

## Video: Lean Supply Chain Fundamentals

Many organizations tend to focus their improvement efforts primarily on what takes place within their facility. While this is important, a truly Lean facility must take into account the entire supply chain from suppliers of raw material to the final customer.

A supply chain consists of all the activity that takes place to provide a good or service, with the exception of the production of the good or the performance of the service. This includes both material and information flows, both inside and outside an organization's main facilities.

However, it does not include the movement of materials that are in a work process, nor does it include the activity involved in providing a service.

In-bound and out-bound logistics involve interaction between independent organizations, including suppliers and shipping companies. Each of these companies bases their practices on assumptions about the others.

Often, this can lead to dysfunctional relationships. However, by gaining support and working together to find mutually beneficial solutions, organizations can create a stronger and more effective supply chain.

In order to find the best solutions you need to first understand what separates the supply chain from production.

As a basic example; bringing work pieces, fixtures and tools to a work area is considered part of supply chain logistics.

However, the person in the work area collecting these items to take to their machine is not part of supply chain logistics.

As another example; in the commercial airline industry, getting the plane to the gate, getting passengers on and off, and loading luggage, are all part of supply chain logistics. However, piloting the plane, and serving beverages to passengers are not considered logistics.

A supply chain in manufacturing generally includes the following elements:

Material Flows, such as shipping, transportation, receiving, storage and retrieval between plants, and delivery to production lines within a plant.

Information Flows, including transaction processing associated with the material flows, analysis of past activity, forecasting, planning and scheduling future activity.

And finally, Funds Flows; this refers to payments triggered by the movements of goods and information.

The supply chain extends far beyond the factory. Materials are delivered from a network of suppliers. Products are carried through a distribution network. What happens inside each of these networks has an effect on the factory, but it can be difficult to keep track of the big picture.

It is important to allow each facility to know more about its suppliers and customers. They should also maintain knowledge of the suppliers for suppliers, and customers for customers along the entire chain.

Another important distinction to make is between in-bound, out-bound and in-plant logistics.

The differences between these types of logistics include distances, quantities, vehicles, and management.

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In-plant logistics is controlled by the internal organization. In contrast, in-bound and out-bound logistics involve multiple independent organizations. This includes multiple tiers of suppliers, distributors, and freight companies, who all make their own decisions.

This tends to result in stable, but non-ideal systems. Such systems are usually the result of each organization making assumptions about the others in isolation, instead of communicating to make mutually beneficial decisions.

One reason for this might be that people in a supply network are trained to focus on customers, not suppliers. They focus solely on their customers ordering patterns, regardless of how unpredictable they might be.

Managers tend to think it is not their job to create better conditions for their suppliers. In order to reduce stress and fluctuation within a supply network it is important to avoid this mindset.

One useful strategy that can be adopted is Level Loading, which was introduced by Toyota.

The goal of level loading is to sequence products in order to smooth the flow of materials into a mixed model assembly system. This creates a more even and predictable workload both inside and outside the supply chain.

Using tools such as level loading to increase predictability and sustainability, the Lean approach to supply chain management creates cooperative and harmonious relationships between suppliers, producers, and consumers. [u](#)