

DMES: Deloitte's Preconfigured MES Solution

Accelerating time to value on your digital manufacturing journey

Digital manufacturing—perception vs. reality

Eighty percent of manufacturers surveyed last year believe that smart factories will transform the way products are made and become the main driver of competition by 2025. Yet only 5 percent of them reported full conversion of at least one factory to “smart” status, and only 30 percent report having smart factory initiatives currently underway at all.¹

That gap between *perceived importance* and *real action* can be caused due to the distractions emerging from the shop floor including:

- Ineffective, antiquated planning approaches
- Insufficient material and labor traceability
- Missed throughput goals due to time-consuming manual activities
- Inability to troubleshoot quality issues
- Lack of visibility into key performance indicators
- Unplanned maintenance leading to unnecessary downtime

The biggest challenge—where to start?

Many companies have invested in manufacturing execution systems (MES) over the past 20 years. But each plant's MES solution is often unique—some are homegrown, others have been purchased from software providers. As a result:

- The capability maturity of individual plants often varies, sometimes widely.
- Plants may not be able to define a transformation path on their own.
- Replication across the plant network may be impeded by lack of standardization and willingness to compromise.
- Executive buy-in may be withheld due to a poorly defined business case for transforming all plants.
- The path to integration may be impeded by siloed and decentralized system development.

¹ Paul Wellener et al., 2019 Deloitte and MAPI Smart Factory Study: Capturing value through the digital journey, Deloitte Insights and MAPI, September 2019.

So many choices, so little time (and budget)

The good news? In the past five years, significant consolidation and growth have occurred in the MES software market. Several major players have become leaders in the space. Technologies are integrating easier. Digital innovations are emerging, including:

- Automations
- Workflow tools
- Advanced analytics
- Artificial intelligence (AI)
- Internet of things (IoT) solutions

But now manufacturers need to decide which capabilities to pursue and how to transition from their current operations to more modern capabilities before competitors.

Deloitte can help.

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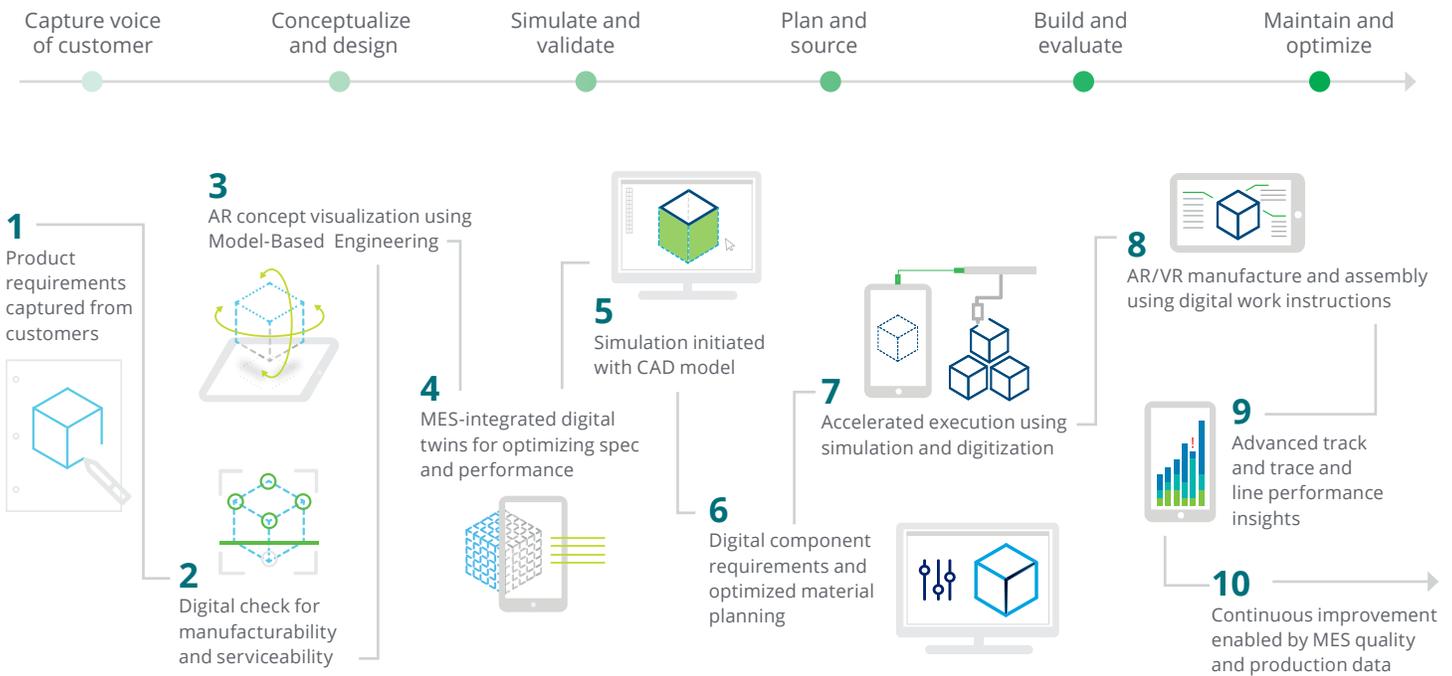
DMES is a process-led, turnkey approach to MES implementation that focuses on seven key MES capabilities:

- Manufacturing process definition
- Production scheduling
- Production execution
- Tracking and traceability
- Production quality management
- Closing production unit
- Data collection and reporting

DMES is an important enabler of the product lifecycle digital thread, with pre-built process and data integration connections to other end-to-end digital product development and real-time IoT production monitoring capabilities (figure 1).

Figure 1. A holistic view of the value stream

At Deloitte we look at problems through the lens of the end-to-end "Digital Thread" that connects product development and manufacturing to the field.



Core enablers of the digital thread

Digital engineering
Manage the design, development, and testing of product. Create process documentation and requirements.

Industrial simulation
Dynamically represent and validate processes. Plan and optimize against hypothetical production parameters.

Manufacturing execution
Build, execute, and track to tactical work plans. Integrate with production systems to manage quality and report metrics.

Real Time monitoring
Collect, synthesize, and display live data and performance insights. Alert for issues and predict upcoming events.

Accelerating time to value

Deloitte combines strong manufacturing operations capabilities, industry knowledge, extensive experience and relationships with the major MES vendors, and many tools and accelerators to jumpstart and enable your MES transformation journey. Based on years of experience in manufacturing shop floor redesign, we have developed preconfigured tools and templates to help speed your path to value with MES, including:

- A proprietary capability maturity model for assessing existing people, process, and technology capabilities and determining business needs
- Business case and quantifiable return on investment (ROI) development
- Scenario development for vendor demonstrations
- Methodology for comparing software capabilities
- Strategy for prioritizing and sequencing solution roll-out using preconfigured templates
- Common, repeatable business processes tailored to the specifics of each factory
- Out-of-the-box lean manufacturing and continuous improvement tools to deliver sustainable production system improvements

- Transformation program governance models based on our experience with leading companies in many industries
- Outsource support for MES maintenance and support to reduce IT/OT expenses and focus on core competencies

DMES can include IoT integration, low-code application development, and AR/VR (augmented reality/virtual reality) capabilities. We can also share industry-specific MES leading practices and many lessons learned in other industries to add value to your implementation.

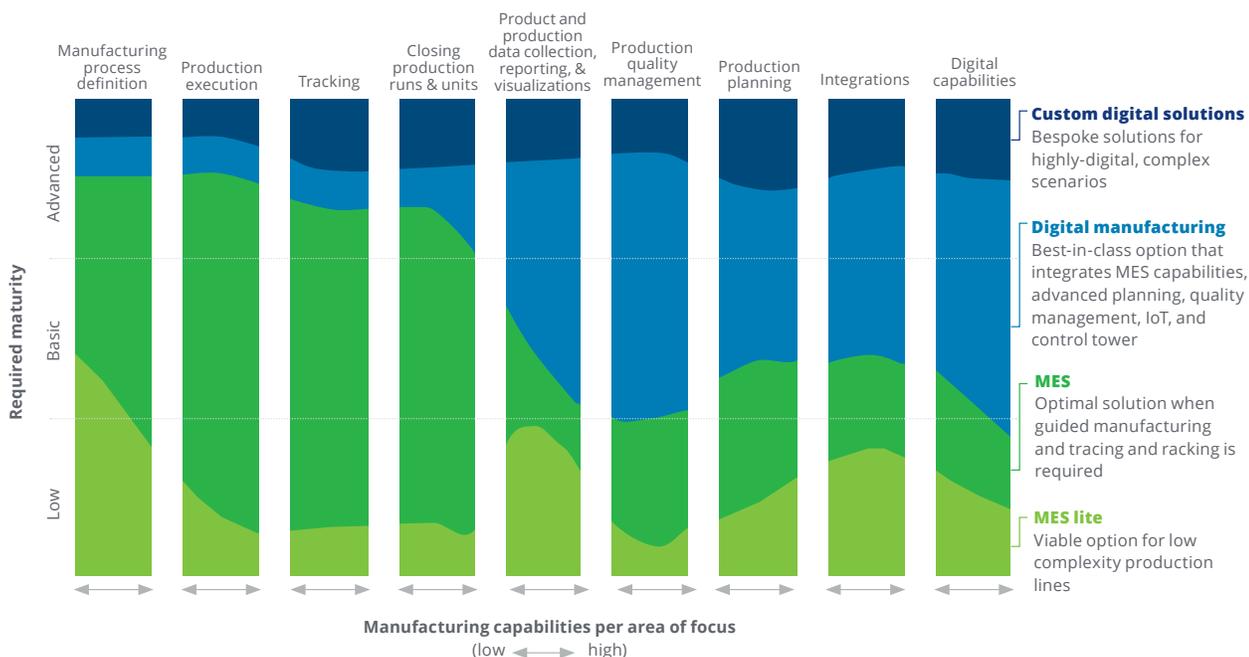
Potential benefits

A DMES implementation can provide the following potential benefits:

- Overall project cost reduction
- Shortest time-to-value due to accelerated implementation
- Simplified and globally harmonized processes
- Improved digital integration with product lifecycle management and operational systems and processes
- Strengthened regulatory compliance through improved digital traceability
- Lower annual maintenance cost using out-of-the-box functions

Figure 2. Flexible and scalable to match your transformation objectives

DMES is available through a wide range of engagement options to help you tailor the implementation to your organization's needs, culture, timeframe, and budget as you progress in your digital maturity.



Let's talk

By choosing Deloitte's DMES solution, you can jumpstart 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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