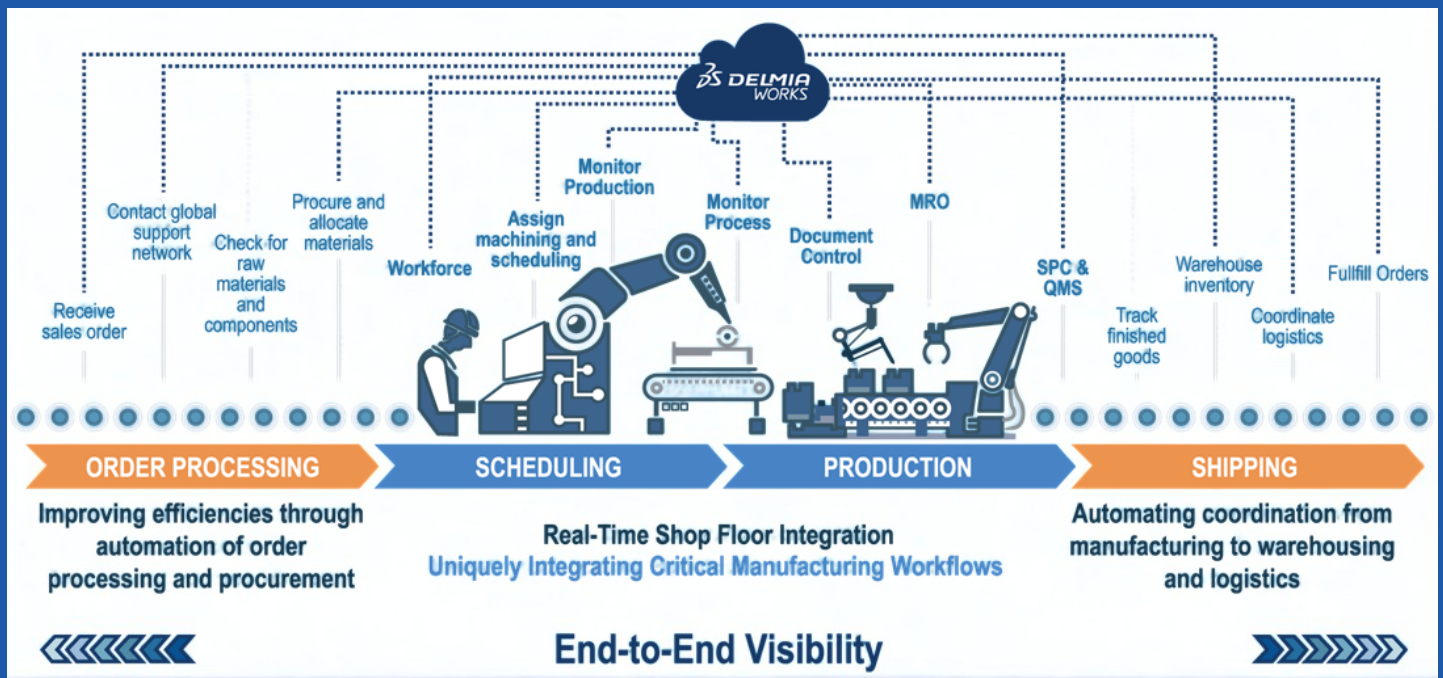




MANUFACTURING EXECUTION SYSTEM (MES)

OVERVIEW:

Since 1993, DELMIAworks has helped manufacturers gather real-time shop floor data and feed it into ERP systems for better decision-making. When your ERP falls short, DELMIAworks' customizable MES solution fills the gap—managing everything from preventative maintenance and production monitoring to SPC, quality, inventory, and more. Whether you're operating one facility or many, DELMIAworks seamlessly integrates with your ERP to deliver the critical data you need to succeed.



KEY FEATURES

- RealTime™ Production Monitoring
- RealTime™ Process Monitoring
- Advanced Planning and Scheduling
- Overall Equipment Efficiency (OEE)
- Quality Management
- Material Resource Planning (MRP)
- Heijunka Box and Kanban
- Business Activity Monitoring
- Business and Manufacturing Intelligence
- Mobile Apps
- RTStation
- Statistical Process Control (SPC)
- Automation

BEACON

3DEXPERIENCE® Works



Leveraging Digital Transformation Solutions for Operational Excellence

The Essentials of PLM, EBOM & MBOM

Product Lifecycle Management (PLM) refers to the process of managing a product's journey from concept through design and manufacturing to its eventual retirement. It centralizes all product-related data, ensuring that teams across engineering, design, and manufacturing have access to the most up-to-date and accurate information.

- **EBOM (Engineering Bill of Materials):** This is the list of components and materials needed to design and develop a product. Created during the design phase, the EBOM includes all technical specifications and design details that are crucial for the engineering team.
- **MBOM (Manufacturing Bill of Materials):** In contrast to the EBOM, the MBOM focuses on the materials and components needed for the product's manufacturing and assembly. It includes detailed instructions for the production team, ensuring that the design is correctly translated into a finished product.

To fully leverage the potential of a PLM system, it must be integrated with other enterprise systems such as ERP and MES. This integration ensures seamless data flow across all stages of the product lifecycle, from design to production.

PLM & ERP Integration:

- **Material Procurement:** By linking the EBOM with the ERP system, procurement teams can automatically receive accurate material requirements for production, reducing errors and ensuring timely procurement.
- **Cost Management:** The integration between PLM and ERP helps manufacturers gain better control over product costs by ensuring that the design and materials specified in the EBOM align with procurement costs and production budgets.
- **Inventory Control:** Real-time updates from the PLM system help inventory managers track materials more accurately, reducing the risk of excess inventory or stockouts.

PLM & MES Integration:

- **Production Accuracy:** By connecting the EBOM and MBOM with the MES, manufacturers ensure that the right materials and assembly instructions are used during production, minimizing errors and inefficiencies.
- **Real-Time Monitoring:** MES systems provide real-time updates from the shop floor. When integrated with PLM, manufacturers gain deeper insights into production status, machine performance, and potential bottlenecks.
- **Continuous Improvement:** Data from the MES, combined with insights from the PLM system, allows manufacturers to track performance trends and continuously refine their product designs and manufacturing processes.

Harnessing Data for AI, ML & LLM

- By integrating PLM, EBOM, MBOM, ERP, and MES systems, manufacturers create a powerful foundation for AI and machine learning.
- This end-to-end visibility and data consistency enable advanced analytics, automation, and intelligent decision-making.
- AI-driven insights can cut costs, speed up production, and reduce errors, while LLMs can power next-gen tools that improve employee efficiency and collaboration.
- The combined impact is smarter operations, faster innovation, and a stronger competitive edge in an increasingly digital marketplace.



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