Manufacturing Visibility: A Competitive Advantage

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Information is critical to manufacturers — what products are selling, what materials are being bought, how and when goods are being produced, and the internal and external cost to accomplish. Timely sharing of information across a company and its supply chain enables an organization to:

- Manage and improve their own operations
- Synchronize processes with suppliers
- Offer better customer service

Capturing and sharing manufacturing information requires a strategic approach that identifies what should be tracked, with whom to share information, and how to leverage this manufacturing visibility into improved operations and business performance.

Lack of Visibility

Business success today involves far more than manufacturers simply delivering quality products on time. It requires integrated solutions that include service, support, and timely and accurate information, whenever and wherever customers want it. It demands that manufacturers regularly assess and improve the performance of operations that deliver those solutions. To deliver optimum customer satisfaction and operations performance—and business success—manufacturers must be able to provide products and efficiently capture, access, and share operations data in the right way with the right entities. Manufacturers—along with their customer and suppliers –need ‘manufacturing visibility‘

Why a visibility void?

First, countless information technology applications are available to capture almost any kind of data and feed to an ERP system. But knowing which few numbers really need to be captured —those performance measurements that directly support business strategy by helping to sustain, control, and improve operations—and how to establish processes that enable employees to react to appropriate information in ways that improve productivity and profits, has been the challenge.

Second, many legacy enterprise resource planning (ERP) solutions were focused on transactions and data entry and not on the people and usability. There was inadequate attention to varying work styles, role-based perspectives on information and tasks, and the need to extract information in the context of business processes.

According to a study from AMR Research, only 15 percent of employees are licensed to use their company's ERP system and that 46 percent of licensed ERP seats go unused. And when people don't use the system, business productivity declines, growth slows, and even business critical processes can be compromised.

Fortunately, the shift in ERP Solution design is addressing these challenges. Many solutions are raising usability to a higher standard by focusing on specific roles within organizations allowing greater business intelligence capabilities.

Importance of Role Focus

Role centers present job-specific information and enhance personal productivity by helping people prioritize their work and focus on the most relevant information and tasks.

Role centers are based on Microsoft SharePoint technology, which further enhances flexibility and control. You can easily personalize information and reconfigure your role center based on your work preference and needs.

Because you can see at a glance all of your work in progress; better visualize urgent needs and changing conditions; and extract contextual information, you can make faster decisions and exert greater influence over processes and change. By using one of the web parts as a Work List in your Role Center you can receive notifications and actions to-be-taken that are initiated by automated workflows, allowing you to be an active participant in your company's business processes. Also, you have quick access to reports, key performance indicators (KPIs), and common tasks. KPIs relevant to your role helps improve decision-making. With this role-tailored information, you can better monitor your work and quickly respond to unexpected changes.

The user profile for a specific role, such as Chief Financial Officer or Customer Service Manager, determines the content displayed in that role center. Typical role centers are as follows:

- **CEO**: Executive
- **Operations:** Operations Manager
- **Logistics:** Warehouse Manager, Warehouse Worker, Shipping and Receiving, Purchasing Manager, Purchasing Agent
- **Production:** Production Manager, Shop Supervisor
- **Sales and Marketing:** Marketing Executive, Sales Manager, Super Sales Rep, Dedicated Sales Rep, Account Manager, Order Processor
- **Customer Service**: Customer Service Manager
- **HR**: HR Director/Manager, Training and Development Manager/Specialist; Recruiting and Staffing Manager/Specialist
- **Finance:** CFO, Accounting Manager, Controller, Accounts Payable Coordinator, Accounts Receivable Administrator, Credit and Collections Manager, Accountant

- **Professional Services:** Project Manager, Project Team Member

What makes the role center different from other home pages and portals is that it is role-tailored instead of process-oriented meaning all the activities of that employee's role are organized in one place enabling the user to work more efficiently.

Business Intelligence (BI) in Manufacturing

Creating individualized business intelligence cubes for self-service roles makes access and use of data available to everyone in the organization and empowers employees with visibility across departments, real time information, and comprehensive reporting tools. All of this adds up to greater insight and better decision-making. BI cubes are sets of key data elements, attributes, and dimensions that allow data to be sliced and diced in many ways.

Predefined data cubes should be created for all major solution areas:

- Sales
- Purchase
- Accounts Payable
- Accounts Receivable
- Customer Relationship Management
- Expense Management
- General Ledger
- Human Resource Management
- Production
- Project Accounting

This makes it easier for employees to add key performance indicators and business data to their role center or to insert data right into a Microsoft Word document or an Excel pivot table and graph as shown below with the use of the sales cube.

The right numbers to make visible?

“There are business objects at the executive level that are rarely tied to specific operational measures on a day-to-day basis,” says Mike Frichol, general manager, manufacturing, with Microsoft Business Solutions. Consequently, many manufacturers cannot assess the full impact of declining performance measures until it‘s too late. “That‘s where better visibility of the right information is really key to making progress relative to overall objectives.”

What is the right information—the right numbers—individual companies must make that decision based on their unique business objectives, but there are many performance measures that can and should find their way into corporate–wide systems. The Manufacturing Performance Institute (MPI) finds that successful manufacturers track many of the following measures to answer:

1. “Can we make product?”

Customer Demand

To schedule operations confidently, plant personnel need to know real-time customer demand by SKU (including orders changes as they occur), as well as what is likely to come or forecast. And even when advanced application such as demand planning software do produce accurate forecast for today or next month, can that information be accessed on the plant floor or by suppliers?

Material Requirements

Are there enough materials and components? Is it the right amount? Excess inventory can drain corporate cash flow, yet inside many manufacturing plants it‘s common to see large amounts of material stored at each cell, line, or department. It is also common for these plants to lose material or not have enough of the right material requiring expediting orders and extra shipping costs. Knowing what material is on site is vital, as well as knowing material has been received, stored, and logged properly. Also, knowing real-time finished good levels per SKU and can sales see that information?

Capacity and Availability

What are current production volumes, available manufacturing times for additional output, and the overall capability of production—including people, processes, and machines—to make quality product in a day, week, or month? Answer the fundamental question, “Do we have enough physical operations capacity and material to satisfy customer demand?”

2. “Can we make product profitably?”

Inventory Turns

The frequency with which production can turn over its inventories—raw material and components, work-in-process, finished goods, and total inventory—indicates how efficiently and cost-effectively it uses this inventory. Low turn rates relative to industry benchmarks can point to inefficient purchasing, non-lean production processes, scheduling problems and/or unreliable demand data, poor internal quality, and poor product development processes.

Quality

While capturing quality at the end of production or from customers can provide a historical perspective (finished-product yields, warranty costs, customer rejects), capturing and sharing quality measures that occur now (in-process yields, scrap and rework by workstation/cell enable staff to react to quality problems as they occur. The numbers should be tracked as close to real-time as possible at the source, with plant personnel empowered to stop production when they see that quality is slipping. It is better to react to real-time data and shut down a line or cell, identify

root causes, and implement a sound solution than to track quality only at the end of the line—after producing an hour‘s or days worth of bad product.

Speed

Organizations need to know the time that it takes to produce goods from start to finish (manufacturing lead time or cycle time) and to satisfy orders from entry to delivery (order-to-ship lead time). In make-to-order settings, production speed indicates how quickly orders can get out the door. To control operations, production time needs to be regularly measured against customer demand, tracking how the pace of production for a given product aligns with customer demand for that product.

Identifying and Sharing Data

The above is only a subset of the possible measurements that a company may need to determine what it needs to hit its strategic objectives, control its operations, drive its improvement, help its suppliers and satisfy its customers. After the key data has been determined, it must also be distributed to the correct groups or individuals within your business. Leveraging an integrated alert system to notify operations of critical information and conditions that require action is a manufacturing best practice. Alerts enable a management by exception approach to operations control, driving immediate notification, and response to drive profitability.

Another example of streamlining communications and sharing data is represented through workflows. Workflows can create electronic representations of your processes and rules to control and speed the flow of information based on rules for your processes leveraging email as the conduit. Workflow enables parallel electronic communications where appropriate to speed the throughput of information and reduce the manual effort associated with processes such as approvals or change orders.

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