



nMetric®

How nMetric Meets the 10 Classic Challenges of Manufacturing

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Manufacturers of practically every stripe face the same basic challenges in running a production operation:

1. Demand Visibility
2. Bottleneck Identification
3. Optimize/Level Throughput
4. Minimize Inventory
5. Operation Execution Data Collection (Traceability)
6. Operational Data Analysis
7. Supplier Management
8. Timely Investments
9. Organizational Alignment
10. Customer Satisfaction


Every technology and process initiative of the last fifty-plus years has been an attempt to address one or more of these challenges, with mixed results. Indeed, there have been so many “solutions” tried over time that many factory managers and workers assume the often inefficient, chaotic and inconsistent environment with which they grapple daily is as good as it gets – a reality that cannot appreciably be improved, no matter what the claims of the latest cure-all. As the following will show, this is hardly the case.

nMetric’s Unique Approach

The modular nMetric Product Suite takes a unique approach to factory floor performance optimization, resulting in unique capabilities and benefits. While other software solutions (ERP, MRP, etc.) are deterministic, centralized and rules-based, nMetric is stochastic, distributed and reality-based. The nMetric system breaks down each order into its actionable components, creating a series of task-oriented software objects called Smart Jobs™. These intelligent objects find and book all of the available resources necessary for their on-time completion, including equipment, material, labor and tools. They are capable of responding in real time to shop floor developments, effectively routing themselves and bringing business process automation to the factory floor.

Smart Jobs also provide real-time, closed-loop information to the nMetric system, which uses it to provide unprecedented current and forward visibility into workload, orders and constraints. The system arranges, guides and reports on activities as they occur, and allows fine-grain control over each step to accommodate actual work environment situations. This enhances schedule accuracy and keeps facility operations moving as rapidly as possible, while avoiding expectations of unrealistic results.

nMetric allows manufacturers to meet the ten classic challenges as never before, helping them realize a high level of efficiency, productivity, quality and reliability.





Meeting the Challenges

Through its patented scheduling engine and Smart Job™ object-based technology, nMetric provides the process automation, intelligent reactivity and visibility manufacturers need to more effectively meet the ten classic challenges.

1. Demand Visibility

At the point of order entry, the nMetric system knows the actual real-time demand loads for machinery, tools and individual skilled workers, all of which is continually collected from Smart Jobs already on the floor. Smart Jobs resulting from the new order use this information to ascertain resource availability and make resource reservations. In addition, accurate demand visibility allows management to foresee order constraints and plan targeted overtime to keep all orders on schedule.

2. Bottleneck Identification

With visibility into current and upcoming demand, nMetric reveals real-time and developing bottlenecks relating to individual machine workcenters, assembly workcenters, skilled labor, and tools and fixtures.

3. Optimize/Level Throughput

Smart Jobs reserve available resources in advance, allowing for proper staging of materials, reduced set-up times and reduced change-over times. Smart Jobs communicate with each other through the system to automatically load level resources, optimizing bottlenecks and minimizing wait times. Each Smart Job knows its priority relative to other Smart Jobs as it encounters real-time floor situations, and is able to “bump” lower-priority jobs in order to ensure its own on-time completion.

4. Minimize Inventory

Accurate system and Smart Job visibility into raw materials, work in process (WIP) and finished goods allows constraints to be avoided and true Just In Time production to be achieved. (See also 7 below.)

5. Operation Execution Data Collection (Traceability)

Thanks to Smart Job technology, you know the status and location of every order on the floor. Data is continuously collected during production, so you know what was produced when, by whom, with what materials, using which tools and on which machine or workcenter.

6. Operational Data Analysis

The nMetric Suite lets you analyze production data for trends critical to quality indicators. Quality analysis findings can be used to update standards. Analysis of detailed traceable execution data allows the size of any product recall to be minimized to high-probability defective units.

7. Supplier Management

nMetric can be extended into vendor/supplier organizations to track order progress and communicate upcoming material demands to enable Just In Time delivery for production.

8. Timely Investments


Reliable forward visibility lets you avoid investments in workcenter machinery, tools and fixtures until truly necessary. Hiring and training labor can also be better timed to meet demand.

9. Organizational Alignment

With nMetric, everyone in the company – manufacturing, sales, management, operations – is on the same page thanks to universal visibility via web-based APIs. All parties use consistent, common data for analysis and can access real-time production status and metrics.

10. Customer Satisfaction

All of the above culminate in meeting the ultimate challenge on which success depends. With nMetric, you know what you can produce and by when, so you can make realistic commitments to customers. In addition, Smart Jobs allow you to maximize on-time shipments, and also know when and by how long an order will be late while it's still in production.





Benefits

By meeting classic manufacturing challenges, nMetric delivers proven financial and organizational benefits. These include:

Financial Benefits

- Reduced cycle times
- Increased throughput
- Lower inventory costs
- Reduced overtime costs
- Limited recall expenses
- Elimination of paper travelers
- Better timing of investments

Organizational Benefits

- Real-time and forward-looking visibility
- Improved percentage of on-time shipments
- Shorter lead times
- Increased customer satisfaction
- Streamlined internal communications
- Better vendor/supplier communications

nMetric LLC

3070 S. Bristol Street
Suite 100
Costa Mesa, CA 92626

Tel. 888.561.9700
Fax. 714.668.5877
info@nmetric.com

www.nmetric.com