

Just-in-time and stock control

Effective Stock management, whether it is of raw materials, work in progress, or of finished goods, is an important part of an efficient operations management plan.

Effective stock management means firstly, that firms must ensure that stock is available for use within the manufacturing process as and when it is needed. Secondly, that part finished goods (work-in-progress) do not sit around the factory floor unused, and losing value. And finally that finished goods are available for timely delivery to customers and are not made before customers are found for them.

In the past the main method of ensuring a ready supply of raw materials has been the maintenance of buffer stocks. That is large stock holdings, held 'just in case', they might be needed. This method of stock management was to an extent understandable. After all firms were operating during times of industrial strife, with interruptions to supplies an every day occurrence. But the industrial landscape has changes and this has allowed the operations management emphasis

now to be on the reduction of stock holdings, and the freeing up working capital. The old idea of buffer stocks has been abandoned in favour of the effective use of just-in-time systems. Below is shown a traditional stock management chart. In this we can see 4 major parts.

These are:

- reorder level,
- order quantity,
- delivery time
- buffer stock.

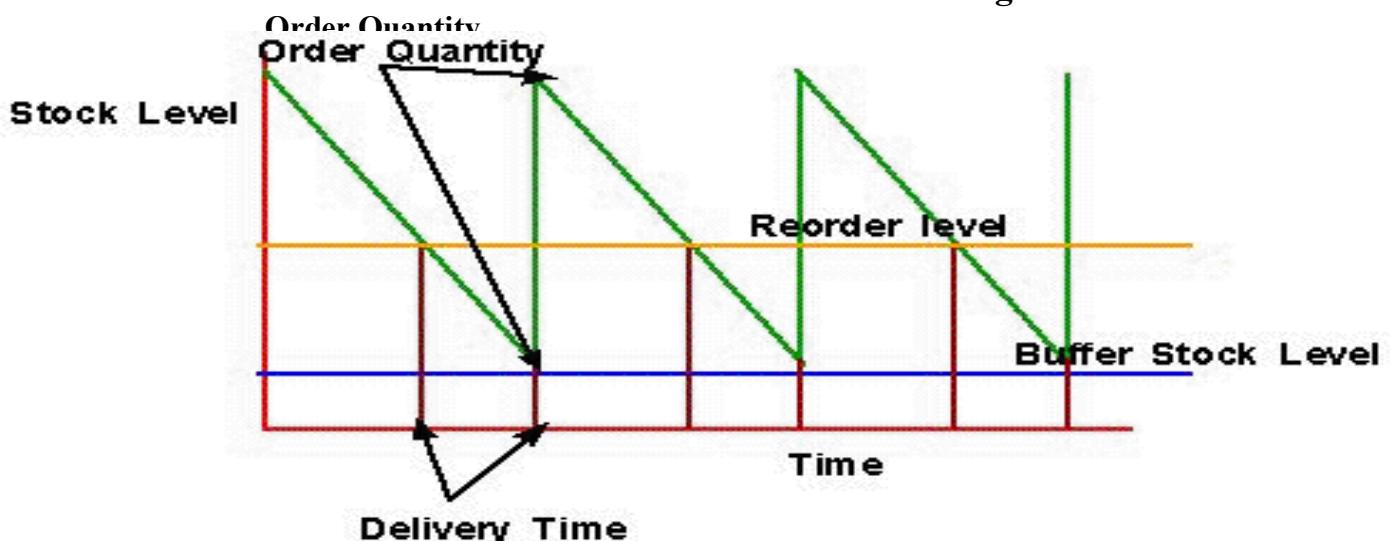
Reorder level. This is the level of stock at which a new order is placed. So a shoe manufacturer may re-order laces when stock holding falls to 1,000 pairs of laces.

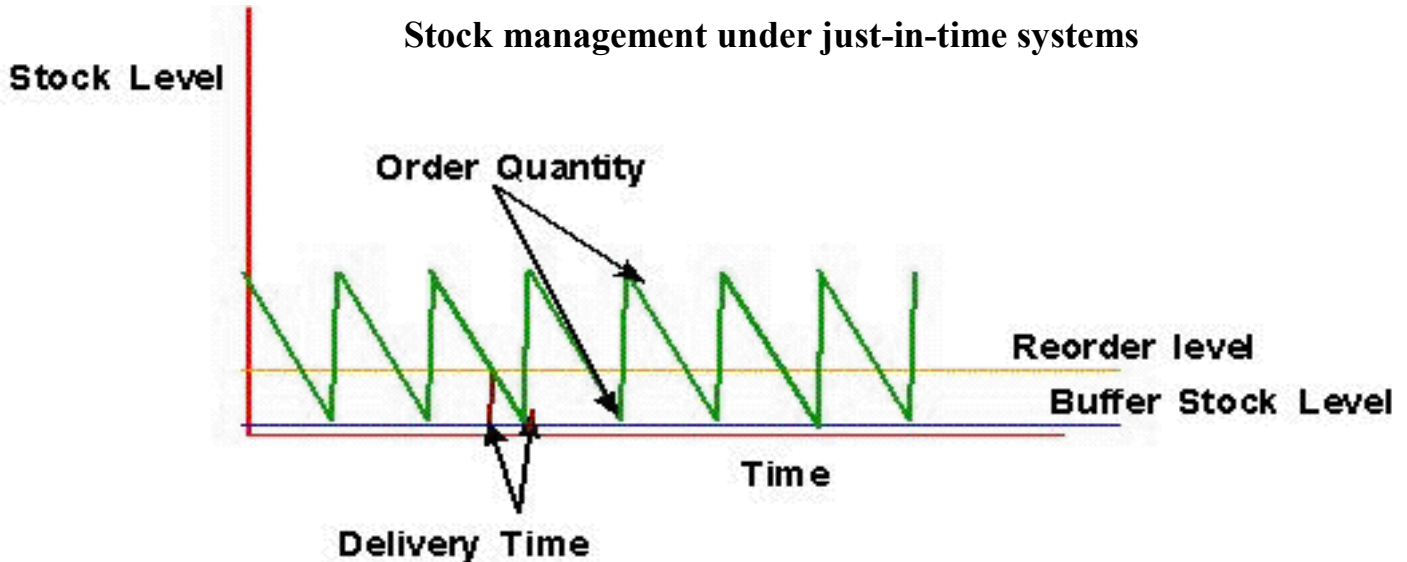
Order Quantity. This is the typical quantity ordered. The shoe manufacturer may order 20,000 pairs of laces.

Delivery Time. This is the amount of time taken for order to be delivered.

Buffer Stock. This is the stock level that will always be held in case of problems with delivery. The buffer level is designed to ensure that stock is always available.

Stock Control Diagram





Stock Management and Just-in-time.

Above we can see the new stock chart for the shoe manufacturer once just-in-time systems have been put in place.

The chart still has the same component parts, but important changes can be seen.

The use of large buffer stocks has been abandoned. Both the reorder level and the order quantity have fallen. Orders are now much more regular, and smaller. This frees up space within the firm; for example a retailer can now have a smaller warehouse and a larger retail area.

The system that is often used to ensure this level of efficiency in stock management within the firm is called Kan Ban. The delivery time has fallen. Delivery can be expected within days if not hours of the order being made. In fact there are examples of firms electronically placing orders with suppliers, and the supplier then making immediate delivery of goods ordered.

The regular and efficient delivery of new stocks and the reduction in holdings of buffer stocks frees working capital and storage space.

When we look at this just-in-time system, it is worth remembering that we are not just talking about deliveries from external suppliers, but also deliveries and suppliers along the production chain within the manufacturing process.

The shoe manufacturer will not cut soles until the uppers are ready. And will not cut uppers until an order is received. This reduces the capital tied up in work-in-progress. The system that is often used to ensure this level of efficiency in stock management within the firm is called KanBan. (For more on KanBan see the chapter on Lean Production).

Under a perfect stock control system, the manufacturing and ordering process is customer led. This means that nothing is made until an order is received. And as soon as it is made it is delivered. The finished articles do not sit around in a warehouse losing value, going out of date and getting damaged.

Systems for Effective stock Management

For effective stock management to work there must be systems and relationships put in place. These systems and relationships include:

Effective relationships with suppliers and customers. Suppliers must be able to switch to the new ordering system. There is no point in expecting to have regular and timely deliveries if a firm's suppliers are unable to comply with this requirement. Often this type of ordering and delivery system will involve some integration between the two companies. This type of integration of systems can be achieved by the use of EPOS

Effective internal relationships. There must be a customer chain within the manufacturing process. This means that internal relationships of supply and use are the same as external ones. Goods and parts are only supplied when they are needed.

Advantages of Effective Stock Management

Reduction in working capital. This frees money for investment and improves liquidity. There is an opportunity cost of holding stock. This means that if money is tied up in stock it is not free for use elsewhere in the business.

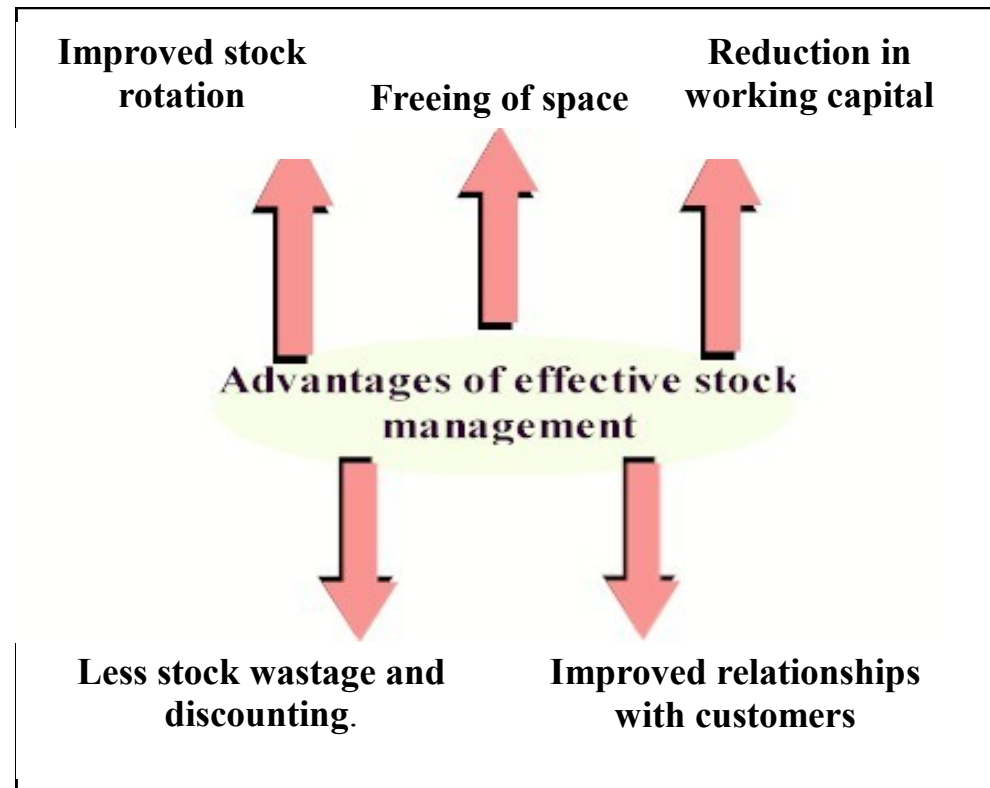
Improved relationships with customers. Helping to guarantee ongoing orders.

Freeing of storage space.

This can release retail or manufacturing space.

Less stock wastage and discounting. Smaller buffer stocks and supplies of finished goods will mean that stock is less likely to be damaged before it is used and finished goods are less likely to become out of date or out of fashion.

Easier stock rotation. Stock rotation means ensuring that older stock is used before newer stock. When buffer stocks are small and deliveries are regular this becomes easier;



and bar coding systems, as well as Kan Ban.

this is because stock is used shortly after delivery.

Customers must be taught the advantages of using the system, and also incorporate the latest methods of stock management and ordering.

Notes