

# ENGINEERED MATERIAL MANUFACTURING

## Benefits

**Optimize inventory by improving collaboration between planning and execution teams**

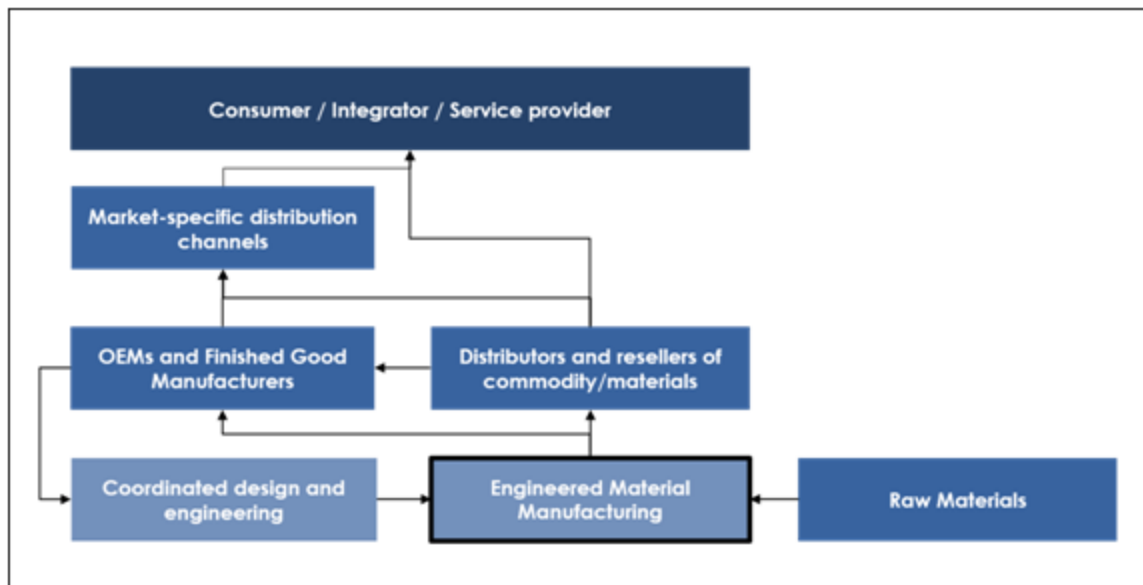
**Increase customer responsiveness by deploying alternative schedules in real-time**

**Digitize management of customer and supplier orders through EDI**

**Eliminate issue root causes sustainably with centralized visibility and integrated quality**

QAD provides a complete solution for Engineered Material Manufacturing (EMM) that supports collaboration across planning, manufacturing operations customer service. It is simple to configure and may be deployed in the [cloud](#) or on premise. Several leading engineered material manufacturers successfully utilize the QAD solution.

## Engineered Material Manufacturing Value Chain



The value chain for EMM varies between products delivered in standard formats for consumption by multiple customers and products customized for specific manufacturers and OEMs. The variation affects the sales channel for delivering the product and the level of interaction with the customer consuming the products.

The QAD EMM solution consists of full-featured ERP that includes global financials and planning and scheduling workbenches combined with capabilities like shop floor data collection, demand and supply chain planning and quality management. QAD designed the solution specifically for make-to-order, high mix production environments.

**Reduce Sales, General and Administrative (SG&A) expense and Cost of Goods Sold while**

**improving Operating Income Margin** by more effective planning and scheduling.

**Improve Delivery In Full On Time (DIFOT), Forecast Accuracy and Inventory Accuracy while reducing Stock-outs** with more accurate demand planning

**Enhance Supplier Performance, CAPA Efficiency and GMP Compliance** with fully integrated quality management.

## QAD Engineered Materials Manufacturing Solution Overview

The [manufacturing](#) of customizable engineered materials can be characterized by rapid engineering product development cycles and constant customization of as-delivered permutations of these products. There is continuous competitive pressure to deliver new permutations and engineered material product life cycles have been condensed into shorter and shorter time frames. Engineered Material Manufacturers are familiar with certain barriers to success:

**Untapped capacity is a lost order** – every nonproductive hour of machine utilization could be turned into the servicing of another customer order.

**Excessive raw material and finished goods inventory levels impact cash flow and inhibit investment.**

**Underperformance on client deliveries – DIFOT – affects the manufacturer’s ability to grow organically** with key customers and restricts the pursuit of new customers.

Operational effectiveness is an imperative under these conditions. Market share increase and improved customer support, however, cannot be achieved based by limiting investment. The successful EMM needs to operate as a collaborative entity at peak effectiveness, and should maintain a sharp focus in the following three areas:

**Quality:** Effective organizations have an automated quality management system that allows them to apply quality principles from design and engineering through final customer delivery and support.

**Delivery:** EMM organizations must deliver 100 percent on time and therefore are effective in automatically integrating customer requirements in their ERP. EMM’s leverage ERP to automatically schedule to the shop floor and minimize the use of manual systems or spreadsheets that limit collaboration across the supply chain.

**Operations:** Effective EMM organizations must optimize their operations by focusing on quality, cost and delivery.

The QAD solution for EMM provides end-to-end business capabilities that can be modularly deployed to allow for rapid expansion and adoption. Some key areas of the QAD EMM solution include:

### [Planning and Scheduling Workbenches](#)

## [QAD QMS \(Quality Management System\)](#)

## [QAD Automation Solutions: Material Handling, Shop Floor Data Collection and Label Printing](#)

## [QAD DSCP \(Demand and Supply Chain Planning\)](#)

## [Internationalization](#)

## QAD Bi (Business Intelligence)

An overview of the first three critical processes follows. For information about the other processes, please visit [QAD.com](http://QAD.com).

## Planning and Scheduling Workbenches

Planning and Scheduling Workbenches generate **more reliable production plans, manage exceptions proactively and respond to changing conditions**. Improving production plans directly impacts on Manufacturing Schedules, Manufacturing Efficiency, Asset Utilization and Inventory Effectiveness.

Planning and Scheduling Workbenches **give schedulers total visibility of demand, supply, inventory, capacity and production** using an intuitive spreadsheet-like workbench. Planned production, alternative resources, changes in customer demand, inventory levels, safety stock, forecast, capacity and planned maintenance schedules are centralized and managed. Schedulers interact directly with the schedule, with color-coded alerts that focus attention on potential issues.

### Planning and Scheduling Workbench

Production Line	Item Number	Nettable QTY	Part Due	03/28	03/29	03/30	03/31	03/28	04/01	04/02	04/03	03/28	04/04	04/05	04/06	04/07	04/08	04/09
ASSY-01	02303	14	1	25	20	10	20	115	20	20	20	175	20	20	20	30	30	30
ASSY-01	02305	30		5	10	25		41				10	55	66				
ASSY-01	02308	3		3														
ASSY-01	02306	610						8	70			90	120	90				
ASSY-01	02301	64	7	14	10	10	10	44	10	10	10	74	10	10	10	10	10	30
ASSY-01	02302	82		13	15	15	15	50	15	15	15	103	15	15	15	15	15	15
ASSY-01	02304							8				1	16					

Typical measurements related to KPIs impacted by Planning and Scheduling Workbenches

include Time and Cost to Schedule, Schedule Achievement, Schedule Variance, Schedule Agility, Overall Equipment Effectiveness (OEE), Capacity Utilization, Non-Value Added Time Ratio, Size of Safety Stock and Expedited Replenishment Orders. More effective planning and scheduling will reduce Sales, General and Administrative (SG&A) cost and Cost of Goods Sold, while increasing Operating Income Margin.

## QAD QMS (Quality Management System)

Engineered Materials Manufacturers commit significant resources to sustain product quality. **An automated quality management system is often critical to track and meet customer and regulator expectations.** QAD QMS helps address KPIs like Compliant Tracking, Supplier Performance and GMP Compliance and measures like CAPA Efficiency, Open Complaints and Lot Acceptance Rate. QAD QMS modules include:

**Auditing management** helps management assure that well-defined business processes apply throughout supply chains and generate the results expected. In addition, when processes are not meeting expectations, the initiation of corrective actions ensures that any problems are resolved and operations return to normal.

**Document control** helps manufacturers manage critical documents like Standard Operating Procedures (SOP) in a centralized repository that works with automated workflows to ensure compliance. Built-in controls ensure that document changes also update related procedures and initiate retraining.

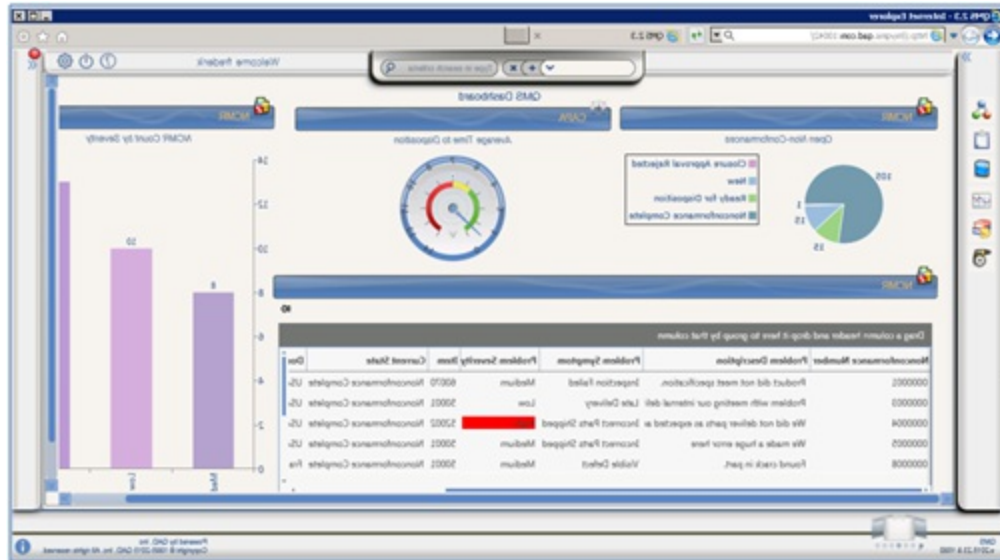
**Corrective Action Preventative Action (CAPA) and Nonconformance Reporting (NCR)** provide an automated closed loop solution for problem tracking and resolution, including impact on other processes or products.

**Training management** tracks each employee, each role, skills associated with that role and training requirements for those skills. Training may be recurring, competency based, or required due to a controlled document change.

**Risk management** enables organizations to define and prioritize each risk, create a heat map and a mitigation plan with action items and comprehensive reporting. This enables manufacturers to manage a comprehensive set of risk requirements.

**Supplier management** helps evaluate and select suppliers based on their ability to supply product in accordance with requirements. Supplier performance increases when suppliers are consistently evaluated, monitored and measured.

### QAD QMS Supplier Management Dashboard



## QAD Automation Solutions

QAD Automation Solutions improves manufacturers' material transactional effectiveness by aligning ERP with material processes. The two primary components are:

**Data Collection** captures material and production data through simplified ERP transactions using a mobile device such as a radio frequency (RF) scanner, tablet or a stationary shop floor personal computer or terminal.

**Label Printing Services** routes and prints labels associated with material and production transactions based on manufacturer, supplier and customer formats and rules. The services support any label format and any printer and are GS1 and 2D compliant.

Automation Solutions acts as a highly configurable set of capabilities that requires no coding to be applied to a wide variety of manufacturing environments, specifically:

**Transaction Development Toolset** reduces customizations by simplifying the development of material and production transactions through configuration of the QAD Service Interface.

**Transaction Library** provides out-of-the-box transactions for inbound, outbound, production, inventory management and packaging for ERP functionality. The library extends to QAD Enterprise Asset Management.

**Transaction Processing Engine** ensures failure free transaction processing through QAD core SI-API processing and interactive record locking management.

**Transaction Linking** combines multiple transactions to create a unified and simplified transaction, aligning with material handling and production processes.

**Label Mapping/Routing Toolset** easily maps to QAD material and production data to select the right label format and to print to the correct printer.

### Automation Solutions Integrate Data Collection and Label Printing



For more information on how the QAD Engineered Material Manufacturing solution can help your company, please contact QAD at +1-805-566-6100 or email [info@qad.com](mailto:info@qad.com).