Module 1
Section A: Introduction to Supply Chains

Term
Echelon

Module 1
Section A: Introduction to Supply Chains

Term
Keiretsu

Module 1
Section A: Introduction to Supply Chains

Term
Service industry

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Section A: Introduction to Supply Chains

Term
Stakeholder

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Section A: Introduction to Supply Chains

Term
Supply chain

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Section A: Introduction to Supply Chains

Term
Supply chain management

Module 1
Section B: Demand Analysis and Patterns

Term
Macro environment

Module 1
Section B: Demand Analysis and Patterns

Term
Market share

A form of cooperative relationship among companies in Japan in which the companies largely remain legally and economically independent even though they work closely in various ways such as 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) keiretsu alliances have been formed of companies ranging from raw material suppliers to retailers.

A level of supply chain nodes, such as factories, warehouses, and retail stores. Each echelon adds operating expense, holds inventory, adds to the cycle time, and expects to make a profit. See: disintermediation.

Any individual or group that has an interest that is affected or could be affected by the organization's activities. These include business partners, civil society organizations, consumers, customers, employees and other workers, managers, governments, local communities, non-governmental organizations, shareholders and other investors, suppliers, trade unions, or vulnerable groups.

1) In its narrowest sense, an organization that provides an intangible product (e.g., medical or legal advice). 2) In its broadest sense, all organizations except farming, mining, and manufacturing. The service industry includes retail trade; wholesale trade; transportation and utilities; finance, insurance, and real estate; construction; professional, personal, and social services; and local, state, and federal governments.

The design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally.

The flow of products, information and money through a network of partners from raw material suppliers to end users.

The actual portion of current market demand that a company or product achieves.

The environment external to a business including technological, economic, natural, and regulatory forces that marketing efforts cannot control.

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Section B: Demand Analysis and Patterns

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Marketing research

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Price elasticity

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Random variation

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Seasonality

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Term
Trend

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Section C: Demand Management

Term
Branding

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Term
Demand

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Term
Demand management

The degree of change in buyer demand in response to changes in product price. It is calculated by dividing the percentage of change in quantity bought by the percentage of change in price. Prices are considered elastic if demand varies with changes in price. If demand changes only slightly when the price changes, demand is said to be inelastic. For example, demand for most medical services is relatively inelastic, but demand for automobiles is generally elastic.

The systematic gathering, recording, and analyzing of data relating to the marketing of goods and services. Such research may be undertaken by impartial agencies or by business firms or their agents. Marketing research includes several types: (1) Market analysis is the study of the size, location, nature, and characteristics of markets; (2) sales analysis (or research) is the systematic study and comparison of sales data; and (3) consumer research is concerned with the discovery and analysis of consumer attitudes, reactions, and preferences.

A predictable, repetitive pattern of demand measured within a year, during which time the 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.

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

The use of a name, term, symbol, design, or a combination of these to identify a product.

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

1) The integration of demand planning upstream and downstream within the supply chain to balance all sources of demand for goods and services with the firm's output capabilities to generate profitable results. Demand management involves prioritizing demand when supply is lacking and responds quickly to changes in demand. Demand management includes the individual processes of planning demand, communicating demand, influencing demand, and prioritizing demand. 2) In marketing and sales, 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. See: marketing management, demand planning.

1) A need for a particular product, component, or service. The demand could come from any number of sources (e.g., a customer order, an interplant requirement, a branch warehouse request for a service part, or the manufacturing of another product). See: booked orders. 2) In economics, the consumer's desire to purchase a good or service and willingness to pay a certain price.

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Section C: Demand Management

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Demand shaping

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Four Ps

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Section C: Demand Management

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Life cycle analysis

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Order processing

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Order qualifier

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Term
Order winner

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Section C: Demand Management

Term
Plan-do-check-act (PDCA)

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Section C: Demand Management

Term
Product life cycle

A set of marketing tools to direct the business offering to the customer. The four Ps are product, price, place, and promotion.

The use of tactics — such as price incentives, advertising, product positioning, product modifications and substitutions or trade programs — to influence customers' purchasing behavior to balance supply and demand more effectively.

The activities required to administratively process a customer's order and make it ready for shipment or production.

1) Syn.: life cycle assessment (LCA). 2) A quantitative forecasting technique that is based on applying past patterns of demand data and that covers introduction, growth, maturity, saturation, and decline of similar products to a new product family. See: product life cycle.

A competitive characteristic that causes a firm's customers to choose that firm's goods and services over those of its competitors. Order winners can be considered to be competitive advantages for the firm. Order winners usually focus on one (rarely more than two) of the following strategic initiatives: price or cost, quality, delivery speed, delivery reliability, product design, flexibility, aftermarket service, and image. See: order loser, order qualifier.

A competitive characteristic that a firm must exhibit to be a viable competitor in the marketplace. For example, a firm may seek to compete on characteristics other than price, but in order to qualify to compete, its costs and the related price must be within a certain range to be considered by its customers. Syn.: qualifiers. See: order loser, order winner.

The stages a new product goes through from beginning to end, from initial research and development, through growth and maturity, to decline and phase-out. See: life cycle analysis.

A four-step process for quality improvement. In the first step (plan), a performance gap is identified, and a plan to effect improvement is developed. In the second step (do), the plan is carried out, preferably on a small scale. In the third step (check), the effects of the plan are monitored. In the last step (act), the results are studied to determine what was learned and what can be predicted to take corrective action or institutionalize the changes. Syns.: plan-do-check-act (PDCA) cycle, Shewhart circle of quality, Shewhart cycle, Deming circle.

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Section C: Demand Management

Term
Product lifecycle management (PLM)

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Section D: Forecasting

Term
Bias

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Section D: Forecasting

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Demand forecasting

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Demand planning

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Forecast error

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Forecasting

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Leading indicator

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Section D: Forecasting

Term
Mean absolute deviation (MAD)

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

The process of facilitating the development, use, and support of products that customers want and need. It helps professionals envision the creation and preservation of product information, both to the customer and along the reverse-logistics portion of the supply chain.

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, etc., to estimate consumer demand for finished products, service parts, and services. Numerous forecasting models are tested and combined with judgment and intelligence from marketing, sales, distributors, warehousing, service parts, and other functions to minimize forecast error. See: demand management.

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

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

The difference between actual demand and forecast demand. Forecast error can be represented several different ways: mean absolute deviation, mean absolute percent error, and mean squared error. See: deviation, mean absolute deviation (MAD), mean absolute percent error (MAPE), mean squared error (MSE).

The average of the absolute values of the deviations of observed values from some expected value. MAD can be calculated based on observations and the arithmetic mean of those observations. In forecasting, MAD is calculated as the arithmetic mean of the absolute forecast error values. See: absolute error, forecast error.

A specific business activity index that indicates future trends. For example, housing starts is a leading indicator for the industry that supplies builders' hardware.

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Section D: Forecasting

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Product mix forecast

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Safety factor

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Term
Standard deviation

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Section D: Forecasting

Term
Tracking signal

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Section E: Supply and Demand Alignment

Term
Assemble-to-order (ATO)

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Section E: Supply and Demand Alignment

Term
Backlog

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Section E: Supply and Demand Alignment

Term
Chase production method

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Section E: Supply and Demand Alignment

Term
Engineer-to-order (ETO)

1) The ratio of average strength to the worst stress expected. It is essential that the variation, in addition to the average value, be considered in design. 2) The numerical value used in the service function (based on the standard deviation or mean absolute deviation of the forecast) to provide a given level of customer service. For example, if the item's mean absolute deviation is 100 and a .95 customer service level (with a safety factor of 2.06) is desired, then a safety stock of 206 units should be carried. This safety stock must be adjusted if the forecast interval and item lead times differ. Syn.: service factor. See: service function.

A forecast of the proportion of products that will be sold within a given product family or the proportion of options ordered within a product line. An inaccurate product mix forecast can create material and inventory shortages even if the aggregate product line or product family demand forecast is accurate.

A measure used to evaluate whether the actual demand reflects the forecasting method's assumptions about demand behavior. It is the ratio of the cumulative forecast errors to the mean absolute deviation (MAD). See: forecast error.

A measurement of dispersion of data or of a variable. The standard deviation is computed by finding the differences between the average and actual observations, squaring each difference, adding the squared differences, dividing by n - 1 (for a sample), and taking the square root of the result. See: dispersion, estimate of error.

All the customer orders received but not yet shipped. This is sometimes referred to as open customer orders or the order board. See: order backlog, past-due order.

A production environment where a good or service can be assembled after receipt of a customer's order. The key components 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 from common components into a pre-determined product. This strategy is useful when a large number of end products (based on the selection of options and accessories) can be assembled from common components. ATO is distinct from configure-to-order in that the assembly is standard and is not customized to order. Syn.: finish-to-order (FTO). See: make-to-order (MTO), make-to-stock (MTS), configure-to-order (CTO).

Products whose customer specifications require unique engineering design, significant customization, or new purchased materials. Each customer order results in a unique set of part numbers, bills of material, and routings. Syn.: design-to-order (DTO).

A production planning method that maintains a stable inventory level while varying production to meet demand. Companies may combine elements of chase and level strategies to create a hybrid production plan that minimizes total cost over the planning horizon. Syn.: chase strategy.

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Section E: Supply and Demand Alignment

Term
Executive sales and operations planning (executive S&OP)

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Section E: Supply and Demand Alignment

Term
Level production method

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Term
Make-to-order (MTO)

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Term
Make-to-stock (MTS)

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Term
Master planning

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Term
Package-to-order (PTO)

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Term
Product family

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Term
Quality

A production planning method that maintains a stable production rate while varying inventory levels to meet demand. Syns.: level strategy, production leveling. See: level schedule.

The portion of sales and operations planning (S&OP) that defines executive decision-making processes to balance supply and demand at the volume level in families, fully integrates financial planning and operational planning, and provides a forum for establishing and linking high-level strategic plans with day-to-day operations. See: sales and operations planning (S&OP).

A production environment where products can be and usually are finished before receipt of a customer order. Customer orders are typically filled from existing stocks, and production orders are used to replenish those stocks. Syn.: produce-to-stock. See: assemble-to-order (ATO), make-to-order (MTO).

A production environment where a good or service is made after receipt of a customer's order. The final product is usually a combination of standard items and items custom-designed to meet the special needs of the customer. Where options or accessories are stocked before customer orders arrive, the term assemble-to-order (ATO) is frequently used. Syn.: build-to-order (BTO). See: assemble-to-order (ATO), make-to-stock (MTS).

A production environment in which the packaging of a good or service is delayed until after the receipt of a customer order. The physical item is typically common across many different customers, and the packaging determines the end product for the order.

A group of business processes that includes the following activities: demand management (forecasting and order servicing), production and resource planning, and master scheduling (master schedule and the rough-cut capacity plan).

Conformance to requirements or fitness for use. Quality can be defined through five principal approaches: (1) Transcendent quality is an ideal and 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 at an acceptable price. Also, quality has two major components: (1) quality of conformance, which is quality defined by the absence of defects, and (2) quality of design, which is quality measured by the degree of customer satisfaction with a product's characteristics and features.

A group of products or services that pass through similar processing steps, have similar characteristics, and share common equipment prior to shipment or delivery to the customer. A product family can be from different overlapping product lines that are produced in one factory. This classification is often used in production planning (or sales and operations planning (S&OP)). See: product line.

Module 1
Section E: Supply and Demand Alignment

Term
Resource planning

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Section E: Supply and Demand Alignment

Term
Sales and operations planning (S&OP)

A mid- to long-term supply chain planning practice that compares the demand plan with inventory levels and production capacity and analyzes where any imbalances to the plan might exist. The process integrates all the plans for the business (sales, marketing, development, manufacturing, sourcing, and financial) and produces a high-level production plan, covering a horizon sufficient to plan for resources and to support the annual business planning process. S&OP is performed at least once a month and is reviewed by management at an aggregate (product family) level. The S&OP 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 (executive S&OP), integrated business planning (IBP), production plan, production planning, sales plan, tactical planning.

Capacity planning conducted at the business plan level. Resource planning is the process of establishing, measuring, and adjusting limits or levels of long-range capacity. It 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. Resource planning decisions always require top management approval. Syn.: resource requirements planning. See: capacity planning, long-term planning.