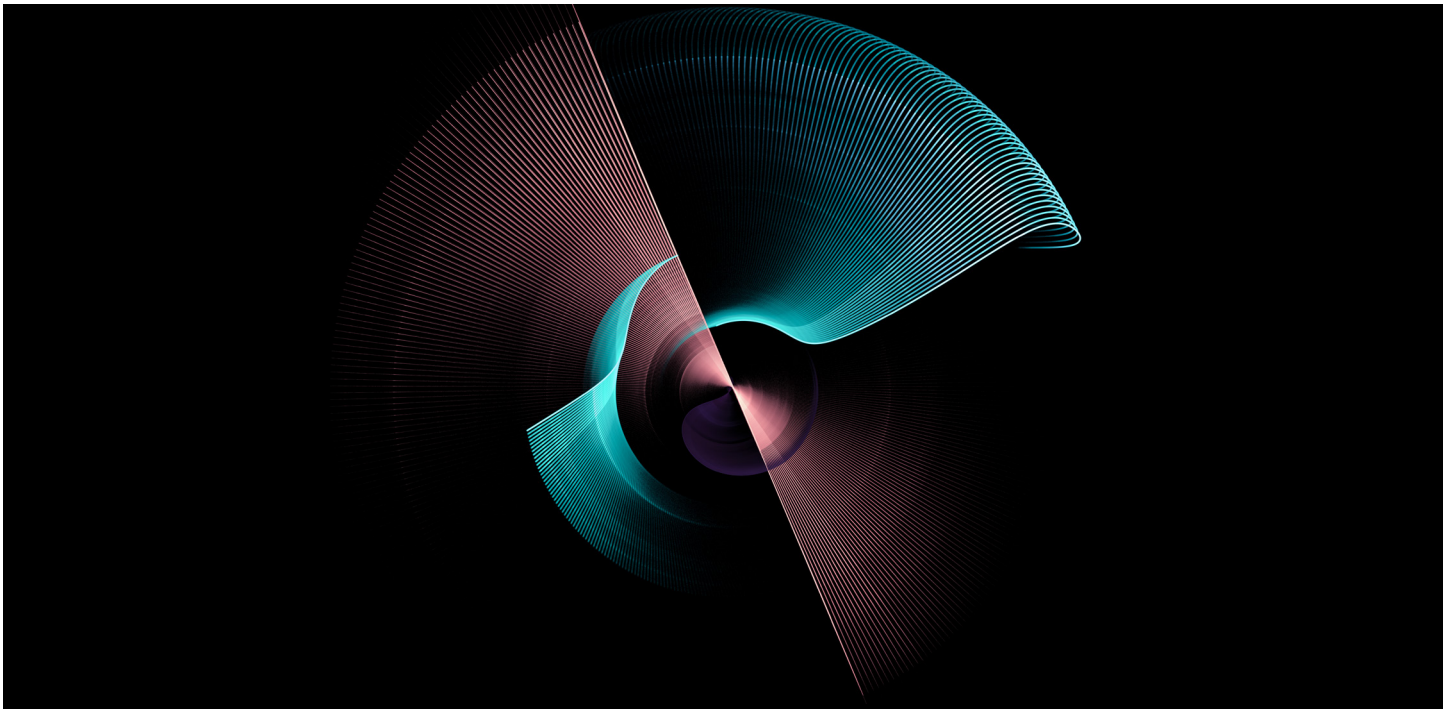

Moving manufacturing forward by transforming MES

Faced with plateauing productivity, manufacturers are looking for systems and processes that can unleash new value. Competitive advantage hinges on adopting smart factories by providing enterprises with the potential for productivity improvement, labor efficiency, and confirming and enhancing product viability with the digital thread. Yet, some 10 years after the emergence of the Fourth Industrial Revolution, many manufacturers continue to see challenges in transforming to smart factory operations.

According to a Deloitte study, 86% of manufacturers think smart factory initiatives will be the main driver of competitiveness within five years, and 83% think these initiatives will transform how products are made. However, just 5% of manufacturers have at least one factory at full smart status, and only 30% have smart factory initiatives underway. Inconsistency in systems across global networks, among other obstacles, causes this stagnation. To move the needle, executives need to look to foundational initiatives that drive productivity and savings while setting the stage for rapidly transforming operations and adopting smart factories. A critical component is the manufacturing execution system (MES).

Disrupting the status quo

Considerations for MES do not often rise to the attention of enterprise leaders. Many companies have invested in MES, but to date, these investments have been in bespoke solutions that are unique to each factory. Whether homegrown or purchased software, the solutions are heavily customized to local operations, and they have limited applicability for other factories. In the new technological era, this status quo presents several drawbacks.

Fundamentally, working with a multitude of MES solutions across a global network inhibits standardized processes and solutions at the enterprise level. Varying, disjointed processes in the production life cycle (including work orders, tracking, and monitoring) lead to inefficiencies and inconsistencies. The capability maturity for individual plants can vary widely, and so too can the data associated with production, machines, and manufactured goods. If the underlying data is inconsistent and fragmented across the network of plants,

the enterprise is challenged to draw upon insights and learnings in the production process and make iterative improvements that are repeatable regardless of the manufacturing facility.

The result is limited enterprise-level visibility and traceability throughout production and the product life cycle. When execution is not governed by standardized processes, technology, and data, it frustrates competitiveness and prevents enterprises from adopting other transformative smart factory capabilities and processes.

To be sure, factories do face some MES elements that are specific to their local operation, but the majority of the production life cycle can and should be consistent between plants. Thus, the MES solution should also be consistent, and when it is, it unleashes greater value.

Efficiencies are found in driving synergy throughout the manufacturing network by building capabilities through common processes and unified data. This leads to more transferable knowledge, allowing decision-makers to focus on unique process differences between plants. A common body of knowledge resulting from standardized data and consistent processes helps enterprises drive waste out of manufacturing and seize cost savings, efficiency, and new capabilities—precisely the capabilities required to thrive in the new industrial revolution.

Finding a rapid path to value

Any transformative initiative raises concerns about how much disruption will occur during the endeavor. There are valid questions of how to shift to a new way of operating without hampering productivity in process. Fortunately, transforming MES need not be a lengthy initiative that impedes business. The priority is to frontload value to seize capacity and improvements that fuel the rest of the program. One path to finding this value is using a preconfigured MES solution. With a global template, the enterprise can standardize MES at most plants and capture value early in the effort.

A lingering consideration is whether the realized value justifies the expense, particularly at a time when cost management is a high priority for executives. There are known best practices, approaches, and solutions, and value flows from aligning the vision for change at the business level, as well as understanding how transformation delivers a bottom-line impact and positions the organization to adopt other emerging technologies.

Seeing how transformation supports enterprise strategy, the next step is to build the business case and develop a plan by understanding capabilities, needs, and timelines. Defining the end state permits the business to strategically decide how to move forward and which solutions to adopt.

As one example, DMES is an essential enabler of the product life cycle digital thread, the onramp to transforming into a model-based enterprise (MBE).

DMES: A proven approach to transformation

One option for manufacturers is selecting a preconfigured MES solution, such as Deloitte's DMES solution. This solution can enhance the design and deployment phases of MES implementation. DMES focuses on seven core capabilities: manufacturing process definition; production scheduling; production execution; tracking and traceability; production quality management; closing production unit; and data collection and reporting. By quickly driving alignment on a global foundation, the enterprise can focus on unique requirements of the MES solution to address important differences between factories and capture full value from each facility.

When new capabilities are enabled with transformed processes, standardized data, and a modern, agile software solution, manufacturers are positioned to move factories toward fuller smart status. As one example, DMES is an essential enabler of the product life cycle digital thread, the onramp to transforming into a model-based enterprise (MBE). Manufacturers with MBE capabilities enjoy essential advantages like shorter program development times, labor efficiency across development and production, process simulations that can confirm product viability, and the capacity to take data-driven insights and feed them back into manufacturing process for iterative improvement. This is the level of productivity and agility that enterprises need to win in the Fourth Industrial Revolution, and it all starts with transforming MES.

Most manufacturers are facing similar challenges in MES, and now is an opportunity to seize the first-mover advantage. Resetting the digital foundation across plants delivers better visibility and traceability in operations while also preparing the enterprise for what comes next.

Let's talk!

By choosing Deloitte's DMES solution, you can jump-start intelligent and timely transformation toward smart factory capabilities that align with your organization's broader goals. It all starts with a process-led, turnkey approach that leverages many years of digital transformation, manufacturing operations, and systems implementation experience. Contact us to learn more about DMES or to discuss a specific challenge your organization is facing in its digital transformation journey.

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