



nMetric[®]
Smarter manufacturing™

**FORTUNE 500 Firm
Reduces Scheduling Time,
Scrap and Rework
Using nMetric Software**

Company Profile

This multibillion dollar, multinational Fortune 500 company employs more than 30,000 people at over 150 manufacturing and distribution facilities.

The company is a global leader in its field, serving consumer and industrial markets worldwide. Its proprietary technologies and applications are an integral part of products used in virtually every major industry.

Challenges

In 2004, a North American division of the company was faced with scheduling and production data challenges. Personnel had no real-time visibility to key plant metrics. Scheduling data had to be entered in three enterprise systems (materials, planning and logistics) that did not communicate efficiently. The production schedule was manually developed in spreadsheets for distribution and tracking. As soon as it was published, it was obsolete.

Version control and change communication were key obstacles. All productivity data was manually collected and transcribed for metric calculation and analysis. Load balancing and capacity analysis were a “magical” event that relied on the planner’s best guess. Most decisions were made using data that was at least 24 hours old. To address any immediate problems, the most current and accurate data had to be searched out and the appropriate personnel gathered together for analysis and decision making.

The planning cycle caused tracking problems for late and missed orders, resulting in poor service metrics. The redundant data entry required excess headcount and also caused transcription errors resulting in questionable data.

The division first attempted to solve its problems by customizing the planning application, giving the Planner better tools to manage the schedule. However, all of the data necessary for analysis still had to be manually entered, which was very time consuming and produced unreliable data accuracy.

Solution

The division began investigating the software market, looking for an integrated scheduling and production data system. Site Management developed a requirements list to help select an application capable of resolving their plant’s scheduling and production problems. For various reasons, the solution had to be web-based, scalable, easily replicated and off-the-shelf. The company’s main goals were to:

- Streamline production scheduling
- Enable automated order execution on the floor
- Improve visibility and accuracy of key metrics
- Empower personnel with user friendly data

nMetric was selected as the best available software solution after it was determined to be ideally suited for managing the scheduling data required. nMetric assisted the company in every step of implementation. The first phase involved mapping the processes being followed by the planning and operations departments in developing, executing and tracking the schedule. Major exceptions to normal order creation and tracking were also documented to provide planning and operations visibility.

Support group requirements and visibility were also included as part of the analysis. The data source location, format and accessibility were key items in determining the interface presentation for management and execution. nMetric duplicated the old paper-based system and transformed it into an electronically-based, automated system powered by patented Smart Job™ technology, leveraging a number of nMetric software features and capabilities:

- Simple planning and operations interface screens
- Real-time status and lateness views for the plant and for each individual machine
- Manual sequencing views to manage individual machine set-up efficiency
- Integrated move and hold functionality to simplify machine load balancing
- Alert configurations to notify appropriate personnel of critical changes to the plan
- Predefined reporting screens for daily completions and exception analysis
- Integration with installed production data collection systems to minimize order data transcription
- Integration with existing specification system to present current information at the touch of a button

The solution was validated for completeness and accuracy prior to completing intensive training for all personnel interacting with the system.

Benefits

Using the nMetric system at the division resulted in the following:

- Scheduling time cycle reduced from more than 24 man-hours per day to less than 20 minutes through immediate visibility and automated sequencing
- Virtual elimination of scrap or rework from product runs due to spec version mismatch, for a 3% reduction in scrap overall
- Service for customer fills improved by 10%, consistently enabling the site to exceed 98%
- 5% reduction in changeovers for the site and improved material/tooling staging efficiency due to automated sequencing
- Improved labor utilization through appropriate grouping of products on the assigned work center
- Reduction of manual data collection requirements and centralization of analysis into one system

About the nMetric Software Suite

With its patented Smart Job technology, the nMetric software suite takes a unique approach to optimizing the manufacturing process. It disaggregates each order into a series of Smart Jobs™ that establish the routing steps and resources needed to complete each step of an order's production path. The system arranges each Smart Job according to its due date priority and in accordance with other Smart Jobs requiring similar resources. The jobs reserve all resources necessary for their on-time completion and react to changes in the floor environment, rerouting themselves as needed to stay on schedule.

The nMetric system tracks the progress of each Smart Job as it moves along its self-supervised path. Smart Jobs provide the system and its users with real-time intelligence of floor activity and conditions. Each change made to the integrated databases or to any Smart Job is updated in real time. This self-supporting feedback loop allows the nMetric solution to provide current shop floor status and visibility into all manufacturing operations, replicating the real-world capabilities and availability of resources at any point in present or future time.

As a result, manufacturing management can proactively manage the availability of resources, and arrange operations to optimize efficiency and ensure that all orders are progressing towards on-time shipment.