



Paperless Production System Yields 30% Productivity Increase

Two manufacturing companies successfully launched a custom-designed manufacturing information system providing product specifications to each work center and collects production data from order entry to invoicing.

The software application called “Alfred” and was developed in a collaborative environment facilitated by SMConsulting. Every user in each company participated in the design and implementation.

The framework of the design was patterned from the healthcare manufacturing industry where they require a (1) Master record that stores the specifications of the product and a (2) History record that retains batch-related production data.

An Alfred terminal at each work center provides the operator the production schedule, work order, product specifications, drawings, photos and an instant messaging utility for operators to communicate between work centers.

Industrial Engineering techniques were applied to the design of Alfred and both companies report a minimum of 30% productivity improvement attributed mostly to an increase in product throughput and velocity.

Alfred is a plug-in production management information system that shares data with existing ERP systems.

Metal Fab Shop Cuts Inventory and Eliminate Stock-outs

A metal fabrication company launched their inventory reduction initiative by using Kanban. SMConsulting provided the training and technical support at developing in-house Kanban experts.

Inventory reduction of 55% and the elimination of stock-outs were achieved in a 4-month time frame. A two-year review of inventory turns revealed the kanban pull system adjusting inventory quantities to match market demand peaks and valleys.



Shop Floor Management Establishes the Foundation for Lean Manufacturing

Over 80 employees of a medical-device manufacturer attended the Shop Floor Management workshop as the foundation for their Lean Manufacturing initiative. The manufacturer of hospital beds and emergency service stretchers implemented Shop Floor Management in two production areas.

The Advanced Manufacturing Engineers received training and implementation coaching at developing effective work instructions. Primary goal of work instruction development is to develop a process that is:

1. Easy to develop
2. Easy to understand
3. Easy to update

These are the primary concepts that enabled the medical-device manufacturer build process compliance and a robust work instruction system.



Fast-paced, hands-on learning at the Shop Floor Management workshop

Aluminum Anodizing Company Focuses on Total Throughput and Velocity

An Indiana-based anodizing company implemented a process re-engineering initiative that encompasses order entry to invoicing.

A top-down process mapping exercise started with corporate officers and migrated to department managers, supervisors, and line leads. The resulting process map led to the identification and elimination of process gaps and waste.

The plan focused on the plant layout and the implementation of the “Total Throughput” approach. SMConsulting conducted the training and provided technical support at changing process & layout paradigms.

The results were impressive, 15% productivity gains and a reduction of inventory by 65% in a 12-week period.



The Visual Factory for a Contact Lens Manufacturer

A contact lens manufacturer in Illinois selected the Shop Floor Management (SFM) process to implement the Visual Factory concept.

Production teams review performance measures on a daily basis and escalate issues to the Production Support Staff. The Support Staff include team leaders, maintenance mechanics, process engineers, production engineering and a Human Resources department representative.

The SFM process enabled production operators to take ownership of the process and elevate supervisors to manage resources that support the operations.

In addition, SFM enabled team members to identify and make agreements on best practices that were trained and implemented across four shifts 24/7. As each team reviews performance, issues are documented and corrective actions are formulated at resolving chronic issues with tools and equipment.

The result was a substantial impact on reject rates on the shop floor - up to 90% improvement in the case of one product. The Production Support staff now reports satisfaction with a faster meeting process, more efficiently covering, tracking, and closing hundreds of issues since the start of the process.



Start-of shift team meeting at a contact lens manufacturing facility

Clock Manufacturer Implements the Toyota Production System

A clock manufacturer long been established as the world's largest grandfather clock manufacturer implemented the Toyota Production System (TPS). Over the past years, the company's product line has grown to include many different types of clocks, as well as collector cabinets and other types of furniture.

The division launched a total of 10 work teams, and several support teams, spanning the entire manufacturing process. Functions encompassed by the work teams include cabinet assembly, sanding, spraying, glazing, trimming, final assembly, and packing.

Work teams conduct daily huddles, at the start of the shift, where they review recent performance results, discuss their plan for the day, and solicit and record associate concerns, issues, and suggestions for improvement.

To facilitate these meetings, team scoreboards are posted in the work area and maintained by team representatives. A follow-up contact with supervision allows team representatives to request necessary support for the teams to accomplish their production objectives.

Routine departmental support meetings are also conducted involving important indirect staff such as purchasing, industrial engineering, production planning, and product engineering.



Clock manufacturer implements Shop Floor Management

Suppliers to the Healthcare Manufacturing Industry need more than ISO 9000

ISO 9000 is a good start at building a Quality System for suppliers to Medical-device and Pharmaceutical manufacturers. Additional elements are needed to be incorporated to adopt the Food & Drug Administration's Current Good Manufacturing Practice (cGMP).

In one case, an ISO 9000 registered company received several "Critical" non-conformances and didn't qualify as a vendor to a pharmaceutical manufacturer.

Steps were taken in a 4-month time frame to re-engineer the Quality System and adopt the cGMP requirements. The results were immediate. The company was consistently qualification to all audits conducted by medical-device and pharmaceutical manufacturers.

SMConsulting was instrumental at identifying critical issues and adopting methods that integrate fully into the business process. Full integration assures high compliance to the Quality System and a successful vendor qualification.



Improving Process Efficiency

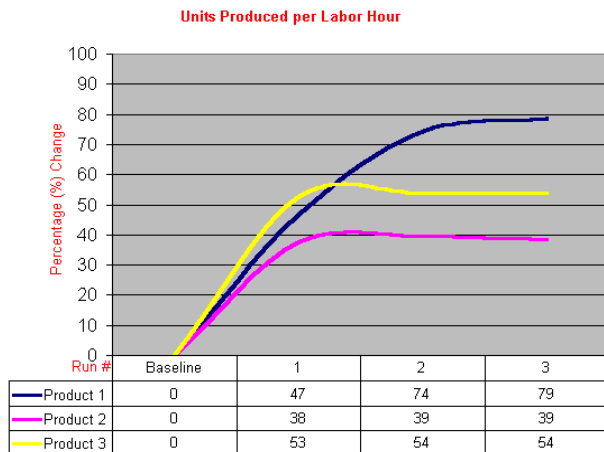
The Lean Manufacturing Concept is nothing new to SMConsulting. Since 1991, project managers deployed Industrial Engineering techniques with higher levels of analysis and deployment of technical applications.

Lean Manufacturing Concept is a sub-component of the Methods, Time, & Resource Optimization™ model.

MTR Optimization™ looks at the global process of (1) New Product Introductions, (2) Engineering Change Orders, and (3) Order Processing.

A custom-steel manufacturer improved its' Order-Processing cycle time by 56%. Simple Process Mapping with key personnel, coupled with compliance training, made the initiative successful within a three-month time frame.

A medical-device manufacturer applied MTR Optimization™ and gained 39% to 79% productivity gains. The chart below illustrates the rapid improvement cycles.



Gains from MTR Optimization™

Production Line Optimization at a Medical-device Manufacturer

A manufacturer of Enteral Feeding systems located in Illinois relied on SMConsulting to provide technical assistance to streamline and improve productivity.

Fundamental line layout and workload balancing provided a productivity gain of 35% within a two month period.

The 5 Basics of Workplace Organization was also trained and implemented throughout the facility to improve regulatory compliance and process efficiency.

Implementing Digital Print Technology

A printing company enlisted SMConsulting to manage the project and provide industrial engineering support during the development, implementation, and continued-operations of Digital Print Centers around the country.

The Digital Print Centers provide packaging components to medical-device and pharmaceutical manufacturers that require strict adherence to federal regulatory requirements.

Process Validation methods were used to integrate print equipment, information technology, finishing equipment, management process, and the Quality System.

The print-on-demand facility provided a Six Sigma Quality process within the first few months of operation and reduced customer inventory levels by as much as 90%. Within a year, the work center exceeded the six sigma quality level and was received the highest quality award from the customer.

SMConsulting led the project management and implementation of the entire digital print center which included the Quality System, Shop Floor Management, the 5 Basics of Workplace Organization™, Capacity and Resource Planning, and Process Optimization.



Digital Print Center producing on-demand user manuals for medical devices