Module 4
Section A: Planning Operations

Term
Allocation

Module 4
Section A: Planning Operations

Term
Available-to-promise (ATP)

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Module 4
Section A: Planning Operations

Term
Component

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Module 4
Section A: Planning Operations

Term
Cumulative lead time

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Module 4
Section A: Planning Operations

Term
Customer order

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Module 4
Section A: Planning Operations

Term
Dependent demand

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Module 4
Section A: Planning Operations

Term
Distribution requirements planning (DRP)

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Module 4
Section A: Planning Operations

Term
Exception report

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1) In operations, the uncommitted portion of a company's inventory and planned production maintained in the master schedule to support customer-order promising. [This] quantity is the uncommitted inventory balance in the first period and is normally calculated for each period in which an MPS receipt is scheduled. In the first period, [this] includes on-hand inventory less customer orders that are due and overdue. Three methods of calculation are used: discrete [...], cumulative [...] with look-ahead, and cumulative [...] without look-ahead. (2) In logistics, the quantity of a finished good that is or will be available to commit to a customer order based on the customer's required ship date. To accommodate deliveries on future dates, [this] is usually time-phased to include anticipated purchases or production receipts. See: discrete available-to-promise, cumulative available-to-promise.

1) The classification of resources or item quantities that have been assigned to specific orders but have not yet been released from the stockroom to production. It is an "uncashed" stockroom requisition. 2) A process used to distribute material in short supply. Syn.: assignment. See: reservation.

The longest planned length of time to accomplish the activity in question. It is found by reviewing the lead time for each bill of material path below the item; [this term is defined by whichever path adds up to the greatest number]. Syn.: aggregate lead time, combined lead time, composite lead time, critical path lead time, stacked lead time. See: planning horizon, planning time fence.

The raw material, part, or subassembly that goes into a higher-level assembly, compound, or other item. This term may also include packaging materials for finished items. See: ingredient, intermediate part.

Demand that is directly related to or derived from the bill-of-material structure for other items or end products. Such demands are therefore calculated and need not and should not be forecast. A given inventory item may [also have] independent demand at any given time. For example, a part may simultaneously be the component of an assembly and sold as a service part. See: independent demand.

An order from a customer for a particular product or number of products. It is often referred to as an actual demand to distinguish it from a forecasted demand. See: booked orders.

A report that lists or flags only those items that deviate from the plan.

1) The function of determining the need to replenish inventory at branch warehouses. A time-phased order point approach is used where the planned orders at the branch warehouse level are "exploded" via MRP logic to become gross requirements of the supplying source. In the case of multilevel distribution networks, this explosion process can continue down through the various levels of regional warehouses (master warehouse, factory warehouse, etc.) and become input to the master production schedule. Demand on the supplying sources is recognized as dependent, and standard MRP logic applies. 2) More generally, replenishment inventory calculations, which may be based on other planning approaches such as period order quantities or "replace exactly what was used," rather than being limited to the time-phased order point approach.

Module 4
Section A: Planning Operations

Term
Firm planned order (FPO)

Module 4
Section A: Planning Operations

Term
Independent demand

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Module 4
Section A: Planning Operations

Term
Interplant demand

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Module 4
Section A: Planning Operations

Term
Joint replenishment

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Module 4
Section A: Planning Operations

Term
Manufacturing resource planning (MRP II)

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Module 4
Section A: Planning Operations

Term
Master production schedule (MPS)

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Module 4
Section A: Planning Operations

Term
Master schedule

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Module 4
Section A: Planning Operations

Term
Master schedule item

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The demand for an item that is unrelated to the demand for other items. Demand for finished goods, parts required for destructive testing, and service parts requirements are examples of independent demand. See: dependent demand.

A planned order that can be frozen in quantity and time. The computer is not allowed to change it automatically; this is the responsibility of the planner in charge of the item that is being planned. This technique can aid planners working with MRP systems to respond to material and capacity problems by [solidifying] selected planned orders. In addition, [these] are the normal method of stating the master production schedule. See: planning time fence.

Coordinating the lot sizing and order release decision for related items and treating them as a family of items. The objective is to achieve lower costs because of ordering, setup, shipping, and quantity discount economies. This term applies equally to joint ordering (family contracts) and to composite part (group technology) fabrication scheduling. Syn.: joint replenishment system.

One plant's need for a part or product that is produced by another plant or division within the same organization. Although it is not a customer order, it is usually handled by the master production scheduling system in a similar manner. See: interplant transfer.

A line on the master schedule grid that reflects the anticipated build schedule for those items assigned to the master scheduler. The master scheduler maintains this schedule, and in turn, it becomes a set of planning numbers that drives material requirements planning. It represents what the company plans to produce, expressed in specific configurations, quantities, and dates. [This] is not a sales item forecast that represents a statement of demand. It must take into account the forecast, the production plan, and other important considerations such as backlog, availability of material, availability of capacity, and management policies and goals. See: master schedule.

A method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units and financial planning in dollars, and has a simulation capability to answer what-if questions. It is made up of a variety of processes, each linked together: business planning, production planning (sales and operations planning), master production scheduling, material requirements planning, capacity requirements planning, and the execution support systems for capacity and material. Output from these systems is integrated with financial reports such as the business plan, purchase commitment report, shipping budget, and inventory projections in dollars. [It] is a direct outgrowth and extension of closed-loop MRP.

A part number selected to be planned by the master scheduler. [It] is deemed critical in its impact on lower-level components or resources such as skilled labor, key machines, or dollars. Therefore, the master scheduler, not the computer, maintains the plan for these items. [This] may be an end item, a component, a pseudo number, or a planning bill of material.

A format that includes time periods (dates), the forecast, customer orders, projected available balance, available-to-promise, and the master production schedule. It takes into account the forecast; the production plan; and other important considerations such as backlog, availability of material, availability of capacity, and management policies and goals. See: master production schedule.

Module 4
Section A: Planning Operations

Term
Material requirements planning (MRP)

Module 4
Section A: Planning Operations

Term
Multilevel bill of material

Module 4
Section A: Planning Operations

Term
Open order

Module 4
Section A: Planning Operations

Term
Order promising

Module 4
Section A: Planning Operations

Term
Parent item

Module 4
Section A: Planning Operations

Term
Pegging

Module 4
Section A: Planning Operations

Term
Planned order

Module 4
Section A: Planning Operations

Term
Planned order receipt

A display of all the components directly or indirectly used in a parent, together with the quantity required of each component. If a component is a subassembly, blend, intermediate, etc., all its components and all their components also will be exhibited, down to purchased parts and raw materials.

A set of techniques that uses bill of material data, inventory data, and the master production schedule to calculate requirements for materials. It makes recommendations to release replenishment orders for material. Further, because it is time-phased, it makes recommendations to reschedule open orders when due dates and need dates are not in phase. [When] time-phased, [this concept] begins with the items listed on the MPS and determines (1) the quantity of all components and materials required to fabricate those items and (2) the date that the components and material are required. [Also when] time-phased, [this] is accomplished by exploding the bill of material, adjusting for inventory quantities on hand or on order, and offsetting the net requirements by the appropriate lead times.

The process of making a delivery commitment (i.e., answering the question, “When can you ship?”). For make-to-order products, this usually involves a check of uncommitted material and availability of capacity, often as represented by the master schedule available-to-promise. Syn.: customer order promising, order dating. See: available-to-promise, order service.

1) A released manufacturing order or purchase order. Syn.: released order. See: scheduled receipt. 2) An unfilled customer order.

In MRP and MPS, the ability to identify for a given item the sources of its gross requirements and/or allocations. [This] can be thought of as active where-used information. See: requirements traceability.

The item produced from one or more components. Syn.: parent.

The quantity planned to be received at a future date as a result of a planned order release. [These] differ from scheduled receipts in that they have not been released. Syn.: planned receipt.

A suggested order quantity, release date, and due date created by the planning system’s logic when it encounters net requirements in processing MRP. In some cases, it can also be created by a master scheduling module. [These] are created by the computer, exist only within the computer, and may be changed or deleted by the computer during subsequent processing if conditions change. [While at one level, these] will be exploded into gross requirements for components at the next level. [Along with released orders, these] serve as input to capacity requirements planning to show the total capacity requirements by work center in future time periods. See: planning time fence.

Module 4
Section A: Planning Operations

Term
Planned order release

Module 4
Section A: Planning Operations

Term
Planning horizon

Module 4
Section A: Planning Operations

Term
Projected available balance (PAB)

Module 4
Section A: Planning Operations

Term
Pull system

Module 4
Section A: Planning Operations

Term
Push system

Module 4
Section A: Planning Operations

Term
Scheduled receipt

Module 4
Section A: Planning Operations

Term
Time fence

Module 4
Section B: Capacity and Production Activity Control

Term
Bill of resources

The amount of time a plan extends into the future. For a master schedule, this is normally set to cover a minimum of cumulative lead time plus time for lot sizing low-level components and time for capacity changes of primary work centers or of key suppliers. For longer-term plans, [this] must be long enough to permit any needed additions to capacity. See: cumulative lead time, planning time fence.

A row on an MRP table that is derived from planned order receipts by taking the planned receipt quantity and offsetting to the left by the appropriate lead time. See: order release.

1) In production, the production of items only as demanded for use or to replace those taken for use. See: pull signal. 2) In material control, the withdrawal of inventory as demanded by the using operations. Material is not issued until a signal comes from the user. 3) In distribution, a system for replenishing field warehouse inventories where replenishment decisions are made at the field warehouse itself, not at the central warehouse or plant.

An inventory balance projected into the future. It is the running sum of on-hand inventory minus requirements plus scheduled receipts and planned orders. Syn.: projected available inventory.

An open order that has an assigned due date. See: open order.

1) In production, the production of items at times required by a given schedule planned in advance. 2) In material control, the issuing of material according to a given schedule or issuing material to a job order at its start time. 3) In distribution, a system for replenishing field warehouse inventories where replenishment decision making is centralized, usually at the manufacturing site or central supply facility. See: pull system.

A listing of the required capacity and key resources needed to manufacture one unit of a selected item or family. Rough-cut capacity planning uses [these] to calculate the approximate capacity requirements of the master production schedule. Resource planning may use a form of [this]. Syn.: bill of capacity. See: bill of labor, capacity planning using overall factors, product load profile, resource profile, rough-cut capacity planning, routing.

A policy or guideline established to note where various restrictions or changes in operating procedures take place. For example, changes to the master production schedule can be accomplished easily beyond the cumulative lead time, while changes inside the cumulative lead time become increasingly more difficult to a point where changes should be resisted. [It] can be used to define these points. See: demand time fence, hedge, planning time fence.

Module 4
Section B: Capacity and Production Activity Control

Term
Bottleneck

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity control

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity management

Module 4
Section B: Capacity and Production Activity Control

Term
Capacity planning

Module 4
Section B: Capacity and Production Activity Control

Term
Cycle time

Module 4
Section B: Capacity and Production Activity Control

Term
Demand pull

Module 4
Section B: Capacity and Production Activity Control

Term
Efficiency

Module 4
Section B: Capacity and Production Activity Control

Term
Kanban

The process of measuring production output and comparing it with the capacity plan, determining if the variance exceeds pre-established limits, and taking corrective action to get back on plan if the limits are exceeded. See: input/output control.

A facility, function, department, or resource whose capacity is less than the demand placed upon it. For example, [this type of] machine or work center exists where jobs are processed at a slower rate than they are demanded. Syn.: bottleneck operation.

The process of determining the amount of capacity required to produce in the future. This process may be performed at an aggregate or product-line level [...], at the master-scheduling level [...], and at the material requirements planning level [...]. See: capacity requirements planning, resource planning, rough-cut capacity planning.

The function of establishing, measuring, monitoring, and adjusting limits or levels of capacity in order to execute all manufacturing schedules (i.e., the production plan, master production schedule, material requirements plan, and dispatch list). [It] is executed at four levels: resource requirements planning, rough-cut capacity planning, capacity requirements planning, and input/output control.

The triggering of material movement to a work center only when that work center is ready to begin the next job. In effect, it shortens or eliminates the queue from in front of a work center, but it can cause a queue at the end of a preceding work center. [This] also can occur within a supply chain, in which case it often is called a demand chain.

1) In industrial engineering, the time between the completion of two discrete units of production. For example, [if] motors [are] assembled at a rate of 120 per hour, [this] is 30 seconds. 2) In materials management, the length of time from when material enters a production facility until it exits. Syn.: throughput time.

A method of just-in-time production that uses standard containers or lot sizes with a single card attached to each. It is a pull system in which work centers signal with a card that they wish to withdraw parts from feeding operations or suppliers. [This] Japanese word, loosely translated, means card, billboard, or sign, but other signaling devices such as colored golf balls have also been used. The term is often used synonymously for the specific scheduling system developed and used by the Toyota Corporation in Japan. See: move card, production card, synchronized production.

A measurement (usually expressed as a percentage) of the actual output relative to the standard output expected. [This] measures how well something is performing relative to existing standards; in contrast, productivity measures output relative to a specific input (e.g., tons/labor hour). [It] is the ratio of (1) actual units produced to the standard rate of production expected in a time period, or (2) standard hours produced to actual hours worked (taking longer means less [of this]), or (3) actual dollar volume of output to a standard dollar volume in a time period. For example: (1) There is a standard of 100 pieces per hour and 780 units are produced in one eight-hour shift; [this] is 780 ÷ 800 converted to a percentage, or 97.5 percent. (2) The work is measured in hours and took 8.21 hours to produce 8 standard hours; [this] is 8 ÷ 8.21 converted to a percentage, or 97.5 percent. (3) The work is measured in dollars and produces $780 with a standard of $800; [this] is $780 ÷ $800 converted to a percentage, or 97.5 percent.

Module 4
Section B: Capacity and Production Activity Control

Term
Load

Module 4
Section B: Capacity and Production Activity Control

Term
Load leveling

Module 4
Section B: Capacity and Production Activity Control

Term
Lot size

Module 4
Section B: Capacity and Production Activity Control

Term
Manufacturing lead time

Module 4
Section B: Capacity and Production Activity Control

Term
Resource management

Module 4
Section B: Capacity and Production Activity Control

Term
Resource profile

Module 4
Section B: Capacity and Production Activity Control

Term
Rough-cut capacity planning (RCCP)

Module 4
Section B: Capacity and Production Activity Control

Term
Utilization

Spreading orders out in time or rescheduling operations so that the amount of work to be done in sequential time periods tends to be distributed evenly and is achievable. Although [this ideally applies to] both material and labor, specific businesses and industries may load to one or the other exclusively (e.g., service industries). Syn.: capacity smoothing, level loading. See: level schedule.

The amount of planned work scheduled for and actual work released to a facility, work center, or operation for a specific span of time. Usually expressed in terms of standard hours of work or, when items consume similar resources at the same rate, units of production. Syn.: workload.

The total time required to manufacture an item, exclusive of lower-level purchasing lead time. For make-to-order products, it is the length of time between the release of an order to the production process and shipment to the final customer. For make-to-stock products, it is the length of time between the release of an order to the production process and receipt into inventory. Included are order preparation time, queue time, setup time, run time, move time, inspection time, and put-away time. Syn.: manufacturing cycle, production cycle, production lead time. See: lead time.

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.

The standard hours of load placed on a resource by time period. Production lead-time data is taken into account to provide time-phased projections of the capacity requirements for individual production facilities. See: bill of resources, capacity planning using overall factors, product load profile, rough-cut capacity planning.

1) The planning and validation of all organizational resources. 2) The effective identification, planning, scheduling, execution, and control of all organizational resources to produce a good or service that provides customer satisfaction and supports the organization's competitive edge and ultimately, its organizational goals. 3) An emerging field of study emphasizing the systems perspective, encompassing both the product and process life cycles, and focusing on the integration of organizational resources toward the effective realization of organizational goals. Resources include materials; maintenance, repair, and operating supplies; production and supporting equipment; facilities; direct and indirect employees; staff; administrative and professional employees; information; knowledge; and capital. Syn.: integrated resource management.

1) A measure (usually expressed as a percentage) of how intensively a resource is being used to produce a good or service. Compares actual time used to available time. Traditionally, calculated as the ratio of direct time charged (run time plus setup time) to the clock time available. [It] is a percentage between 0 percent and 100 percent that is equal to 100 percent minus the percentage of time lost due to the unavailability of machines, tools, workers, and so forth. See: efficiency, lost time factor, productivity. 2) In the theory of constraints, activation of a resource that productively contributes to reaching the goal. Over-activation of a resource does not productively [use] a resource. See: available time.

The process of converting the master production schedule into requirements for key resources often including labor, machinery, warehouse space, suppliers' capabilities, and, in some cases, money. Comparison to available or demonstrated capacity is usually done for each key resource. This comparison assists the master scheduler in establishing a feasible master production schedule. Three approaches to performing [this] are the bill of labor (resources, capacity) approach, the capacity planning using overall factors approach, and the resource profile approach. See: bill of resources, capacity planning, capacity planning using overall factors, product load profile, resource profile.

Module 4
Section C: Inventory

Term
ABC classification

Module 4
Section C: Inventory

Term
Acquisition cost

Module 4
Section C: Inventory

Term
Anticipation inventories

Module 4
Section C: Inventory

Term
Backorder

Module 4
Section C: Inventory

Term
Buffer

Module 4
Section C: Inventory

Term
Carrying cost

Module 4
Section C: Inventory

Term
Configuration management

Module 4
Section C: Inventory

Term
Cycle counting

The cost required to obtain one or more units of an item. Computed as: order quantity times unit cost. See: ordering cost.

The classification of a group of items in decreasing order of annual dollar volume (price multiplied by projected volume) or other criteria. This array is then split into three classes [...]. The [first] group usually represents 10 percent to 20 percent by number of items and 50 percent to 70 percent by projected dollar volume. The next grouping [...] usually represents about 20 percent of the items and about 20 percent of the dollar volume. The [third] class contains 60 percent to 70 percent of the items and represents about 10 percent to 30 percent of the dollar volume. The ABC principle states that effort and money can be saved through applying looser controls to the low-dollar-volume class items than to the high-dollar-volume class items. The ABC principle is applicable to inventories, purchasing, and sales. Syn.: ABC analysis, distribution by value. See: 80-20, Pareto analysis, Pareto's law.

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.

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

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.

In theory of constraints, time or material that supports throughput and/or due date performance.

An inventory accuracy audit technique where inventory is counted on a cyclic schedule rather than once a year. A cycle inventory count is usually taken on a regular, defined basis (often more frequently for high-value or fast-moving items and less frequently for low-value or slow-moving items). [the most effective of these] systems require the counting of a certain number of items every workday with each item counted at a prescribed frequency. The key purpose of [this] is to identify items in error, thus triggering research, identification, and elimination of the cause of the errors.

Formal procedures to identify and document the physical characteristics of a product or project, control changes, and support an audit to verify conformance.

Module 4
Section C: Inventory

Term
Cycle stock

Module 4
Section C: Inventory

Term
Decoupling

Module 4
Section C: Inventory

Term
Distribution center

Module 4
Section C: Inventory

Term
Echelon

Module 4
Section C: Inventory

Term
End-of-life management

Module 4
Section C: Inventory

Term
Fixed order quantity

Module 4
Section C: Inventory

Term
In-transit inventory

Module 4
Section C: Inventory

Term
Inventory

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 level of supply chain nodes. For example, a supply chain with two independent factory warehouses and nine wholesale warehouses delivering product to 350 retail stores is a supply chain with three [of these] between the factory and the end customer. One [of these] consists of the two independent factory warehouses, one consists of the nine wholesale warehouses, and one consists of the 350 retail stores. Each [of these] adds operating expense, holds inventory, adds to the cycle time, and expects to make a profit. See: disintermediation.

A location used to store inventory. Decisions driving warehouse management include site selection, number of facilities in the system, layout, and methods of receiving, storing, and retrieving goods.

A lot-sizing technique in MRP or inventory management that will always cause planned or actual orders to be generated for a predetermined fixed quantity, or multiples thereof, if net requirements for the period exceed [this].

Planning for the phase-out of one product and the phase-in of a new product to avoid both the excessive inventory of and an out-of-stock situation with the old product before the replacement product is available.

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.

Material moving between two or more locations, usually separated geographically; for example, finished goods being shipped from a plant to a distribution center.

Module 4
Section C: Inventory

Term
Inventory accuracy

Module 4
Section C: Inventory

Term
Inventory adjustment

Module 4
Section C: Inventory

Term
Inventory control

Module 4
Section C: Inventory

Term
Inventory management

Module 4
Section C: Inventory

Term
Inventory ordering system

Module 4
Section C: Inventory

Term
Inventory planning

Module 4
Section C: Inventory

Term
Inventory visibility

Module 4
Section C: Inventory

Term
Landed cost

A change made to an inventory record to correct the balance in order to bring it in line with actual physical inventory balances. The adjustment either increases or decreases the item record on-hand balance.

When the on-hand quantity is within an allowed tolerance of the recorded balance. This important metric usually is measured as the percent of items with inventory levels that fall within tolerance. Target values usually are 95 percent to 99 percent, depending on the value of the item. For logistical operations (location management) purposes, it is sometimes measured as the number of storage locations with errors divided by the total number of storage locations.

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

The activities and techniques of maintaining the desired levels of items, whether raw materials, work in process, or finished products. Syn.: material control.

The activities and techniques of determining the desired levels of items, whether raw materials, work in process, or finished products (including order quantities and safety stock levels). Syn.: material planning.

Inventory models for the replenishment of inventory. Independent demand inventory ordering models include fixed reorder cycle, fixed reorder quantity, optional replenishment, and hybrid models, among others. Dependent demand inventory ordering models include material requirements planning, kanban, and drum-buffer-rope.

This cost includes the product cost plus the costs of logistics, such as warehousing, transportation, and handling fees.

The extent to which inventory information is shared within a firm and with supply chain partners.

Module 4
Section C: Inventory

Term
Life cycle analysis

Module 4
Section C: Inventory

Term
Lot-for-lot (L4L)

Module 4
Section C: Inventory

Term
Ordering cost

Module 4
Section C: Inventory

Term
Physical inventory

Module 4
Section C: Inventory

Term
Safety lead time

Module 4
Section C: Inventory

Term
Safety stock

Module 4
Section C: Inventory

Term
Time-phased order point (TPOP)

Module 4
Section C: Inventory

Term
Warehouses (distribution centers)

A lot-sizing technique that generates planned orders in quantities equal to the net requirements in each period. See: discrete order quantity.

A quantitative forecasting technique based on applying past patterns of demand data covering introduction, growth, maturity, saturation, and decline of similar products to a new product family.

1) The actual inventory itself. 2) The determination of inventory quantity by actual count. [It] can be taken on a continuous, periodic, or annual basis. Syn.: annual inventory count, annual physical inventory. See: periodic inventory.

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.

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.

Facilities used to store inventory. Decisions driving warehouse management include site selection, number of facilities in the system, layout, and methods of receiving, storing, and retrieving goods.

MRP-like time planning logic technique for independent demand items, where gross requirements come from a forecast, not via explosion. Can be used to plan distribution center inventories as well as to plan for service (repair) parts, because MRP logic can readily handle items with dependent demand, independent demand, or a combination of both. An approach that uses time periods, thus allowing for lumpy withdrawals instead of average demand. When used in distribution environments, the planned order releases are input to the master schedule dependent demands. See: fixed reorder quantity inventory model.

Module 4
Section C: Inventory

Term
Work in process (WIP)

Module 4
Section D: Performance and Continuous Improvement

Term
80-20

Module 4
Section D: Performance and Continuous Improvement

Term
Appraisal costs

Module 4
Section D: Performance and Continuous Improvement

Term
Buffer

Module 4
Section D: Performance and Continuous Improvement

Term
Constraint

Module 4
Section D: Performance and Continuous Improvement

Term
Continuous improvement (CI)

Module 4
Section D: Performance and Continuous Improvement

Term
Continuous process improvement (CPI)

Module 4
Section D: Performance and Continuous Improvement

Term
Control chart

A term referring to the Pareto principle. The principle suggests that most effects come from relatively few causes; that is, [a larger] percent of the effects (or sales or costs) come from [a smaller] percent of the possible causes (or items). See: ABC classification.

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.

In theory of constraints, time or material that supports throughput and/or due date performance.

Those costs associated with the formal evaluation and audit of quality in the firm. Typical costs include inspection, quality audits, testing, calibration, and checking time.

The act of making incremental, regular improvements and upgrades to a process or product in the search for excellence.

Any element or factor that prevents a system from achieving a higher level of performance with respect to its goal.

A graphic comparison of process performance data with predetermined computed control limits. The process performance data usually consists of groups of measurements selected in the regular sequence of production that preserve the order. The primary use of [these] is to detect assignable causes of variation in the process as opposed to random variations. [This] is one of the seven tools of quality. Syn.: process control chart.

A never-ending effort to expose and eliminate root causes of problems; small-step improvement as opposed to big-step improvement. Syn.: continuous improvement. See: kaizen.

Module 4
Section D: Performance and Continuous Improvement

Term
Cost of poor quality

Module 4
Section D: Performance and Continuous Improvement

Term
Define, Measure, Analyze, Improve, Control (DMAIC) process

Module 4
Section D: Performance and Continuous Improvement

Term
Heijunka

Module 4
Section D: Performance and Continuous Improvement

Term
Inventory shrinkage

Module 4
Section D: Performance and Continuous Improvement

Term
Just in time (JIT)

Module 4
Section D: Performance and Continuous Improvement

Term
Kaizen

Module 4
Section D: Performance and Continuous Improvement

Term
Kaizen blitz

Module 4
Section D: Performance and Continuous Improvement

Term
Kaizen event

A six sigma improvement process composed of five stages: (1) Determine the nature of the problem. (2) Measure existing performance and commence recording data and facts that offer information about the underlying causes of the problem. (3) Study the information to determine the root causes of the problem. (4) Improve the process by effecting solutions to the problem. (5) Monitor the process until the solutions become ingrained.

The costs associated with performing a task incorrectly and/or generating unacceptable output. These costs would include the costs of nonconformities, inefficient processes, and lost opportunities. See: quality costs.

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.

In just-in-time philosophy, an approach to level production throughout the supply chain to match the planned rate of end product sales.

The Japanese term for improvement; refers to continuing improvement involving everyone—managers and workers. In manufacturing, [this] relates to finding and eliminating waste in machinery, labor, or production methods. See: continuous process improvement.

A philosophy of manufacturing based on planned elimination of all waste and on continuous improvement of productivity. It encompasses the successful execution of all manufacturing activities required to produce a final product, from design engineering to delivery, and includes all stages of conversion from raw material onward. The primary elements of [this] are to have only the required inventory when needed; to improve quality to zero defects; to reduce lead times by reducing setup times, queue lengths, and lot sizes; to incrementally revise the operations themselves; and to accomplish these activities at minimum cost. In the broad sense, it applies to all forms of manufacturing—job shop, process, and repetitive—and to many service industries as well. Syn.: short-cycle manufacturing, stockless production, zero inventories.

A time-boxed set of activities carried out by the cell team during the week of cell implementation. [It] is an implementation arm of a lean manufacturing program. See: kaizen blitz.

A rapid improvement of a limited process area; for example, a production cell. Part of the improvement team consists of workers in that area. The objectives are to use innovative thinking to eliminate non-value-added work and to immediately implement the changes within a week or less. Ownership of the improvement by the area work team and the development of the team's problem-solving skills are additional benefits. See: kaizen event.

Module 4
Section D: Performance and Continuous Improvement

Term
Key performance indicator (KPI)

Module 4
Section D: Performance and Continuous Improvement

Term
Lean metric

Module 4
Section D: Performance and Continuous Improvement

Term
Lean production

Module 4
Section D: Performance and Continuous Improvement

Term
Load leveling

Module 4
Section D: Performance and Continuous Improvement

Term
Operational performance measurements

Module 4
Section D: Performance and Continuous Improvement

Term
Pareto chart

Module 4
Section D: Performance and Continuous Improvement

Term
Pareto's law

Module 4
Section D: Performance and Continuous Improvement

Term
Process map

A metric that permits a balanced evaluation and response—quality without sacrificing quantity objectives. The types of metrics are financial, behavioral, and core-process performance.

1) A financial or nonfinancial measure that is used to define and assess progress toward specific organizational goals and that typically is tied to an organization's strategy and business stakeholders. Should not be contradictory to other departmental or strategic business unit performance measures. 2) A metric used to measure the overall performance or state of affairs. SCOR level 1 metrics are an example.

Spreading orders out in time or rescheduling operations so that the amount of work to be done in sequential time periods tends to be distributed evenly and is achievable. Although [this ideally applies to] both material and labor, specific businesses and industries may load to one or the other exclusively (e.g., service industries). Syn.: capacity smoothing, level loading. See: level schedule.

A philosophy of production that emphasizes the minimization of the amount of all the resources (including time) used in the various activities of the enterprise. It involves identifying and eliminating non-value-adding activities in design, production, supply chain management, and dealing with customers. [It also employs] teams of multiskilled workers at all levels of the organization and use highly flexible, increasingly automated machines to produce volumes of products in potentially enormous variety. [It] contains a set of principles and practices to reduce cost through the relentless removal of waste and through the simplification of all manufacturing and support processes. Syn.: lean, lean manufacturing.

A bar graph that displays the results of a Pareto analysis. It may or may not display the 80-20 variation, but it does show a distinct variation from the few compared to the many.

1) In traditional management, performance measurements related to machine, worker, or department efficiency or utilization. These performance measurements are usually poorly correlated with organizational performance. 2) In theory of constraints, performance measurements that link causally to organizational performance measurements. Throughput, inventory, and operating expense are examples. See: global performance measurements, local performance measurements, strategic performance measurements.

A diagram of the flow of a production process or service process through the production system. Standardized symbols are used to designate processing, flow directions, branching decisions, input/output, and other aspects of the process.

A concept developed by Vilfredo Pareto, an Italian economist, that states that a small percentage of a group accounts for the largest fraction of its impact or value. In an ABC classification, for example, 20 percent of the inventory items may constitute 80 percent of the inventory value. See: ABC classification, 80-20.

Module 4
Section D: Performance and Continuous Improvement

Term
Quality

Module 4
Section D: Performance and Continuous Improvement

Term
Setup time

Module 4
Section D: Performance and Continuous Improvement

Term
Six sigma

Module 4
Section D: Performance and Continuous Improvement

Term
Statistical process control (SPC)

Module 4
Section D: Performance and Continuous Improvement

Term
Stock keeping unit (SKU)

Module 4
Section D: Performance and Continuous Improvement

Term
Total productive maintenance (TPM)

Module 4
Section D: Performance and Continuous Improvement

Term
Total quality management (TQM)

Module 4
Section D: Performance and Continuous Improvement

Term
Value stream

The time required for a specific machine, resource, work center, process, or line to convert from the production of the last good piece of item A to the first good piece of item B. Syn.: setup lead time.

Conformance to requirements or fitness for use.

The application of statistical techniques to monitor and adjust an operation. Often used interchangeably with statistical quality control, although statistical quality control [also includes acceptance sampling.]

A methodology that furnishes tools for the improvement of business processes. The intent is to decrease process variation and improve product quality.

Preventive maintenance plus continuing efforts to adapt, modify, and refine equipment to increase flexibility, reduce material handling, and promote continuous flows. It is operator-oriented maintenance with the involvement of all qualified employees in all maintenance activities. Syn.: total preventive maintenance.

1) An inventory item. For example, a shirt in six colors and five sizes represents 30 [of these]. 2) In a distribution system, an item at a particular geographic location. For example, one product stocked at the plant and at six different distribution centers would represent seven [of these].

The processes of creating, producing, and delivering a good or service to the market. For a good, [this] encompasses the raw material supplier, the manufacture and assembly of the good, and the distribution network. For a service, [this] consists of suppliers, support personnel and technology, the service “producer,” and the distribution channel. May be controlled by a single business or a network of several businesses.

A management approach to long-term success through customer satisfaction; based on the participation of all members of an organization in improving processes, goods, services, and the culture in which they work.

Module 4

Section D: Performance and Continuous Improvement

Term

Velocity

Module 4

Section D: Performance and Continuous Improvement

Term

Waste

1) Any activity that does not add value to the good or service in the eyes of the consumer. 2) A by-product of a process or task with unique characteristics requiring special management control. [The] production [of this] can usually be planned and somewhat controlled. Scrap is typically not planned and may result from the same production run as [this term]. See: hazardous waste.

1) The rate of change of an item with respect to time. See: inventory turnover, lead time. 2) In supply chain management, a term used to indicate the relative speed of all transactions, collectively, within a supply chain community. [The maximum of this] is most desirable because it indicates higher asset turnover for stockholders and faster order-to-delivery response for customers.