

Glossary of Inventory Management Terms

ABC analysis – also called Pareto analysis or the rule of 80/20, is a way of categorizing inventory items into different types depending on value and use

Aggregate plans – show the overall production planned for families of products, typically by month

Agile strategy – aims at giving a high customer service by responding quickly to different or changing circumstances

Andon – a mechanism for showing when a process is working normally, and when it is developing problems

B2B – business-to-business dealings, where one business buys materials from another business

B2C – business-to-customer dealings, where a final customer buys from a business

Backorder – occurs when a customer demand cannot be met from stock, but the customer waits for the item to come into stock

Batching rule – a rule for reducing the costs of MRP by combining several smaller batches into larger ones

Bill of materials – an ordered list of all the materials needed to make a product, and the order in which the materials are used

Break bulk – typically done in a warehouse, where large quantities of an item are broken into smaller amounts for delivery to customers

Business strategy – the set of strategic decisions that affect a whole business

Capacity – the maximum throughput of a process in a given time

Causal forecast – a method that uses a known (possibly cause and effect) relationship to forecast the value of one variable from known values of another

Closed loop MRP – a version of MRP that includes feedback to ensure that a proposed schedule causes no problems with, say, capacity

Coefficient of correlation – shows how closely two variables are related

222 ■ Glossary of Inventory Management Terms

Coefficient of determination – shows the proportion of the sum of squared error that is explained by a regression

Co-managed inventory – where an organization and a third party jointly manage stocks

Consumables – stocks of materials needed to support operations, but which do not form part of the final product, such as oil, paper, cleaners, etc.

Control system – part of a scheduling system that checks progress and makes sure that plans are actually being achieved

Corporate strategy – the set of strategic decisions that affect the whole corporation

Cross-docking – co-ordinates supply and delivery, typically at a warehouse, so that goods arriving are moved straight away to a loading area ready to be sent to customers

Customer – anyone or anything that creates demand for items

Cycle-counting – where stock is checked at regular intervals, with a small proportion of items typically checked every week

Cycle service level – the probability of meeting all demand in a stock cycle

Cycle stock – normal stock used during operations

Demand – the amount of materials wanted by customers

Dependent demand methods – assume the demand for an item is directly related to the demand for other items, with this relationship used to control stocks

Destock – reduce the amount of stock held

Distribution centres – locations in the supply chain for performing logistic activities, often including stocks and warehousing

e-business or **e-commerce** – a general term for transactions that use EDI, often through the Web

Economic order quantity – the order size that minimizes costs for a simple inventory system

Efficient customer response – an extension of JIT principles to other organizations in the supply chain

Electronic data interchange (EDI) – a method of transferring data directly between remote computers

Electronic fund transfer (EFT) – a method of automatically debiting a customer's bank account and crediting the money to a supplier's account

Electronic point of sales (EPOS) – a system that records transactions at a cash register and transfers the information to stock control and other functions

Enterprise resource planning – an extension of the MRP approach to other organizations within a supply chain

e-purchasing or **e-procurement** – systems for electronic purchasing of materials, often using the Web

ERP – enterprise resource planning

Error – in a forecast is defined as the difference between the actual value and the forecast value

Exponential smoothing – a widely used method of projective forecasting, where:

$$\text{New Forecast} = \alpha \times \text{latest demand} + (1 - \alpha) \times \text{previous forecast}$$

FIFO – first-in-first-out convention for valuing stock

Finished goods – items that are ready to be moved to a customer

finite replenishment rate – when deliveries do not arrive in a single batch, but feed into stock over some period

Fixed order quantity method – approaches to inventory control that place orders of fixed size at variable intervals of time

Forecast – assessment of what will happen in the future

Forecast error – difference between the actual value and the forecast value

Functional strategies – the set of strategic decisions made for a particular function

Holding cost – cost of holding a unit of an item in stock for a unit time

Independent demand methods – assume that the demand for an item is independent of the demand for any other item

Information system – the system that controls the flow of information throughout an organization, and makes sure that everyone has the information they need to work properly

Invalid minimum – an EOQ that is not on the valid total cost curve when costs are discounted

Inventory – is a list of the items held in stock (often taken as being the stock itself)

Inventory management information system – the part of a management information system that deals with the information needed for stock control

Item – a single article that is kept in stock – it is one entry in the inventory

Item coding – an arrangement for giving every package of material moved an identifying tag, usually a bar code or magnetic strip

Jidoka – quality at source as a means of achieving TQM

Judgemental forecast – a method of forecasting that uses people’s skills, knowledge and judgement rather than more formal analysis

Just-in-time – an approach that organizes operations to occur at exactly the time they are needed

Kanban – card (either physical or electronic) that passes a message backwards through the supply chain to trigger JIT operations

Lead time – the total time between ordering materials and having them delivered and available for use

Lead time demand – demand for an item during its lead time

Lean strategy – a business strategy that aims at doing every operation using the least possible resource – people, space, stock, equipment, time, etc.

LIFO – last-in-first-out convention for valuing stock

Linear regression – a method of finding the line of best fit through a set of data, which can be used for causal forecasting

Logistics – the function responsible for the flow of materials into organizations, through their operations, and then on to customers

Logistics centre – locations in the supply chain for performing logistic activities, often including stocks and warehousing

Lost sales – when customer demand cannot be met, and the customer withdraws their demand (perhaps moving to another supplier)

Lot sizing – combining several small orders into larger ones for MRP

Management information system (MIS) – system that controls the flow of information throughout an organization and makes sure that everyone has the information they need to work properly

Manufacturing resource planning (MRP II) – an extension of the MRP approach to all resources within an organization

Mass customization – an approach to operations that combines the benefits of mass production with the flexibility of customized products

Master schedule – detailed timetable for production of individual products, typically by week

Material – anything that is kept in stock

Material handling – the function that physically moves materials around a warehouse or between operations

Material requirements planning (MRP) – dependent demand method where the demand for materials is found directly by exploding the master schedule

Mean absolute deviation – a measure of the average error in a forecast

Mean error – a measure of bias in a forecast

Mean squared error – a measure of the error in a forecast, which does not have a precise meaning, but is useful for other analyses

Min-max system – a hybrid method (between fixed order quantity and periodic review) for setting the size of orders

Mission – statement of the overall purpose and aims of an organization

Moving average – the mean value of a fixed number of observations, used for projective forecasting

MRP – material requirements planning

MRP II – manufacturing resource planning

Newsboy problem – a standard problem of finding the best order size for a single stock cycle, with uncertain demand

Noise – random variations in time series (which make forecasting difficult)

Order – a message from an organization to a supplier requesting a delivery of materials

Organization – any business, government, charity or other body that (in this context) holds stock

Outsourcing – use of other, third party organizations to perform non-core activities (such as transport, warehousing, etc.)

Pareto analysis – also called ABC analysis or the rule of 80/20, is a way of categorizing inventory items depending on value and use

Partnership – a formal, long-term relationship between organizations, which involves a mutual sharing of information, risks and rewards

Parts list – a bill of materials, giving an ordered list of all the materials needed to make a product, and also the order in which the materials are used

Periodic review methods – approaches to inventory control that place orders of variable size at fixed intervals of time

Pipeline stock – stock that is currently being moved from one location to another

Postponement – moves almost-finished products into stock, and delays final modifications or customization until the last possible moment

Price – the amount charged by a supplier

Price discounts – all unit (we assume) step reductions in price given for larger orders

Procurement – (an extension to purchasing that gives) the function responsible for acquiring all the materials needed by an organization

Procurement cycle – sequence of activities needed to acquire materials

Projective forecast – a forecast that projects historical patterns into the future

Pull – system used by JIT, where operations are triggered by customer demand and materials are pulled through the supply chain

Purchasing – part of procurement responsible for actually buying materials (and often used to mean the same as procurement)

Quality circles – group of people who meet to discuss ways of improving product quality

Quick response – extension of JIT principles to other organizations in the supply chain

Raw materials – materials that have arrived from suppliers and are kept in stock until needed for operations

Reorder cost – cost associated with each order for materials placed with suppliers

Reorder level – the stock level at which it is time to place another order for materials (generally the lead time demand plus safety stock minus any stock on order)

Replenishment – putting materials into stock to replace units that have been used

Replenishment rate – the (finite) rate at which materials are added to stock

Reverse logistics – brings materials (defects, spare units, wrong deliveries, packaging, materials for recycling, containers, etc.) back from customers to suppliers

Rule of 80/20 – also called Pareto analysis or ABC analysis, is a way of categorizing inventory items depending on value and use

Safety stock – a reserve of materials that is not normally needed, but is held to cover unexpected circumstances

Scheduling rules – guidelines or rules of thumb that give reasonable results for scheduling problems

Scientific inventory control – the use of mathematical models to find optimal stock levels and ordering policies

Seasonal stock – stock that is used to maintain stable operations through seasonal variations in demand

Sensitivity – the rate at which a forecast responds to changes in demand

Service level – a measure of the proportion of customer demand met from stock (or some equivalent measure)

Shortage – occurs when customer demand cannot be met from stock (resulting in backorders or lost sales)

Shortage cost – cost associated with each shortage (which may be dependent or independent of the amount of shortage or its duration)

Short-term schedules – detailed timetables for all resources used in an organization

Simulation – uses a dynamic model to duplicate the continuous operation of a system over time

SKU – stock keeping unit (an alternative name for item)

Smoothing constant – a value used to set the sensitivity of a forecasting method

Spare parts – items held in stock as replacements to keep machinery, equipment, etc working properly

Stock – all the goods and materials that are stored by an organization until they are needed

Stock cycle – sequence of repeated events for stock holdings; the time between consecutive replenishments

Stock keeping unit (SKU) – an alternative name for item

Stocktaking – periodic checks to find differences between recorded and actual stock levels

Strategic alliance – a formal, long-term relationship between organizations, which involves a mutual sharing of information, risks and rewards

Strategic decision – a decision by senior managers that has effects over the long term

Supplier – anyone or anything that replenishes or adds to stock

Supply chain – the series of activities and organizations that a product moves through between initial suppliers and final customers

Supply chain management – the function responsible for the flow of materials into organizations, through their operations, and then on to customers

Tactical decision – a decision made by middle managers that has effects over the medium term

Target stock level – determines the order size for a periodic review method (with order size equal to target stock level minus current stock minus amount already on order)

Third party operations – the use of an outside organization to perform non-core activities (which are outsourced)

Time series – a series of observations taken at regular intervals of time

Total quality management (TQM) – a means of ensuring that all products have perfect quality

Two-bin system – simple method for finding when it is time to place an order, by storing the reorder level in one bin and the remaining stock in another

228 ■ Glossary of Inventory Management Terms

Uncertainty – occurs when a value is not known exactly, but follows a known probability distribution

Unit – the standard size or quantity of a stock item

Unit cost – cost of buying (or acquiring) each unit of an item

Unitization – putting materials into standard packages (typically on pallets or in containers) to ease movement

Utility – perceived value of materials (often considered as place utility when materials are in the right locations, and time utility when they are available at the right time)

Valid minimum – an EOQ that corresponds to a point on the valid total cost curve when costs are discounted

Valid total cost curve – the stepped curve that connects valid sections of a family of cost curves when there are price discounts

Vendor-managed inventory – has suppliers managing both their own stocks and those held further down the supply chain

Vision – statement of the overall purpose and aims of an organization

Warehouse – any location where stocks are held

Work in process – another term for work in progress

Work in progress – units that are currently being worked on