

Module 5

*Section A: Understand Inventory Management
Fundamentals*

Term
Active tag

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Term
Anticipation inventories

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Term
Automatic identification and data capture (AIDC)

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Automatic identification system (AIS)

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Average inventory

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Backorder

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Batch processing

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Carrying cost

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Additional inventory above basic pipeline stock to cover projected trends of increasing sales, planned sales promotion programs, seasonal fluctuations, plant shutdowns, and vacations.

A radio frequency identification tag that broadcasts information and contains its own power source. See: radio frequency identification (RFID).

A system that can use various means, including bar code scanning and radio frequencies, to sense and load data in a computer.

Technologies that collect data about objects and then sends the data to a computer without human intervention. Examples include radio frequency wireless devices and terminals, bar code scanners, and smart cards.

An unfilled customer order or commitment. [This is] an immediate (or past due) demand against an item whose inventory is insufficient to satisfy the demand. See: stockout.

One-half the average lot size plus the safety stock, when demand and lot sizes are expected to be relatively uniform over time. The average can be calculated as an average of several inventory observations taken over several historical time periods; for example, 12-month ending inventories may be averaged. When demand and lot sizes are not uniform, the stock level versus time can be graphed to determine the average.

The cost of holding inventory, usually defined as a percentage of the dollar value of inventory per unit of time (generally one year). [This] depends mainly on the cost of capital invested as well as costs of maintaining the inventory such as taxes and insurance, obsolescence, spoilage, and space occupied. Such costs vary from 10 percent to 35 percent annually, depending on type of industry. [It] is ultimately a policy variable reflecting the opportunity cost of alternative uses for funds invested in inventory. Syn.: holding costs.

1) A manufacturing technique in which parts are accumulated and processed together in a lot. 2) A computer technique in which transactions are accumulated and processed together or in a lot. Syn.: batch production.

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Cycle stock

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Decoupling

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Decoupling points

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Economy of scale

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Electronic product codes (EPCs)

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Excess inventory

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Expedite

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Handling cost

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Creating independence between supply and use of material. Commonly denotes allocating inventory between operations so that fluctuations in the production rate of the supplying operation do not constrain the production or use rates of the next operation.

One of the two main conceptual components of any item inventory, [this] is the most active component. [It] depletes gradually as customer orders are received and is replenished cyclically when supplier orders are received. The other conceptual component of the item inventory is the safety stock, which is a cushion of protection against uncertainty in the demand or in the replenishment lead time. Syn.: cycle inventory.

A phenomenon whereby larger volumes of production reduce unit cost by distributing fixed costs over a larger quantity. See: economy of scope.

The locations in the product structure or distribution network where inventory is placed to create independence between processes or entities. Selection of decoupling points is a strategic decision that determines customer lead times and inventory investment. See: control points.

Any inventory in the system that exceeds the minimum amount necessary to achieve the desired throughput rate at the constraint or that exceeds the minimum amount necessary to achieve the desired due date performance. Total inventory = productive inventory + protective inventory + excess inventory.

Codes that are used with RFID tags to carry information on the product that will support warranty programs.

The cost involved in the movement of material. In some cases, the handling cost depends on the size of the inventory.

To rush or chase production or purchase orders that are needed in less than the normal lead time; to take extraordinary action because of an increase in relative priority. Syn.: stockchase.

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Hedge inventory

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Inactive inventory

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Inventory

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Inventory costs

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Inventory management

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Inventory shrinkage

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Level of service

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Lot size

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Stock designated as in excess of consumption within a defined period; stocks of items that have not been used for a defined period.

A form of inventory buildup to buffer against some event that may not happen. [Planning] involves speculation related to potential labor strikes, price increases, unsettled governments, and events that could severely impair a company's strategic initiatives. Risk and consequences are unusually high, and top management approval is often required.

Costs associated with ordering and holding inventory. See: carrying costs, ordering cost.

1) Those stocks or items used to support production (raw materials and work-in-process items), supporting activities (maintenance, repair, and operating supplies), and customer service (finished goods and spare parts). Demand for inventory may be dependent or independent. Inventory functions are anticipation, hedge, cycle (lot size), fluctuation (safety, buffer, or reserve), transportation (pipeline), and service parts. 2) All the money currently tied up in the system. As used in theory of constraints, inventory refers to the equipment, fixtures, buildings, and so forth that the system owns—as well as inventory in the forms of raw materials, work-in-process, and finished goods.

Reductions of actual quantities of items in stock, in process, or in transit. The loss may be caused by scrap, theft, deterioration, evaporation, and so forth. Sometimes referred to as shrinkage.

The branch of business management concerned with planning and controlling inventories.

The amount of a particular item that is ordered from the plant or a supplier or issued as a standard quantity to the production process. Syn.: order quantity.

A measure (usually expressed as a percentage) of satisfying demand through inventory or by the current production schedule in time to satisfy the customers' requested delivery dates and quantities. In a make-to-stock environment, [this] is sometimes calculated as the percentage of orders picked complete from stock upon receipt of the customer order, the percentage of line items picked complete, or the percentage of total dollar demand picked complete. In make-to-order and design-to-order environments, [it] is the percentage of times the customer-requested or acknowledged date was met by shipping complete product quantities. Syn.: measure of service, service level. See: cycle service level.

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Maintenance, repair, and operating (MRO) supplies

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On-time schedule performance

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Ordering cost

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Passive tag

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Pipeline stock

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Radio frequency identification (RFID)

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Safety lead time

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Safety stock

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A measure (percentage) of meeting the customer's originally negotiated delivery request date. Performance can be expressed as a percentage based on the number of orders, line items, or dollar value shipped on time.

Items used in support of general operations and maintenance such as maintenance supplies, spare parts, and consumables used in the manufacturing process and supporting operations.

A RFID tag that does not send out data and is not self-powered. See: radio frequency identification (RFID) tag.

The costs that increase as the number of orders placed increases. Used in calculating order quantities. Includes costs related to the clerical work of preparing, releasing, monitoring, and receiving orders; the physical handling of goods; inspections; and setup costs, as applicable. See: acquisition cost, inventory costs.

A system using electronic tags to store data about items. Accessing or retrieving this data is accomplished through a specific radio frequency and does not require close proximity or line-of-sight access. See: active tag, passive tag, semi-passive tag.

Inventory in the transportation network and the distribution system, including the flow through intermediate stocking points. The flow time through the pipeline has a major effect on the amount of inventory required in the pipeline. Time factors involve order transmission, order processing, scheduling, shipping, transportation, receiving, stocking, review time, and so forth. Syn.: pipeline inventory. See: distribution system, transportation inventory.

1) In general, a quantity of stock planned to be in inventory to protect against fluctuations in demand or supply. 2) In the context of master production scheduling, the additional inventory and capacity planned as protection against forecast errors and short-term changes in the backlog. Overplanning can be used to create [this]. Syn.: buffer stock, reserve stock. See: hedge, inventory buffer.

An element of time added to normal lead time to protect against fluctuations in lead time so that an order can be completed before its real need date. When used, the MRP system, in offsetting for lead time, will plan both order release and order completion for earlier dates than it would otherwise. Syn.: protection time, safety time.

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Semipassive tag

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Setup costs

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Stockout

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Stockout costs

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Stockout percentage

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Unit cost

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Work in process (WIP)

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Costs such as scrap costs, calibration costs, downtime costs, and lost sales associated with preparing the resource for the next product. Syn.: changeover costs, turnaround costs.

An RFID tag that sends out data, is self-powered, and widens its range by harnessing power from the reader. See: radio frequency identification (RFID).

The costs associated with a stockout. Those costs may include lost sales, backorder costs, expediting, and additional manufacturing and purchasing costs.

A lack of materials, components, or finished goods that are needed. See: backorder.

Total labor, material, and overhead cost for one unit of production (e.g., one part, one gallon, one pound).

A measure of the effectiveness with which a company responds to actual demand or requirements. The stockout percentage can be a comparison of total orders containing a stockout with total orders or of line items incurring stockouts with total line items ordered during a period. One formula is $\text{stockout percentage} = (1 - \text{customer service ratio}) \times 100 \text{ percent}$. Ant.: customer service ratio.

A good or goods in various stages of completion throughout the plant, including all material from raw material that has been released for initial processing up to completely processed material awaiting final inspection and acceptance as finished goods inventory. Many accounting systems also include the value of semifinished stock and components in this category. Syn.: in-process inventory.