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It's a Whole New World for Manufacturers: **Preparing Your Company to Adapt**

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Since the start of the recent economic crisis, companies have seen the global manufacturing market shift greatly. Before the economic uncertainty, the operations world was characterized by incremental but predictable growth, relatively stable trade balances and currency differentials, and consistent access to capital, labor, and materials. Then, when the crisis hit, companies were forced to abandon markets, freeze assets or equipment replacement expenditures, and liquidate working capital.

Since then, we've seen signs of economic recovery, and the operations world has shifted again as companies try to reform and take advantage of new opportunities in the reemerging market (see sidebar on the next page). Now, companies are once more reassessing their operational processes as they look for new ways to thrive.

4 Operational Strategies to Help Companies Thrive in a Changed Market

To deal with changing operational trends, companies should consider the following four strategies.

1. Align global manufacturing operations to changing conditions.

Addressing new and restructured markets requires manufacturers to coordinate across the entire idea-to-delivery value chain. To do so, companies must:

- Quickly capture and easily exchange structured information between the plant and the enterprise as part of an integrated work process
- Create a seamless hand-over process for product information between product development and manufacturing departments to ensure that production is better able to execute against the latest product design
- Optimize production operations with component supply, production targets, and customer demand to more effectively use manufacturing capacity

To achieve these goals, companies need a robust set of integrated solutions that cover the entire product life cycle and integrate with one another. That's where SAP comes in. For example, SAP Product Lifecycle Management (SAP PLM) can provide an engineering bill of materials (BOM) to SAP Manufacturing Execution, enabling the accurate production of designs and fast turnaround of any design modifications. Additionally, the SAP Advanced Planning and Optimization (SAP APO) tool provides demand forecasting and optimization capabilities that integrate with SAP ERP's production planning functionality, enabling companies to globally manage their demand.

2. Execute efficient, sustainable operations.

Companies need to empower workers with timely, relevant information to improve process adherence and more accurately track and forecast resource consumption. To achieve this, companies need to:

- Provide effective insight into demand, work status, work in progress, and production and asset capacity information across all manufacturing operations for everyone, from shop floor workers to managers
- Provide contextualized production process data to compliance, engineering, and manufacturing supervisors
- Establish environmental, health, and safety measures for — and make this information more readily accessible to — everybody in the value chain

To help companies improve their access to operational information — and therefore their efficiency — SAP provides SAP Manufacturing Execution, a powerful solution that enables global manufacturers to manage and control manufacturing and shop floor operations. This solution integrates business systems with shop floor systems, enabling complete component and material-level visibility across the company. By collecting product data from multiple sources and integrating data systems with shop floor activities to create a comprehensive production record, SAP Manufacturing Execution ensures that a product

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is designed and built to specifications the first time, reducing the need for rework. In addition, this data creates a record of the product's history, which can be used to make more effective product decisions and ensure that the product meets compliance requirements. And SAP Manufacturing Intelligence and Integration (SAP MII) provides the platform needed to integrate this data with SAP ERP, giving users valuable enterprise analytics.

For more information about how SAP solutions can support your operations in a changing market, visit **www.sap.com/manufacturing**.

3. Produce high-quality, compliant products and institute holistic quality management practices.

Preventing problems that lead to product recalls, for example, must happen in the operations stage. Companies must provide clear traceability into where components were used, implement firm quality management processes, and track where their products are within supply distribution networks. To do this, companies must:

- Create a process that outlines how to handle defect detection, product tracking, and follow-ups
- Establish and enact compliant, closed-loop inspection planning and execution processes
- Accurately track and trace material, products, and conditions across the entire supply network

The quality management functionality available with SAP ERP works with SAP Manufacturing Execution to help companies integrate information and processes across departments and corporate boundaries, empowering employees and supply network partners to improve quality levels. Also, SAP's manufacturing network planning and execution functionality, part of the SAP Supply Chain Management (SAP SCM) suite, makes it easier to track components and trace batches through subcontracted and outsourced manufacturers. This enables full utilization of manufacturing capabilities, while maintaining consistent quality and traceability processes.

4. Sustain continuous performance improvement.

To thrive in a changing market, companies must remain flexible, constantly improving their performance and their products. To do so, they need visibility into the entire value chain so they can detect potential customer complaints, trace product returns, and track supplier components. Visibility within the company is also important. Improving insight into a product's life cycle helps companies more easily assess the product's cost and profitability. Providing employees with easily accessible KPIs enables them to make more knowledgeable decisions. To accomplish this, companies must:

- Integrate processes and relevant data from multiple sources and systems in real time
- Provide role-specific manufacturing information and analytics to enhance employee effectiveness
- Effectively manage changes to product, manufacturing execution, and safety and environmental processes

To help companies do this, SAP MII provides a core platform for disseminating shop floor information to the broader supply network through embedded quality control algorithms and a business application development environment. This enables the effective translation of manufacturing data into business information and the standardization of business processes across the enterprise. SAP MII also provides role-based, shop-floor composite applications, dashboards, and analytics to enhance employee effectiveness by providing the right information to the right worker for the task at hand.

Operational Responses to a Reemerging Market

In 2010, companies were relieved to see signs of economic recovery. Many manufacturers even saw demand rise as companies replenished worn-out equipment and inventory. However, manufacturers realized that this rising demand was not sustainable and tried to meet it with their existing operational capacity, without investing in new people, plants, or equipment. This meant that it was important for manufacturers to maximize the use of their assets and enlist outsourcing and subcontracting where needed. Having the flexibility to adapt their processes was also crucial.

Now, as we head into 2011, manufacturers are finally seeing comparative stability and overall growth in their markets. But the world has changed, and companies can't go back to traditional manufacturing practices. Companies must now consider how to meet the needs of new growth markets and their new product requirements, how to handle shifts in manufacturing geographies, and how to meet new product compliance expectations. Companies must restructure their operational processes to meet these needs — and take advantage of the opportunities they present.

Build an Integrated Supply Network with Tools from SAP and Partners

SAP is arming its customers with the tools they need to meet the demands and opportunities of the new manufacturing world. But like all companies that leverage partners in their supply network to meet changing market needs, we can't do it alone. On the following pages, you'll find examples of how our partners' complementary solutions can help you further automate and track your operational processes, enable a more adaptive supply chain, and ensure your supply processes are sustainable. ■