

# Warehouse Dictionary

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V1.1

**2D bar code:** Two-dimensional bar code based on a flat set of rows of encrypted data in the form of bars and spaces, normally in a rectangular or square pattern.

**3D bar code:** Three-dimensional bar code based on a physically embossed or stamped set of encrypted data interpreted by variations in height rather than contrast between spaces and bars (as used in 2D bar codes). Often used in environments where labels cannot be easily attached to items

**3PL:** This refers to a '3rd Party Logistics', which is where a warehouse is managed on behalf of the owner of the stock. The type of activities and how a 3PL operates will vary according to the type of organization it is. A 3PL could operate as a fulfilment services provider or as managed warehousing facility.

**80/20 rule:** a more specific version of the Pareto principle. 80/20 implies that 80% of effects are the result of 20% of causes.

**ABC Analysis:** A classification of items in an inventory according to importance defined in terms of criteria such as sales volume and purchase volume.

**ABC Classification:** Classification of a group of items in decreasing order of annual dollar volume or other criteria. This array is then split into three classes called A, B, and C. The A group represents 10 to 20% by number of items, and 50 to 70% by projected dollar volume. The next grouping, B, represents about 20% of the items and 20% of the dollar volume. The C-class contains 60 to 70% of the items, and represents about 10 to 30% of the dollar volume.

**ABC Inventory Control:** An inventory control approach based on the ABC volume or sales revenue classification of products (A items are highest volume or revenue; C - or perhaps D - are lowest volume SKUs.)

**ABC Model:** In cost management, a representation of resource costs during a time period that are consumed through activities and traced to products, services, and customers, or to any other object that creates a demand for the activity to be performed.

**ABC System:** In cost management, a system that maintains financial and operating data on an organization's resources, activities, drivers, objects and measures. ABC Models are created and maintained within this system.

**Abnormal Demand:** Demand in any period that is outside the limits established by management policy. This demand may come from a new customer or from existing customers whose own demand is increasing or decreasing. Care must be taken in evaluating the nature of the demand: Is it a volume change; is it a change in product mixes, or is it related to the timing of the order?

**Absorption Costing:** In cost management, an approach to inventory valuation in which variable costs and a portion of fixed costs are assigned to each unit of production. The fixed costs are usually allocated to units of output on the basis of direct labor hours, machine hours, or material costs. *Synonym: Allocation Costing.*

**Acceptable Quality Level (AQL):** In quality management, when a continuing series of lots is considered, AQL represents a quality level that, for the purposes of sampling inspection, is the limit of a satisfactory process average.

**Acceptable Sampling Plan:** In quality management, a specific plan that indicates the sampling sizes and the associated acceptance or non-acceptance criteria to be used.

**Acceptance Number:** In quality management, 1) A number used in acceptance sampling as a cut off at which the lot will be accepted or rejected. For example, if x or more units are bad within the sample, the lot will be rejected. 2) The value of the test statistic that divides all possible values into acceptance and rejection regions.

**Acceptance Sampling:** 1) The process of sampling a portion of goods for inspection rather than examining the entire lot. The entire lot may be accepted or rejected based on the sample even though the specific units in the lot are better or worse than the sample. There are two types: attributes sampling and variables sampling. In attributes sampling, the presence or absence of a characteristic is noted in each of the units inspected. In variables sampling, the numerical magnitude of a characteristic is measured and recorded for each inspected unit; this type of sampling involves reference to a continuous scale of some kind. 2) A method of measuring random samples of lots or batches of products against predetermined standards.

**Accessibility:** A carrier's ability to provide service between an origin and a destination.

**Accessorial Charges:** A carrier's charge for accessorial services such as loading, unloading, pickup, and delivery, or any other charge deemed appropriate.

**Accountability:** Being answerable for, but not necessarily personally charged with, doing specific work. Accountability cannot be delegated, but it can be shared. For example, managers and executives are accountable for business performance even though they may not actually perform the work.

**Accounts Payable (A/P):** The value of goods and services acquired for which payment has not yet been made.

**Accounts Receivable (A/R):** The value of goods shipped or services rendered to a customer on whom payment has not been received. Usually includes an allowance for bad debts.

**Accredited Standards Committee (ASC):** A committee of ANSI chartered in 1979 to develop uniform standards for the electronic interchange of business documents. The committee develops and maintains US generic standards (X12) for Electronic Data Interchange.

**Accumulation Bin:** A place, usually a physical location, used to accumulate all components that go into an assembly before the assembly is sent out to the assembly floor.

**Accuracy:** In quality management, the degree of freedom from error or the degree of conformity to a standard. Accuracy is different from precision. For example, four-significant-digit numbers are less precise than six-significant-digit numbers; however, a properly computed four-significant-digit number might be more accurate than an improperly computed six-significant-digit number.

**Acknowledgement:** A communication by a supplier to advise a purchaser that a purchase order has been received. It usually implies acceptance of the order by the supplier.

**Acquisition Cost:** In cost accounting, the cost required to obtain one or more units of an item. It is order quantity times unit cost.

**Action Message:** An alert that an MRP or DRP system generates to inform the controller of a situation requiring his or her attention.

**Active Stock:** Goods in active pick locations and ready for order filling.

**Activity:** Work performed by people, equipment, technologies, or facilities. Activities are usually described by the action-verb-adjective-noun grammar convention. Activities may occur in a linked sequence and activity-to-activity assignments may exist. (1) In activity-based cost accounting, a task or activity, performed by or at a resource, required in producing the organization's output of goods and services. A resource may be a person, machine, or facility. Activities are grouped into pools by type of activity and allocated to products. (2) In project management, an element of work on a project. It usually has an anticipated duration, anticipated cost, and expected resource requirements. Sometimes major activity is used for larger bodies of work.

**Activity Analysis:** The process of identifying and cataloging activities for detailed understanding and documentation of their characteristics. An activity analysis is accomplished by means of interviews, group sessions, questionnaires, observations, and reviews of physical records of work.

**Activity-Based Budgeting (ABB):** An approach to budgeting where a company uses an understanding of its activities and driver relationships to quantitatively estimate workload and resource requirements as part of an ongoing business plan. Budgets show the types, number of, and cost of resources that activities are expected to consume based on forecasted workloads. The budget is part of an organization's activity-based planning process and can be used in evaluating its success in setting and pursuing strategic goals.

**Activity-Based Costing (ABC):** A methodology that measures the cost and performance of cost objects, activities, and resources. Cost objects consume activities and activities consume resources. Resource costs are assigned to activities based on their use of those resources, and activity costs are reassigned to cost objects (outputs) based on the cost objects proportional use of those activities. Activity-based costing incorporates causal relationships between cost objects and activities and between activities and resources.

**Activity-Based Costing Model:** In activity-based cost accounting, a model, by time period, of resource costs created because of activities related to products or services or other items causing the activity to be carried out.

**Activity-Based Costing System:** A set of activity-based cost accounting models that collectively defines data on an organization's resources, activities, drivers, objects, and measures.

**Activity-Based Management (ABM):** A discipline focusing on the management of activities within business processes as the route to continuously improve both the value received by customers and the profit earned in providing that value. ABM uses activity-based cost information and performance measurements to influence management action.

**Activity-Based Planning (ABP):** Activity-based planning (ABP) is an ongoing process to determine activity and resource requirements (both financial and operational) based on the ongoing demand of products or services by specific customer needs. Resource requirements are compared to resources available and capacity issues are identified and managed.

**Activity-based budgeting (ABB)** is based on the outputs of activity-based planning.

**Activity Level:** A description of types of activities dependent on the functional area. Product-related activity levels may include unit, batch, and product levels. Customer-related activity levels may include customer, market, channel, and project levels.

**Activity profiling:** The systematic analysis of the items and orders handled in a warehouse in order to improve its design and operation.

**Actual Cost System:** A cost system that collects costs historically as they are applied to production, and allocates indirect costs to products based on the specific costs and achieved volume of the products.

**Actual Costs:** The labor, material, and associated overhead costs that are charged against a job as it moves through the production process.

**Actual Demand:** Actual demand is composed of customer orders (and often allocations of items, ingredients, or raw materials to production or distribution). Actual demand nets against or consumes the forecast, depending on the rules chosen over a time horizon.

**Administrative Monetary Penalty System (AMPS):** A Canada Customs system of monetary penalties that will be imposed against violations of Canada Customs regulations.

**Advance Material Request:** Ordering materials before the release of the formal product design. This early release is required because of long lead times.

**Advanced Planning and Scheduling (APS):** Techniques that deal with analysis and planning of logistics and manufacturing over the short, intermediate, and long-term time periods. APS describes any computer program that uses advanced mathematical algorithms or logic to perform optimization or simulation on finite capacity scheduling, sourcing, capital planning, resource planning, forecasting, demand management, and others. These techniques simultaneously consider a range of constraints and business rules to provide real-time planning and scheduling, decision support, available-to-promise, and capable-to-promise capabilities. APS often generates and evaluates multiple scenarios. Management then selects one scenario to use as the official plan. The five main components of an APS system are demand planning, production planning, production scheduling, distribution planning, and transportation planning.

**Advanced Shipping Notice (ASN):** Detailed shipment information transmitted to a customer or consignee in advance of delivery, designating the contents (individual products and quantities of each) and nature of the shipment. May also include carrier and shipment specifics, including time of shipment and expected time of arrival.

**After-Sale Service:** Services provided to the customer after products have been delivered. This can include repairs, maintenance, and/or telephone support.

**Agent:** An enterprise authorized to transact business for, or in the name of, another enterprise.

**Aging:** The separation of invoices, orders, inventory and production lots into time buckets based on due dates, receipt dates, expiration dates, or other factors. Used to focus attention on past due and most urgent items.

**Aggregate Forecast:** An estimate of sales, oftentimes phased, for a grouping of products or product families produced by a facility or firm. Stated in terms of units, dollars, or both, the aggregate forecast is used for sales and production planning (or for sales and operations planning) purposes.

**Aggregate Planning:** A process to develop tactical plans to support the organization's business plan. Aggregate planning usually includes the development, analysis and maintenance of plans for total sales, total production, targeted inventory, and targeted customer backlog for families of products. The production plan is the result of the aggregate planning process. Two approaches to aggregate planning exist - production planning and sales and operations planning.

**Agility:** The ability to successfully manufacture and market a broad range of low-cost, high-quality products and services with short lead times and varying volumes that provides enhanced value to customers through customization. Agility merges the four distinctive competencies of cost, quality, dependability, and flexibility.

**Air Cargo:** Freight that is moved by air transportation.

**Air Cargo Agent:** An agent appointed by an airline to solicit and process international airfreight shipments.

**Air Cargo Containers:** Containers designed to conform to the inside of an aircraft. There are many shapes and sizes of containers. Air cargo containers fall into three categories: 1) air cargo pallets 2) lower deck containers 3) box type containers.

**Air Carrier:** An enterprise that offers transportation service via air.

**Air Taxi:** An exempt for-hire air carrier that will fly anywhere on demand; air taxis are restricted to a maximum payload and passenger capacity per plane.

**Air Waybill (AWB):** A bill of lading for air transport that serves as a receipt for the shipper indicates that the carrier has accepted the goods listed obligates the carrier to carry the consignment to the airport of destination according to specified conditions.

**Allocation:** 1) A distribution of costs using calculations that may be unrelated to physical observations or direct or repeatable cause-and-effect relationships. Because of the arbitrary nature of allocations, costs based on cost causal assignment are viewed as more relevant for management decision-making. 2) Allocation of available inventory to customer and production orders.

**American National Standards Institute (ANSI):** A non-profit organization chartered to develop, maintain, and promulgate voluntary US national standards in a number of areas, especially with regards to setting EDI standards. ANSI is the US representative to the International Standards Organization (ISO).

**American Society of Transportation & Logistics:** A professional organization in the field of logistics.

**American Trucking Associations:** A motor carrier industry association composed of sub-conferences representing various motor carrier industry sectors.

**Any-Quantity (AQ) rate:** A rate that applies to any size shipment tendered to a carrier; no discount rate is available for large shipments.

**Arrival Notice:** A notice from the delivering carrier to the Notify Party indicating the shipment's arrival date at a specific location (normally the destination).

**Assemble to Order:** A production environment where a good or service can be assembled after receipt of a customer's order. The key components (bulk, semi finished, intermediate, sub-assembly, fabricated, purchased, packing, and so on) used in the assembly or finishing process are planned and usually stocked in anticipation of a customer order. Receipt of an order initiates assembly of the customized product. This strategy is useful where a large number of end products (based on the selection of options and accessories) can be assembled from common components.

**Assembly:** A group of subassemblies and/or parts that are put together and constitute a major subdivision for the final product. An assembly may be an end item or a component of a higher-level assembly.

**Association of American Railroads:** A railroad industry association that represents the larger U.S. railroads.

**ATA:** Actual time of arrival, or also known as the American Trucking Associations.

**ATD:** Actual time of departure

**Attributes:** A label used to provide additional classification or information about a resource, activity, or cost object. Used for focusing attention and may be subjective. Examples are a characteristic, a score or grade of product or activity, or groupings of these items, and performance measures.

**Audit:** In reference to freight bills, the term audit is used to determine the accuracy of freight bills.

**Auditability:** A characteristic of modern information systems gauged by the ease with which data can be substantiated by tracing it to source documents, and the extent to which auditors can rely on pre-verified and monitored control processes.

**Audit Trail:** Manual or computerized tracing of the transactions affecting the contents or origin or a record.

**AutoID:** Referring to an automated identification system. This includes technology such as bar coding and radio frequency tagging (RFID).

**Automated Guided Vehicle System (AGVS):** A computer-controlled materials handling system consisting of small vehicles (carts) that move along a guideway.

**Automated Storage/Retrieval System (AS/RS):** A high-density rack inventory storage system with unmanned vehicles automatically loading and unloading products to/from the racks.

**Available to Promise (ATP):** The uncommitted portion of a company's inventory and planned production maintained in the master schedule to support customer-order promising. The ATP 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, ATP includes on-hand inventory less customer orders that are due and overdue. Three methods of calculation are used: discrete ATP, cumulative ATP with look ahead, and cumulative ATP without look ahead.

**Average Cost:** Total cost, fixed plus variable, divided by total output.

**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

**Back Order:** Product ordered but out of stock and promised to ship when the product becomes available.

**Backflush:** method for issuing (reducing on-hand quantities) materials to a production order. With backflushing, the material is issued automatically when production is posted against an operation. The backflushing program will use the quantity completed to calculate through the bill of materials the quantities of the components used, and reduce on-hand balances by these quantities.

**Backhaul:** The process of a transportation vehicle returning from the original destination point to the point of origin. The 1980 Motor Carrier Act deregulated interstate commercial trucking, thereby allowing carriers to contract for the return trip. The backhaul can be with a full, partial, or empty load. An empty backhaul is called deadheading.

**Backorder:** (1) The act of retaining a quantity to ship against an order when other order lines have already been shipped. Backorders are usually caused by stock shortages. (2) The quantity remaining to be shipped if an initial shipment(s) has been processed. *Note:* In some cases, backorders are not allowed. This results in a lost sale when sufficient quantities are not available to completely ship an order or order line.

**Bale:** A large compressed, bound, and often wrapped bundle of a commodity, such as cotton or hay.

**Bar Code:** A symbol consisting of a series of printed bars representing values. A system of optical character reading, scanning, tracking of units by reading a series of printed bars for translation into a numeric or alphanumeric identification code. A popular example is the UPC code used on retail packaging.

**Bar Code Scanner:** A device to read bar codes and communicate data to computer systems.

**Bar Coding:** A method of encoding data for fast and accurate readability. Bar codes are a series of alternating bars and spaces printed or stamped on products, labels, or other media, representing encoded information which can be read by electronic readers called bar.

**Base Currency:** The currency whose value is "one" whenever a quote is made between two currencies.

**Basing-Point Pricing:** A pricing system that includes a transportation cost from a particular city or town in a zone or region even though the shipment does not originate at the basing point.

**Batch Terminal Communications:** The connection between the PC and Batch handheld for purposes of transferring data or WMS program setting.

**Benchmarking:** The process of comparing performance against the practices of other leading companies for the purpose of improving performance. Companies also benchmark internally by tracking and comparing current performance with past performance.

**Benefit-Cost Ratio:** An analytical tool used in public planning; a ratio of total measurable benefits divided by the initial capital cost.

**Best Practice:** A specific process or group of processes which have been recognized as the best method for conducting an action. Best practices may vary by industry or geography depending on the environment being used. Best-practices methodology may be applied with respect to resources, activities, cost object, or processes.

**Bill of Activities:** A listing of activities required by a product, service, process output, or other cost object. Bill of activity attributes could include volume and/or cost of each activity in the listing.

**Bill of Lading (BOL):** A transportation document that is the contract of carriage containing the terms and conditions between the shipper and carrier.

**Bill of Lading Number:** The number assigned by the carrier to identify the bill of lading.

**Bill of Materials:** lists materials (components) required to produce an item. Multilevel BOMs also show subassemblies and their components. Other information such as scrap factors may also be included in the BOM for use in materials planning and costing. Commonly known as a BOM or just a Bill.

**Bill of Material Accuracy:** Conformity of a list of specified items to administrative specifications, with all quantities correct.

**Bill of Resources:** A listing of resources required by an activity. Resource attributes could include cost and volumes.

**Bin Center:** A drop off facility that is smaller than a public warehouse

**Binder:** A strip of cardboard, thin wood, burlap, or similar material placed between layers of containers to hold a stack together.

**Blanket Purchase Order:** A long-term commitment to a supplier for material against which short-term releases will be generated to satisfy requirements. Oftentimes, blanket orders cover only one item with predetermined delivery dates.

**Blanket Rate:** A rate that does not increase according to the distance a commodity is shipped.

**Blanket Release:** The authorization to ship and/or produce against a blanket agreement or contract.

**Blind Receiving:** Receiving goods in a DC without any PO or ASN is termed as blind receiving.

**Bonded Warehouse:** Warehouse approved by the Treasury Department and under bond/guarantee for observance of revenue laws. Used for storing goods until duty is paid or goods are released in some other proper manner.

**Booking:** The act of requesting space and equipment aboard a vessel for cargo which is to be transported.

**Booking Number:** The number assigned to a certain space reservation by the carrier or the carrier's agent.

**Bottleneck:** A constraint, obstacle, or planned control that limits throughput or the utilization of capacity.

**Boxcar:** An enclosed railcar used to transport freight

**Bracing:** To secure a shipment inside a carrier's vehicle to prevent damage.

**Bracketed Recall:** Recall from customers of suspect lot numbers, plus a specified number of lots produced before and after the suspect ones.

**Break-Bulk:** The separation of a consolidated bulk load into smaller individual shipments for delivery to the ultimate consignee. The freight may be moved intact inside the trailer, or it may be interchanged and rehandled to connecting carriers.

**Break Bulk Cargo:** Cargo that is shipped as a unit or package (for example: palletized cargo, boxed cargo, large machinery, trucks) but is not containerized.

**Break Bulk Vessel:** A vessel designed to handle break bulk cargo.



**Break-Even Point:** The level of production or the volume of sales at which operations are neither profitable nor unprofitable. The break-even point is the intersection of the total revenue and total cost curves.

**Buffer:** 1) A quantity of materials awaiting further processing. It can refer to raw materials, semi-finished stores, or hold points, or a work backlog that is purposely maintained behind a work center. 2) In the theory of constraints, buffers can be time or material, and support throughput and/or due date performance. Buffers can be maintained at the constraint, convergent points (with a constraint part), divergent points, and shipping points.

**Buffer Management:** In the theory of constraints, a process in which all expediting in a shop is driven by what is scheduled to be in the buffers (constraint, shipping, and assembly buffers). By expediting this material into the buffers, the system helps avoid idleness at the constraint and missed customer due dates. In addition, the causes of items missing from the buffer are identified, and the frequency of occurrence is used to prioritize improvement activities.

**Buffer Stock:** A quantity of goods or articles kept in storage to safeguard against unforeseen shortages or demands.

**Build to Inventory:** A "push" system of production and inventory management. Product is manufactured or acquired in response to sales forecasts.

**Build to Order:** A method of reducing inventory by not manufacturing product until there is an actual order from the customer.

**Bulk Area:** A storage area for large items which at a minimum are most efficiently handled by the pallet load.

**Bulk Cargo:** Unpacked dry cargo such as grain, iron ore or coal. Any commodity shipped in this way is said to be in bulk.

**Bullwhip Effect:** An extreme change in the supply position upstream in a supply chain generated by a small change in demand downstream in the supply chain. Inventory can quickly move from being backordered to being in excess. This is caused by the serial nature of communicating orders up the chain with the inherent transportation delays of moving product down the chain. The bullwhip effect can be eliminated by synchronizing the supply chain.

**Bundling:** An occurrence where two or more products are combined into one transaction for a single price.

**Business Application:** Any computer program, set of programs, or package of programs created to solve a particular business problem or function.

**Business Logistics:** The process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

**Business Plan:** (1) A statement of long-range strategy and revenue, cost, and profit objectives usually accompanied by budgets, a projected balance sheet, and a cash flow (source and application of funds) statement. A business plan is usually stated in terms of dollars and grouped by product family. The business plan is then translated into synchronized tactical functional plans through the production planning process (or the sales and operations planning process). Although frequently stated in different terms (dollars versus units), these tactical plans should agree with each other and with the business plan. (2) A document consisting of the business details (organization, strategy, and financing tactics) prepared by an entrepreneur to plan for a new business.

**Business Performance Measurement (BPM):** A technique that uses a system of goals and metrics to monitor performance. Analysis of these measurements can help businesses periodically set business goals, and then provide feedback to managers on progress towards those goals. A specific measure can be compared to itself over time, compared with a present target, or evaluated along with other measures.

**Business Process Outsourcing (BPO):** The practice of outsourcing non-core internal functions to third parties. Functions typically outsourced include logistics, accounts payable, accounts receivable, payroll, and human resources. Other areas can include IT development or complete management of the IT functions of the enterprise.

**Business Process Reengineering (BPR):** The fundamental rethinking and radical redesign of business processes to achieve dramatic organizational improvements.

**Business Unit:** A division or segment of an organization generally treated as a separate profit-and-loss center.

**Buyer:** An enterprise that arranges for the acquisition of goods or services and agrees to payment terms for such goods or services.

**Cab Extenders:** Also called gap seals, which help to close the gap between the tractor and the trailer

**Cabotage:** A federal law that requires coastal and inter-coastal traffic to be carried in U.S.-built and registered ships.

**Cage:** (1) A secure enclosed area for storing highly valuable items (2) A pallet-sized platform with sides that can be secured to the tines of a forklift and in which a person may ride to inventory items stored well above the warehouse floor.

**Caged:** Referring to the practice of placing high-value or sensitive products in a fenced off area within a warehouse.

**Can-Order Point:** An ordering system used when multiple items are ordered from one vendor. The can-order point is a point higher than the original order point. When any one of the items triggers an order by reaching the must-order point, all items below their can-order point are also ordered. The can-order point is set by considering is set by considering the additional holding cost that would be incurred if the item were ordered early.

**Capacity Management:** The concept that capacity should be understood, defined, and measured for each level in the organization to include market segments, products, processes, activities, and resources. In each of these applications, capacity is defined in a hierarchy of idle, non-productive, and productive views.

**Capacity Requirements Planning:** CRP is a capacity planning tool used to verify the ability of resources to meet scheduled production. CRP uses the routings to calculate loads on work centers, and then compares these loads to the capacity of these work centers. CRP is more detailed than either rough-cut capacity planning or resources requirements planning.

**CAPEX:** A term used to describe the monetary requirements (CAPital EXpenditure) of an initial investment in new machines or equipment.

**Capital:** The resources, or money, available for investing in assets that produce output.

**Cargo:** Merchandise carried by a means of transportation.

**Carnet:** A Customs document permitting the holder to carry or send special categories of goods temporarily into certain foreign countries without paying duties or posting bonds.

**Carrier:** This refers to the business that is used for delivery. Examples of carriers include: Royal Mail, Parcelforce, UPS, Yodel, City Link, etc.

**Carrier Assets:** Items that a carrier owns (technically or outright) to facilitate the services they provide.

**Carrier Certificate and Release Order:** Used to advise customs of the shipment's details. By means of this document, the carrier certifies that the firm or individual named in the certificate is the owner or consignee of the cargo.

**Carrier Liability:** A common carrier is liable for all shipment loss, damage, and delay with the exception of that caused by act of God, act of a public enemy, act of a public authority, act of the shipper, and the goods' inherent nature.

**Carrier Service:** This term refers to the type of service that a carrier offers. This may relate to speed, package or shipment size, special handling requirements or signature.

**Carrying costs:** the costs associated with having specific quantities of inventory. Carrying costs primarily include the cost of the inventory investment and the costs associated with storing the inventory. Carrying costs are used in cost-based lot sizing calculations such as EOQ.

**Cartage:** There are two definitions for this term: 1) charge for pick-up and delivery of goods 2) movement of goods locally (short distances).

**Carton Flow Rack:** A storage rack consisting of multiple lines of gravity flow conveyors.

**Case picking:** Retrieval of full carton loads of each item or inner packs of items from cartons (the latter a.k.a. split-case picking).

**Cash Conversion Cycle:** 1) In retailing, the length of time between the sale of products and the cash payments for a company's resources. 2) In manufacturing, the length of time from the purchase of raw materials to the collection of accounts receivable from customers for the sale of products or services.

**Cash-to-Cash Cycle Time:** The time it takes for cash to flow back into a company after it has been spent for raw materials. Total Inventory Days of Supply + Days of Sales Outstanding - Average Payment Period for Material in Days.

**Category Management:** The management of product categories as strategic business units. This practice empowers a category manager with full responsibility for the assortment decisions, inventory levels, shelf-space allocation, promotions, and buying. With this authority and responsibility, the category manager is able to more accurately judge the consumer buying patterns, product sales, and market trends of that category.

**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

**CCD Scanner:** A nice compromise in price and performance between a pen and a laser, this Charged Coupled Device (CCD) scans up to 200 times per second and reads from as far as 4 inches from the bar code. Very durable.

**CELL:** A manufacturing or service unit consisting of a number of workstations, and the materials transport mechanisms and storage buffers that interconnect them.

**Central Dispatching:** The organization of the dispatching function into one central location. This structure often involves the use of data collection devices for communication between the centralized dispatching function which usually reports to the production control department and the shop manufacturing departments.

**Centralized Inventory Control:** Inventory decision-making (for all SKUs) exercised from one office or department for an entire company.

**Certificate of Compliance:** A supplier's certification that the supplies or services in question meet specified requirements.

**Certificate of Insurance:** A negotiable document indicating that insurance has been secured under an open policy to cover loss or damage to a shipment while in transit.

**Certificate of Origin:** A document containing an affidavit to prove the origin of imported goods. Used for customs and foreign exchange purposes.

**Certificated Carrier:** A for-hire air carrier that is subject to economic regulation and requires an operating certification to provide service.

**Certified Supplier:** A status awarded to a supplier who consistently meets predetermined quality, cost, delivery, financial, and count objectives. Incoming inspection may not be required.

**Change Management:** The business process that coordinates and monitors all changes to the business processes and applications operated by the business, as well as to their internal equipment, resources, operating systems, and procedures. The change management discipline is carried out in a way that minimizes the risk of problems that will affect the operating environment and service delivery to the users.

**Change Order:** A formal notification that a purchase order or shop order must be modified in some way. This change can result from a revised quantity, date, or specification by the customer; an engineering change; a change in inventory requirement data; etc.

**Changeover:** Process of making necessary adjustments to change or switchover the type of products produced on a manufacturing line. Changeovers usually lead to downtime and for the most part, companies try to minimize changeover time to help reduce costs.

**Channel: 1.** A method whereby a business dispenses its product, such as a retail or distribution channel, call center, or a web-based electronic storefront. **2.** A push technology that allows users to subscribe to a web site to browse offline, automatically display updated pages on their screen savers, and download or receive notifications when pages in the web site are modified. Channels are available only in browsers that support channel definitions such as Microsoft Internet Explorer version 4.0.

**Channel Conflict:** This occurs when various sales channels within a company's supply chain compete with each other for the same business. An example is where a retail channel is in competition with a web-based channel set up by the company.

**Channel Partners:** Members of a supply chain (i.e., suppliers, manufacturers, distributors, retailers, etc.) who work in conjunction with one another to manufacture, distribute, and sell a specific product.

**Channels of Distribution:** Any series of firms or individuals that participates in the flow of goods and services from the raw material supplier and producer to the final user or consumer.

**Chargeable Weight:** The shipment weight used in determining freight charges. The chargeable weight may be the dimensional weight or, for container shipments, the gross weight of the shipment less the tare weight of the container.

**Charging Area:** A warehouse area where a company maintains battery chargers and extra batteries to support a fleet of electrically powered materials handling equipment. The company must maintain this area in accordance with government safety regulations.

**Chock:** A wedge usually made of hard rubber or steel that is firmly placed under the wheel of a trailer, truck, or boxcar to stop it from rolling.

**CL:** Carload rail service requiring shipper to meet minimum weight.

**Claim:** A charge made against a carrier for loss, damage, delay, or overcharge.

**Class I Carrier:** A classification of regulated carriers based upon annual operating revenues -- motor carriers of property: \$5 million; railroads: \$50 million; motor carriers of passengers: \$3 million.

**Class II Carrier:** A classification of regulated carriers based upon annual operating revenues -- motor carriers of property: \$1-\$5 million; railroads: \$10-\$50 million; motor carriers of passengers: \$3 million.

**Class III Carrier:** A classification of regulated carriers based upon annual operating revenues -- motor carriers of property: \$1 million; railroads \$10 million.

**Class 1 Railroad:** A line haul freight railroad of US ownership with operating revenue in excess of \$272.0 million. There are seven (7) Class 1 Railroads in the United States. Two Mexican and two Canadian railroads would also qualify, if they were US companies.

**Class Rates:** A grouping of goods or commodities under one general heading. All the items in the group make up a class. The freight rates that apply to all items in the class are called "class rates."

**Classification:** An alphabetical listing of commodities, the class or rating into which the commodity is placed, and the minimum weight necessary for the rate discount; used in the class rate structure.

**Classification yard:** A railroad terminal area where railcars are grouped together to form train units.

**Clearance:** A document stating that a shipment is free to be imported into the country after all legal requirements have been met.

**Clearinghouse:** A conventional or limited-purpose entity generally restricted to providing specialized services, such as clearing funds or settling accounts.

**CLM:** Council of Logistics Management, now known as The Council of Supply Chain Management Professionals.

**Closed Loop MRP:** A system build around material requirements planning that includes the additional planning processes of production planning (sales and operations planning), master production scheduling, and capacity requirements planning. Once this planning phase is complete and the plans have been accepted as realistic and attainable, the execution processes come into play. These processes include the manufacturing control process of input-output (capacity) measurement, detailed scheduling and dispatching, as well as anticipated delay reports from both the plant and suppliers, supplier scheduling, and so on. The term "closed loop" implies not only that each of these processes is included in the overall system, but also that feedback is provided by the execution processes so that the planning can be kept valid at all times..

**Co-Packer:** A contract co-packer produces goods and/or services for other companies, usually under the other company's label or name. Co-packers are more frequently seen in consumer packaged goods and foods.

**Co-Managed Inventory (CMI):** A form of continuous replenishment in which the manufacturer is responsible for replenishment of standard merchandise, while the retailer manages the replenishment of promotional merchandise.

**Coastal Carriers:** Water carriers that provide service along coasts serving ports on the Atlantic or Pacific Oceans or on the Gulf of Mexico.

**Collaborative Planning, Forecasting, and Replenishment (CPFR):** (1) A collaboration process whereby supply chain trading partners can jointly plan key supply chain activities from production and delivery of raw materials, to production and delivery of final products to end customers. Collaboration encompasses business planning, sales forecasting, and all operations required to replenish raw materials and finished goods. (2) A process philosophy for facilitating collaborative communications. CPFR is considered a standard, endorsed by the Voluntary Inter-Industry Commerce Standards.

**Collect Freight:** Freight payable to the carrier at the port of discharge or ultimate destination. The consignee does not pay the freight charge if the cargo does not arrive at the destination.

**Commercial Invoice:** A document created by the seller. It is an official document which is used to indicate, among other things, the name and address of the buyer and seller, the product(s) being shipped, and their value for customs, insurance, or other purposes.

**Commercial zone:** The area surrounding a city or town to which rate carriers quote for the city or town also apply; the ICC defines the area.

**Committed Capability:** The portion of the production capability that is currently in use, or is scheduled for use.

**Commodity Code:** A code describing a commodity or a group of commodities pertaining to goods classification. This code can be carrier tariff or regulating in nature.

**Commodity Procurement Strategy:** The purchasing plan for a family of items. This would include the plan to manage the supplier base and solve problems.

**Commodity Rate:** A rate for a specific commodity and its origin-destination.

**Common Carrier:** Transportation available to the public that does not provide special treatment to any one party and is regulated as to the rates charged, the liability assumed, and the service provided. A common carrier must obtain a certificate of public convenience and necessity from the Federal Trade Commission for interstate traffic.

**Competitive Benchmarking:** Benchmarking a product or service against competitors.

**Competitive Bid:** A price/service offering by a supplier that must compete with offerings from other suppliers.

**Complete and On-Time Delivery (COTD):** A measure of customer service. All items on any given order must be delivered on time for the order to be considered as complete and on time.

**Complete Manufacture to Ship Time:** Average time from when a unit is declared shippable by manufacturing until the unit actually ships to a customer.

**Compliance:** Meaning that products, services, processes, and/or documents comply with requirements.

**Component:** Material that will contribute to a finished product but is not the finished product itself. Examples include tires for an automobile, power supply for a personal computer, or a zipper for a ski parka.

**Composite forecast:** a forecast that is created by combining (through averaging or weighted averaging) the results of multiple forecasting methods.

**Conference Carrier:** An ocean carrier who is a member of an association known as a "conference." The purpose of the conference is to standardize shipping practices, eliminate freight rate competition, and provide regularly scheduled service between specific ports.

**Configuration:** The arrangement of components as specified to produce an assembly.

**Configure/Package to Order:** A process where the trigger to begin to manufacture, final assembly, or packaging of a product is an actual customer order or release rather than a market forecast. In order to be considered a configure-to-order environment, less than 20% of the value added takes place after the receipt of the order or release, and virtually all necessary design and process documentation is available at time of order receipt.

**Confirmation:** With regards to EDI, a formal notice (by message or code) from an electronic mailbox system or EDI server indicating that a message sent to a trading partner has reached its intended mailbox or has been retrieved by the addressee.

**Consignee:** The party to whom goods are shipped and delivered. The receiver of a freight shipment.

**Consignment inventory:** inventory that is in the possession of the customer, but is still owned by the supplier. The supplier places some of his inventory in his customer's possession (in their store, warehouse, or plant) and allows them to sell or consume directly from his stock. The customer purchases the inventory only after he has resold or consumed it.

**Consignor:** The party who originates a shipment of goods (shipper). The sender of a freight shipment, usually the seller.

**Consolidation:** Combining two or more shipments in order to realize lower transportation rates. Inbound consolidation from vendors is called make-bulk consolidation; outbound consolidation to customers is called break-bulk consolidation.

**Consolidation Point:** The location where consolidation takes place.

**Consolidator:** An enterprise that provides services to group shipments, orders, and/or goods to facilitate movement.

**Consolidator's Bill of Lading:** A bill of lading issued by a consolidator as a receipt for merchandise that will be grouped with cargo obtained from other shippers.

**Consortium:** A group of companies that works together to jointly produce a product, service, or project.

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

**Container:** (1) A box, typically 10 to 40 feet long, which is primarily used for ocean freight shipments. For travel to and from ports, containers are loaded onto truck chassis or on railroad flatcars. (2) The packaging, such as a carton, case, box, bucket, drum, bin, bottle, bundle, or bag, that an item is packed and shipped in.

**Container Chassis:** A vehicle built for the purpose of transporting a container so that, when a container and chassis are assembled, the produced unit serves as a road trailer.

**Container Freight Station (CFS):** The location designated by carriers for receipt of cargo to be packed into containers/equipment by the carrier. At destination, CFS is the location designated by the carrier for unpacking of cargo from equipment/containers.

**Container Freight Station Charge:** The charge assessed for services performed at the loading or discharge location.

**Container Freight Station to Container Freight Station (CFS/CFS):** A type of steamship-line service in which cargo is transported between container freight stations, where containers may be stuffed, stripped, or consolidated. Usually used for less-than-container load shipments.

**Container I.D.:** An identifier assigned to a container by a carrier.

**Containerization:** A shipment method in which commodities are placed in containers, and after initial loading, the commodities, per se, are not rehandled in shipment until they are unloaded at the destination.

**Container on Flat Car (COFC):** A container that is transported on a rail flatcar. It can be shipped via tractor/trailer using a chassis as the wheel section.

**Container Yard:** The location designated by the carrier for receiving, assembling, holding, storing, and delivering containers, and where containers may be picked up by shippers or redelivered by consignees.

**Continuous Flow Distribution (CFD):** The streamlined pull of products in response to customer requirements while minimizing the total costs of distribution.

**Continuous-Flow, Fixed-Path Equipment:** Materials handling devices that include conveyors and drag lines.

**Continuous Improvement (CI):** A structured, measurement-driven process that continually reviews and improves performance.

**Continuous Replenishment:** Continuous replenishment is the practice of partnering between distribution channel members that changes the traditional replenishment process from distributor-generated purchase orders based on economic order quantities to the replenishment of products based on actual and forecasted product demand.

**Contract:** An agreement between two or more competent persons or companies to perform or not to perform specific acts or services or to deliver merchandise. A contract may be oral or written. A purchase order, when accepted by a supplier, becomes a contract. Acceptance may be in writing or by performance, unless the purchase order requires acceptance in writing.

**Contract Carrier:** A for-hire carrier that does not serve the general public but serves shippers with whom the carrier has a continuing contract. The contract carrier must secure a permit to operate.

**Contract of Affreightment:** A contract between a cargo shipper and carrier for the transport of multiple cargoes over a period of time. Contracts are individually negotiated and usually include cargo description, quantities per shipment and in total, load and discharge ports, freight rates and duration of the contract.

**Contract warehouse:** Business that handles shipping, receiving, and storage of products on a contract basis

**Contribution:** The difference between sales price and various costs. Contribution is used to cover fixed costs and profits.

**Contribution Margin:** An amount equal to the difference between sales revenue and variable costs.

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

**Controlled Access:** Referring to an area within a warehouse or yard that is fenced and gated. These areas are typically used to store high-value items and may be monitored by security cameras.

**Conveyance:** The application used to describe the function of a vehicle of transfer.

**Conveyor:** A materials handling device that moves freight from one warehouse area to another. Roller conveyors utilize gravity, whereas belt conveyors use motors.

**Cooperative Associations:** Groups of firms or individuals having common interests; agricultural cooperative associations may haul up to 25 percent of their total interstate non-farm, nonmember goods tonnage in movements incidental and necessary to their primary business.

**Coordinated Transportation:** Two or more carriers of different modes transporting a shipment.

**Core Competency:** Bundles of skills or knowledge sets that enable a firm to provide the greatest level of value to its customers in a way that's difficult for competitors to emulate and that provides for future growth. Core competencies are embodied in the skills of the workers and in the organization. They are developed through collective learning, communication, and commitment to work across levels and functions in the organization and with the customers and suppliers. A core competency could be the capability of a firm to coordinate and harmonize diverse production skills and multiple technologies.

**Core Process:** That unique capability that is central to a company's competitive strategy.

**Corporate strategy:** the set of strategic decisions that affect the whole corporation

**Cost Allocation:** In accounting, the assignment of costs that cannot be directly related to production activities via more measurable means, e.g., assigning corporate expenses to different products via direct labor costs or hours.

**Cost Center:** In accounting, a sub-unit in an organization that is responsible for costs.

**Cost Driver:** In accounting, any situation or event that causes a change in the consumption of a resource, or influences quality or cycle time. An activity may have multiple cost drivers. Cost drivers do not necessarily need to be quantified; however, they strongly influence the selection and magnitude of resource drivers and activity drivers.

**Cost Driver Analysis:** In cost accounting, the examination, quantification, and explanation of the effects of cost drivers. The results are often used for continuous improvement programs to reduce throughput times, improve quality, and reduce cost.

**Cost, Insurance, Freight:** A freight term indicating that the seller is responsible for cost, the marine insurance, and the freight charges on an ocean shipment of goods.

**Cost Management:** The management and control of activities and drivers to calculate accurate product and service costs, improve business processes, eliminate waste, influence cost drivers, and plan operations. The resulting information can be very useful in setting and evaluating an organization's strategies.

**Cost of capital:** costs associated with having money tied up in inventory. Generally this would be the interest rate paid on business debt, but could optionally be the return on investment a company could expect if it had access to money to invest.



**Cost of goods sold:** accounting term used to describe the total value (cost) of products sold during a specific period of time. Since inventory is an asset, it is not expensed when it is purchased or produced; it instead goes into an asset account (the inventory account). When product is sold, the value of the product (the cost, not the sell price) is moved from the asset account to an expense account called “cost of goods sold” or COGS. COGS appear on the profit and loss statement and are also used in some inventory measurements (such as inventory turns).

**Cost of Lost Sales:** The forgone profit companies associate with a stockout.

**Council of Supply Chain Management Professionals (CSCMP):** The CSCMP is a not-for-profit professional business organization consisting of individuals throughout the world who have interests and/or responsibilities in logistics and supply chain management, and the related functions that make up these professions. Its purpose is to enhance the development of the logistics and supply chain management professions by providing these individuals with educational opportunities and relevant information through a variety of programs, services, and activities.

**Countertrade:** A reciprocal trading agreement that includes a variety of transactions involving two or more parties.

**Courier Service:** A fast, door-to-door service for high-valued goods and documents; firms usually limit service to shipments weighing fifty pounds or less.

**Crane:** A materials handling device that lifts heavy items. There are two types: bridge and stacker.

**Credit Terms:** The agreement between two or more enterprises concerning the amount and timing of payment for goods or services.

**Critical Differentiators:** This is what makes an idea, product, service, or business model unique.

**Critical Stock:** Commodity that must be maintained in inventory, though little used, to respond to expressed need.

**Critical Success Factor (CSF):** Those activities and/or processes that must be completed and/or controlled to enable a company to reach its goals.

**Cross Docking:** A distribution system in which merchandise received at the warehouse or distribution center is not put away, but instead is readied for shipment to retail stores. Cross docking requires close synchronization of all inbound and outbound shipment movements. By eliminating the put-away, storage, and selection operations, it can significantly reduce distribution costs.

**Cubage:** Cubic volume of space being used or available for shipping or storage.

**Cube Out:** The situation when a piece of equipment has reached its volumetric capacity before reaching the permitted weight limit.

**Cube Utilization:** In warehousing, a measurement of the utilization of the total storage capacity of a vehicle or warehouse.

**Cubic Capacity:** The carrying capacity of a piece of equipment according to measurement in cubic feet.

**Cubic Space:** In warehousing, a measurement of space available, or required, in transportation and warehousing.

**Cubing:** The cubic size of the item may be created for the item's units of measurement (i.e., each, box, and case) and stored in the item's record (at the Item Data form). When prompted to perform a move, receipt, or put away, the system is able to determine space availability in a particular location. If a location has insufficient space to accommodate the material, the system directs the user to select another location. The user can also override and store the item in the location.

**Cumulative Lead Time:** The total time required to source components, build, and ship a product.

**Currency Adjustment Factor (CAF):** A surcharge imposed by a carrier on ocean freight charges to offset foreign currency fluctuations.

**Current-demand inventory:** inventory carried to meet immediate expected demand. For example, the inventory that will be shipping in today's orders. The definition of "current demand" is somewhat subject to interpretation since you must apply a period of time to determine what is considered "current demand" as opposed to "future demand".

**Customer Acquisition or Retention:** The rate at which new customers are acquired, or existing customers are retained. A key selling point to potential marquis partners.

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

**Customer/Order Fulfillment Process:** A series of customers' interactions with an organization through the order-filling process, including product/service design, production and delivery, and order stats reporting.

**Customer Relationship Management (CRM):** This refers to information systems that help sales and marketing functions as opposed to the ERP (Enterprise Resource Planning), which is for back-end integration.

**Customer Segmentation:** Dividing customers into groups based on specific criteria, such as products purchased, customer geographic location, etc.

**Customer-Supplier Partnership:** A long-term relationship between a buyer and a supplier characterized by teamwork and mutual confidence. The supplier is considered an extension of the buyer's organization. The partnership is based on several commitments. The buyer provides long-term contracts and uses fewer suppliers. The supplier implements quality assurance processes so that incoming inspection can be minimized. The supplier also helps the buyer reduce costs and improve product and process designs.

**Customization:** Creating a product from existing components into an individual order.

**Customs:** The authorities designated to collect duties levied by a country on imports and exports.

**Customs Broker:** A firm that represents importers/exporters in dealings with customs. Normally responsible for obtaining and submitting all documents for clearing merchandise through customs, arranging inland transport, and paying all charges related to these functions.

**Customs Clearance:** The act of obtaining permission to import merchandise from another country into the importing nation.

**Customs House Broker:** A business firm that oversees the movement of international shipments through Customs, and ensures that the documentation accompanying a shipment is complete and accurate.

**Customs Invoice:** A document that contains a declaration by the seller, the shipper, or the agent as to the value of the shipment.

**Customs Value:** The value of the imported goods on which duties will be assessed.

**CWT:** The abbreviation for hundredweight, which is the equivalent of 100 pounds.

**Cycle Inventory:** An inventory system where counts are performed continuously, often eliminating the need for an annual overall inventory. It is usually set up so that A items are counted regularly (i.e., every month), B items are counted semi-regularly (every quarter or six months), and C items are counted perhaps only once a year.

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

**Cycle stock:** normal stock used during operations

**Cycle Time:** The amount of time it takes to complete a business process.

**Dashboard:** A performance measurement tool used to capture a summary of the key performance indicators/metrics of a company. Metrics dashboards/scorecards should be easy to read and usually have red, yellow, green indicators to flag when the company is not meeting its metrics targets. Ideally, a dashboard/scoreboard should be cross functional in nature and include both financial and non-financial measures. In addition, scorecards should be reviewed regularly - at least on a monthly basis, and weekly in key functions such as manufacturing and distribution where activities are critical to the success of a company. The dashboards/scorecards philosophy can also be applied to external supply chain partners like suppliers to ensure that their objectives and practices align.

**Data Dictionary:** Lists the data elements for which standards exist. The Joint Electronic Document Interchange (JEDI) committee developed a data dictionary that is employed by many EDI users.

**Data Mining:** The process of studying data to search for previously unknown relationships. This knowledge is then applied to achieving specific business goals.

**Data Synchronization:** The data transfer process between a handheld device and a desktop computer.

**Data Warehouse:** A repository of data that has been specially prepared to support decision-making applications.

**Date Code:** A label on products with the date of production. In food industries, it's often an integral part of the lot number.

**Days of Supply:** Measure of quantity of inventory on hand in relation to number of days for which usage will be covered. For example, if a component is consumed in manufacturing at the rate of 100 per day and there are 1,585 units available on hand, this represents 15.85 days' supply.

**DDP:** Delivered Duty Paid. Relates to international delivery where the price quoted by a seller and/or paid by the customer for their order includes all of the relevant charges such as customs import fees, any taxes and/or duty charges. These fees / taxes / duties are to be paid for by the shipper of the order.

**DDU:** Delivered Duty Unpaid. Relates to international delivery where the quoted by a seller and/or paid by the customer does not include all charges, such as customs import fees, any taxes and/or duty charges. These fees / taxes / duties are to be paid for by the recipient of the shipment on delivery.

**Deadweight Tons (DWT):** The cargo carrying capacity of a vessel, including fuel oil, stores and provisions.

**Declaration of Dangerous Goods:** To comply with the U.S. regulations, exporters are required to provide special notices to inland and ocean transport companies when goods are hazardous.

**Declared Value for Carriage:** The value of the goods, declared by the shipper on a bill of lading, for the purpose of determining a freight rate or the limit of the carrier's liability.

**Deconsolidator:** An enterprise that provides services to un-group shipments, orders, goods, etc., to facilitate distribution.

**Dedicated Contract Carriage:** A third party service that dedicates equipment (vehicles) and drivers to a single customer for its exclusive use on a contractual basis.

**Defective goods inventory (DGI):** Those items that have been returned, have been delivered damaged and have a freight claim outstanding, or have been damaged in some way during warehouse handling.

**Delivery Appointment:** The time agreed upon between two enterprises for goods or transportation equipment to arrive at a selected location.

**Delivery Confirmation:** An electronic message sent by the carrier to confirm that the shipment has been successfully delivered. Depending on the carrier service, this may be the final delivery status update message.

**Delivery-Duty-Paid:** Supplier/manufacturer arrangement in which suppliers are responsible for the transport of the goods they've produced, which are being sent to a manufacturer. This responsibility includes tasks such as ensuring that products get through Customs.

**Delivery Order:** A document issued by the customs broker to the ocean carrier as authority to release the cargo to the appropriate party.

**Delivery Option:** This is the choice of delivery that a customer may choose when placing an order.

**Delivery Service:** This term refers to the type of service that a retailer/shipper offers and might be agnostic to carrier/carrier service. A delivery usually relates to speed of delivery, timeslot for delivery or the type of delivery. For example, "standard", "next day", "pre 12pm" or "deliver to locker" are all examples of delivery service.

**Demand Chain Management:** The same as supply chain management, but with an emphasis on consumer pull versus supplier push.

**Demand:** the need for a specific item in a specific quantity.

**Demand override:** any adjustment that is used to supersede your demand history (usually for the purposes of forecasting or calculating safety stock). A demand override can be a fixed quantity that will be used to replace the actual demand, or it can be a factor that can be used to adjust the demand.

**Demand Planning Systems:** The systems that assist in the process of identifying, aggregating, and prioritizing all sources of demand for the integrated supply chain of a product of service at the appropriate level, horizon, and interval.

**Demand Signal:** A signal from a consumer, customer or using operation that triggers the issue of product or raw material.

**Demand Supply Balancing:** The process of identifying and measuring the gaps and imbalances between demand and resources in order to determine how to best resolve the variances through marketing, pricing, packaging, warehousing, outsource plans, or some other action that will optimize service, flexibility, costs, assets, (or other supply chain inconsistencies) in an iterative and collaborative environment.

**Demand variability:** changes in demand from period to period. Demand variability is the result of trend, seasonality, events, and noise.

**Demurrage:** The carrier charges and fees applied when rail freight cars and ships are retained beyond a specified loading or unloading time.

**Deregulation:** Revisions or complete elimination of economic regulations controlling transportation. The Motor Carrier Act of 1980 and the Staggers Act of 1980 revised the economic controls over motor carriers and railroads, and the Airline Deregulation Act of 1978 eliminated economic controls over air carriers.

**Dispatch Confirmation:** An electronic message sent by the warehouse to confirm that a specific parcel, package or shipment has successfully left the warehouse. A dispatch confirmation may contain the parcel tracking number.

**Destination:** The location designated as a receipt point for goods/shipment.

**Destock:** reduce the amount of stock held

**Devanning:** The unloading of cargo from a container or other piece of equipment.

**Differential:** A discount offered by a carrier that faces a service time disadvantage over a route.

**Direct Cost:** A cost that can be directly traced to a cost object since a direct or repeatable cause-and-effect relationship exists. A direct cost uses a direct assignment or cost causal relationship to transfer costs.

**Direct Product Profitability (DPP):** Calculation of the net profit contribution attributable to a specific product or product line.

**Direct Production Material:** Material that is used in the manufacturing/content of a product. (*Example: purchased parts, solder, SMT glues, adhesives, mechanical parts, bill-of-materials parts, etc.*)

**Direct Retail Locations:** A retail location that purchases products directly from your organization or responding entity.

**Direct shipping:** a procurement strategy that allows a company to sell product without ever stocking or even handling the product. When a customer places an order with a seller, the order is passed on to the seller's supplier who will then ship the product directly to the customer.

**Direct Store Delivery (DSD):** Process of shipping direct from a manufacturer's plant or distribution center to the customer's retail store, thus bypassing the customer's distribution center.

**Discrete Manufacturing:** Discrete manufacturing processes create products by assembling unconnected distinct parts as in the production of distinct items such as automobiles, appliances, or computers.

**Discrete picking:** An order picking method where a single picker picks all of the items for a single order.

**Distributed Inventory:** Inventory that is geographically dispersed. For example, where a company maintains inventory in multiple distribution centers to provide a higher level of customer service.

**Distribution:** Outbound logistics, from the end of the production line to the end user. The activities associated with the movement of material, usually finished goods or service parts, from the manufacturer to the customer. These activities encompass the functions of transportation, warehousing, inventory control, material handling, order administration, site and location analysis, industrial packaging, data processing, and the communications network necessary for effective management. It includes all activities related to physical distribution, as well as the return of goods to the manufacturer. In many cases, this movement is made through one or more levels of field warehouses. The systematic division of a whole into discrete parts having distinctive characteristics.

**Distribution Center (DC):** The warehouse facility which holds inventory from manufacturing pending distribution to the appropriate stores.

**Distribution Channel:** One or more companies or individuals who participate in the flow of goods and services from the manufacturer to the final user or consumer.

**Distribution Channel Management:** The organizational and pipeline strategy for getting products to customers. Direct channels involve company sales forces, facilities, and/or direct shipments to customers; indirect channels involve the use of wholesalers, distributors, and/or other parties to supply the products to customers. Many companies use both strategies, depending on markets and effectiveness.

**Distribution inventory:** distribution inventory is the result of a distribution network and the increases in inventory required to operate out of multiple distribution points. When you decide to have two or three or more strategically located distribution centers rather than a single centrally located distribution center, you will generally increase your overall inventory levels. The reason for this is you are now breaking up your demand among three locations. When demand is broken up (disaggregated) you will usually find greater variability in the demand at each location. This increase in variability results in increases in safety stock in order to meet desired service levels. This increase in safety stock is essentially your distribution inventory. Some practitioners consider all inventory in the distribution network to be distribution inventory. I disagree with that definition, since much of that inventory would exist regardless of the distribution network.

**Distribution Planning:** The planning activities associated with transportation, warehousing, inventory levels, materials handling, order administration, site and location planning, industrial packaging, data processing, and communications networks to support distribution.

**Distribution Requirements Planning (DRP):** A system of determining demands for inventory at distribution centers and consolidating demand information in reverse as input to the production and materials system.

**Distribution Resource Planning (DRP II):** The extension of distribution requirements planning into the planning of the key resources contained in a distribution system: warehouse space, workforce, money, trucks, freight cars, etc.

**Distribution Warehouse:** A finished goods warehouse from which a company assembles customer orders.

**Distributor:** A business that does not manufacture its own products, but purchases and resells these products. Such a business usually maintains a finished goods inventory. *Synonym: Wholesaler.*

**Dock Receipt:** A document used to accept materials or equipment at an ocean pier or accepted location. Provides the ocean carrier with verification of receipt and the delivering carrier with proof of delivery.

**Dock-to-stock cycle measurement:** measuring the amount of time it takes between the time something arrives at your dock, and the time it is in stock and available for sale or use.

**Document:** In EDI, a form, such as an invoice or purchase order, that trading partners have agreed to exchange and that the EDI software handles within its compliance-checking logic.

**Domestic Trunk Line Carrier:** A classification for air carriers that operate between major population centers. These carriers are now classified as major carriers.

**Double-Pallet Jack:** A mechanized device for transporting two standard pallets simultaneously.

**Drayage:** The service offered by a motor carrier for pick-up and delivery of ocean containers or rail containers. Drayage agents usually handle full-load containers for ocean and rail carriers.

**Drayage Firms:** Motor carriers that provide local pickup and delivery of trailers and containers (on chassis)

**Driving Time Regulations:** U.S. Department of Transportation rules that limit the maximum time a driver may drive in interstate commerce; the rules prescribe both daily and weekly maximums.

**Drop:** A situation in which an equipment operator deposits a trailer or boxcar at a facility at which it is to be loaded or unloaded.

**Drop Ship:** To take the title of the products but not actually handle, stock, or deliver it, e.g., to have one supplier ship directly to another or to have a supplier ship directly to the buyer's customer.

**Dual Operation:** A motor carrier that has both common and contract carrier operating authority.

**Dual rate system:** An international water carrier pricing system in which a shipper signing an exclusive use agreement with the conference pays a rate 10 to 15 percent lower than non-signing shippers do for an identical shipment.

**Dumping:** When a product is sold below cost in a foreign market and/or when a product is sold at a lower price in the foreign market than in a domestic market, with the intention of driving out competition in the foreign market.

**Dunnage:** The packing material used to protect a product from damage during transport.

**DUNS Number:** A coded, numerical representation assigned to a specific company (USA).

**Duty Free Zone (DFZ):** An area where goods or cargo can be stored without paying import customs duties while awaiting manufacturing or future transport.

**EAN.UCC:** European Article Numbering/Uniform Code Council. The EAN.UCC System provides identification standards to uniquely identify trade items, logistics units, locations, assets, and service relations worldwide. The identification standards define the construction of globally-unique and unambiguous numbers.

**Economic Order Quantity (EOQ):** An inventory model that determines how much to order by determining the amount that will meet customer service levels while minimizing total ordering and holding costs.

**Economic Value Added (EVA):** A measurement of shareholder value as a company's operating profits after tax, less an appropriate charge for the capital used in creating the profits.

**Economy of Scale:** A phenomenon whereby larger volumes of production reduce unit cost by distributing fixed costs over a larger quantity.

**EDI Interchange:** Communication between partners in the form of a structured set of messages and service segments starting with an interchange control header and ending with an interchange control trailer. In the context of X.400 EDI messaging, the contents of the primary body of an EDI message.

**EDI Standards:** Criteria that define the data content and format requirements for specific business transactions (e.g., purchase orders). Using standard formats allows companies to exchange transactions with multiple trading partners more easily.

**EDI Transmission:** A functional group of one or more EDI transactions that are sent to the same location in the same transmission, and are identified by a functional group header and trailer.

**Effective dates:** dates on the detail lines of bills of materials and routings that let the system know when these lines should be included in planning and execution activities.

**Effective lead time:** a lead time that has been adjusted to take into account additional factors. For example, in a fixed-schedule ordering system (periodic review) you may adjust your lead time to include the time between ordering opportunities.

**Electronic Commerce (EC):** Also written as e-commerce. Conducting business electronically via traditional EDI technologies, or online via the Internet. In the traditional sense of selling goods, it's possible to do this electronically because of certain software programs that run the main functions of e-commerce support, such as product display, ordering, shipment, billing, and inventory management. The definition of e-commerce includes business activity that is business-to-business (B2B) and/or business-to-consumer (B2C)

**Electronic Data Interchange (EDI):** Intercompany, computer-to-computer transmission of business information in a standard format. For EDI purists, computer to computer means direct transmission from the originating application program to the receiving or processing application program. An EDI transmission consists only of business data, not any accompanying verbiage or free-form messages. Purists might also contend that a standard format is one that is approved by a national or international standards organization, as opposed to formats developed by industry groups or companies.

**Electronic Data Interchange Association:** A national body that propagates and controls the use of EDI in a given country. All EDIAs are nonprofit organizations dedicated to encouraging EDI growth. The EDI in the United States was formerly TDCC and administered the development of standards in transportation and other industries.

**Electronic Funds Transfer (EFT):** A computerized system that processes financial transactions and information about these transactions or performs the exchange of value. Sending payment instructions across a computer network, or the company-to-company, company-to-bank, or bank-to-bank electronic exchange of value.

**EPC (Electronic Product Code):** A globally unique serial number for physical objects identified using RFID tags.

**Emergency Stock:** Quantity of a commodity that must be maintained on hand at all times to provide for initial response to an unplanned catastrophic event.

**End Item:** A product sold as a completed item or repair part; any item subject to a customer order or sales forecast.

**End-of-Life Inventory:** Inventory on hand that will satisfy future demand for products that are no longer in production at your company.

**Engineer-to-order:** a variation of a make-to-order manufacturing strategy. An engineer-to-order strategy is used when the end product is truly custom. In this strategy, design or engineering tasks must be completed as part of the order process. This strategy has the longest lead time to the customer, but is necessary since the detailed specifications of the product are not known in advance.

**Engineering Change:** A revision to a drawing or design released by engineering to modify or correct a part. The request for the change can be from a customer or from production, quality control, another department, or a supplier.

**Enterprise Resource Planning (ERP) System:** A class of software for planning and managing enterprise-wide the resources needed to take customer orders, ship them, account for them, and replenish all needed goods according to customer orders and forecasts. Often includes electronic commerce with suppliers. Examples of ERP systems are the application suites from SAP, Oracle, PeopleSoft, and others.

**EPC or ePC:** Electronic Product Code. An electronically coded tag that is intended as an improvement to the UPC bar code system. The EPC is a 96-bit tag which contains a number called the global Trade Identification Number (GTIN). Unlike a UPC number, which only provides information specific to a group of products, the GTIN gives each product its own specific identifying number, giving greater accuracy in tracking.

**Equipment:** The rolling stock carriers use to facilitate the transportation services that they provide, including containers, trucks, chassis, vessels, and airplanes, among others.

**Equipment I.D.:** An identifier assigned by the carrier to a piece of equipment.

**Equipment Positioning:** The process of placing equipment at a selected location.

**Evaluated Receipts Settlement (ERS):** A process for authorizing payment for goods based on actual receipts with purchase order data when price has already been negotiated. The basic premise behind ERS is that all of the information in an invoice has already been transmitted in the shipping documentation. Therefore, the invoice is eliminated and the shipping documentation is used to pay the vendor.

**Exempt Carrier:** A for-hire carrier that is free from economic regulation. Trucks hauling certain commodities are exempt from Interstate Commerce Commission economic regulation. By far, the largest portion of exempt carriers transports agricultural commodities or seafood.

**Expediting:** (1) Moving shipments through regular channels at an accelerated rate. (2) To take extraordinary action because of an increase in relative priority. *Synonym: Stock chase*

**Expiration Date:** In the WMS, the product expiration date may be used to assign an expiration date to an inventoried item. Commonly used with perishable inventory items, medicines, etc.

**Export:** To send goods and services to another country.

**Export Broker:** An enterprise that brings together buyer and seller for a fee, then eventually withdraws from the transaction.

**Export Declaration:** A document required by the U.S. Treasury department and completed by the exporter to show the value, weight, consignee, destination, etc., pertinent to the export shipment. The document serves two purposes: to gather trade statistics and to provide a control document if the goods require a valid export license.

**Export License:** A document secured from a government authorizing an exporter to export a specific quantity of a controlled commodity to a certain country. An export license is often required if a government has placed embargoes or other restrictions upon exports.



**Exporter Identification Number (EIN):** A number required for the exporter on the Shipper's Export Declaration. A corporation may use their Federal Employer Identification Number as issued by the IRS; individuals can use their Social Security Numbers.

**Extended Enterprise:** The notion that supply chain partners form a larger entity which works together as though it were a single unit.

**Extensible Markup Language (XML):** A computer term for a language that facilitates direct communication of data among computers on the Internet. Unlike the older hypertext markup language (HTML) which provides data tags that give instructions to a web browser on how to display information, XML tags give instructions to a browser or to application software which help to define specifics about the category of information.

**External Factory:** A situation where suppliers are viewed as an extension of the firm's manufacturing capabilities and capacities. The same practices and concerns that are commonly applied to the management of the firm's manufacturing system should also be applied to the management of the external factory.

**Ex Works:** The price that the seller quotes applies only at the point of origin. The buyer takes possession of the shipment at the point of origin and bears all costs and risks associated with transporting the goods to the destination.

**Facilities:** The physical plant, distribution centers, service centers, and related equipment.

**Federal Maritime Commission:** Regulatory agency responsible for rates and practices of ocean carriers shipping to and from the United States.

**FEU:** Forty-foot equivalent unit, a standard size intermodal container.

**Final Assembly:** The highest level assembled product, as it is shipped to customers. This terminology is typically used when products consist of many possible features and options that may only be combined when an actual order is received.

**Final Assembly Schedule (FAS):** A schedule of end items to finish the product for specific customers' orders in a make-to-order or assemble-to-order environment. It's also referred to as the finishing schedule because it may involve operations other than just the final assembly; also, it may not involve assembly, but simply final mixing, cutting, packaging, etc. The FAS is prepared after receipt of a customer order as constrained by the availability of material and capacity, and it schedules the operations required to complete the product from the level where it is stocked (or master scheduled) to the end-item level.

**Finished Goods Inventory (FG or FGI):** Products completely manufactured, packaged, stored, and ready for distribution.

**Firm Planned Order:** In a DRP or MRP system, a planned order whose status has been updated to a fixed order.

**First In First Out (FIFO):** In inventory control and financial accounting, this refers to the practice of using stock from inventory on the basis of what was received first and is consumed first. *Antonym: Last In First Out.*

**Fixed Costs:** Costs which do not fluctuate with business volume in the short run. Fixed costs include items such as depreciation on buildings and fixtures.

**Fixed Order Quantity:** A lot-sizing technique in MRP or inventory management that will always cause planned or actual orders to be generated for a pre-determined fixed quantity, or multiples thereof, if net requirements for the period exceed the fixed order quantity.

**Fixed reorder point:** also called fixed order point, fixed reorder point is a preset (fixed) quantity that triggers the need for a new order being placed.

**Flexibility:** Ability to respond quickly and efficiently to changing customer and consumer demands.

**Float:** The time required for documents, payments, etc. to get from one trading partner to another.

**Flow Rack:** A storage method where product is presented to picking operations at one end of a rack and replenished from the opposite end.

**FOB:** A term of sale defining who is to incur transportation charges for the shipment, which is to control the shipment movement, or where title to the goods passes to the buyer; originally meant "free on board ship."

**FOB Destination:** Title passes at destination, and seller has total responsibility until shipment is delivered.

**FOB Origin:** Title passes at origin, and buyer has total responsibility over the goods while in shipment.

**Forecast:** An estimate of future demand. A forecast can be constructed using quantitative methods, qualitative methods, or a combination of methods, and can be based on extrinsic (external) or intrinsic (internal) factors. Various forecasting techniques attempt to predict one or more of the four components of demand: cyclical, random, seasonal, and trend.

**Forecasting:** Predictions of how much of a product will be purchased by customers. Relies upon both quantitative and qualitative methods.

**Foreign Trade Zone (FTZ):** An area or zone set aside at or near a port or airport under the control of the US Customs Service, for holding goods duty-free pending Customs clearance.

**Forklift Truck:** A machine-powered device used to raise and lower freight and to move freight to different warehouse locations.

**Forward picking:** A storage area designed for efficient piece and case order picking that is usually replenished from reserve storage but sometimes directly from receiving.

**Fourth Party Logistics (4PL):** Differs from third party logistics in the following ways: (1) 4PL organization is often a separate entity established as a joint venture or long-term contract between a primary client and one or more partners; (2) 4PL organization acts as a single interface between the client and multiple logistics service providers; (3) All aspects (ideally) of the client's supply chain are managed by the 4PL organization; (4) It is possible for a major third party logistics provider to form a 4PL organization within its existing structure (*Strategic Supply Chain Alignment*; John Gattorna).

**FPA:** Free of Particular Average.

**Free Along Side (FAS):** The seller agrees to deliver the goods to the dock alongside the overseas vessel that is to carry the shipment. The seller pays the cost of getting the shipment to the dock; the buyer contracts the carrier, obtains documentation, and assumes all responsibility from that point forward.

**Free Alongside Ship:** A term of sale indicating that the seller is liable for all changes and risks until the goods sold are delivered to the port on a dock that will be used by the vessel. Title passes to the buyer when the seller has secured a clean dock or ship's receipt of goods.

**Free on Board (FOB):** Contractual terms between a buyer and a seller that define where title transfer takes place.

**Freight:** Goods being transported from one place to another.

**Freight Bill:** The carrier's invoice for payment of transport services rendered.

**Freight Charge:** The rate established for transporting freight.

**Freight Consolidation:** The grouping of shipments to obtain reduced costs or improved utilization of the transportation function. Consolidation can occur by market area grouping, grouping according to scheduled deliveries, or using third party pooling services such as public warehouses and freight forwarders.

**Freight Forwarder:** An organization which provides logistics services as an intermediary between the shipper and the carrier, typically on international shipments. Freight forwarders provide the ability to respond quickly and efficiently to changing customer and consumer demands and international shipping (import/export) requirements.

**Freight terms:** an agreement between a supplier and customer that describes the responsibility for transportation costs.

**Fronthaul:** The first leg of the truck trip that involves hauling a load or several loads to targeted destinations.

**Fulfillment:** The act of fulfilling a customer order. Fulfillment includes order management, picking, packaging, and shipping.

**Fulfillment Services Provider:** A fulfillment services provider is an organization that operates on your behalf to receive delivery of stock from your suppliers, store inventory on your behalf and fulfill your customer orders. May also be referred to as a fulfillment house or fulfillment company or a 3PL.

**Full Containerload (FCL):** A term used when goods occupy a whole container.

**Full-Service Leasing:** An equipment-leasing arrangement that includes a variety of services to support the leased equipment; a common method for leasing motor carrier tractors.

**Full-time Connection:** A communication link between two (or more) entities which is normally maintained continuously.

**Full Truckload (FTL):** Same as Full Container load, but in reference to motor carriage instead of containers.

**Functional Acknowledgement (FA):** A specific EDI Transaction Set (997) sent by the recipient of an EDI message to confirm the receipt of data but with no indication as to the recipient application's response to the message. The FA will confirm that the message contained the correct number of lines, etc., via control summaries, but does not report on the validity of the data.

**Functional Group:** Part of the hierarchical structure of EDI transmissions, a functional group contains one or more related transaction sets preceded by a functional group header and followed by a functional group trailer.

**General Agreement on Tariffs and Trade (GATT):** A multilateral trade agreement aimed at expanding international trade as a means of raising world welfare.

**General-Merchandise Warehouse:** A warehouse used to store goods that are readily handled, are packaged, and do not require a controlled environment.

**General Order (GO):** A customs term referring to a warehouse where merchandise not entered within five working days after the carrier's arrival is stored at the risk and expense of the importer.

**GTIN (Global Trade Item Number):** All-numeric system for assigning globally unique codes to trade items (products and services). GTIN includes UPC, ISBN, and NDC.

**Goods:** A term associated with more than one definition: 1) Common term indicating movable property, merchandise, or wares. 2) All materials which are used to satisfy demands. 3) Whole or part of the cargo received from the shipper, including any equipment supplied by the shipper.

**Goods Receipt:** This is where the warehouse confirms that the products have been received from a supplier, as per an issued purchase order and are put into stock. On receipt, products may be checked against a packing list or ASN, go through QA, are labeled and put away in bin or shelf location.

**Government Bill of Lading (GB/L):** The bill of lading used for shipments made by U.S. Government agencies.

**Grandfather Clause:** A provision that enabled motor carriers engaged in lawful trucking operations before the passage of the Motor Carrier Act of 1935 to secure common carrier authority w/o proving public convenience and necessity; a similar provision exists for other modes.

**Granger Laws:** State laws passed before 1870 in Midwestern states to control rail transportation.

**Great Lakes Carriers:** Water carriers that operate on the five Great Lakes.

**Gross Margin:** The difference between total revenue and the cost-of-goods sold.

**Gross Weight:** The total weight of the vehicle and the payload of freight or passengers.

**Group logic:** methods used to manage inventory based on groups of items rather than single items

**GTDI:** European Guidelines for Trade Data Interchange.

**GTIN:** Global Tracking Identification Number or Global Trade Item Number. GTIN is the globally-unique EAN.UCC System identification number, or key, used for trade items (products and services). It's used for uniquely identifying trade items (products and services) sold, delivered, warehoused, and billed throughout the retail and commercial distribution channels. Unlike a UPC number, which only provides information specific to a group of products, the GTIN gives each product its own specific identifying number, giving greater accuracy in tracking.

**Handling Costs:** The cost involved in moving, transferring, preparing, and otherwise handling inventory.

**Haulage:** The inland transport service which is offered by the carrier under the terms and conditions of the tariff and of the relative transport document.

**Hazardous Material:** A substance or material which the Department of Transportation has determined to be capable of posing a risk to health, safety, and property when stored or transported in commerce.

**Hedge inventory:** inventory that is purchased to protect against or take advantage of price fluctuations. The price fluctuations may be the result of seasonal or cyclical variations that result with imbalances in supply and demand (supply exceeds demand or vice versa), changes in exchange rates with international purchases, or even special promotions.

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

**Highway Trust Fund:** A fund into which highway users (carriers and automobile operators) pay; the fund pays for federal government's highway construction share.

**Highway Use Taxes:** Taxes that federal and state governments assess against highway users (the fuel tax is an example). The government uses the use tax money to pay for the construction, maintenance, and policing of highways.

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

**House Air Waybill (HAWB):** A bill of lading issued by a forwarder to a shipper as a receipt for goods that the forwarder will consolidate with cargo from other shippers for transport.

**Hub:** 1) A large retailer or manufacturer having many trading partners. 2) A reference for a transportation network as a "hub and spoke" which is common in the airline and trucking industry. For example, a hub airport serves as the focal point for the origin and termination of long-distance flights where flights from outlying areas are fed into the hub airport for connecting flights. 3) A common connection point for devices in a network. 4) A web "hub" is one of the initial names for what is now known as a "portal." It came from the creative idea of producing a web site which would contain many different "portal spots" (small boxes that looked like ads with links to different, yet related content). This content, combined with Internet technology, made the idea a milestone in the development and appearance of web sites, primarily due to the ability to display a lot of useful content and store one's preferred information on a secured server. The web term "hub" was replaced with portal.

5) An Internet web site that provides a central repository for data or a central planning capability in an industry or supply network.

**Hub Airport:** An airport that serves as the focal point for the origin and termination of long-distance flights; flights from outlying areas meet connecting flights at the hub airport.

**Hundredweight (CWT):** a pricing unit used in transportation (equal to 100 pounds).

**Igloos:** Pallets and containers used in air transportation; the igloo shape fits the internal wall contours of a narrow-body airplane.

**Import:** Movement of products from one country into another. The import of automobiles from Germany into the US is an example.

**Importation Point:** The location where goods will be cleared for importation into a country.

**Import/Export License:** Official authorization issued by a government allowing the shipping or delivery of a product across national boundaries.

**In Bond:** Goods are held or transported In-Bond under customs control either until import duties or other charges are paid, or to avoid paying the duties or charges until a later date.

**Inbound logistics:** The management of materials from suppliers and vendors into production processes or storage facilities.

**Incentive Rate:** A rate that induces the shipper to ship heavier volumes per shipment.

**INCOTERMS:** International terms of sale developed by the International Chamber of Commerce to define sellers' and buyers' responsibilities.

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

**Indirect Cost:** A resource or activity cost that cannot be directly traced to a final cost object since no direct or repeatable cause-and-effect relationship exists. An indirect cost uses an assignment or allocation to transfer cost.

**Infinite capacity scheduling:** a manufacturing planning system that completely ignores capacity constraints and schedules purely based on demand. MRP is an example of an infinite capacity scheduling system. It requires that planners check the production schedule against capacity and make adjustments accordingly.

**Inland Bill of Lading:** The carriage contract used in transport from a shipping point overland to the exporter's international carrier location.

**Inland Carrier:** An enterprise that offers overland service to or from a point of export.

**Inner pack:** Package used inside of a carton to allow more efficient split-case picking instead of individual piece picking when a less-than-carton-size number of units are to be picked.

**Inspection Certificate:** A document certifying that merchandise (such as perishable goods) was in good condition immediately prior to shipment.

**Insurance Certificate:** A document issued to the consignee to certify that insurance is provided to cover loss of or damage to the cargo while in transit.

**Integrated Carrier:** An airfreight company that offers a blend of transportation services such as air carriage, freight forwarding, and ground handling.

**Integrated Logistics:** A comprehensive, system-wide view of the entire supply chain as a single process, from raw materials supply through finished goods distribution. All functions that make up the supply chain are managed as a single entity rather than managing individual functions separately.

**Interchange:** In EDI, the exchange of electronic information between companies. Also, the group of transaction sets transmitted from one sender to one receiver at one time. Delineated by interchange control segments.

**Intercoastal carriers:** Water carriers that transport freight between East and West Coast ports, usually by way of the Panama Canal.

**Intercorporate hauling:** A private carrier hauling a subsidiary's goods and charging the subsidiary a fee; this is legal if the subsidiary is wholly owned or if the private carrier has common carrier authority.

**Interleaving:** The practice of assigning an employee multiple tasks which are performed concurrently.

**Intermittent-Flow, Fixed-Path Equipment:** Materials handling devices that include bridge cranes, monorails, and stacker cranes.

**Intermodal Container Transfer Facility:** A facility where cargo is transferred from one mode of transportation to another, usually from ship or truck to rail.

**Intermodal Transportation:** Transporting freight by using two or more transportation modes, such as by truck and rail or truck and oceangoing vessel.

**International Import Certificate:** A document required by the importing country indicating that the importing country recognizes that a controlled shipment is entering their country. The importing country pledges to monitor the shipment and prevent its re-export, except in accordance with its own export control regulations.

**International Maritime Bureau (IMB):** A special division of the International Chamber of Commerce.

**International Maritime Organization (IMO):** A United Nations-affiliated organization representing all maritime countries in matters affecting maritime transportation, including the movement of dangerous goods. The organization also is involved in deliberations on marine environmental pollution.

**International Standards Organization (ISO):** An organization within the United Nations to which all national and other standard-setting bodies (should) defer. Develops and monitors international standards, including OSI, EDIFACT, and X.400.

**Internet:** A computer term which refers to an interconnected group of computer networks from all parts of the world, i.e., a network of networks. Accessed via a modem and an online service provider, it contains many information resources and acts as a giant electronic message routing system.

**Interstate Commerce:** The transportation of persons or property between states; in the course of the movement, the shipment crosses a state boundary.

**Interstate Commerce Commission (ICC):** An independent regulatory agency that implements federal economic regulations controlling railroads, motor carriers, pipelines, domestic water carriers, domestic surface freight forwarders, and brokers.

**In-Transit Inventory:** Material moving between two or more locations, usually separated geographically; for example, finished goods being shipped from a plant to a distribution center. In-transit inventory is an easily overlooked component of total supply chain availability.

**Intrastate Commerce:** The transportation of persons or property between points within a state. A shipment between two points within a state may be interstate if the shipment had a prior or subsequent move outside of the state and the shipper intended an interstate shipment at time of shipment.

**In-transit quantity:** a quantity that has been shipped from one facility and has not yet been received into another facility

**Inventory:** This is the products and quantity that you own and store in order to sell to your customers.

**Inventory Accuracy:** When the on-hand quantity is equivalent to the perpetual balance (plus or minus the designated count tolerances).

**Inventory Carrying Cost:** One of the elements comprising a company's total supply chain management costs. These costs consist of the following:

**1. Opportunity Cost:** The opportunity cost of holding inventory. This should be based on your company's own cost of capital standards using the following formula.

*Calculation: Cost of Capital x Average Net Value of Inventory*

**2. Shrinkage:** The costs associated with breakage, pilferage, and deterioration of inventories. Usually pertains to the loss of material through handling damage, theft, or neglect.

**3. Insurance and Taxes:** The cost of insuring inventories and taxes associated with the holding of inventory.

**4. Total Obsolescence for Raw Material, WIP, and Finished Goods Inventory:** Inventory reserves taken due to obsolescence and scrap and includes products exceeding the shelf life, i.e., spoils and is no good for use in its original purpose (do not include reserves taken for Field Service Parts).

**5. Channel Obsolescence:** Aging allowances paid to channel partners, provisions for buy-back agreements, etc. Includes all material that becomes obsolete while in a distribution channel. Usually, a distributor will demand a refund on material that goes bad (shelf life) or is no longer needed because of changing needs.

**6. Field Service Parts Obsolescence:** Reserves taken due to obsolescence and scrap. field service parts are those inventories kept at locations outside the four walls of the manufacturing plant i.e., distribution center or warehouse.

**Inventory Cost:** The cost of holding goods usually expressed as a percentage of the inventory value; includes the cost of capital, warehousing, taxes, insurance, depreciation, and obsolescence.

**Inventory, Days of:** The number of days of inventory on-hand at any given time.

**Inventory Management Information System:** the part of a management information system that deals with the information needed for stock control

**Inventory Master File:** File maintained by a WMS that contains the total quantity and storage locations of each items stored in the warehouse. Used together like the location master file to control material transport operations.

**Inventory Planning Systems:** The systems that help to strategically balance the inventory policy and customer service levels throughout the supply chain. These systems usually calculate time-phased order quantities and safety stock using selected inventory strategies. Some inventory planning systems conduct what-if analysis and compare the current inventory policy with simulated inventory scenarios to improve the inventory ROI.

**Inventory Turns:** The cost of goods sold divided by the average level of inventory on hand. This ratio measures how many times a company's inventory has been sold during a period of time. Operationally, inventory turns are measured as total throughput divided by average level of inventory for a given period. How many times a year the average inventory for a firm changes over or is sold.

**Invoice:** A detailed statement showing goods sold or shipped and amounts for each. The invoice is prepared by the seller and acts as the document that the buyer will use to make payment.

**ISO 9000:** A series of quality assurance standards compiled by the Geneva, Switzerland-based International Standards Organization. In the United States, ISO is represented by the American National Standards Institute based in Washington, DC.

**ISO 14000 Series Standards:** A series of generic environmental management standards under development by the International Organization of Standardization which provide structure and systems for managing environmental compliance with legislative and regulatory requirements and affect every aspect of a company's environmental operations.

**Issuing Carrier:** The carrier whose name is printed on the bill of lading and with whom the contract of carriage exists.

**Item:** Any unique manufactured or purchased part, material, intermediate, sub-assembly, or product.

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

**Item master:** a collection of data that describes a specific item. Item master is also used to describe the database table that contains this data.

**Item number:** the identification number assigned to an item. Also called the part number, SKU number, or SKU.

**Jidoka:** The concept of adding an element of human judgment to automated equipment. In doing this, the equipment becomes capable of discriminating against unacceptable quality, and the automated process becomes more reliable.

**Joint Cost:** A common cost in cases where a company produces products in fixed proportions and the cost the company incurs to produce one product entails producing another; the backhaul is an example.

**Joint Rate:** A rate over a route that requires two or more carriers to transport the shipment.

**Just In Time (JIT):** An inventory control system that controls material flow into assembly and manufacturing plants by coordinating demand and supply to the point where desired materials arrive just in time for use. An inventory reduction strategy that feeds production lines with products delivered just in time. Developed by the auto industry, it refers to shipping goods in smaller, more frequent lots.

**Just in Time II (JIT II):** Vendor-managed operations taking place within a customer's facility. JIT II was popularized by the Bose Corporation. The supplier reps, called "implants," place orders to their own companies, relieving the customer's buyers from this task. Many also become involved at a deeper level such as participating in new product development projects and manufacturing planning (concurrent planning).

**Just-in-Time Logistics (or Quick Response):** The process of minimizing the times required to source, handle, produce, transport, and deliver products in order to meet customer requirements.

**Kaizen:** A Japanese term for improvement - continuing improvement involving everyone - managers and workers. In manufacturing, kaizen relates to finding and eliminating waste in machinery, labor, or production methods.

**Kanban:** replenishment system where replenishment is triggered by emptying a container and a physical notification such as a card or the empty container is sent up the line to the previous operation or supplier to be refilled.

**Keiretsu:** A form of cooperative relationship among companies in Japan where the companies largely remain legally and economically independent, even though they work closely in various ways, such as sole sourcing and financial backing. A member of a keiretsu generally owns a limited amount of stock in other member companies. A keiretsu generally forms around a bank and a trading company but distribution (supply chain) keiretsus exist, linking companies from raw material suppliers to retailers.

**Key Performance Indicator (KPI):** A measure which is of strategic importance to a company or department. For example, a supply chain flexibility metric is Supplier On-Time Delivery Performance which indicates the percentage of orders that fulfilled on or before the original requested date.

**Kitting:** Light assembly of components or parts into defined units, Kitting reduces the need to maintain an inventory of pre-build, completed products, but increases the time and labor consumed at shipment.

**Lading:** The cargo carried in a transportation vehicle.

**Land bridge:** The movement of containers by ship-rail-ship on Japan-to-Europe moves; ships move containers to the U.S. Pacific Coast, rails move containers to an East Coast port, and ships deliver containers to Europe.

**Landed Cost:** Cost of product plus relevant logistics costs, such as transportation, warehousing, handling, etc. Also called Total Landed Cost of Net Landed Costs.

**Lash Barges:** Covered barges that carriers load on board oceangoing ships for movement to foreign destinations.



**LASH Vessel:** A ship measuring at least 820 feet long with a deck crane able to load and unload barges through a stern section that projects over the water. The acronym LASH stands for Lighter (barge) Aboard Ship.

**Last In First Out (LIFO):** In inventory control and financial accounting, this refers to the practice of using stock from inventory on the basis of what was received last is consumed first. This has limited use in stock keeping and is primarily a cost-accounting method.

**Last Mile:** Description for the final leg of home delivery, where the carrier, courier (or delivery agent) is responsible for final handover to the customer.

**Last Updated:** A date and time stamp that is recorded when a field or record was last modified by the user.

**Lead Logistics Provider (LLP):** An organization that organizes other third party logistics partners for outsourcing of logistics functions.

**Lead Time:** The total time that elapses between an order's placement and its receipt. It includes the time required for order transmittal, order processing, order preparation, and transit.

**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.

**Leg:** A leg has an origin, destination, and carrier and is composed of all consecutive segments of a route booked through the same carrier

**Less-Than-Carload (LCL):** Shipment that is less than a complete rail car load (lot shipment).

**Less-Than-Containerload (LCL):** A term used when goods do not completely occupy an entire container. When many shippers' goods occupy a single container, each shipper's shipment is considered to be LCL.

**Less-Than-Truckload (LTL) Carriers:** Trucking companies that consolidate and transport smaller (less than truckload) shipments of freight utilizing a network of terminals and relay points.

**Less-Than-Truckload (LTL):** Trucking companies that consolidate and transport smaller (less than truckload) shipments of freight by utilizing a network of terminals and relay points.

**Lessee:** A person or firm to whom a lessor grants a lease.

**Lessor:** A person or firm that grants a lease.

**Letter of Credit (LOC):** A method of payment for goods in which the buyer established his credit with a local bank, clearly describing the goods to be purchased, the price, the documentation required, and a time limit for completion of the transaction. Upon receipt of documentation, the bank is either paid by the buyer or takes title to the goods themselves and proceeds to transfer funds to the seller.

**License Plate Number (LPN):** A document, tag, or label used to identify a unitized load.

**Life Cycle Cost:** In cost account, a product's life cycle is the period that starts with the initial product conceptualization and ends with the withdrawal of the product from the marketplace and final disposition. A product life cycle is characterized by certain defined stages, including research, development, introduction, maturity, decline, and abandonment. Life cycle cost is the accumulated costs incurred by a product during these stages.

**Lighter:** A barge-type vessel used to carry cargo between shore and cargo ship. While the terms barge and lighter are used interchangeably, a barge usually refers to a vessel used for a long haul, while a lighter is used for a short haul.

**Lighterage:** The cost of loading or unloading a vessel by means of barges.

**Line Functions:** The decision-making areas companies associate with daily operations. Logistics line functions include traffic management, inventory control, order processing, warehousing, and packaging.

**Line Item:** A specific and unique identifier assigned to a product by the responsible enterprise.

**Liner Service:** International water carriers that ply fixed routes on published schedules.

**Link:** The transportation method a company uses to connect nodes (plants, warehouses) in a logistics system.

**Local Area Network (LAN):** A data communications network spanning a limited geographical area, usually a few miles at most, providing communications between computers and peripheral devices.

**Loading Allowance:** A reduced rate that carriers offer to shippers and/or consignees who load and/or unload LTL or Any Quantity shipments.

**Loading Port:** The port where the cargo is loaded onto the exporting vessel. This port must be reported on the Shipper's Export Declaration, Schedule D. Schedule D is used by U.S. companies when exporting to determine which tariff is used to freight rate the cargo for carriers with more than one tariff.

**Locational Determinant:** The factors that determine a facility's location. For industrial facilities, the determinants include logistics.

**Location master file:** File maintained by a WMS that contains the quantity of the item available at each storage location in the warehouse. Used together with the inventory master file to control material transport operations.

**Locator System:** Inventory-tracking systems that allow you to assign locations to your inventory to facilitate greater tracking and the ability to store product randomly. Prior to locator systems, warehouses needed to store product in some logical manner in order to be able to find it (stored in item number sequence, by vendor, by product description, etc.)

**Logbook:** A daily record of the hours an interstate driver spends driving, off duty, sleeping in the berth, or on duty but not driving.

**Logistics:** The process of planning, implementing, and controlling procedures for the efficient and effective storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements. This definition includes inbound, outbound, internal, and external movements.

**Logistics Center:** locations in the supply chain for performing logistic activities, often including stocks and warehousing

**Logistics Channel:** The network of supply chain participants engaged in storage, handling, transfer, transportation, and communications functions that contribute to the efficient flow of goods.

**Logistics Costs:** The factors associated with the acquisition, storage, movement, and disposition of goods.

**Logistics Data Interchange (LDI):** A computerized system that electronically transmits logistics information.

**Logistics Management as defined by the Council of Supply Chain Management Professionals (CSCMP):** Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning and management of third party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution - strategic, operational, and tactical. Logistics management is an integrating function which coordinates and optimizes all logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology.

**Long Ton:** 2,240 pounds.

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

**Lot:** A production run or batch that can be isolated from other runs and identified with a specific set of material, production facility and process characteristics.

**Lot Control:** A set of procedures (e.g., assigning unique batch numbers and tracing each batch) used to maintain lot integrity from raw materials, from the supplier through manufacturing to consumers.

**Lot sizing:** combining several small orders into larger ones for MRP

**Lot Tracking:** The process of tracking a given material lot up (into upper level items and customer/interplant orders) or down (into the lower level lots it consumed when produced, or the lot received from a vendor). Physical and system controls are required to provide the true source and destination of a given lot in a product recall or similar situation.

**Lot-for-lot:** a very basic lot sizing method that uses demand during the specified planning time period (time bucket) as the lot size. In most cases the planning periods would be your forecast periods, therefore your lot would be equal to the net demand in the forecast period in which the order is planned on being received.

**LTL shipment:** A less-than-truckload shipment, one weighing less than the minimum weight a company needs to use the lower truckload rate.

**Machine Downtimes:** Time during which a machine cannot be utilized. Machine downtimes may occur during breakdowns, maintenance, changeovers, etc.

**Maintenance, Repair, and Operating Supplies (MRO):** 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.

**Major Carrier:** A for-hire certificated air carrier that has annual operating revenues of \$1 billion or more; the carrier usually operates between major population centers.

**Make-or-Buy Decision:** The act of deciding whether to produce an item internally or buy it from an outside supplier. Factors to consider in the decision include costs, capacity availability, proprietary and/or specialized knowledge, quality considerations, skill requirements, volume, and timing.

**Make-to-order:** a manufacturing strategy where you do not manufacture your product until after you receive actual orders from your customers. The primary advantage to this strategy is that you do not have to carry finished goods inventory. This strategy does not necessarily result in zero inventories. Many make-to-order manufactures will forecast and procure some raw materials and components in advance of receiving orders in an effort to reduce the lead time to their customers.

**Make-to-stock:** manufacturing strategy where you must carry adequate finished goods inventory to meet upcoming forecasted demand. The reason this stocking strategy is so common is not that it is the most cost-effective inventory strategy overall, but rather it is a necessary strategy when market conditions require shipment of goods quicker than you can manufacture them.

**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

**Management of All Logistics:** The effective management of all costs associated with logistics functions and activities so as to minimize their sum across the product supply chain.

**Manifest:** A document which describes individual orders contained within a shipment.

**Manufacture Cycle Time:** The average time between commencement and completion of a manufacturing process, as it applies to make-to-stock products.

*Calculation: [Average # of units in WIP]/[Average daily output in units]*

**Manufacturer's Representative:** One who sells goods for several firms but does not take title to them.

**Manufacturing Calendar:** A calendar used in inventory and production planning functions that consecutively numbers only the working days so that the component and work order scheduling may be done based on the actual number of workdays available.

**Manufacturing Execution Systems (MES):** Programs and systems that participate in shop-floor control, including programmed logic controllers and process control computers for direct and supervisory control of manufacturing equipment; process information systems that gather historical performance information, then generate reports; graphical displays; and alarms that inform operations personnel what is going on in the plant currently and a short history into the past. Quality control information is also gathered - a laboratory information management system may be part of this configuration to tie process conditions to the quality data that are generated. Thereby, cause-and-effect relationships can be determined. The quality data at times affect the control parameters that are used to meet product specifications, either dynamically or offline.

**Manufacturing Lead Time:** The total time required to manufacture an item, exclusive of lower-level purchasing lead time. For make-to-order products, it's 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's the length of time between the release of an order to the production process and receipt into finished goods inventory. Included are order preparation time, queue time, set-up time, run time, move time, inspection time, and put-away time.

**Manufacturing Resource Planning (MRP-II):** A method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning in dollars, and has a simulation capability to answer what-if questions. It consists 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 business plan, purchase commitment report, shipping budget, and inventory projections in dollars. Manufacturing resource planning is a direct outgrowth and extension of closed-loop MRP.

**Marginal Cost:** The cost to produce one additional unit of output. The change in total variable cost resulting from a one-unit change in output.

**Market Demand:** In marketing, the total demand that would exist within a defined customer group in a given geographical area during a particular time period given a known marketing program.

**Market Dominance:** The absence of effective competition for railroads from other carriers and modes for the traffic to which the rail rate applies. The Staggers Act stated that market dominance does not exist if the rate is below the revenue-to-variable-cost ratio of 160 percent in 1981 and 170 percent in 1983.

**Market-Positioned Warehouse:** Warehouse positioned to replenish customer inventory assortments and afford maximum inbound transport consolidation economies from inventory origin points with relatively short-haul local delivery.

**Market Segment:** A group of potential customers sharing some measurable characteristics based on demographics, psychographics, lifestyle, geography, benefits, etc.

**Marks and Numbers:** Marks and numbers placed on goods used to identify a shipment or parts of a shipment.

**Mass Customization:** The creation of a high-volume product with large variety so that a customer may specify his or her exact model out of a large volume of possible end items, while manufacturing cost is low because of the large volume. An example is a personal computer order in which the customer may specify processor speed, memory size, hard disk size and speed, removable storage device characteristics, and many other options when PCs are assembled on one line and at a low cost.

**Master Air Waybill (MAWB):** The bill of lading issued by air carriers to their customers.

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

**Material:** anything that is kept in stock

**Material Acquisition Costs:** One of the elements comprising a company's total supply chain management costs. These costs consist of the following:

**1. Materials (Commodity) Management and Planning:** All costs associated with the supplier sourcing, contract negotiation and qualification, and the preparation, placement, and tracking of a purchase order - including all costs related to buyer/planners.

**2. Supplier Quality Engineering:** The costs associated with the determination, development/certification, and monitoring of suppliers' capabilities to fully satisfy the applicable quality and regulatory requirements.

**3. Inbound Freight and Duties:** Freight costs associated with the movement of material from a vendor to the buyer, including all associated administrative tasks. Duties are those fees and taxes levied by government for moving purchased material across international borders. Customs broker fees should also be included in this category.

**4. Receiving and Put Away:** all costs associated with taking possession of material and storing it. Note - inventory-carrying costs are normally covered in a separate worksheet.

**5. Incoming Inspection:** All costs associated with the inspection and testing of received materials to verify compliance with specifications.

**Materials Handling:** The physical handling of products and materials between procurement and shipping.

**Material Index:** The ratio of the sum of the localized raw material weights to the weight of the finished product.

**Materials Management:** Inbound logistics from suppliers through the production process. The movement and management of materials and products from procurement through production.

**Materials Planning:** The materials management function that attempts to coordinate materials supply with materials demand.

**Maximum Order Quantity:** An order quantity modifier applied after the lot size has been calculated that limits the order quantity to a pre-established maximum.

**m-Commerce:** Mobile commerce applications involve using a mobile phone to carry out financial transactions. This usually means making a payment for goods or transferring funds electronically. Transferring money between accounts and paying for purchases are electronic commerce applications. An emerging application, electronic commerce has been facilitated by developments in other areas in the mobile world, such as dual slot phones and other smarter terminals, and more standardized protocols which allow greater interactivity and therefore, more sophisticated service.

**Mean absolute deviation:** the average of the absolute values of a series of variances. MAD is used in forecast error measurement, safety stock calculations, and other applications of statistics.

**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

**Measurement Ton:** Forty cubic feet; used in water transportation ratemaking.

**Merge In Transit:** The process of "merging" shipments from suppliers and going directly to the buyer or to the store, bypassing the seller. A "drop shipment" from several vendors to one buyer.

**Micro-Land Bridge:** An intermodal movement in which the shipment is moved from a foreign country to the U.S. by water and then moved across the U.S. by railroad to an interior, non-port city, or vice versa for exports from a non-port city.

**Middleware:** Connectivity software, enabling an enterprise-wide range of data sources to be integrated into the decision-making database of the common reference model, is a strong requirement for success. Interfaces to various ERP, MRP, databases and specialized software are required for these translators between IT applications.

**Mileage Allowance:** An allowance, based upon distance, which railroads give to shippers using private railcars.

**Mileage Rate:** A rate based upon the number of miles the commodity is shipped.

**Minimum Weight:** The shipment weight the carrier's tariff specifies as the minimum weight required to use the TL or CL rate; the rate discount volume.

**Mixed Loads:** The movement of both regulated and exempt commodities in the same vehicle at the same time.

**Modal Split:** The relative use that companies make of transportation modes; the statistics include ton-miles, passenger-miles, and revenue.

**Movable unit:** A single identifiable unit load (e.g. carton, pallet, trailer, etc.) that is moved between and stored at a location.

**Move time:** the time it takes to physically relocate materials from one manufacturing operation (step in manufacturing process) to the next.

**Moving average:** forecasting method that calculates the average demand over a fixed number of time periods relative to the date the forecast is generated, and uses that as the forecast for subsequent periods. For example, if I am calculating a three-month moving average on July 1st, I will calculate the average demand over April, May, and June. Subsequently, on August 1st, I would use May, June, and July demand for the calculation.

**Multi-Channel:** Multi-channel was a term used to refer to how retailers offered their products to their customers across many sales channels, i.e. Store Catalogue, Web or Call Centre. This has now evolved into Omni-channel.

**Multi-Currency:** The ability to process orders using a variety of currencies for pricing and billing.

**Multi-Language:** Pertaining to the ability to process orders in many different country-specific languages using voice and text.

**Multi-level bill of materials:** a bill-of-materials structure where components on one BOM have their own BOMs below them. Technically, a multi-level bill does not actually exist. Instead, you just have numerous single-level bills and your computer software figures out that if an item on one bill has its own bill; it can logically link these together for planning purposes.

**Multiple-Car Rate:** A railroad rate that is lower for shipping more than one carload at a time.

**National Carrier:** A for-hire certificated air carrier that has annual operating revenues of \$75 million to \$1 billion; the carrier usually operates between major population centers and areas of lesser population.

**National Motor Freight Classification (NMFC):** A tariff, which contains descriptions and classifications of commodities and rules for domestic movement by motor carriers in the US.

**Negotiable BOL:** Provides for the delivery of goods to a named enterprise or to their order (anyone they may designate), but only upon surrender of proper endorsement and the bill of lading to the carrier or the carrier's agents.

**Net Weight:** The weight of the merchandise, unpacked, exclusive of any containers.

**New Product Introduction (NPI):** The process used to develop products that are new to the sales portfolio of a company.

**Node:** A fixed point in a firm's logistics system where goods come to rest; includes plants, warehouses, supply sources, and markets.

**No Location (No Loc):** A received item for which the warehouse has no previously established storage slot.

**Non-Certificated carrier:** A for-hire air carrier that is exempt from economic regulation.

**Non-Negotiable BOL:** Provides for the delivery of goods to a named enterprise and to no one else. Also known as a straight bill of lading.

**Non-stock inventory:** inventory that is not tracked within your perpetual inventory system. Non-stock inventory will generally not have an item-master record or internal SKU number. An alternate meaning for non-stock inventory is order-as-needed inventory. In this case, you do have an item-master record and an internal SKU number, but do not carry stock of the item.

**Non Vessel Operating Common Carrier (NVOCC):** A firm that offers the same services as an ocean carrier, but which does not own or operate a vessel. NVOCCs usually act as consolidators, accepting small shipments (LCL) and consolidating them into full container loads. They also consolidate and disperse international containers that originate at or are bound for inland ports. They then act as a shipper, tendering the containers to ocean common carriers. They are required to file tariffs with the Federal Maritime Commission and are subject to the same laws and statutes that apply to primary common carriers.

**Notify Party:** The name of an organization, or individual, which should be notified when a shipment reaches its destination.

**Not otherwise specified/Not elsewhere specified (NOS/NES):** This term often appears in ocean or airfreight tariffs respectively. If no rate for the specific commodity shipped appears in the tariff, then a general class rate (for example: printed matter NES) will apply. Such rates usually are higher than rates for specific commodities.

**Obsolete Inventory:** Inventory for which there is no forecast demand expected. A condition of being out of date. A loss of value occasioned by new developments that place the older property at a competitive disadvantage.

**Ocean Bill of Lading:** The bill of lading issued by the ocean carrier to its customer.

**Ocean Carrier:** An enterprise that offers service via ocean (water) transport.

**Offshore:** Utilizing an outsourcing service provider located in a country other than where the client is located.

**Omni-Channel:** Omni-channel is the seamless way in which a customer interacts and shops with a retailer across multiple channels (such as store or web) and while using multiple devices, whilst experiencing no material difference in customer experience.

**On-Demand:** Pertaining to work performed when demand is present. Typically used to describe products which are manufactured or assembled only when a customer order is placed.

**One-Piece Flow:** Moving parts through a process in batches of one.

**On-Line receiving:** A system in which computer terminals are available at each receiving bay and operators enter items into the system as they are unloaded.

**On-time delivery:** a fill-rate measurement generally used by manufacturers to describe the percentage of orders, lines, dollars, or units filled by the requested (or promised) date. Tolerances or time breakdowns may be used to adjust or add detail to this type of measurement.

**Operating Ratio:** A measure of operating efficiency defined as operating expenses divided by the Operating revenues x 100.

**Operational Performance Measurements:** (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.

**Optimization:** the process of getting the “best” result from a stated problem. A typical optimization model would be made up of a value that you would like to optimize (minimize or maximize), one or more changeable values that have a mathematical relationship to the value you want to optimize, and one or more constraints (limits). Though optimization implies an optimal (best) solution, the reality is in most cases we are looking for the “best practical” solution, which is not necessarily the best solution.

**Order:** Request to ship, receive, or transport material as indicated in a customer order, purchase order, or shop order, respectively.

**Order cost:** the sum of the fixed costs that are incurred each time an item is ordered or produced. Order costs are the costs associated with the instance, but not the quantity, of an order; which is not necessarily the same as all costs associated with ordering and receiving inventory. Order cost is used in cost-based lot sizing calculations such as EOQ.

**Order cycle:** the length of time between receipts of an item. You can also think of it as the length of time an ordered quantity should last.

**Order Entry and Scheduling:** The process of receiving orders from the customer and entering them into a company's order processing system. Orders can be received through phone, fax, or electronic media. Activities may include "technically" examining orders to ensure an orderable configuration and provide accurate price, checking the customer's credit and accepting payment (optionally), identifying and reserving inventory (both on hand and scheduled), and committing and scheduling a delivery date.

**Order Fill:** A measure of the number of orders processed without stockouts, or the need to back order, expressed as a percentage of all orders processed in the distribution center or warehouse.

**Order Management:** The planning, directing, monitoring, and controlling of the processes related to customer orders, manufacturing orders, and purchase orders. Regarding customer orders, order management includes order promising, order entry, order pick, pack and ship, billing, and reconciliation of the customer account. Regarding manufacturing orders, order management includes order release, routing, manufacture, monitoring, and receipt into stores or finished goods inventories. Regarding purchase orders, order management includes order placement, monitoring, receiving, acceptance, and payment of supplier.



**Order Management Costs:** One of the elements comprising a company's total supply chain management costs. These costs consist of the following:

- 1. New Product Release Phase In and Maintenance:** This includes costs associated with releasing new products to the field, maintaining released products, assigning product ID, defining configurations and packaging, publishing availability schedules, release letters and updates, and maintaining product databases.
- 2. Create Customer Order:** This includes costs associated with creating and pricing configurations to order and preparing customer order documents.
- 3. Order Entry and Maintenance:** This includes costs associated with maintaining the customer database, credit check, accepting new orders, and adding them to the order system, as well as later order modifications.
- 4. Contract/Program and Channel Management:** This includes costs related to contract negotiation, monitoring progress, and reporting against the customer's contract, including administration of performance or warranty-related issues.
- 5. Installation Planning:** This includes costs associated with installation engineering, scheduling and modification, handling cancellations, and planning the installation.
- 6. Order Fulfillment:** This includes costs associated with order processing, inventory allocation, ordering from internal or external suppliers, shipment scheduling, order status reporting, and shipment initiation.
- 7. Distribution:** This includes costs associated with warehouse space and management, finished goods receiving and stocking, processing shipments, picking and consolidating, selecting carriers, and staging products/systems.
- 8. Transportation, Outbound Freight, and Duties:** This includes costs associated with all company-paid freight duties from point of manufacturer to end customer or channel.
- 9. Installation:** This includes costs associated with verification of site preparation, installation, certification, and authorization of billing.
- 10. Customer Invoicing/Accounting:** This includes costs associated with invoicing, processing customer payments, and verification of customer receipt.

**Order Picking:** Assembling a customer's order from items in storage.

**Order Processing:** Activities associated with filling customer orders.

**Ordering Cost:** The cost of placing an inventory order with a supplier.

**Original Equipment Manufacturer (OEM):** A manufacturer that buys and incorporates another supplier's products into its own products. Also, products supplied to the original equipment manufacturer or sold as part of an assembly. For example, an engine may be sold to an OEM for use as that company's power source for its generator units.

**Outbound Logistics:** The process related to the movement and storage of products from the end of the production line to the end user.

**Outlier:** A data point that differs significantly from other data for a similar phenomenon. For example, if the average sales for a product were ten units per month, and one month the product had sales of 500 units, this sales point might be considered an outlier.

**Outpartnering:** The process of involving the supplier in a close partnership with the firm and its operations management system. Outpartnering is characterized by close working relationships between buyers and suppliers, high levels of trust, mutual respect, and emphasis on joint problem solving and cooperation. With outpartnering, the supplier is not viewed as an alternative source of goods and services (as observed under outsourcing), but rather as a source of knowledge, expertise, and complementary core competencies. Outpartnering is typically found during the early stages of product life cycle when dealing with products that are viewed as critical to the strategic survival of the firm.

**Outsource:** To utilize a third party provider to perform services previously performed in house. Examples include manufacturing of products and call center/customer support.

**Over, Short, and damaged (OS&D):** This is typically a report issued at the warehouse when goods are damaged. Used to file a claim with a carrier.

**Over-the-Road:** A motor carrier operation that reflects long-distance moves; the opposite of local operations.

**Overhead:** indirect costs associated with facilities and management that are applied to the costs of manufactured goods through the manufacturing reporting process.

**Packing:** The process of preparing a container for shipment.

**Packing List:** A document containing information about the location of each Product ID in each package. It allows the recipient to quickly find the item he or she is looking for without a broad search of all packages. It also confirms the actual shipment of goods on a line item basis.

**Pallet:** The platform which cartons are stacked on and then used for shipment or movement as a group. Pallets may be made of wood or composite materials.

**Pallet picking:** Retrieval of full pallets of cartons, or layers of cartons from a pallet (a.k.a. unit-load picking).

**Pallet Wrapping Machine:** A machine that wraps a pallet's contents in stretch-wrap to ensure safe shipment.

**Parcel Manifest System:** Automated shipping system.

**Parcel Shipment:** Parcels include small packages like those typically handled by providers such as UPS and FedEx.

**Part Standardization:** A program for planned elimination of superficial, accidental, and deliberate differences between similar parts in the interest of reducing part and supplier proliferation. A typical goal of part standardization is to reduce costs by reducing the number of parts that the company needs to manage.

**Parts list:** a listing of material required for a production order. The manufacturing planning system will use the bill of materials to calculate the material requirements for a manufacturing order, resulting in the parts list (also called a materials list). Parts lists can also be created or edited manually.

**Pay on Use:** Pay on use is a process where payment is initiated by product consumption, i.e., consignment stock based on withdrawal of product from inventory. This process is popular with many European companies.

**Payment terms:** an agreement between a supplier and customer that describes how and when payment will be made for products or services.

**Peak Demand:** The time period during which customers demand the greatest quantity.

**Peer to Peer (P2P):** A computer-networking environment which allows individual computers to share resources and data without passing through an intermediate network server.

**Pegging:** A technique in which a DRP system traces demand for a product by date, quantity, and warehouse location.

**Perfect Order:** The definition of a perfect order is one which meets all of the following criteria:

- \* Delivered complete, with all items on the order in the quantity requested
- \* Delivered on time to customer's request date, using the customer's definition of on-time delivery
- \* Delivered with complete and accurate documentation supporting the order including packing slips, bills of lading and invoices
- \* Delivered in perfect condition with the correct configuration, customer ready, without damage, and faultlessly installed (as applicable)

**Performance and Event Management Systems:** The systems that report on the key measurements in the supply chain - inventory days of supply, delivery performance, order cycle times, capacity use, etc. Using this information to identify causal relationships to suggest actions in line with the business goals.

**Performance Measures:** Indicators of the work performed and the results achieved in an activity, process, or organizational unit. Performance measures should be both non-financial and financial. Performance measures enable periodic comparison and benchmarking.

**Performance Measurement Program:** A performance measurement program goes beyond just having performance metrics in place. Typical characteristics of a good performance measurement program include the following:

- \* Metrics that are aligned to strategy, and linked to the shop floor or line-level workers.
- \* A process and culture that drives performance and accountability to deliver performance against key performance indicators.
- \* An incentive plan that is tied to performance goals, objectives, and metrics.
- \* Tools/technology in place to support easy data collection and use.

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

**Perpetual Inventory:** An inventory record keeping system where each transaction in and out is recorded and a new balance is computed.

**Physical Inventory:** the process of counting all inventories in a warehouse or plant in a single event. Also called a wall-to-wall inventory.

**Physical Supply:** The movement and storage of raw materials from supply sources to the manufacturing facility.

**Pick/Pack:** Picking and packing immediately into shipment containers.

**Pick conveyor:** A non-powered conveyor (e.g. wheel or roller) used in piece picking to support a tote or other container while it is being filled.

**Pick Ticket/ Pick Instruction:** An instruction used in the warehouse that lists the products and the quantities to pick for order processing.

**Picking:** The operations involved in pulling products from storage areas to complete a customer order.

**Picking by Aisle:** A method by which pickers pick all needed items in an aisle regardless of the items' ultimate destination; the items must be sorted later.

**Picking by Source:** A method in which pickers successively pick all items going to a particular destination regardless of the aisle in which each item is located.

**Pick List:** A list of items to be picked from stock in order to fill an order; the pick list generation and the picking method can be quite sophisticated.

**Pick Sequence:** The location travel sequence when picking items.

**Pick to Light:** A laser identifies the bin for the next item in the rack; when the picker completes the pick, the bar code is scanned and the system then points the laser at the next bin.

**Pick-Up Order:** A document indicating the authority to pick up cargo or equipment from a specific location.

**Piece picking:** Retrieval of individual units (or 'eaches') of an item, where each piece picked is the unit of issue to the final customer (a.k.a. broken-case picking).

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

**Place Utility:** A value that logistics creates in a product by changing the product's location. Transportation creates place utility.

**Planned Date:** The date an operation such as a receipt, shipment, or delivery of an order is planned to occur.

**Planned Order:** In DRP and MRP systems, a future order the system plans in response to forecasted demand.

**Planned order receipt:** term used within MRP and DRP systems to describe the date a planned order must be received in order to fulfil net requirements.

**Planned order release:** term used within MRP and DRP systems to describe the date a planned order must be released in order to meet the lead time. It is essentially the planned order receipt date offset by the lead time.

**Plant Finished Goods:** Finished goods inventory held at the end manufacturing location.

**Point of Use Delivery:** Delivery right to the production floor of an item.

**Poka Yoke (mistake proof):** The application of simple techniques that prevent process quality failure. A mechanism that either prevents a mistake from being made or makes the mistake obvious at a glance.

**Pooling:** A shipping term for the practice of combining shipment from multiple shippers into a truckload in order to reduce shipping charges.

**Port:** A harbor where ships will anchor.

**Port Authority:** A state or local government that owns, operates, or otherwise provides wharf, dock, and other terminal investments at ports.

**Port of Discharge:** Port where vessel is off loaded.

**Port of Entry:** A port at which foreign goods are admitted into the receiving country.

**Port of Loading :** Port where cargo is loaded aboard the vessel.

**Portable Data Collection Terminal (PDT):** A portable device used to collect inventory data and perform inventory functions. Interfaces with the WMS through a separate Batch Portable or RF Server application.

**Portal:** A web site that serves as a starting point to other destinations or activities on the Internet. Initially thought of as a home base-type of web page, portals attempt to provide all Internet needs in one location. Portals commonly provide services such as e-mail, online chat forums, shopping, searching, content, and news feeds.

**POS:** Point of Shipment, or Point of Sale

**Postponement:** The delay of final activities (i.e., assembly, production, packaging, etc.) until the latest possible time. A strategy used to eliminate excess inventory in the form of finished goods which may be packaged in a variety of configurations.

**Pre-Expediting:** The function of following up on open orders before the scheduled delivery date to ensure the timely delivery of materials in the specified quantity.

**Prepaid:** A freight term which indicates that charges are to be paid by the shipper. Prepaid shipping charges may be added to the customer invoice, or the cost may be bundled into the pricing for the product.

**Prepaid Freight:** Freight paid by the shipper to the carrier when merchandise is tendered for shipment that is not refundable if the merchandise does not arrive at the intended destination.

**Price:** the amount charged by a supplier

**Price discounts:** all unit step reductions in price given for larger orders

**Primary-Business Test:** A test the ICC uses to determine if a trucking operation is bona fide private transportation; the private trucking operation must be incidental to and in the furtherance of the firm's primary business.

**Primary Manufacturing Strategy:** Your company's dominant manufacturing strategy. The primary manufacturing strategy generally accounts for 80-plus % of a company's product volume. According to a study by Pittiglio Rabin Todd & McGrath (PRTM), approximately 73% of all companies use a make-to-stock strategy.

**Private Carrier:** A carrier that provides transportation service to the firm that owns or leases the vehicles and does not charge a fee. Private motor carriers may haul at a fee for wholly owned subsidiaries.

**Private Label:** Products that are designed, produced, controlled by, and which carry the name of the store or a name owned by the store; also known as a store brand or dealer brand. An example would be Wal-Mart's "Sam's Choice" products.

**Private Trucking Fleets:** Private fleets serve the needs of their owners, and do not ordinarily offer commercial trucking services to other customers. Private fleets typically perform distribution or service functions.

**Private Warehousing:** The storage of goods in a warehouse owned by the company that has title to the goods.

**Process:** A series of time-based activities linked to complete a specific output.

**Process Benchmarking:** Benchmarking a process (such as the pick, pack, and ship process) against organizations known to be the best in class in this process. Process benchmarking is usually conducted on firms outside of the organization's industry.

**Process Improvement:** A design or activity which improves quality or reduces costs, often through the elimination of waste on non-value-added tasks.

**Process Manufacturing:** Production that adds value by mixing, separating, forming, and/or performing chemical reactions. It may be done in a batch, continuous, or mixed batch/continuous mode.

**Procure-to-order:** an inventory strategy where you do not procure your product until after you receive actual orders from your customers.

**Procure-to-stock:** an inventory strategy where you must carry adequate finished goods inventory to meet upcoming forecasted demand. The reason this stocking strategy is so common is not that it is the most cost-effective inventory strategy overall, but rather it is a necessary strategy when market conditions require shipment of goods quicker than you can procure them.

**Procurement:** The business functions of procurement planning, purchasing, inventory control, traffic, receiving, incoming inspection, and salvage operations. *Synonym: Purchasing*

**Procurement cycle:** sequence of activities needed to acquire materials

**Product:** Something that has been or is being produced.

**Product Characteristics:** All of the elements that define a product's character, such as size, shape, weight, etc.

**Product Description:** The user's description of the product.

**Product Family:** A group of products with similar characteristics often used in production planning (or sales and operations planning).

**Product ID:** A method of identifying a product without using a full description. These can be different for each document type and must, therefore, be captured and related to the document in which they were used. They must then be related to each other in context (also known as SKU, Item Code or Number, or other such name).

**Product life cycle:** the period of time in which a specific item is considered an active saleable item. Product life cycle starts when a product is first introduced, and ends when a product is removed from active status. Some definitions of product life cycle may also include the development time for a product.

**Production Capacity:** Measure of how much production volume may be experienced over a set period of time.

**Production Line:** A series of pieces of equipment dedicated to the manufacture of a specific number of products or families.

**Production order:** the document used to process a production run of an item. Also known as a job, work order, or manufacturing order, a production order is usually made up of a production order header, a parts list, and a routing.

**Production Planning and Scheduling:** The systems that enable creation of detailed, optimized plans and schedules, taking into account the resource, material, and dependency constraints to meet the deadlines.

**Production-Related Material:** Production-related material is an item classified as a material purchase and included in cost-of-goods sold as a raw material purchase.

**Productivity:** A measure of resource utilization efficiency defined as the sum of the outputs divided by the sum of the inputs.

**Profit Ratio:** The percentage of profit to sales--that is, profit divided by sales.

**Profitability Analysis:** The analysis of profit derived from cost objects with the view to improve or optimize profitability. Multiple views may be analyzed, such as market segment, customer, distribution channel, product families, products, technologies, platforms, regions, manufacturing capacity, etc.

**Pro-forma:** A type of quotation or offer that may be used when first negotiating the sales of goods or services. If the pro-forma is accepted, then the terms and conditions of the pro-forma may become the request.

**Pro Forma Invoice:** An invoice, forwarded by the seller of goods prior to shipment that advises the buyer of the particulars and value of the goods. Usually required by the buyer in order to obtain an import permit or letter of credit.

**Progressive assembly picking:** Variation of zone picking where an order is passed from one zone to the next, eliminating the need to consolidate the order but increasing its total picking time (a.k.a. pick-and-pass).

**Projective forecast:** a forecast that projects historical patterns into the future

**Promised date:** the date a supplier expects to be able to fulfil a customer order.

**Promotion:** The act of selling a product at a reduced price, or a buy one/get one free offer, for the purpose of increasing sales.

**Pro Number:** Any progressive or serialized number applied for identification of freight bills, bills of lading, etc.

**Proof of Delivery (POD):** Information supplied by the carrier containing the name of the person who signed for the shipment, the time and date of delivery and other shipment delivery-related information. POD is also sometimes used to refer to the process of printing materials just prior to shipment (*Print on Demand*).

**Proportional Rate:** A rate lower than the regular rate for shipments that have prior or subsequent moves; used to overcome combination rates' competitive disadvantages.

**Public Warehouse:** The warehouse space that is rented or leased by an independent business providing a variety of services for a fee or on a contract basis.

**Public Warehousing:** The storage of goods by a firm that offers storage service for a fee to the public.

**Public Warehouse receipt:** The basic document a public warehouse manager issues as a receipt for the goods a company gives to the warehouse manager. The receipt can be either negotiable or nonnegotiable.

**Pull Signal:** A signal from a using operation that triggers the issue of raw material.

**Pull Ordering System:** A system in which each warehouse controls its own shipping requirements by placing individual orders for inventory with the central distribution center. A replenishment system where inventory is "pulled" into the supply chain (or "demand chain" by POS systems, or ECR programs). Associated with "build to order" systems.

**Purchase Order (PO):** The purchaser's authorization used to formalize a purchase transaction with a supplier. The physical form or electronic transaction a buyer uses when placing an order for merchandise.

**Purchase Price Discount:** A pricing structure in which the seller offers a lower price if the buyer purchases a larger quantity.

**Purchasing:** The functions associated with buying the goods and services the firm requires.

**Push Distribution:** The process of building product and pushing it into the distribution channel without receiving any information regarding requirements.

**Push system:** an ordering or production scheduling system where production or procurement of a product is triggered by expected (forecasted) demand rather than actual customer orders. Make-to-stock and procure-to-stock are examples of push systems.

**Put Away:** Removing the material from the dock (or other location of receipt), transporting the material to a storage area, placing that material in a staging area, and then moving it to a specific location and recording the movement and identification of the location where the material has been placed.

**Quality:** Conformance to requirements or fitness for use. Quality can be defined through five principal approaches:

- 1) Transcendent quality is an ideal, a condition of excellence.
- 2) Product-based quality is based on a product attribute.
- 3) User-based quality is fitness for use.
- 4) Manufacturing-based quality is conformance to requirements.
- 5) Value-based quality is the degree of excellence to an acceptable price.

Also, quality has two major components:

- a) quality of conformance - quality is defined by the absence of defects.
- b) quality of design - quality is measured by the degree of customer satisfaction with a product's characteristics and features.

**Quality Assurance/ QA:** Program planned to provide that goods purchased may be inspected and/or tested so that compliance with specifications may be determined.

**Quality Circle:** In quality management, a small group of people who normally work as a unit and meet frequently to uncover and solve problems concerning the quality of items produced, process capability, or process control.

**Quality Control:** The management function that attempts to ensure that the goods or services in a firm manufacturers or purchases meet the product or service specifications.

**Quality Function Deployment (QFD):** A structured method for translating user requirements into detailed design specifications using a continual stream of "what-how" matrices. QFD links the needs of the customer (end user) with design, development, engineering, manufacturing, and service functions. It helps organizations seek out both spoken and unspoken needs, translate these into actions and designs, and focus various business functions toward achieving this common goal.

**Quantity discount:** a price structure that involves lower prices for larger purchase quantities. Quantity discounts generally have specific "break points" that designate quantities at which the price changes.

**Quarantine:** The setting aside of items from availability for use or sale until all required quality tests have been performed and conformance certified.

**Queue time:** the amount of time inventory is staged prior to processing.

**Quick Response (QR):** A strategy widely adopted by general merchandise and soft lines retailers and manufacturers to reduce retail out of stocks, forced markdowns, and operating expenses. These goals are accomplished through shipping accuracy and reduced response time. QR is a partnership strategy in which suppliers and retailers work together to respond more rapidly to the consumer by sharing point-of-sale scan data, enabling both to forecast replenishment needs.

**Radio Frequency (RF):** A form of wireless communications that lets users relay information via electromagnetic energy waves from a terminal to a base station which is linked, in turn, to a host computer. The terminal can be placed at a fixed station, mounted on a forklift truck, or carried in a worker's hand. The base station contains a transmitter and receiver for communication with the terminal. RF systems use either narrow-band or spread-spectrum transmissions. Narrow-band data transmissions move along a single limited radio frequency, while spread-spectrum transmissions move across several different frequencies. When combined with a bar code system of identifying inventory items, a radio frequency system can relay data instantly, thus updating inventory records in so-called real time.

**Radio Frequency Identification (RFID):** The use of radio frequency technology such as RFID tags and tag readers to identify objects. Objects may include virtually anything physical, such as equipment, pallets of stock, or even individual units of product.

**Radio Frequency Server:** The RF server that interfaces between the WMS database and an RF portable; it must be opened as a separate application.

**Radio Frequency Terminal:** An RF enabled wireless portable data terminal that uses the WMS RF server application.

**Ramp Rate:** A statement which quantifies how quickly you grow or expand an operation growth trajectory. Can refer to sales, profits, or margins.

**Random-Location Storage:** In warehouses, a storage technique in which received material is put away in any available space rather than a specific decided logical criteria.

**Rationing:** The allocation of product among customers, or components among manufactured goods during periods of short supply. When price is used to allocate product, it's allocated to those willing to pay the most.

**Raw Materials (RM):** Crude or processed material that can be converted by manufacturing, processing, or a combination thereof into a new and useful product.

**Real Time:** The processing of data in a business application as it happens, as contrasted with storing data for input at a later time (batch processing).

**Receiving:** The function encompassing the physical receipt of material, the inspection of the shipment for conformance with the purchase order (quantity and damage), the identification and delivery to destination, and the preparation of receiving reports.

**Receiving Dock:** Distribution center location where the actual physical receipt of the purchased material from the carrier occurs.

**Reengineering:** (1) A fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in performance. (2) A term used to describe the process of making (usually) significant and major revisions or modifications to business processes. (3) Also called Business Process Reengineering.

**Refrigerated Carriers:** Truckload carriers designed to keep perishables good refrigerated. The food industry typically uses this type of carrier.

**Release-to-Start Manufacturing:** Average time from order release to manufacturing to the start of the production process. This cycle time may typically be required to support activities like material movement and line changeovers.

**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:** within a warehouse or plant, replenishment is the process of moving inventory from secondary storage areas into fixed storage locations. Within a supply chain or a multi-plant environment, replenishment is the process of moving inventory between facilities or from suppliers to meet demand.



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

**Request for Information (RFI):** A document used to solicit information about vendors, products, and services prior to a formal RFQ/RFP process.

**Request for Proposal (RFP):** A document which provides information concerning needs and requirements for a manufacturer. This document is created in order to solicit proposals from potential suppliers. For example, a computer manufacturer may use an RFP to solicit proposals from suppliers of third party logistics services.

**Request for Quote (RFQ):** A document used to solicit vendor responses when a product has been selected and price quotations are needed from several vendors.

**Resellers:** Organizations intermediate in manufacturing and distribution process such as wholesalers and retailers.

**Reserve storage:** An area intended for the storage of material in full pallet load sizes from which both forward picking.

**Resources:** Economic elements applied or used in the performance of activities or to directly support cost objects. They include people, materials, supplies, equipment, technologies, and facilities.

**Resources requirements planning:** RRP is a capacity planning tool used to verify the ability of key resources to meet a production plan or business plan. RRP deals primarily with resources that require long-term planning, such as facilities, major equipment, capital, and workforce levels.

**Retailer:** A business that takes title to products and resells them to final consumers. Examples include Wal-Mart, Best Buy, and Safeway, but also include the many smaller independent stores.

**Return Goods Handling:** Processes involved with returning goods from the customer to the manufacturer. Products may be returned because of performance problems or simply because the customer doesn't like the product.

**Return Material Authorization or Return Merchandise Authorization (RMA):** A number usually produced to recognize and give authority for a faulty (perhaps) good to be returned to a distribution center or manufacturer. A form generally required with a warranty/return which helps the company identify the original product and the reason for the return. The RMA number often acts as an order form for the work required in repair situations, or as a reference for credit approval.

**Return on Assets (ROA):** Financial measure calculated by dividing profit by assets.

**Return on Sales:** Financial measure calculated by dividing profit by sales.

**Return Order Management Costs:** The costs associated with managing Return Material Authorization (RMA). Includes all applicable elements of the Level 2 component order management cost of total supply chain management cost.

**Return Product Authorization (RPA):** Also called Return Material or Goods Authorization (RMA or RGA). A form generally required with a warranty/return which helps the company identify the original product and the reason for the return. The RPA number often acts as an order form for the work required in repair situations or as a reference for credit approval.

**Return to Vendor (RTV):** Material that has been rejected by the customer or the buyer's inspection department and is awaiting shipment back to the supplier for repair or replacement.

**Returns Inventory Costs:** The costs associated with managing inventory returned for any of the following reasons: repair, refurbish, excess, obsolescence, end of life, ecological conformance, and demonstration. Includes all applicable elements of the Level 2 component Inventory Carrying Cost of Total Supply Chain Management Cost.

**Returns Material Acquisition, Finance, Planning, and IT Costs:** The costs associated with acquiring the defective products and materials for repair or refurbishing items, plus any finance, planning, and information technology costs to support return activity. Includes all applicable elements of the Level 2 components material acquisition cost (acquiring materials for repairs), supply chain-related finance and planning costs, and supply chain management cost.

**Returns Processing Cost:** The total cost to process repairs, refurbished, excess, obsolete, and end-of-life products, including diagnosing problems and replacing products. Includes the costs of logistics support, materials, centralized functions, troubleshooting service requests, on-site diagnosis and repair, external repair, and miscellaneous. These costs are broken into Returns Order Management, Returns Inventory Carrying, Returns Material Acquisition, Finance, Planning, IT, Disposal, and Warranty Costs.

**Returns to Scale:** A defining characteristic of B2B. Bigger is better. It's what creates the "winner takes all" quality of most B2B hubs. It also places a premium on being first to market and first to achieve critical mass.

**Reverse Engineering:** A process whereby competitors' products are disassembled and analyzed for evidence of the use of better processes, components, and techniques.

**Reverse Logistics:** A specialized segment of logistics focusing on the movement and management of products and resources after the sale and after delivery to the customer. Includes product returns for repair and/or credit.

**Rewarehousing:** The process of moving items to different storage locations to improve handling efficiency.

**Routing or Routing Guide:** (1) Process of determining how shipment will move between origin and destination. Routing information includes designation of carrier(s) involved, actual route of carrier, and estimate time en route. (2) Right of shipper to determine carriers, routes, and points for transfer shipments. (3) In manufacturing, this is the document which defines a process of steps used to manufacture and/or assemble a product.

**Routing Accuracy:** When specified activities conform to administrative specifications, and specified resource consumptions (both man and machine) are detailed according to administrative specifications and are within 10% of actual requirements.

**Run Time:** in an operation step in a routing, run time is the amount of time it takes to produce (run) a single unit. It does not include any setup time or queue time. The term can also be used to describe the accumulation of run time for multiple operations or multiple units (based on an entire production order).

**Safety Lead Time:** a means of adding some time to your lead time as part of your ordering calculations. Though safety lead time is used in the ordering calculation to determine when you need to order something, it is excluded from the calculation that then determines the "requested date" for the order.

**Safety Stock:** The inventory a company holds above normal needs as a buffer against delays in receipt of supply or changes in customer demand.

**Salable Goods:** A part of assembly authorized for sale to final customers through the marketing function.

**Sales and Operations Planning (S&OP):** A strategic planning process that reconciles conflicting business objectives and plans future supply chain actions. S&OP usually involves various business functions, such as sales, operations, and finance to agree on a single plan/forecast that can be used to drive the entire business.

**Sales Mix:** The proportion of individual product-type sales volumes that make up the total sales volume.

**Sales Order:** document used to approve, track, and process outbound customer shipments.

**Sawtooth Diagram:** A quantity-versus-time graphic representation of the order point/order quantity inventory system showing inventory being received, used up, and reordered.

**Scalability:**

- 1) How quickly and efficiently a company can ramp up to meet demand.
- 2) How well a solution to a problem will work when the size of the problem increases. The economies of scale don't really kick in until you reach the critical mass, and then revenues start to increase exponentially.

**Scanlon Plan:** A system of group incentives on a companywide or plant-wide basis that sets up one measure that reflects the results of all efforts. The Scanlon plan originated in the 1930s by Joe Scanlon and MIT. The universal standard is the ratio of labor costs to sales value added by production. If there's an increase in production sales value with no change in labor costs, productivity has increased while unit cost has decreased.

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

**SCOR:** Supply Chain Operations Reference Model. This is the model developed by the Supply-Chain Council (SCC), and is built around six major processes: plan, source, make, deliver, return, and enable. The aim of the SCOR is to provide a standardized method of measuring supply chain performance, and to use a common set of metrics to benchmark against other organizations.

**Scorecard:** A performance measurement tool used to capture a summary of the key performance indicators (KPIs)/metrics of a company. Metrics dashboards/scorecards should be easy to read and usually have red, yellow, green indicators to flag when the company is not meeting its metrics targets. Ideally, a dashboard/scorecard should be cross functional in nature and include both financial and non-financial measures. In addition, scorecards should be reviewed regularly - at least on a monthly basis and weekly in key functions, such as manufacturing and distribution where activities are critical to the success of a company. The dashboard/scorecards philosophy can also be applied to external supply chain partners like suppliers to ensure that their objectives and practices align.

**Scrap:** inventory that must be discarded or recycled as a result of a manufacturing process or damage that occurs during storage or material handling.

**Scrap rate:** the rate of expected scrap for specific components within the context of manufacturing an item. A scrap rate would be attached to a specific component on the bill of materials for a specific item

**Seasonality:** fluctuations in demand that repeat with the same pattern over equivalent time periods. The most common representation of seasonality occurs with changing demand patterns measured weekly, monthly, or quarterly, that repeat annually.

**Seasonality index:** consists of a number for each specific forecast period that describes the relationship of each period's demand to the average demand over the complete seasonal cycle. The average demand is represented by the number one. If seasonality for a period results in demand greater than the average demand, it will be represented by a number greater than one. For example, if December's sales were, on average, 30% greater than the average monthly sales for the year, you would have a seasonality index of 1.3 (1 plus .30) for December.

**Secure Electronic Transaction (SET):** In e-commerce, a system of guaranteeing the security of financial transactions conducted over the Internet.

**Self Billing:** A transportation industry strategy which prescribes that a carrier will accept payment based on the tender document provided by the shipper.

**Self Correcting:** A computer term for an online process that validates data and won't allow the data to enter the system unless all errors are corrected.

**Semi-processed materials:** stockable items (meaning they have their own unique item number) that have gone through some processing, but will be later pulled from stock and undergo additional processing.

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

**Serial Number:** A unique number assigned for identification to a single piece that will never be repeated for similar pieces. Serial numbers are usually applied by the manufacturer but can be applied at other points by the distributor or wholesaler. Serial numbers can be used to support traceability and warranty programs.

**SSCC (Serial Shipping Container Code):** A globally unique serial number for identifying a movable unit (e.g., a pallet).

**Service Parts Revenue:** The sum of the value of sales made to external customers and the transfer price valuation of sales within the company of repair or replacement parts and supplies, net of all discounts, coupons, allowances, and rebates.

**Setup costs:** the costs associated with initiating a production run. May include labor and machine time to get equipment ready, as well as scrap or tooling associated with the setup process.

**Setup time:** the time it takes to prepare (equipment and materials) for a production run.

**Shared Services:** Consolidation of a company's back-office processes to form a spinout (Or a separate "shared services" unit to be run like a separate business), providing services to the parent company and sometimes, to external customers. Shared services typically lower overall cost due to the consolidation, and may improve support as a result of focus.

**Shelf Life:** The amount of time an item may be held in inventory before it becomes unusable. Shelf life is a consideration for food and drugs which deteriorate over time, and for high-tech products which become obsolete quickly.

**Shingo's Seven Wastes:** Shigeo Shingo, a pioneer in the Japanese just-in-time philosophy, identified seven barriers to improving manufacturing. They are the waste of overproduction, waste of waiting, waste of transportation, waste of stocks, waste of motion, waste of making defects, and waste of the processing itself.

**Shipper:** The party that tenders goods for transportation.

**Shipper-Carriers:** Shipper-carriers (also called private carriers) are companies with goods to be shipped that own or manage their own vehicle fleets. Many large retailers, particularly groceries and "big box" stores, are shipper-carriers.

**Shipping:** The function that performs the tasks for the outgoing shipment of parts, components, and products. It includes packaging, marking, weighing, and loading for shipment.

**Shipping Lane:** A predetermined, mapped route on the ocean that commercial vessels tend to follow between ports. This helps ships avoid hazardous areas. In general transportation, the logical route between the point of shipment and the point of delivery used to analyze the volume of shipment between two points.

**Shipping Manifest:** A document that lists the pieces in a shipment. A manifest usually covers an entire load regardless of whether the load is to be delivered to a single destination or many destinations. Manifests usually list the items, piece count, total weight, and the destination name and address for each destination in the load.

**Shipping order:** document used to approve, track, and process outbound shipments.

**Shop Floor Production Control Systems:** The systems that assign priority to each shop order, maintaining work-in-process quantity information, providing actual output data for capacity control purposes, and providing quantity by location by shop order for work-in-process inventory and accounting purposes.

**Shop order:** Request that indicates the type and quantity of SKUs to be transported from a warehouse to a production area; each SKU-quantity pair in the order is termed a line (cf. customer order and shop order).

**Short Shipment:** Piece of freight missing from shipment as stipulated by documents on hand.

**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

**Shrinkage:** Reductions of actual quantities of items in stock, in process, or in transit. The loss may be caused by scrap, theft, deterioration, evaporation, etc.

**Simultaneous picking:** Variation of zone picking and where the items for an order are picked simultaneously in each zone and then consolidated, making it possible to minimize the total picking time required for an order (which is useful if there are multiple waves per shift).

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

**Six-Sigma Quality:** A term generally used to indicate that a process is well controlled, i.e., tolerance limits are  $\pm 6$  sigma (3.4 defects per million events) from the centerline in a control chart. The term is usually associated with Motorola which named one of its key operations initiatives Six-Sigma Quality.

**Skills Matrix:** A visible means of displaying people's skill levels in various tasks. Used in a team environment to identify the skills required by the team and which team members possess those skills.

**Slotting:** Warehouse slotting is defined as the placement of products within a warehouse facility. Its objective is to increase picking efficiency and reduce warehouse handling costs through optimizing product location and balancing the workload.

**Small Group Improvement Activity:** An organizational technique for involving employees in continuous improvement activities.

**Sortation:** The process of merging, identifying, inducting, and separating material to be conveyed to specific destinations.

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

**Split-case picking:** Variation of case picking where inner packs of items from cartons are retrieved.

**Split Delivery:** A method by which a larger quantity is ordered on a purchase order to secure a lower price, but delivery is divided into smaller quantities and is spread out over several dates to control inventory investment, save storage space, etc.

**Spot Demand:** Demand with a short lead time that's difficult to estimate. Usually supply for this demand is provided at a premium price. An example of spot demand would be when there's a spiked demand for building materials as a result of a hurricane.

**Staging:** Pulling material for an order from inventory before the material is required. This action is often taken to identify shortages, but it can lead to increased problems in availability and inventory accuracy.

**Stakeholders:** People with a vested interest in a company, including manager, employees, stockholders, customers, suppliers, and others.

**Standard business practices:** business practices that are typical for general industry or specific industries.

**Standard Components:** Components (parts) of a product for which there is an abundance of suppliers. Not difficult to produce. An example would be a power cord for a computer.

**Standard Cost Accounting System:** A cost accounting system that uses cost units determined before production for estimating the cost of an order or product. For management control purposes, the standards are compared to actual costs, and variances are computed.

**Statement of Work (SOW):** 1) A description of products to be supplied under a contract. A good practice is for companies to have SOWs in place with their trading partners - especially for all top suppliers. 2) In projection management, the first project planning document that should be prepared. It describes the purpose, history, deliverables, and measurable success indicators for a project. It captures the support required from the customer and identifies contingency plans for events that could throw the project off course. Because the project must be sold to management, staff, and review groups, the statement of work should be a persuasive document.

**Statistical Process Control (SPC):** A visual means of measuring and plotting process and product variation. Results are used to adjust variables and maintain product quality.

**Sticker:** Placing customer-specific stickers on boxes of product. An example would be where Wal-Mart has a request for their own product codes to be applied to retail boxes prior to shipment.

**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

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

**Stock-Keeping Unit (SKU):** A category of unit with a unique combination of form, fit, and function (i.e., unique components held in stock). *To illustrate:* If two items are indistinguishable to the customer, or if any distinguishing characteristics visible to the customer are not important to the customer so that the customer believes the two items to be the same, these two items are part of the same SKU.

*As a further illustration:* consider a computer company that allows customers to configure a complete computer from a selection of standard components. For example, they can choose from three keyboards, three monitors, and three CPUs. Customers may also individually buy keyboards, monitors, and CPUs. If the stock were held at the configuration component level, the company would have nine SKUs. If the company stocks at the component level, the company would have 36 SKUs. (9 component SKUs + 3\*3\*3 configured product SKUs.) If, as part of a promotional campaign, the company also specially packaged the products, the company would have a total of 72 SKUs.

**Stocking type:** a classification used by planning and execution systems to identify the primary stocking characteristic of the inventory. Examples of stocking types would include classifications that distinguish manufactured inventory, purchased inventory, direct ship inventory, or order-as-needed inventory.

**Stocking unit of measure:** the unit of measure used to track inventory within a facility. Stocking unit of measure is usually, but not always, the smallest unit of measure handled.

**Stockout:** a situation where you have inadequate inventory levels to meet current demand.

**Storage cost:** the costs associated with the physical storage of inventory. This would include the cost of the physical space dedicated to the inventory, as well as storage equipment (racking, shelving) used to store the inventory.

**Storage location:** An identifiable location in a warehouse assigned a unique address and used to store a single item, where the capacity of the location corresponds to the maximum number of units of the item that can be stored at the location.

**Straight Truck:** Straight trucks do not have a separate tractor and trailer. The driving compartment, engine and trailer are one unit.

**Strategic Alliance:** Business relationship in which two or more independent organizations cooperate and willingly modify their business objectives and practices to help achieve long-term goals and objectives.

**Subassembly:** a stockable item that has gone through an assembly process, but is also used in the assembly of other items. A subassembly is also a component.

**Sub-Optimization:** Decisions or activities in part made at the expense of the whole. An example of sub-optimization is where a manufacturing unit schedules production to benefit its cost structure without regard to customer requirements or the effect on other business units.

**Subcontracting:** Sending production work outside to another manufacturer. This can involve specialized operations such as plating metals or complete functional operations.

**Subhauler:** A subhauler drives a tractor under contract for a company. Usually a subhauler is an owner/operator or a small company.

**Sunk Cost:** 1) The unrecovered balance of an investment. It's a cost already paid that is not relevant to the decision concerning the future that is being made. Capital already invested that for some reason cannot be retrieved. 2) A past cost that has no relevance with respect to future receipts and disbursements of a facility undergoing an economic study. This concept implies that since a past outlay is the same regardless of the alternative selected, it should not influence the choice between alternatives.

**Supplier:**

- 1) A provider of goods or services.
- 2) A seller with whom the buyer does business, as opposed to vendor, which is a generic term referring to all sellers in the marketplace.

**Supplier Certification:** Certification procedures verifying that a supplier operates, maintains, improves, and documents effective procedures that relate to the customer's requirements. Such requirements can include cost, quality, delivery, flexibility, maintenance, safety, and ISO quality and environmental standards.

**Supplier-Owned Inventory:** A variant of Vendor-Managed Inventory and Consignment Inventory. In this case the supplier not only manages the inventory, but also owns the stock close to or at the customer location until the point of consumption or usage by the customer.

**Supply Chain:** (1) Starting with unprocessed raw materials and ending with the final customer using the finished goods, the supply chain links many companies together. (2) The material and informational interchanges in the logistical process, stretching from acquisition of raw materials to delivery of finished products to the end user. All vendors, service providers, and customers are links in the supply chain.

**Supply Chain Design:** The determination of how to structure a supply chain. Design decisions include the selection of partners, the location and capacity of warehouse and production facilities, the products, the modes of transportation, and supporting information systems.

**Supply Chain Execution (SCE):** The ability to move the product out of the warehouse door. This is a critical capacity and one that only brick-and-mortar firms bring to the B2B table. Dot coms have the technology, but that's only part of the equation. The need for SCE is what is driving the dot coms to offer equity partnerships to the wholesale distributors.

**Supply Chain Event Management (SCEM):** SCEM is an application that supports control processes for managing events within and between companies. It consists of integrated software functionality that supports five business processes: monitor, notify, simulate, control, and measure supply chain activities.

**Supply Chain Integration (SCI):** Likely to become a key competitive advantage of selected e-marketplaces. Similar concept to the back-end integration, but with greater emphasis on the moving of goods and services.

**Supply Chain Inventory Visibility:** Software applications that permit monitoring events across a supply chain. These systems track and trace inventory globally on a line-item level, and notify the user of significant deviations from the plans. Companies are provided with realistic estimates of when the material will arrive.

**Supply Chain Management (SCM):** Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. Supply chain management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive, high-performing business model. It includes all of the logistics management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology. — *as defined by the [Council of Supply Chain Management Professionals \(CSCMP\)](#)*

**Supply Chain Network Design Systems:** The systems employed in optimizing the relationships among the various elements of the supply chain manufacturing plants, distribution centers, points of sale, as well as raw materials, relationships among product families, and other factors to synchronize supply chains at a strategic level.

**Supply Chain-Related Finance and Planning Cost Element:** One of the elements comprising a company's total supply chain management costs. These costs consist of the following:

- 1. Supply-Chain Finance Costs:** Costs associated with paying invoices, auditing physical counts, performing inventory accounting, and collecting accounts receivable. Does NOT include customer invoicing/accounting costs.
- 2. Demand/Supply Planning Costs:** Costs associated with forecasting developing finished goods, intermediate, subassembly or end-item inventory plans, and coordinating demand/supply.

**Supply Chain-Related IT Costs:** Information technology (IT) costs (in US dollars) associated with major supply chain management processes as described below. These costs should include:

- \* *Development costs* (costs incurred in process reengineering, planning, software development, installation, implementation, and training associated with new and/or upgraded architecture, infrastructure, and systems to support the described supply chain management processes),
  - \* *Execution costs* (operating costs to support supply chain process users, including computer and network operations, EDI and telecommunications services, and amortization/depreciation of hardware)
  - \* *Maintenance costs* (costs incurred in problem resolution, troubleshooting, repair, and routine maintenance associated with installed hardware and software for described supply chain management processes. Includes costs associated with database administration systems configuration control, release planning, and management).
- These costs are associated with the following processes:

#### **PLAN**

- 1. Product Data Management** - Product phase-in/phase-out and release; post-introduction support and expansion; testing and evaluation; end-of-life inventory management. Item master definition and control.
- 2. Forecasting and Demand/Supply Manage and Finished Goods** - Forecasting; end-item inventory planning, DRP, production master scheduling for all products, all channels.

#### **SOURCE**

- 1. Sourcing/Material Acquisition** - Material requisitions, purchasing, supplier quality engineering, inbound freight management, receiving, incoming inspection, component engineering, tooling acquisition, accounts payable.
- 2. Component and Supplier Management** - Part number cross references, supplier catalogs, approved vendor lists.
- 3. Inventory Management** - Perpetual and physical inventory controls and tools.

#### **MAKE**

- 1. Manufacturing Planning** - MRP, production scheduling, tracking, manufacturing engineering, manufacturing documentation management, inventory/obsolescence tracking.
- 2. Inventory Management** - Perpetual and physical inventory controls and tools.
- 3. Manufacturing Execution** - MES detailed and finite interval scheduling, process controls, and machine scheduling.



## **DELIVER**

- 1. Order Management** - Order entry/maintenance, quotes, customer database, product/price database, accounts receivable, credits and collections, invoicing.
- 2. Distribution and Transportation Management** - DRP, shipping, freight management, traffic management.
- 3. Inventory Management** - Perpetual and physical inventory controls and tools.
- 4. Warehouse Management** - Finished goods, receiving and stocking, pick/pack.
- 5. Channel Management** - Promotions, pricing and discounting, customer satisfaction surveys.
- 6. Field Service/Support** - Field service, customer and field support, technical service, service/call management, returns, warranty tracking.

## **EXTERNAL ELECTRONIC INTERFACES**

**Plan/Source/Make/Deliver** - Interfaces, gateways, and data repositories created and maintained to exchange supply chain-related information with the outside world. E-commerce initiatives. Includes development and implementation costs.

*Note:* Accurate assignment of IT-related cost is challenging. It can be done using activity-based costing methods or using other approaches, such as allocation based on user counts, transactions counts, or departmental headcounts. The emphasis should be on capturing all costs. Costs for any outsourced IT activities should be included.

**Supply Chain Strategic Planning:** The process of analyzing, evaluating, and defining supply chain strategies, including network design, manufacturing and transportation strategy, and inventory policy.

**Supply Planning:** The process of identifying, prioritizing, and aggregating, as a whole with constituent parts, all sources of supply that are required and add value in the supply chain of a product or service at the appropriate level, horizon, and interval.

**Supply Warehouse:** A warehouse that stores raw materials. Goods from different suppliers are picked, sorted, staged, or sequenced at the warehouse to assemble plant orders.

**Support Costs:** Costs of activities not directly associated with producing or delivering products or services. Examples are the costs of information systems, process engineering, and purchasing.

**Surrogate [item] Driver:** In ABC costing, a substitute for the ideal cost driver, but closely correlated to the ideal driver, where [item] is Resource, Activity, or Cost Object. A surrogate driver is used to significantly reduce the cost of measurement while not significantly reducing accuracy. For example, the number of production runs is not descriptive of the material-disbursing activity, but the number of production runs may be used as an activity driver if material disbursements correlate well with the number of production runs.

**Sustaining Activity:** An activity that benefits an organizational unit as a whole, but not any specific cost object.

**SWOT Analysis:** An analysis of the strengths, weaknesses, opportunities, and threats of and to an organization. SWOT analysis is useful in developing strategy.

**Synchronization:** The concept that all supply chain functions are integrated and interact in real time; when changes are made to one area, the effect is automatically reflected throughout the supply chain.

**3D Loading:** 3D loading is a method of space optimizing designed to help quickly and easily plan the best compact arrangement of any 3D rectangular object set (boxes) within one or more larger rectangular enclosures (containers). It's based on three-dimensional, most-dense packing algorithms.

**Taguchi Method:** A concept of offline quality control methods conducted at the product and process design states in the product development cycle. This concept, expressed by Genichi Taguchi, encompasses three phases of product design, parameter design, and tolerance design. The goal is to reduce quality loss by reducing the variability of a product's characteristics during the parameter phase of product development.

**Takeaway conveyor:** A powered conveyor (e.g., belt or live roller) used in piece and case picking to transport completed orders.

**Takt Time:** Sets the pace of production to match the rate of customer demand and becomes the heartbeat of any lean production system. It's computed as the available production time divided by the rate of customer demand. For example, assume demand is 10,000 units per month, or 500 units per day and planned available capacity are 420 minutes per day. The takt time = 420 minutes per day/500 units per day = 0.84 minutes per unit. This takt time means that a unit should be planned to exit the production system on average every 0.84 minutes.

**Tare Weight:** The weight of a substance obtained by deducting the weight of the empty container from the gross weight of the full container.

**Target Costing:** A target cost is calculated by subtracting the desired profit margin from an estimated or market-based price to arrive at a desired production, engineering, or marketing cost. This may not be the initial production cost, but one expected to be achieved during the mature production stage. Target costing is a method used in the analysis of product design that involves estimated a target cost, then designing the product/service to meet that cost.

**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)

**Tariff:** A tax assessed by a government on goods entering or leaving a country. The term is also used in transportation in reference to the fees and rules applied by a carrier for its services.

**Task interleaving:** Term used in describing a warehouse management systems to mix tasks to reduce travel time. Sending a forklift driver to put away a pallet on his way to his next pick is a task interleaving example.

**Tasks:** The breakdown of the work in an activity into smaller elements.

**Tender:** The document which describes a business transaction to be performed.

**Theory of Constraints (TOC):** A production management theory which dictates that volume is controlled by a series of constraints related to work center capacity, component availability, finance, etc. Total throughput cannot exceed the capacity of the smallest constraint, and any inventory buffers or excess capacity at non-related work center is waste.

**Third Party Logistics:** Outsourcing all or much of a company's logistics operations to a specialized company.

**Third Party Logistics Provider (3PL):** A firm which provides multiple logistics services for use by customers. Preferably, these services are integrated or bundled together, by the provider. These firms facilitate the movement of parts and materials from suppliers to manufacturers, and finished products from manufacturers, and finished products from manufacturers to distributors and retailers. Among the services they provide are transportation, warehousing, cross docking, inventory management, packaging, and freight forwarding.

**Third Party Warehousing:** The outsourcing of the warehousing function by the seller of the goods.

**Throughput:** A measure of warehousing output volume (weight, number of units). Also, the total amount of units received, plus the total amount of units shipped divided by two.

**Tier 1, 2 supplier:** A tier 1 supplier is the immediate or primary set of vendors directly used by a company, and tier 2 is a vendor to tier 1. In some industries the final customers or dominant chain partners are consolidating (reducing) their number of tier 1 suppliers, and requiring proof of the communications and fulfillment capabilities between tier 1 and tier 2.

**Total Annual Sales:** Total Annual Sales are Total Product Revenue plus post-delivery revenues (e.g., maintenance and repair or equipment, system integration) royalties, sales of other services, spare parts revenue, and rental/lease revenues.

**Total Average Inventory:** Average normal use stock, plus average lead stock, plus safety stock.

**Total Cost Analysis:** A decision-making approach that considers minimization of total costs and recognizes the inter-relationship among system variables, such as transportation, warehousing, inventory, and customer service.

**Total Cost Curve:** 1) In cost-volume-profit (break-even) analysis, the total cost curve is composed of total fixed and variable costs per unit multiplied by the number of units provided. Break-even quantity occurs where the total cost curve and total sales revenue curve intersect. 2) In inventory theory, the total cost curve for an inventory item is the sum of the costs of acquiring and carrying the item.

**Total Cost of Ownership (TCO):** Total cost of a computer asset throughout its life cycle, from acquisition to disposal. TCO is the combined hard and soft costs of owning networked information assets. "Hard" costs include items such as the purchase price of the asset, implementation fees, upgrades, maintenance, contracts, support contracts, disposal costs, and license fees that may or may not be up-front or charged annually. These costs are considered "hard costs" because they are tangible and easily accounted for.

**Total Cumulative Manufacture Cycle Time:** Average time between commencement of upstream processing and completion of final packaging for shipment operations as well as release of approval for shipment. Does not include WIP storage time.

*Calculation: [Average # of units in WIP]/[Average daily output in units] - WIP days of supply*

**Total Make Cycle Time:** The average processing time between commencement of upstream processing and completion of all manufacturing process steps up to, but not including, packaging and labeling operations (i.e., from start of manufacturing to final formulated product ready for primary packaging.) Does not include hold or test and release times. *Calculation: [Average # of units in active manufacturing]/[Average daily output in units.]*

**Total Product Revenue:** The total value of sales made to external customers plus the transfer price valuation of intra-company shipments, net of all discounts, coupons, allowances, and rebates. Includes only the intra-company revenue for product transferring out of an entity, installation services if these services are sold bundled with end products, and recognized leases to customers initiated during the same period as revenue shipments, with revenue credited at the average selling price.

*Note:* Total Product Revenue excludes post-delivery revenues (maintenance and repair of equipment, system integrations), royalties, sales of other services, spare parts revenue, and rental/lease revenues.

**Total Productive Maintenance (TPM):** Team-based maintenance process designed to maximize machine availability and performance and product quality.

**Total Quality Management:** a management strategy that focuses on continuous improvement.

**Total Supply Chain Management Cost (five elements):** Total cost to manage order processing, acquire materials, manage inventory, and manage supply chain finance, planning, and IT costs as represented as a percent of revenue. Accurate assignment of IT-related cost is challenging. It can be done using activity-based costing methods, or more traditional-based approaches. Allocation based on user counts, transaction counts, or departmental headcounts are reasonable approaches. The emphasis should be on capturing all costs, whether incurred in the entity completing the survey or in a supporting organization on behalf of the entity. Reasonable estimates founded in data were accepted as means to assess overall performance. All estimates reflected fully-burdened actuals inclusive of salary, benefits, space and facilities, and general and administrative allocations.

*Calculation: [Order Management Costs + Material Acquisition Costs + Inventory Carrying Costs + Supply-Chain Related Finance and Planning Costs + Total Supply Chain-Related IT Costs]/[Total Product Revenue]*

**Total Supply Chain Response Time:** The time it takes to rebalance the entire supply chain after determining a change in market demand. Also, a measure of a supply chain's ability to change rapidly in response to marketplace changes.

*Calculation: [Forecast Cycle Time] + [Re-Plan Cycle Time] + [Intra-Manufacturing Re-Plan Cycle Time] + [Cumulative Source/Make Cycle Time] + [Order Fulfillment Lead Time]*

**Total Test Release Cycle Time:** The average total test and release time for all tests, documentation reviews, and batch approval processes performed from start of manufacturing to release of final packaged product for shipment.  
*Calculation:* [Average number of units in test and release]/[Average daily output in units]

**Touch Labor:** The labor that adds value to the product - assemblers, welders, packagers, etc. This does not include indirect resources like material handlers who move and stage product, and mechanical and electrical technicians who maintain equipment.

**Tracing:** The practice of relating resources, activities, and cost objects using the drivers underlying their cost causal relationships. The purpose of tracing is to observe and understand how costs are arising in the normal course of business operations.

**Traceability: 1)** The attribute allowing the ongoing location of a shipment to be determined. **2)** The registering and tracking of parts, processes, and materials used in production, by lot or serial number.

**Tracking and Tracing:** Monitoring and recording shipment movements from origin to destination.

**Trading Partner:** Companies that do business with each other via EDI (e.g., send and receive business documents such as purchase orders).

**Trading Partner Agreement:** The written contract that spells out agreed upon terms between EDI trading partners.

**Traffic:** A department or function charged with the responsibility of arranging the most economic classification and method of shipment for both incoming and outgoing materials and products.

**Traffic Management:** The management and controlling of transportation modes, carriers, and services.

**Trailer:** The part of the truck that carries the goods.

**Trailer Drops:** When a driver drops off a full truck at a warehouse and picks up an empty one.

**Transaction:** A single completed transmission, e.g., transmission of an invoice over an EDI network. Analogous to usage of the term in data processing in which a transaction can be an inquiry or a range of updates and trading transactions. The definition is important for EDI service operators who must interpret invoices and other documents.

**Transaction Set:** Commonly used business transactions (e.g., purchase order, invoice, etc.) organized in a formal, structured manner consisting of a transaction set header control segment, one or more data segments, and a transaction set trailer control data segment.

**Transaction Set ID:** A three digit numerical representation that identifies a transaction set.

**Transit Time:** The total time that elapses between a shipment's pickup and delivery.

**Transparency:** The ability to gain access to information without regard to the system's landscape or architecture. An example would be where an online customer could access a vendor's web site to place an order and receive availability information supplied by a third party outsource manufacturer or shipment information from a third party logistics provider.

**Transportation inventory:** the amount of inventory that is currently in-transit. That is, it is the inventory that has left the shipper's facility (either an owned facility or a supplier's facility) and has yet to arrive at the consignee's facility (may be an owned facility or a customer's facility).

**Transportation Management System:** A computer system designed to provide optimized transportation management in various modes along with associated activities, including managing shipping units, labor planning and building, shipment scheduling through inbound, outbound, intra-company shipments, documentation management (especially when international shipping is involved), and third party logistics management.

**Transportation Mode:** The method of transportation: land, sea, or air shipment.

**Transportation Planning:** The process of defining an integrated supply chain transportation plan and maintaining the information which characterizes total supply chain transportation requirements, and the management of transporters, both inter- and intra- company.

**Transportation Planning Systems:** The systems used in optimizing assignments from plants to distribution centers, and from distribution centers to stores. The systems combine moves to ensure the most economical means are employed.

**Trend:** a gradual increase or decrease in demand over a period of time.

**Trend Forecasting Models:** Methods for forecasting sales data when a definite upward or downward pattern exists. Models include double exponential smoothing, regression, and triple smoothing.

**Truck Stop Electrification (TSE):** Provides power outlets at truck parking spaces in which truck drivers can simply plug in, and turn off their engines, rather than idle their truck engine.

**Truckload Carriers (TL):** Trucking companies which move full truckloads of freight directly from the point of origin to destination.

**Truckload Lot:** A truck shipment that qualifies for a lower freight rate because it meets a minimum weight and/or volume.

**Turnover:**

- 1) Typically refers to inventory turnover
- 2) In the United Kingdom and certain other countries, turnover refers to annual sales volume.

**Umbrella Rate:** An ICC ratemaking practice that held rates to a particular level to protect another mode's traffic.

**Unattended Delivery:** A carrier service or event where neither the customer nor the carrier need both be present in order to enable a successful delivery. Usually used with a postal service or a lockbox service.

**Unbundled Payment/Remittance:** The process where payment is delivered separately from its associated detail.

**UNECE:** United Nations Economic Commission for Europe.

**Unfinished goods:** items that are used to produce finished goods items. Unfinished goods are often called components, ingredients, raw materials, semi-processed materials, and subassemblies.

**Uniform Code Council (UCC):** A US association that administrates UCS, WINS, and VICS and provides UCS identification codes and UPC codes. Also, a model set of legal rules governing commercial transmissions, such as sales, contracts, bank deposits and collections, commercial paper, and letters or credit. Individual states give legal power to the UCC by adopting its articles of law.

**Uniform Product Code (UPC):** A standard product numbering and bar coding system used by the retail industry. UPC codes are administered by the Uniform Code Council. They identify the manufacturer as well as the item, and are included on virtually all retail packaging.

**Uniform Warehouse Receipts Act:** The act that sets forth the regulations governing public warehousing. The regulations define a warehouse manager's legal responsibility and define the types of receipts he or she issues.

**Unit Cost:** The cost associated with a single unit of product. The total cost of producing a product or service divided by the total number of units. The cost associated with a single unit of measure underlying a resource, activity, product, or service. It's calculated by dividing the total cost by the measured volume. Unit cost measurement must be used with caution as it may not always be practical or relevant in all aspects of cost management.

**Unit load:** Either a single unit of an item or multiple units so arranged or restricted that they can be handled as a single entity and maintain their integrity.

**Unit Load Device (ULD):** Refers to airfreight containers and pallets.

**Unit of Measure (UOM):** The unit in which the quantity of an item is managed, e.g., pounds, each, box of 12, package of 20, or case of 144. Various UOMs may exist for a single item. For example, a product may be purchased in cases, stocked in boxes, and issued in single units.

**Unit Train:** An entire, uninterrupted locomotive, car, and caboose movement between an origin and destination.

**United Nations Standard Product and Service Code (UN/SPSC):** Developed jointly between the United Nations and Dun & Bradstreet (D&B). It has a five-level coding structure (segment, family, class, commodity, business function) for nearly 9,000 products.

**United States Railway Association:** The planning and funding agency for Conrail; created by the 3-R Act of 1973.

**Unitization:** In warehousing, the consolidation of several units into larger units for fewer handlings.

**Unitize:** To consolidate several packages into one unit; carriers strap, band, or otherwise attach the several packages together.

**UPC (Universal Product Code):** The standard bar code for retail items in North America.

**Unplanned Order:** Orders which are received that do not fit into the volumes prescribed by the plans developed from forecasts.

**Unique Parcel Identifier (UPI):** A series of characters that are assigned to a specific parcel that enables it to be tracked throughout delivery by a carrier.

**Upsell:** The practice of attempting to sell a higher-value product to the customer.

**Upside Production Flexibility:** The number of days required to complete manufacture and delivery of an unplanned sustainable 20% increase in end-product supply of the predominant product line. The one constraint that is estimated to be the principal obstacle to a 20% increase in end-product supply as represented in days is Upside Flexibility: Principal Constraint. Upside flexibility can affect three possible areas: direct labor availability, internal manufacturing capacity, and key components or material availability.

**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

**Valuation Charges:** Transportation charges to shippers who declare a value of goods higher than the value of the carriers' limits of liability.

**Value Added:** Increased or improved value, worth, functionality, or usefulness.

**Value-Added Network (VAN):** A company that acts as a clearinghouse for electronic transactions between trading partners. A third party supplier that receives EDI transmissions from sending trading partners and holds them in a mailbox until retrieved by the receiving partners.

**Value-Added Productivity Per Employee:** Contribution made by employees to total product revenue minus the material purchases divided by total employment. Total employment is total employment for the entity being surveyed. This is the average full-time equivalent employee in all functions, including sales and marketing, distribution, manufacturing, engineering, customer service, finance, general and administrative, and other. Total employment should include contract and temporary employees on a full-time equivalent (FTE) basis.

*Calculation: Total Product Revenue-External Direct Material/[FTEs]*

**Value Adding/Non-Value Adding:** Assessing the relative value of activities according to how they contribute to customer value or to meeting an organization's needs. The degree of contribution reflects the influence of an activity's cost driver(s).

**Value Analysis:** A method to determine how features of a product or service relate to cost, functionality, appeal and utility to a customer (i.e., engineering value analysis).

**Value Chain:** A series of activities, when combined, define a business process; the series of activities from manufacturers to the retail stores that define the industry supply chain.

**Value Chain Analysis:** A method of identifying all the elements in the linkage of activities a firm relies on to secure the necessary materials and services starting from their point of origin to manufacture, and to distribution of their products and services to an end user.

**Value-of-Service Pricing:** Pricing according to the value of the product the company is transporting; third-degree price discrimination; demand-oriented pricing; charging what the traffic will bear.

**Value Proposition:** What the hub offers to members. To be truly effective, the value proposition has to be two-sided - a benefit to both buyers and sellers.

**Variable Cost:** A cost that fluctuates with the volume or activity level of business.

**Velocity:** Rate of product movement through a warehouse.

**Vendor:** The manufacturer or distributor of an item or product line.

**Vendor Code:** a unique identifier, usually a number and sometimes the company's DUNS number, assigned by a customer for the vendor it buys from.

*Example:* a grocery store chain buys Oreo cookies from Nabisco. For accounting purposes, the grocery store chain identifies Nabisco as Vendor #76091. One company can have multiple vendor codes. *Example:* Welch's Foods sells many different products - frozen grape juice concentrate, chilled grape juice, bottled grape juice, and grape jelly. Because each of these items is a different type of product (frozen food, chilled food, beverages, dry food), they may also have a different buyer at the grocery store chain, requiring a different vendor code for each product line.

**Vendor-Managed Inventory (VMI):** The practice of retailers making suppliers responsible for determining order size and timing usually based on receipt of retail POS and inventory data. Its goal is to increase retail inventory turns and reduce stock outs.

**Vertical Hub/Vertical Portal:** Serving one specific industry. Vertical portal web sites are ones that cater to customers within a particular industry. Similar to the term "vertical industry," these web sites are industry specific, and, like a portal, they make use of Internet technology by using the same kind of personalization technology. In addition to industry-specific vertical portals that cater to consumers, another definition of a vertical portal is one that caters solely to other businesses.

**Vertical Integration:** The degree to which a firm has decided to directly produce multiple value-adding stages, from raw material to the sale of the product to the ultimate consumer. The more steps in the sequence, the greater the vertical integration. A manufacturer that decides to begin producing parts, components, and materials that it normally purchases is said to be backward integrated. Likewise, a manufacturer that decides to take over distribution and perhaps sale to the ultimate consumer is said to be forward integrated.

**Vessel:** A floating structure designed for transport.

**Vessel Manifest:** A list of all cargoes on a vessel.

**Visibility:** The ability to access or view pertinent data or information as it relates to logistics and the supply chain, regardless of the point in the chain where the data exists.

**Vision:** The shared perception of the organization's future - what the organization will achieve and a supporting philosophy. This shared vision must be supported by strategic objectives, strategies, and action plans to move in the desired direction.

**Voice Activated:** Systems which guide users such as warehouse personnel via voice commands.

**Warehouse:** Storage place for products. Principal warehouse activities include receipt of product, storage, shipment, and order picking.

**Warehousing:** The storage (holding) of goods.

**Warehouse Management System (WMS):** The systems used in effectively managing warehouse business processes and direct warehouse activities, including receiving, putaway, picking, shipping, and inventory cycle counts. Also includes support of radio frequency communications, allowing real-time data transfer between the system and warehouse personnel. They also maximize space and minimize material handling by automating putaway processes.

**Warranty Costs:** Includes materials, labor, and problem diagnosis for products returned for repair or refurbishment.

**Waste:**

- 1) In just in time, 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. Waste production can usually be planned and controlled. Scrap is typically not planned and may result from the same production run as waste.

**Waterway Use Tax:** A per-gallon tax assessed barge carriers for waterway

**Wave:** A planning period for picking groups of orders that can be used to coordinate picking with shipping schedules or because downstream sortation has limited order capacity; there are usually multiple waves during each shift.

**Wave Picking:** A method of selecting and sequencing picking lists to minimize the waiting time of the delivered material. Shipping orders may be picked in waves combined by a common product, common carrier, or destination, and manufacturing orders in waves related to work centers.

**Waybill:** Document containing description of goods that are part of common carrier freight shipment. Shows origin, destination, consignee/consignor, and amount charged. Copies travel with goods and are retained by originating/delivering agents. Used by carrier for internal record and control, especially during transit. Not a transportation contract.

**Wedge:** Refers to any device inserted between the keyboard and the terminal that translates digital signals into keyboard codes. In a keyboard wedge application, the data resulting from the scanning of a bar code symbol is treated by the PC or terminal as if it originated from the keyboard, while the keyboard itself remains fully functional. Because the terminal or PC cannot differentiate between bar coded data and actual keyboard data, a keyboard wedge interface allows bar code reading capability to be rapidly added to an existing computer without changing the application software.

**Weight Break:** The shipment volume at which the LTL charges equal the TL charges at the minimum weight.

**Weight Confirmation:** The practice of confirming or validating receipts or shipments based on the weight.

**Weight-Losing Raw Material:** A raw material that loses weight in processing.

**Wharfage:** A charge assessed by a pier or dock owner against the cargo or a steamship company for use of the pier or dock for the handling of incoming or outgoing cargo.

**Wide-Area Network (WAN):** A public or private data communications system for linking computers distributed over a large geographic area.



**Work in Process (WIP):** Parts and subassemblies in the process of becoming completed finished goods. Work in process generally includes all of the material, labor, and overhead charged against a production order which has not been absorbed back into inventory through receipt of completed products.

**World Trade Organization (WTO):** An organization established on January 1, 1995 replacing the previous General Agreement on Tariffs and Trade GATT that forms the cornerstone of the world trading system.

**Yield:** The ratio of usable output from a process to its input.

**Yield rate:** the expected “success” rate in the manufacturing process for an item. Yield rate exists at the parent-item level, as opposed to scrap rate that exist at the component level.

**Zero Inventory:** A term initially used to represent the optimum stock level in a just-in-time system and the idea that inventory is a liability instead of an asset.

**Zone-batch picking:** A combination of zone and batch picking, where multiple pickers each pick portions of multiple orders.

**Zone of Rate Flexibility:** Railroads may raise rates by a percentage increase in the railroad cost index that the ICC determines; the railroads could raise rates by 6 percent per year through 1984 and 4 percent thereafter.

**Zone of Rate Freedom:** Motor carriers may raise or lower rates by 10 percent in one year without ICC interference; if the rate change is within the zone of freedom, the rate is presumed to be reasonable.

**Zone of Reasonableness:** A zone or limit within which air carriers may change rates without regulatory scrutiny; if the rate change is within the zone, the new rate is presumed to be reasonable.

**Zone Picking:** A method of subdividing a picking list by arrears within a storeroom for more efficient and rapid order picking. A zone-picked order must be grouped to a single location and the separate pieces combined before delivery, or must be delivered to different locations such as a work center.

**Zone Price:** The constant price of a product at all geographic locations within a zone.

**References for this Publication:**

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