

Why Supply Chain Planning and MOM Must Work Together

Presenter:

Mike Bradford, DELMIA Strategic Business Development Director, Dassault Systèmes

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KEY TAKEAWAYS

- Static planning is no longer sufficient for meeting modern manufacturing demands.
- Integrated supply chain planning and manufacturing execution helps companies overcome disruptions.
- DELMIA integrates SCP and MOM in a single planning optimization platform.
- The DELMIA MOM solution is much more than an MES.

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Why Supply Chain Planning and MOM Must Work Together

OVERVIEW

Supply chain planning and manufacturing operations often work toward the same goals—but not always together. Planning happens upstream, while execution unfolds on the factory floor, creating gaps in visibility, responsiveness, and performance.

Closer alignment between supply chain planning (SCP) and manufacturing operations management (MOM) is essential for manufacturers facing increased volatility and performance pressure. Connecting planning and execution enables more realistic plans, faster responses to change, and better operational outcomes across cost, service level, and throughput.

Founded in 1981, Dassault Systèmes is an innovation leader in the entire value creation process, from product engineering to process engineering to virtual twins and simulation to production planning to production execution and end-of life for products. Dassault's 3D UNIV+RSES, powered by the 3DEXPERIENCE®, unifies engineering and manufacturing software solutions into a single connected ecosystem operating across twelve industries and brands.

[DELMIA](#) solutions specialize in manufacturing operations and the integration of virtual and real-world processes.

CONTEXT

Mike Bradford explained how DELMIA's integrated supply chain planning and manufacturing operations management solutions help manufacturers overcome modern operational challenges.

KEY TAKEAWAYS

Static planning is no longer sufficient for meeting modern manufacturing demands.

Historically, production planning and scheduling relied on manual tools such as paper and pencil, boards, and spreadsheets. Manual solutions are time consuming, difficult to update, non-collaborative, non-integrated, and challenging to prioritize. Today, however, digital tools

enable capabilities such as sequencing and assignment, loading/capacity planning, and more. Modern systems can be standalone or integrated and are much more dynamic and easy to use than manual solutions.

Despite these advancements, several 2025 market reports found that 50-70% of manufacturing organizations still rely on spreadsheets, standalone databases, or other manual solutions to develop a workable production plan.

Modern integrated planning tools enable automation across multiple functions—from long-term planning to real-time rescheduling. When properly integrated, these tools can help produce a “perfect” plan.

Reality inevitably disrupts even the best plans. Internal disruptions such as machine breakdowns, materials shortages, employee callouts, missed delivery dates, or last-minute order changes occur frequently, requiring immediate and often significant changes to production plans. External disruptions such as geopolitical tensions, nearshoring and reshoring challenges, climate events, and tariffs and trade policy shifts, while less frequent, can have enormous impacts on the business.

McKinsey research found that companies experience short-term external disruptions regularly (approximately once every two years) and major disruptions (lasting a month or longer) every 3.7 years. Over a decade, these events combined can reduce cumulative EBITDA by 42%.

“You can have the perfect plan, and it will stay perfect for about 10 minutes.”

- Mike Bradford, Dassault Systèmes

To remain viable in the face of growing disruptions, it is crucial that manufacturers shift production planning away from static systems.

Why Supply Chain Planning and MOM Must Work Together

Integrated supply chain planning and manufacturing execution helps companies overcome disruptions.

Tight alignment between supply chain planning and manufacturing operations management helps companies close the gap between plans and reality.

MOM and SCP each provide standalone value:

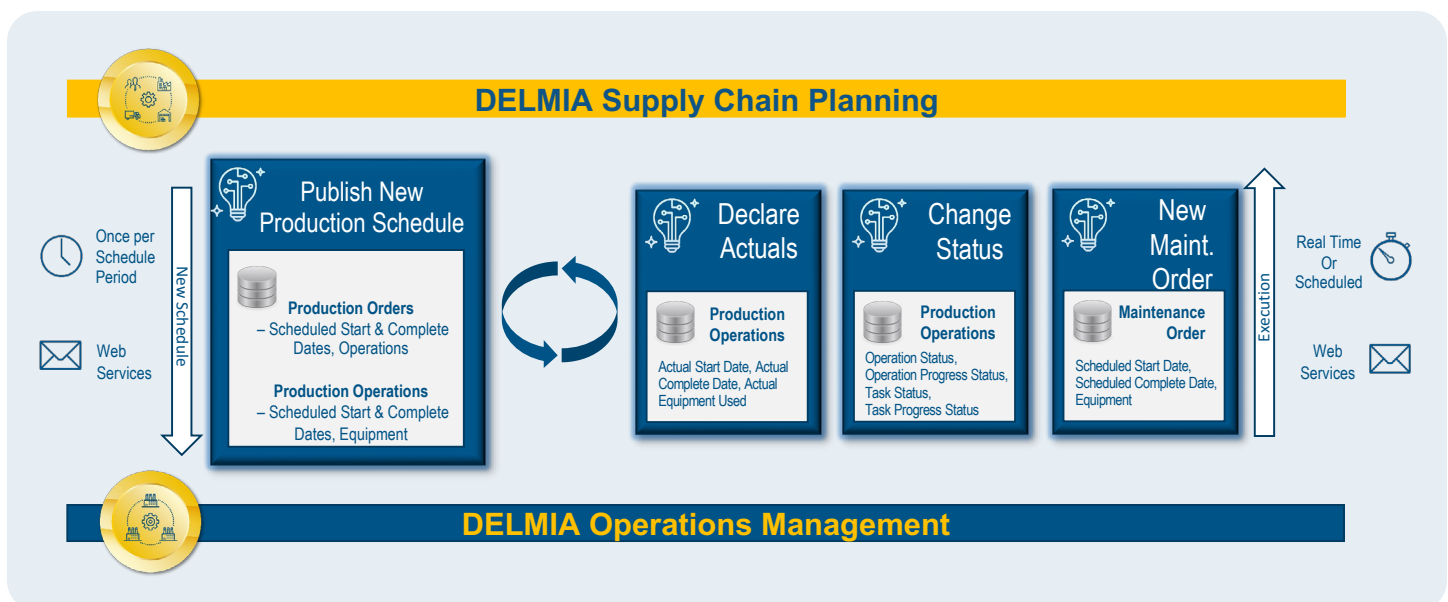
- **MOM** manages work orders, ensures production and quality execution, provides plant operations and material synchronization for production, coordinates labor and resources, and monitors shop floor operations in real time.
- **SCP** plays a pivotal role in orchestrating all activities involved in delivering products to customers, addressing all time horizons—from short-term detailed scheduling to long-term strategic planning. SCP includes integrated business planning, demand and sales planning, and finite capacity scheduling. In heavily machine-based industries, SCP handles setup time optimization, accounts for constraints such as material availability, labor capacity, and tools capacity, and facilitates multi-level bill of materials (BOM) sync.

Bringing these capabilities together enables real-time data sharing between planning and execution, to maintain an optimized schedule based on finite capacity. Connecting MOM and SCP data in an automated solution ensures that production plans are accurate, up-to-date, and visible across teams through shared tools and processes. Real-time data also enables immediate automated alerts on disruptions, ensuring faster identification and response to unknown events.

“For all [disruptions] you need to have consistent, constant real-time or near real-time feedback from your shop floor back to your supply chain planning solution. . . Integrating supply chain planning with MOM . . . is absolutely critical for resilience, for agility, and for value.”

- Mike Bradford, Dassault Systèmes

Figure 1: Integrating SCP and MOM connects real-time data with automation



Why Supply Chain Planning and MOM Must Work Together

DELMIA integrates SCP and MOM in a single planning optimization platform.

Research shows that collaboration between planning, manufacturing, and engineering is critical for high-performing supply chains—optimal performance at the lowest cost. Integration between every planning level is essential for understanding and managing bottlenecks.

DELMIA Supply Chain Planning and Optimization (SCPO) orchestrates activities across the entire time horizon, leveraging integrated capabilities for order dispatching for short-term daily execution up to integrated business planning for long-term strategic planning. Logistics optimization determines the most efficient transportation methods and routes for improved speed and sustainability, while detailed operational scheduling accounts for specific machines, materials, and labor.

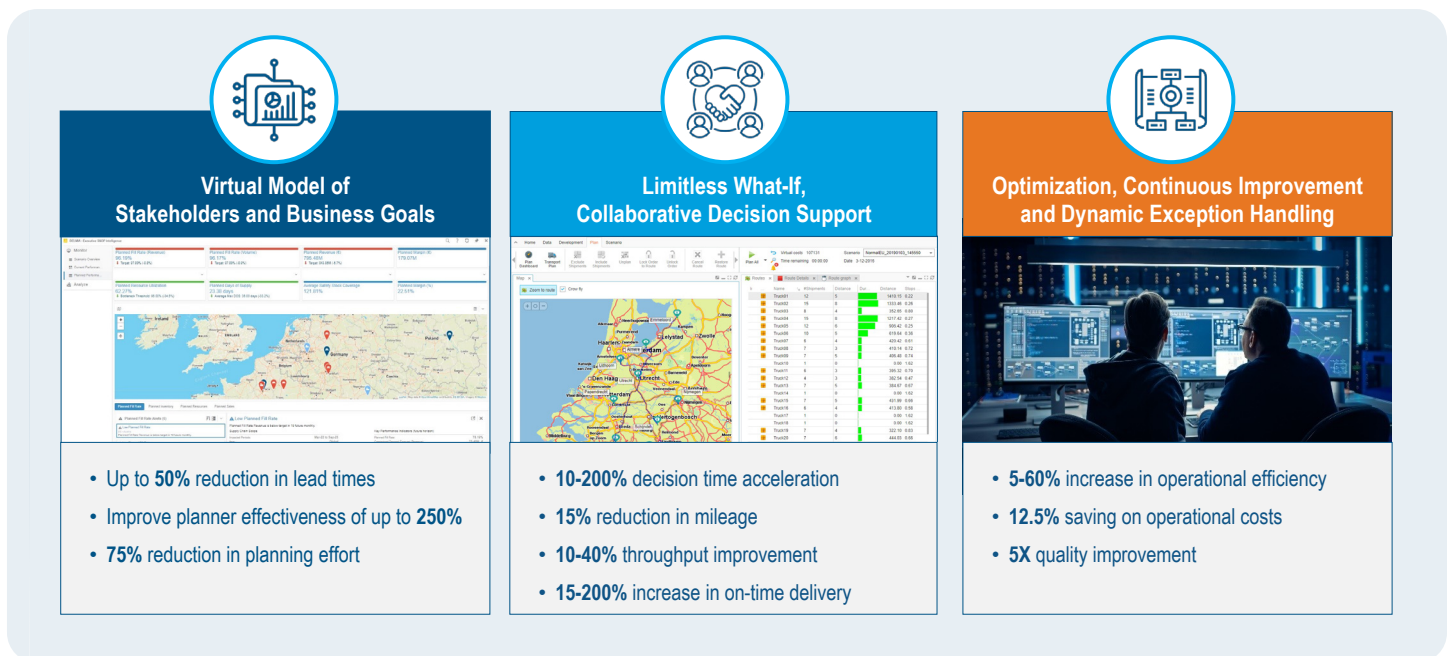
Logistics optimization determines the most efficient transportation methods and routes for improved speed and sustainability, while detailed operational scheduling accounts for specific machines, materials, and labor.

DELMIA SCPO supports complex, multi-site operations and helps optimize processes across entire supply networks to achieve high-efficiency manufacturing—essential to meet the unpredictable demands of supply and customer demands.

DELMIA SCPO offers one of the fastest replanning capabilities in the industry, incorporating cutting-edge technology to improve business outcomes. For example, integrated AI reduces planning time, lowers costs, and enhances service levels. Simulation through virtual models of the supply chain allows companies to test scenarios to avoid costly mistakes, evaluate trade-offs, and improve decision making. And seamless integration and clean, high-quality data reduce the burden on IT.

Customers have already achieved significant benefits, including up to 50% reduction in lead times, 10-40% increase in throughput, and up to 5x improvement in quality.

Figure 2: DELMIA SCPO enables transformative business benefits



Why Supply Chain Planning and MOM Must Work Together

The DELMIA MOM solution is much more than an MES.

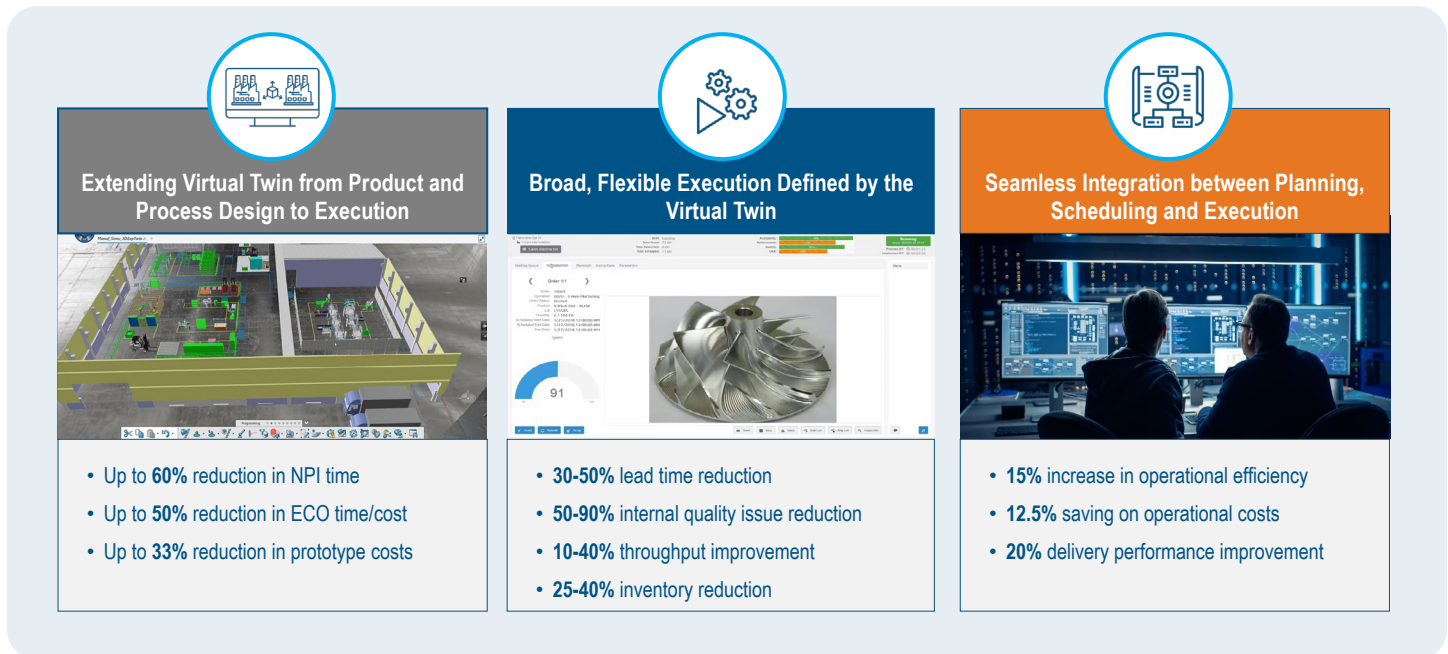
Although the term “MOM” is often used interchangeably with “MES” (manufacturing execution system), MES is focused solely on production tracking, displaying work instructions, connecting to shop floor equipment—those processes required to turn raw materials and components into a finished product.

MOM includes and builds on MES capabilities, extending to include integrated quality and logistics execution, time and labor, maintenance and calibration, and multi-site manufacturing coordination.

DELMIA Apriso is the broadest MOM solution in the industry, integrating all these functions into a single platform, ensuring production consistency across interconnected plants and enabling global enterprise support for business process governance, shared best practices, and localization.

DELMIA Apriso uses a shared single 3D data model to enable the visibility, control, and synchronization—across processes, people, and skills—needed to achieve global operations excellence. Customers have realized benefits such as up to 60% reduction in new product introduction time, 10-40% throughput improvement, and up to 15% increase in operational efficiency.

Figure 3: DELMIA Apriso helps businesses keep pace with rapidly changing markets



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DELMIA Virtual Twin Experience

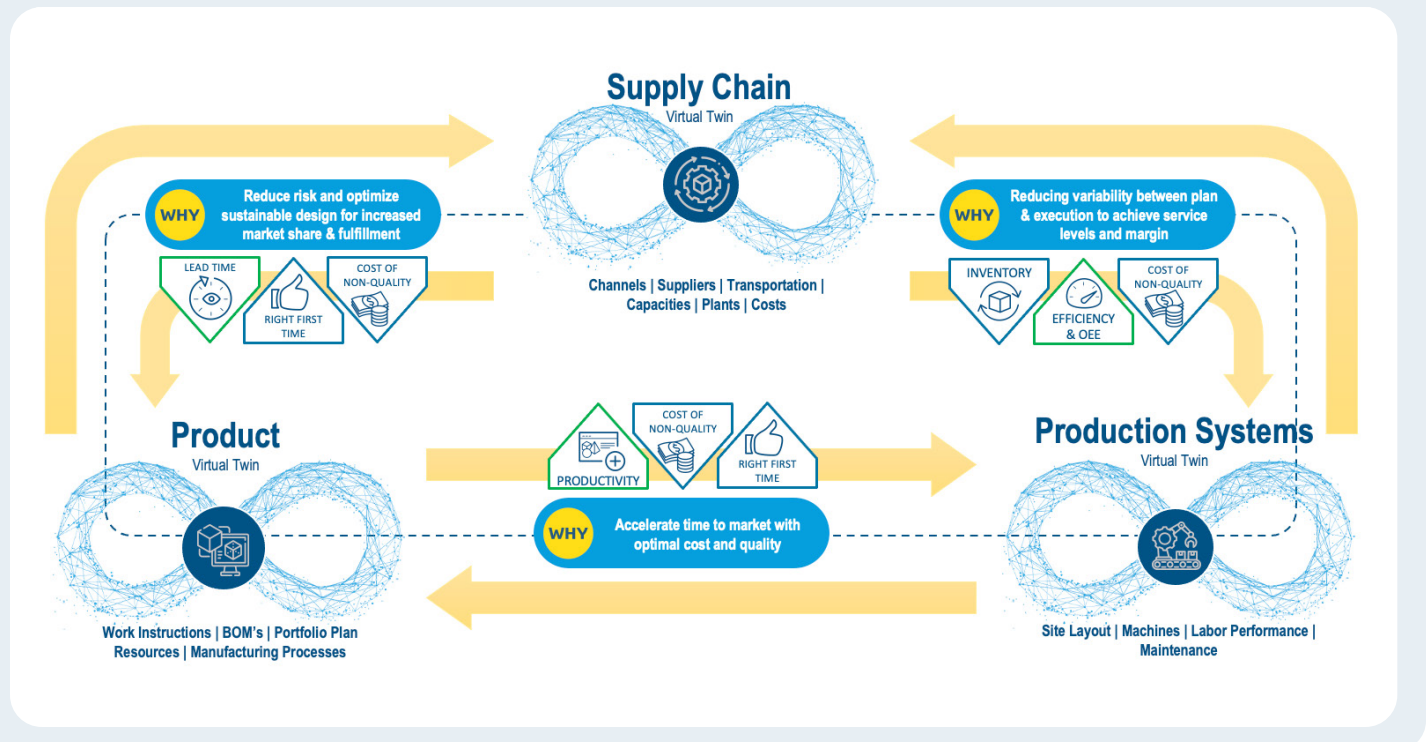
Unlike digital twins, which are typically created for a single purpose and often remain static and isolated, virtual twins are dynamic, inherently collaborative, and connected to real-time data, enabling users to understand the current state of operations and to predict and anticipate future outcomes.

DELMIA Virtual Twin Experience encompasses three key functions—modeling, experimenting, and simulating—allowing manufacturers to optimize processes within a virtual space, before being implemented in real-world situations such as the shop floor or supply chain. At the same time, virtual twins are continuously updated based on actual performance.

To provide a comprehensive view of operations, DELMIA offers three interconnected virtual twins: **supply chain**, **production systems**, and **products**. (Dassault is the only company to offer virtual twins in all three areas.)

Virtual Twin Experience is not limited to one specific industry or application; it can be used across a wide range of fields, from strategic planning to tactical execution, ensuring collective cooperation and intelligent decision making.

Figure 4: DELMIA virtual twins provide models of the shop floor, execution system, and platform



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BIOGRAPHY



Mike Bradford

DELMIA Strategic Business
Development Director
Dassault Systèmes

Michael J. Bradford has over 35 years of experience in Manufacturing and Information Technologies as a MIS Manager, Materials Manager, Management Consultant, Software Consultant, Business Owner and part-time college instructor. He is currently the DELMIA Strategic Business Development Director for Dassault Systèmes. Mike is a member of ASCM (the Association for Supply Chain Management—formerly APICS), MESA (Manufacturing Enterprise Solutions Association) and AIAG (the Automotive Industry Action Group.) He has contributed to multiple industry work groups, has spoken at numerous industry workshops and conferences and has been published in several trade magazines.

ADDITIONAL INFORMATION

To learn more about DELMIA, visit Dassault Systèmes at <https://www.3ds.com>