Module 9
Section C: Facilitate Facilities Planning and Network Design

Term
Analytics

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Term
Center-of-gravity approach

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Heuristics

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Network design

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Optimization models

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Predictive analytics

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SWOT analysis

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Scope creep

A methodology for locating distribution centers at approximately the location representing the minimum transportation costs between the plants, the distribution centers, and the markets, in order to maximize revenue.

The review of typically large sets of business data using mathematics, statistics, and computer software to identify meaningful patterns in the data to help in decision-making.

1) In supply chain management, the design of a supply chain's sourcing, manufacturing, and distribution facilities and information flows to meet the organization's strategic goals. These strategic goals can include being efficient, responsive, customer-focused, or some other mix of priorities. The design includes determining the best locations, numbers, sizes, capacities, capabilities, and ownership models of facilities to support these goals. 2) In logistics, the design and periodic review of inbound and outbound transportation networks—all types of warehouses by number, location, size, layout, and optimum mix of inventory levels per location—to meet the organization's strategic goals. Considerations are made to balance tradeoffs among warehouse costs, transportation times and expenses, and customer service goals.

A form of problem solving in which the results or rules have been determined by experience or intuition instead of by optimization. Heuristics can be used in such areas as forecasting, lot sizing, or determining production, staff, or inventory levels.

A method of extracting information from existing data in order to identify patterns and predict future outcomes and trends.

A class of mathematical models used when the modeler wishes to find the ideal (maximum or minimum) value of some objective function subject to a set of constraints.

The informal addition of unfunded features and services to a project. Scope creep is closely monitored and controlled to ensure that agreed-upon output of a project can be achieved within the budgeted timeline and costs.

An analysis of the strengths, weaknesses, opportunities, and threats of and to an organization. Useful in developing strategy.

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Simulation

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Square root rule

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Value stream

A technique that assists planners to calculate the change in total safety stock needed to maintain customer service levels within a distribution network when the number of stocking locations is changed. [It] states that total safety stock inventories in a specified number of facilities can be approximated by multiplying the total amount of inventory in existing facilities by the square root of the ratio of number of future facilities divided by the number of existing facilities.

1) The technique of using representative or artificial data to reproduce in a model various conditions that are likely to occur in the actual performance of a system. Frequently used to test the behavior of a system under different operating policies. 2) Within MRP II, using the operational data to perform what-if evaluations of alternative plans to answer the question, “Can we do it?” If yes, the simulation can then be run in the financial mode to help answer the question, “Do we really want to?” See: what-if analysis.

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