



Five Tips to Achieve a Lean Manufacturing Business



Executive Overview



Introduction

The more successful manufacturers today are those with the ability to meet customer delivery schedules while maintaining minimum levels of inventory. Many businesses are implementing Lean manufacturing strategies to build products to order instead of maintaining large inventories and overstocking product while attempting to create customer demand.

Lean is a manufacturing model that eliminates waste, fine-tunes inventory requirements and reduces lead times. Re-engineering traditional manufacturing methods through the use of Lean concepts results in a more collaborative supply chain, rapid order turnaround, streamlined deployment of resources, profitable contracts and, last but not least, greater customer satisfaction. As well as raising quality levels and reducing costs, Lean manufacturing enables companies to realise significant improvements in cycle times (lead times), customer service (fill rates), throughput and inventory reduction.

To ensure a successful Lean strategy, manufacturers need real-time interoperability with their customers and suppliers and 360° inventory visibility across the entire enterprise. Once manufacturers have confidence in their delivery schedules, they can stop over-compensating for inbound delivery problems with excess inventory, and they can ship from multiple warehouses without keeping all finished good items in each location. In addition, sales people can be confident of their ability to quote more accurate promise dates. Once the order has shipped, customers should have the ability to track its shipment status.

Enterprise software can assist in making information, decisions and materials flow faster throughout an organization. Thus, the faster the company can respond to customer orders or adjust to changes in customer demand and market competitive conditions, the faster it can successfully implement a demand or 'pull' strategy.

In this article SYSPRO outlines five main Lean principles and how enterprise resource planning system (ERP) software can support these to help businesses be more profitable:

1. Supporting 'Flow'
2. Supporting 'Pull'
3. Understanding What Customers Value
4. Value Stream Analysis
5. Supporting 'Perfection'



1. Supporting 'Flow'

Production should flow continuously from raw materials to finished goods through cell-based production, where employees work in teams or 'cells' and are trained in many skills.

Each team is responsible for continually trying to figure out how to do things better, a process called 'Kaizen'.

Continuous flow should also be created with a direct link between suppliers and customers. 'Take time' is the rate of customer demand and should be used to manage the workflow.

A well-balanced Lean system focuses on maximizing throughput, and the take time or pace of manufacturing, to eliminate bottlenecks and Work in Progress (WIP) buildup, with the goal of achieving a continuous operational flow.

With Just-in-Time (JIT) methodologies, many manufacturers are faced with constantly changing blanket orders, small run repeat orders and delivery schedules that are shorter than material lead times.

Key areas where enterprise software can support Lean manufacturing initiatives are accounting, customer service, supplier management, demand smoothing, production planning, scheduling and data analysis:

- Demand planning applications can help businesses become Lean by offering advanced forecasting algorithms to improve efficiency and production flow by predicting and leveling load.
- Repetitive manufacturing modules can be used to process work orders more efficiently. Software-driven Kanban can generate replenishment signals for bins by back flushing, resizing and sequencing to reduce WIP.
- Supplier integration through Internet-based portals and real-time communication to pass Kanban information from the shop floor to suppliers can improve supply chain flow.
- Vendor-managed inventory and Web-based portal technology make it easier to collaborate with suppliers. Instead of sending information back and forth, customers and suppliers can access inventory balances and future demands through a portal or be notified electronically.

Enterprise business software, such as SYSPRO, supports JIT manufacturing and supply chain flow through its integration of procurement with production schedules as well as customer order monitoring for optimum delivery schedules.



2. Supporting 'Pull'

Products should be demanded by the consumer, or pulled by market demand, instead of being pushed from production.

Production should be driven by actual customer orders, rather than from forecasts that project market demand. In a Lean environment, a pull system forces reduced batch sizes, reduced inventories and Just-in-Time (JIT) deliveries.

In a pull system, finished goods are not built-to-stock and no work is performed unless a part is required downstream e.g. where customer orders are required to pull parts through the system before part quantities are released to run on the floor.

Enterprise business software solutions such as SYSPRO support the 'pull' concept in a number of ways:

- Provide users with the ability to determine the best lot sizes to run based on customer demands, finished goods inventory and what is already running on the shop floor. In this way the least wasteful amounts can be released to production cells.
- Optimize the sequencing of part releases to minimize set-up times while meeting delivery requirements and support JIT delivery of raw materials based on the scheduling sequence to minimize material warehousing.
- One of the biggest struggles for suppliers is demand visibility. Forecasting software with sophisticated algorithms, such as those in the SYSPRO Inventory Optimization solution, can leverage available history to forecast future sales for planning purposes.
- Dynamic analyses, approval workflow and tabular and graphical reports enable easy analysis and the ability to streamline and optimize inventory forecasting.
- Planning and scheduling solutions enable a plant manager to efficiently schedule production to maximize the use of workers and machinery to meet promised order delivery dates. Sales personnel can give accurate lead times, logistics can plan on-time deliveries and production personnel can make accurate and attainable commitments.
- The 'what if' capability of planning and scheduling solutions enables plant managers to view the consequences of any production changes by considering the real-time dynamic capacity of plant resources.

Enterprise software, like SYSPRO, enables continuous improvement because the software enables the measuring of plant operations, comparing them to past performance and future goals and presenting the results to the people who can make adjustments to those operations.



3. Understanding What Customers Value

Today's customers want smaller shipments, engineer-to-order and make-to-order configurations, last minute changes and same- or next-day delivery options.

To address these needs and reduce the costs of other customer demands, order fulfillment strategies must be integrated with supply chain execution functions.

Software must provide flexibility in the way orders are taken, the options customers can choose, how and when products are shipped, how products are sourced and delivered, how customers track or change their orders and how they are billed.

Many of these issues affect distributed resources across the enterprise. They can include remote production sites, distribution centers, wholesalers, carriers, brokers and suppliers.

Enterprise software builds and maintains a powerful library of customer information, including credit limits, shipping addresses and order history. These records help companies to speed up ordering and delivery cycles.

By identifying both who the customer is and how they define value, Lean manufacturing allows companies to focus resources on adding value. By manufacturing to customer demand, driving out waste and continuously improving processes, companies can satisfy customers, employees and shareholders alike.



4. Value Stream Analysis

Value Stream Analysis can transform companies into Lean operations that produce more from existing resources.

The value stream is the entire collection of activities necessary to produce and deliver a product or service.

The time spent on a formal analysis and plan to go Lean can save months of unproductive time and effort.

Enterprise business software, such as SYSPRO, can integrate all departments and companies within the enterprise and enable real-time sharing and usage of information for 360° visibility into all supply chain operations.

This visibility will enable organizations to see where waste exists in current business processes throughout the company, from customer processes through manufacturing to distribution. This visibility is necessary for an accurate Value Stream Analysis and for the formulation of the right strategy for a company to eliminate waste and become Lean.

The Value Stream Analysis process involves creating a current-state map of the value stream, followed by a future-state map from which specific action plans are developed.

By leveraging information technology, routine business operations can be simplified, rational procedures established and repetition reduced, thereby accelerating core business processes and response time to customers.

The right enterprise business software solution decreases data inaccuracy and redundancy, increases visibility and ensures that key strategic and tactical decisions are made from the most up-to-date and accurate information.



5: Supporting 'Perfection'

Jidoka is when every worker can stop the entire production process the minute a defect is discovered, and each plant member must work on the problem until it is solved.

As company business processes become streamlined and products flow according to customer demand, businesses will realise that there is no end to eliminating defects and reducing waste.

It is a continuous process.

Enterprise business software systems, like SYSPRO, are the key enabling technology for continuous improvement because they measure plant operations, compare them to past performance and future goals and present the results to the people who can make adjustments to those operations.

Business Intelligence applications, like SYSPRO Analytics, offer real-time analysis of key events and reduce data redundancy and inaccuracy, ensuring that key strategic and tactical decisions are made from up-to-date, accurate information that everyone in the company understands. In a Lean manufacturing environment of continuous improvement, everyone is responsible for continually improving quality and eliminating waste until the company reaches 'perfection'.



About SYSPRO

Founded in 1978, SYSPRO is an award-winning Enterprise Resource Planning (ERP) software solution for on-premise and cloud-based utilization. Scalable for rapid growth, SYSPRO is acknowledged by industry analysts to be among the finest enterprise-resource planning solutions in the world.

SYSPRO software combines powerful features, simplicity of use, information visibility, analytic and reporting capabilities, business process modeling and workflow management.

SYSPRO has earned the trust of thousands of companies globally for its suite of visionary software that enhances the competitive thrust of small and mid-sized manufacturers and distributors. SYSPRO's ability to grow with its customers and its adherence to developing technology based on the needs of customers is why SYSPRO enjoys one of the highest customer retention rates in the industry.