

## Just In Time (JIT) Reducing Inventory, Minimizing Waste, and Responding to Your Customers

When is the best time to have an inventory part ready for production? Just in time.

When is the best time to have an item ready for the next step in production? Just in time.

When is the best time to have a product ready for delivery to a customer? Just in time.

When items are ready just in time, they don't occupy so much space. So why do manufacturers build inventory of both finished goods and raw materials? Just in case!

Just In Time (JIT) is one of the key tools used in reducing the cost burden related to high levels of Stock and Inventory, within both Internal

and External Supply Chains. It is an inventory strategy companies employ to increase efficiency and decrease waste by receiving goods only as they are needed in the production process, thereby reducing inventory costs.

A good example would be a car manufacturer that operates with very low inventory levels, relying on their supply chain to deliver the parts they need to build cars. The parts needed to manufacture the cars do not arrive before nor after they are needed, rather they do arrive just as they are needed. This inventory supply system represents a shift away from the older "just in case" strategy

where producers carried large inventories in case higher demand had to be met. But this method requires that producers are able to accurately forecast demand.

In the 1970s, when Japanese manufacturing companies were trying to perfect their systems, Taiichi Ohno of Toyota developed a guiding philosophy for manufacturing that minimized waste and improved quality. Called Just In Time (JIT), this philosophy advocates a lean approach to production, and uses many tools to achieve this overall goal.

Just in time (JIT) inventory is a management system in



which materials or products are produced or acquired only as demand requires. This approach to managing inventory has become increasingly popular in the early 21st century as suppliers and retailers collaborate to try to control inventory costs while still meeting customer demands.

The key benefits of JIT are:

Low inventory

Low wastage

High quality production

High customer responsiveness.

The JIT Strategy

By taking a JIT approach to inventory and product handling, companies can often cut costs significantly. Inventory costs contribute heavily to the company expenses, especially in manufacturing organizations. By minimizing the amount of inventory you hold, you save space, free up cash resources, and reduce the waste that comes from obsolescence.

A buffer of inventory on hand is comforting – and costly. If you hold a lot of items in inventory, you're locking away a huge amount of cash unnecessarily. These items can be lost, stolen, or damaged, or they can deteriorate. They occupy space, which could otherwise be devoted to operations. And they can become obsolete;



particularly when products are improved or changed often (many of us can remember images of airfields full of unwanted, obsolete cars from the 1970s and 1980s.) All of this represents financial loss to the business.

When items are ready just in time, they aren't sitting idle and taking up space. This means that they aren't costing you anything to hold onto them, and they're not becoming obsolete or deteriorating. However, without the buffer of having items in stock, you must tightly control your manufacturing process so that parts are ready when you need them.

When you do (and JIT helps you do this) you can be very responsive to customer orders – after all, you have no stake in “forcing” customers to have one particular product, just because

you have a warehouse full of parts that need to be used up. And you have no stake in trying to persuade customers to take an obsolete model just because it's sitting in stock.

The approach to Just in Time is to evaluate the actual levels of stock in the supply chain and determine optimum stock levels; any excessive stock will then be identified together with its cause. Upstream processes that are identified as the cause of excessive stock will then become the focus for optimization under the Just in Time philosophy. A key element of JIT is to make clear the relationship between the Customer and Supplier, and emphasize their roles and responsibilities throughout the entire supply chain.

JIT Systems

To facilitate a JIT approach, you need a variety of systems in place.



The most notable is a Kanban . This is a Japanese approach to ensuring a continuous supply of inventory or product. Kanbans were designed to support the JIT philosophy.

The term 'kanban' combines the Japanese words 'kan,' meaning 'visual' and 'ban,' meaning 'card' or 'board.' A kanban is a visual card or other cue that signals something is needed. It is a "pull" system, where supply is determined by the manufacturer or user.

Kanban was developed as a means of fulfilling a just-in-time (JIT) inventory system. By implementing kanban, your materials and supplies arrive right when you need them. This

decreases your storage and carrying costs.

Kanban is largely associated with manufacturing. A major concern in manufacturing is the need to have a ready supply of materials, without incurring unnecessary inventory holding costs. But it can also be applied in a nonmanufacturing environment, where the efficiency of your workflow depends on having resources available.

By applying JIT, you are continuously monitoring the production process. This gives you opportunities for making the production process smoother and more efficient.

JIT and Stakeholder

#### Relationships

With JIT, it is necessary that you build strong ties with your supply chain. This will ensure that you have access to the supplies you need when you need them. (A side benefit of this is that you're more likely to receive forewarning of shifts in supply that may have an impact on your business.)

With a secure source of supplies, you can continue to make improvements in your production and inventory systems. This helps you to increase your responsiveness to customer demand. If you need to ramp up production, you can be confident knowing your suppliers will help you.

If your customers demand a newer technology, you can switch product quite easily, without worrying about writing off a large stock of obsolete supplies and finished goods. This means that you can meet changing customer needs more quickly.

Custom orders are simpler with a JIT system. Instead of the customer's widget being built six months in advance and waiting on a shelf, it is built when it's ordered. By delivering product "just in time," you allow for last-minute changes.

#### Risks Associated with JIT

Just in time inventory is generally regarded as an efficient inventory management system. Many suppliers and retailers partner in the early 21st century to coordinate their JIT efforts. This benefits both as the end customer gets the best value for the money. However, JIT is not without risks. The

major risk is that a simple glitch in the supply system can cause stock shortages. JIT only works if you can rely on your suppliers to deliver when they promise to – otherwise your whole operation may grind to a halt.

A supplier facing erratic weather or transportation problems may have delayed shipments, causing inventory to run dry. The more critical the products are to the end buyer, the more sensitive they are to this precarious situation.

What is more, if material costs suddenly increase, then storing them at a lower rate might have been a more economic option. And JIT is also based on historical patterns of need: If orders increase sharply, adjusting to the increased need for supplies may not be easy for you or your suppliers.

The process of implementation requires you to take a very

close look at every stage of your production and inventory carrying points. This alone is a useful exercise that will highlight some areas for improvement. Ultimately, the more efficient you are and the higher quality product you provide, the more appealing you will be to customers and clients.

Essentially, JIT allows your company to get the right products to the right customers at the right time. In many industries, this can give you a huge competitive advantage, at the same time that it helps you save a large amount of money.

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related topics: lean manufacturing, inventory planning, supply chain.

**Hania Zeidan**  
**LACPA**