

Demand-Driven Manufacturing

What is Demand-Driven Manufacturing?

Synchrono defines Demand-Driven Manufacturing as a manufacturing method that enables a synchronized, closed loop between customer orders, production scheduling, and manufacturing execution - all while synchronizing the flow of materials and resources across the supply chain. The key components are **synchronization** and **flow**.

Demand-Driven Manufacturing is associated with “Pull” manufacturing and supply chain methods. The two main continuous improvement approaches that advocate the Demand/Pull method are Lean Manufacturing and Constraints Management.

Lean Manufacturing, Constraints Management and Six Sigma believe that managing variability is of vital importance to any continuous improvement effort. You will see elements of these methodologies

throughout Synchrono systems and the Synchrono Demand-Driven Manufacturing Platform.



Demand-Driven Manufacturing enables a synchronized, closed loop between customer orders, production scheduling and manufacturing execution.

Constraints Management

Because Demand-Driven Manufacturing environments are more agile and adaptive, they are in a better position to manage and leverage constraints in the system. For example, in some environments, a particular machine or work cell may be a constraint. Demand-Driven

Manufacturers know how many units the constraint can handle at a time and release work into the system accordingly. Doing so keeps flow at its peak throughout the production process, eliminating bottlenecks, aging WIP and inventory.

Demand-Driven Value

The primary benefits of Demand-Driven Manufacturing include:

- The ability to align the process, people, machines and methods around the demand signal.
- The ability to gain visibility to constraints across the entire supply chain and leverage them accordingly.
- The increased ability to focus on flow through disparate factory systems and create value via global efficiencies.

The value of these benefits grows exponentially when the enterprise is synchronized through planning, scheduling and execution software that embodies the tools of Lean, Six Sigma and Constraints Management.

Environments for Demand-Driven Manufacturing

Demand-Driven principles can be used in nearly every manufacturing environment because the focus is on flow through the factory. In make-to-stock (MTS) environments, a Demand-Driven Manufacturing platform can drive immediate improvements by right-sizing inventory, increasing flow and throughput, and replenishing resources using a kanban system. These improvements can be extended across the entire supply chain. In a make-to-order (MTO), engineer-to-order (ETO), and configure-to-order (CTO) environments, a Demand-driven planning, scheduling and execution approach delivers increased flow, throughput, on-time delivery and clarity throughout the manufacturing process and the extended supply chain.

In any environment, a Demand-Driven system will synchronize process, people, machine, and method. During execution, work released to the shop floor is in full alignment with the capacity of the constraint, minimizing work-in-process and driving flow. Order statuses (and any associated disruptions) are visible throughout the enterprise --to the production team, supply chain management, customer service, sales and

leadership. Everyone is working from the same factual, real-time information.

To examine how planning, scheduling and execution look in a Demand-Driven environment, read our white paper, [The Next Generation of Planning and Scheduling Solutions](#). There are also several [case studies](#) available that illustrate how Demand-Driven Manufacturing systems work in various environments.

Demand-Driven Key Performance Indicators

The Key Performance Indicators (KPIs) monitored in a Demand-Driven Manufacturing environment track the demand signal through the entire organization. The results measured are those related to flow, velocity, throughput, and other measures of movement throughout the supply chain. These KPIs are often used to guide the organization to areas of focus for continuous improvement. Finally, the true key performance indicator for Demand-Driven Manufacturers is on-time delivery.

High-performing delivery KPIs - coupled with customer satisfaction - open up additional business opportunities based on expanded capacity and enhanced resource utilization. To examine the KPIs met (and dramatic results realized) using Demand-Driven Manufacturing systems, see Synchrono [case studies](#).



The [Demand-Driven Matters blog](#) addresses related issues from multiple perspectives. Subscribe at www.synchrono.com/blog.