Mass Production

Mass production is the large-scale production of goods in factories.

Originally, craftsmen in home workshops made very small numbers of products. But, the increasing demand for consumer goods following the industrial revolution meant that larger numbers of products needed to be manufactured in a more efficient way.

To facilitate the mass production process, organisation of the following factors is necessary.

1. A division of labour, where the manufacturing process is broken down into small-specialised tasks that each worker carries out over and over again.
2. The standardisation of parts across a number of products so that large numbers can be made cheaply and efficiently.
3. The development of machinery to perform standardised tasks and produce components.
4. The production process needs to be designed to efficiently integrate the machine processes and human tasks.

The best-known example of a mass production process was the assembly line developed by Henry Ford to manufacture the Model T Ford in 1913.

Advantages of mass production

- efficiency of production: less time is taken to produce goods
- 'economies of scale': cheaper to make products in large quantities
- workers only need to be trained in one or two tasks.

Disadvantages of mass production

- boredom for the workers
- occupational overuse syndrome (repetitive strain injury)
- low job satisfaction for workers
- large stock piles of raw materials waiting to be processed
- large stock piles of finished goods waiting to be sold
- difficult to change the product's design quickly to respond to changing styles and consumer demand.

These disadvantages, especially the last three points, have led to a change in direction for manufacturers to try and be more responsive to changes in the marketplace.
The development of 'just in time' (JIT) manufacturing has evolved as an appropriate production technique to address the problems of excess stock and lack of responsiveness by manufacturers, to trends in the marketplace.

**Just in time production (JIT)**

Just in time is a ‘pull’ system of production, so actual orders provide a signal for when a product should be manufactured. Demand-pull enables a firm to produce only what is required, in the correct quantity and at the correct time.

This means that stock levels of raw materials, components, work in progress and finished goods can be kept to a minimum. This requires a carefully planned scheduling and flow of resources through the production process. Modern manufacturing firms use sophisticated production scheduling software to plan production for each period of time, which includes ordering the correct stock. Information is exchanged with suppliers and customers through **EDI (Electronic Data Interchange)** to help ensure that every detail is correct.

Supplies are delivered right to the production line only when they are needed. For example, a car manufacturing plant might receive exactly the right number and type of tyres for one day’s production, and the supplier would be expected to deliver them to the correct loading bay on the production line within a very narrow time slot.

**Advantages of JIT**

- Lower stock holding means a reduction in storage space which saves rent and insurance costs
- As stock is only obtained when it is needed, less working capital is tied up in stock
- There is less likelihood of stock perishing, becoming obsolete or out of date
- Avoids the build-up of unsold finished product that can occur with sudden changes in demand
- Less time is spent on checking and re-working the product of others as the emphasis is on getting the work **right first time**

**Disadvantages of JIT**

- There is little room for mistakes as minimal stock is kept for re-working faulty product
- Production is very reliant on suppliers and if stock is not delivered on time, the whole production schedule can be delayed
- There is no spare finished product available to meet unexpected orders, because all product is made to meet actual orders – however, JIT is a very responsive method of production