Challenge: Balancing the Constraints and Opportunities of Manufacturing

Today’s manufacturing industry is typically characterized by increasing demand, shorter product lifecycles, high demand and supply variability, and limited but expensive options to acquire additional production capacity. In addition, the manufacturing function is consistently challenged to maximize productivity, improve efficiency and reduce costs. All of these competing metrics are difficult to manage.

Historically, companies with these characteristics have employed rigid approaches to manufacturing, seeking to maximize the utilization of expensive plant assets by scheduling long production runs. These production runs help create plant efficiencies, but they cause large inventory buildups that shift costs from the plants to working capital tied up in inventory.

In order to achieve profitable growth objectives, those companies must be able to make optimal decisions that balance flexibility, efficiency, speed to market and lower total operating cost.

Solution: JDA Master Planning

Successful consumer goods companies are enabled to achieve these objectives by implementing JDA® Master Planning, a medium- to long-range supply chain planning solution that accommodates multiple business constraints and metrics to generate feasible and reliable production, purchase, distribution and inventory plans that can drive manufacturing efficiencies, improve inventory management and lower operating costs. JDA Master Planning also enables companies to gain greater benefit from their enterprise resource planning (ERP) systems.

As a synchronized manufacturing and distribution planning solution, JDA Master Planning generates optimal production plans and a product family build sequence for changeover optimization. The plans are driven by demand forecasts and simultaneously consider demand priorities, supply priorities, distribution strategies, purchasing and inventory policies, and material and capacity constraints.

JDA Master Planning generates a multi-site manufacturing and distribution plan that contains optimal decisions for:

- How products should flow throughout the supply chain network, i.e., how raw materials, work-in-progress (WIP) and finished goods should flow from one facility to another
- Which products should be made in which facilities based on demand and supply priorities

Key Capabilities

- Provides robust modeling of manufacturing and distribution processes, including multi-stage, multi-site environments
- Prioritizes demand by product, margin, customers, market segments and/or company-specific goals
- Dynamically generates sourcing or product flow plans in the network based on material, capacity, costs and priorities
- Creates time-phased plans and provides short- to long-range visibility of both supply and demand
- Links supply and demand at each level in the network and provides push, pull and cancel supply recommendations
- Provides easy-to-navigate Web user interface with graphical workbenches, scorecards, flexible editor, exception management and plan analysis features

- Lengths and quantities of production runs required to minimize changeovers
- When inventory pre-build should start for anticipating seasonal or promotional demand
- If and when overtime or outsourcing should be used to efficiently fulfill demand
- How perishable products should be produced and distributed, respecting associated shelf-life and expiration dates
- Managing co-products, for instance in meat and poultry businesses

The user-friendly exception navigator provides a simplified guided analysis path to understand and resolve planning exceptions — including areas such as data setup, material or capacity issues — with user-configurable time frames and severity. The JDA Master Planning workbench provides a graphical view of resource loading and editable media that enables users to adjust and adapt to manufacturing plan changes. The solution's plan analysis page provides stock-keeping unit (SKU) demand, inventory, safety stock and supply projections, allowing "drill downs" into individual SKU details.
The solution also provides flexible scenario analysis capabilities that enable users to review the plan and then run multiple what-if scenarios. Once these scenarios have been analyzed, the final plan is determined. The plan can then be published to purchasing, manufacturing facilities, and logistics provider or transportation management teams for execution.

The production plan can be further optimized for extended operational efficiency down to the detailed scheduling level by using JDA® Sequencing. And for companies that require a cost-optimization solution to define feasible production plans, JDA® Production & Sourcing Optimization is available to enable strategic modeling of costs, penalties and additional constraints. The output of JDA Production & Sourcing Optimization is used as a baseline by JDA Master Planning to generate tactical and operational supply chain plans.

For companies that require more complex distribution, deployment, load building and dynamic inventory rebalancing, the solution can be extended to integrate with JDA® Fulfillment. The seamless user experience between JDA Master Planning, JDA Fulfillment, JDA® Demand, and JDA® Reporting enable companies to benefit from true integrated demand-supply-manufacturing advanced planning solutions.

**Real Results**

JDA Master Planning reduces stock-outs and improves inventory turns by aligning supply with demand throughout the entire network. It allows users to plan and control the entire supply picture from determining optimal material and product quantities from suppliers, to planning and scheduling manufacturing, to replenishing and optimizing inventory throughout the distribution network. Manufacturers that rely on JDA Master Planning can reap significant benefits including:

- Minimized total manufacturing and logistics operating costs by modeling the most efficient supply chain network to create a feasible, efficient and low-cost manufacturing and distribution plan
- Improved service levels by building the optimal amounts of inventory at the right place in the network
- Reduced global inventory and freed-up cash for other investments by synchronizing the manufacturing, distribution and purchasing processes to better meet the always-changing customer demand
- Improved planning productivity by eliminating manual analysis and frequent plan adjustments, and improved asset output by utilizing existing manufacturing capacity more effectively

**Deploy JDA Master Planning via JDA Cloud Services**

Protect your JDA software investment and increase business agility by letting JDA experts manage and maintain your JDA solutions. JDA Cloud Services reduces your implementation risk and enables you to quickly and easily deploy new functionality to keep pace with your changing business needs. With your software running in the cloud, you will benefit from always-current applications and solution optimization to help ensure that you achieve and sustain a long-term return on your investment.