

Module 4

Section A: Forecasting

Term

Associative forecasting

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Section A: Forecasting

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Bias

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Section A: Forecasting

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Bullwhip effect

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Section A: Forecasting

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Business-to-business e-commerce (B2B)

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Section A: Forecasting

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Business-to-consumer e-sales (B2C)

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Section A: Forecasting

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Forecast error

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Section A: Forecasting

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Forecasting

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Section A: Forecasting

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Qualitative forecasting techniques

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A consistent deviation from the mean in one direction (high or low). A normal property of a good forecast is that it is not [affected by this]. See: average forecast error.

Uses one or more variables that are believed to affect demand in order to forecast future demand.

Business conducted over the internet between businesses. The implication is that this connectivity will cause businesses to transform themselves via supply chain management to become virtual organizations—reducing costs, improving quality, reducing delivery lead time, and improving due-date performance.

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 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. [This] can be eliminated by synchronizing the supply chain.

The difference between actual demand and forecast demand. [It] can be represented several different ways: mean absolute deviation (MAD); mean absolute percentage error (MAPE); and mean squared error (MSE). See: mean absolute deviation (MAD), mean absolute percentage error (MAPE), mean squared error (MSE).

Business being conducted between businesses and final consumers, largely over the internet. It includes traditional brick and mortar businesses that also offer products online and businesses that trade exclusively on the internet.

An approach to forecasting that is based on intuitive or judgmental evaluation. It is used generally when data is scarce, not available, or no longer relevant. Common [types...] include personal insight, sales force estimates, panel consensus, market research, visionary forecasting, and the Delphi method. Examples include developing long-range projections and new product introductions.

The business function that attempts to predict sales and use of products so they can be purchased or manufactured in appropriate quantities in advance.

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Section A: Forecasting

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Quantitative forecasting techniques

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Section A: Forecasting

Term
Random variation

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Section A: Forecasting

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Seasonality

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Section A: Forecasting

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Time series forecasting

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Section A: Forecasting

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Tracking signal

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Section A: Forecasting

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Trend

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Module 4
Section B: Demand Management and Logistics Capacity

Term
Demand forecasting

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Section B: Demand Management and Logistics Capacity

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Demand management

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A fluctuation in data that is caused by uncertain or random occurrences. See: random events.

An approach to forecasting where historical demand data is used to project future demand. Extrinsic and intrinsic techniques are typically used. See: extrinsic forecasting method, intrinsic forecasting method.

A forecasting method that projects historical data patterns into the future. Involves the assumption that the near-term future will be like the recent past.

A predictable repetitive pattern of demand measured within a year where demand grows and declines. These are calendar-related patterns that can appear annually, quarterly, monthly, weekly, daily and/or hourly. Syn.: seasonal variation. See: base series.

General upward or downward movement of a variable over time (e.g., demand, process attribute).

The ratio of the cumulative algebraic sum of the deviations between the forecasts and the actual values to the mean absolute deviation. Used to signal when the validity of the forecasting model might be in doubt. See: forecast error, mean absolute deviation.

1) The function of recognizing all demands for goods and services to support the marketplace. It involves prioritizing demand when supply is lacking. [This] facilitates the planning and use of resources for profitable business results. 2) In marketing, the process of planning, executing, controlling, and monitoring the design, pricing, promotion, and distribution of products and services to bring about transactions that meet organizational and individual needs. Syn.: marketing management. See: demand planning.

Forecasting the demand for a particular good, component, or service.

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Section B: Demand Management and Logistics Capacity

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Demand management process

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Section B: Demand Management and Logistics Capacity

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Demand planning

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Section B: Demand Management and Logistics Capacity

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Resource planning

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Section B: Demand Management and Logistics Capacity

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Resource requirements planning

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Section C: Sales and Operations Planning (S&OP)

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Advanced planning and scheduling (APS)

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Section C: Sales and Operations Planning (S&OP)

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Collaborative planning, forecasting, and replenishment (CPFR)

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Section C: Sales and Operations Planning (S&OP)

Term

Sales and operations planning

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Section D: Distribution Requirements Planning (DRP)

Term

Aggregate plan

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The process of combining statistical forecasting techniques and judgment to construct demand estimates for products or services (both high and low volume; lumpy and continuous) across the supply chain from the suppliers' raw materials to the consumer's needs. Items can be aggregated by product family, geographical location, product life cycle, and so forth, to determine an estimate of consumer demand for finished products, service parts, and services. Numerous forecasting models are tested and combined with judgment from marketing, sales, distributors, warehousing, service parts, and other functions. Actual sales are compared to forecasts provided by various models and judgments to determine the best integration of techniques and judgment to minimize forecast error. See: demand management.

A process that weighs both customer demand and a firm's output capabilities, and tries to balance the two. Demand management is made up of planning demand, communicating demand, influencing demand, and prioritizing demand.

Syn.: resource planning.

Capacity planning conducted at the business plan level. The process of establishing, measuring, and adjusting limits or levels of long-range capacity. [This] is normally based on the production plan but may be driven by higher-level plans beyond the time horizon of the production plan (e.g., the business plan). It addresses those resources that take long periods of time to acquire. [Decisions based on this] always require top management approval. Syn.: resource requirements planning. See: capacity planning, long-term planning.

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.

Techniques that deal with the analysis and planning of logistics and manufacturing during short, intermediate, and long-term time periods. 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.

A plan that includes budgeted levels of finished goods, inventory, production backlogs, and changes in the workforce to support the production strategy. Aggregated information (e.g., product line, family) rather than product information is used [...].

A process to develop tactical plans that provide management the ability to strategically direct its businesses to achieve competitive advantage on a continuous basis by integrating customer-focused marketing plans for new and existing products with the management of the supply chain. The process brings together all the plans for the business (sales, marketing, development, manufacturing, sourcing, and financial) into one integrated set of plans. [This] is performed at least once a month and is reviewed by management at an aggregate (product family) level. The process must reconcile all supply, demand, and new product plans at both the detail and aggregate levels and tie to the business plan. It is the definitive statement of the company's plans for the near to intermediate term, covering a horizon sufficient to plan for resources and to support the annual business planning process. Executed properly, [this] process links the strategic plans for the business with its execution and reviews performance measurements for continuous improvement. See: aggregate planning, executive sales and operations planning, production plan, production planning, sales plan, tactical planning.

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*Section D: Distribution Requirements Planning
(DRP)*

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Distribution requirements planning (DRP)

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*Section D: Distribution Requirements Planning
(DRP)*

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Distribution resource planning (DRP II)

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*Section D: Distribution Requirements Planning
(DRP)*

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Exception report

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*Section D: Distribution Requirements Planning
(DRP)*

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Planned order

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*Section D: Distribution Requirements Planning
(DRP)*

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Planned order receipt

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*Section D: Distribution Requirements Planning
(DRP)*

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Planned order release

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*Section D: Distribution Requirements Planning
(DRP)*

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Scheduled receipt

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Module 4

*Section E: Master Scheduling and Material
Requirements Planning*

Term

Available-to-promise (ATP)

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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.).

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

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

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

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

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

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

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

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Section E: Master Scheduling and Material Requirements Planning

Term

Customer order

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Section E: Master Scheduling and Material Requirements Planning

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Dependent demand

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Enterprise resource planning (ERP)

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Section E: Master Scheduling and Material Requirements Planning

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Independent demand

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Section E: Master Scheduling and Material Requirements Planning

Term

Interplant demand

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Section E: Master Scheduling and Material Requirements Planning

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Master production schedule (MPS)

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Section E: Master Scheduling and Material Requirements Planning

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Master schedule

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Section E: Master Scheduling and Material Requirements Planning

Term

Material requirements planning (MRP)

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

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

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

Framework for organizing, defining, and standardizing the business processes necessary to effectively plan and control an organization so the organization can use its internal knowledge to seek external advantages. An ERP system provides extensive databanks of information including master file records, repositories of cost and sales, financial details, analysis of product and customer hierarchies, and historic and current transactional data.

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

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

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

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

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Section E: Master Scheduling and Material Requirements Planning

Term
Order promising

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Section E: Master Scheduling and Material Requirements Planning

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Projected available balance (PAB)

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Section E: Master Scheduling and Material Requirements Planning

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Time fence

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Section F: Sourcing and Procurement

Term
Annualized contract

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Bilateral contract

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Contract

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Section F: Sourcing and Procurement

Term
Contracts for the international sale of goods (CISG)

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Cost-based contract

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

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

A negotiated agreement with a supplier for one year that sets pricing, helps ensure a continuous supply of material, and provides the supplier with estimated future requirements.

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

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.

An agreement wherein each party makes a promise to the other party.

A type of purchasing contract where the price of goods or services is tied to the cost of key inputs or other economic factors such as interest rates.

Govern the sale of goods in the international environment. They enable exporters to avoid choice-of-law issues.

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Section F: Sourcing and Procurement

Term

Cost-plus-fixed-fee contract

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Section F: Sourcing and Procurement

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Cost-plus-incentive-fee contract

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Section F: Sourcing and Procurement

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Firm fixed-price contract

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Section F: Sourcing and Procurement

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Fixed-price incentive fee contract

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Section F: Sourcing and Procurement

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Incentive arrangements

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Section F: Sourcing and Procurement

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Incentive contract

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Section F: Sourcing and Procurement

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Multisourcing

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Section F: Sourcing and Procurement

Term

Procurement

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A contract in which the seller is paid for costs specified as allowable in the contract plus a profit, provided certain provisions are met.

A contract in which the seller is paid for costs specified as allowable in the contract plus a stipulated fixed fee.

A contract in which the seller is paid a set price and can earn an additional profit if certain stipulations are met.

A contract in which the seller is paid a set price without regard to costs. Syn.: fixed-price contract.

A contract where the buyer and seller agree to a target cost and maximum price. Cost savings below the target are shared between buyer and seller. If actual cost exceeds the target cost, the cost overrun is shared between buyer and seller up to the maximum price.

Incentive contract that allows for the sharing of the cost responsibility between the buyer and seller. Incentives are incorporated into the contract to motivate the supplier to improve its performance in areas such as quality, on-time delivery, and customer satisfaction. There are three elements of an incentive agreement: target cost, target profit, and the sharing agreement.

The business functions [of...] planning, purchasing, inventory control, traffic, receiving, incoming inspection, and salvage operations.

Procurement of a good or service from more than one independent supplier. Syn.: multiple sourcing. Ant: single sourcing. See: dual sourcing.

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Section F: Sourcing and Procurement

Term

Purchase order

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Section F: Sourcing and Procurement

Term

Routing guide

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Section F: Sourcing and Procurement

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Single-source supplier

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Section F: Sourcing and Procurement

Term

Sole source

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Section F: Sourcing and Procurement

Term

Sourcing

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Strategic sourcing

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Tactical buying

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Section F: Sourcing and Procurement

Term

Terms and conditions

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A shipping tool used to manage logistics activities for shipments between two points. It contains mode and carrier information, freight rates, and service requirements.

The purchaser's authorization used to formalize a purchase transaction with a supplier. [When given to a supplier, this] should contain statements of the name, part number, quantity, description, and price of the goods or services ordered; agreed-to terms as to payment, discounts, date of performance, and transportation; and all other agreements pertinent to the purchase and its execution by the supplier.

The situation where the supply of a product is available from only one organization. Usually technical barriers such as patents preclude other suppliers from offering the product. See: single sourcing.

A company that is selected to have 100 percent of the business for a part although alternate suppliers are available. See: sole-source supplier.

A comprehensive approach for locating and sourcing key material suppliers, which often includes the business process of analyzing total-spend-for-material spend categories. Includes a focus on the development of long-term relationships with trading partners who can help the purchaser meet profitability and customer satisfaction goals. From an information technology applications perspective, includes automation of requests for quote (RFQ), requests for proposal (RFP), electronic auctioning (e-auction or reverse auction), and contract management processes.

The process of identifying a company that provides a needed good or service.

All the provisions and agreements of a contract.

The purchasing process focused on transactions and nonstrategic material buying. Closely aligned with the "ordering" portion of executing the purchasing transaction process. Its characteristics include stable, limited fluctuations; defined standard specifications noncritical to production; no delivery issues; and high reliability concerning quality-standard material with very little concern for rejects. See: strategic sourcing.

Module 4

Section F: Sourcing and Procurement

Term

Terms of sale

Module 4

Section F: Sourcing and Procurement

Term

Trading partner agreement

A contract between trading partners that describes all facets of their business together. A legal and binding agreement suitable for legal purposes as well as standard working agreements.

In international trade, the element of a contract that states the delivery and payment terms between a buyer and a seller. It includes when and where the transfer of goods will occur, documentation that is required, and liabilities for both parties while the goods are in transit.