Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Advanced planning and scheduling (APS)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Artificial intelligence (AI)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Big data

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Blockchain

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Cloud computing

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Competitive analysis

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Data mining

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Decision support system (DSS)

1) Machines or computer programs that can learn, reason, and take action, similar to humans. 2) An area of computer science that attempts to develop AI computer programs. See: artificial general intelligence (AGI), artificial superintelligence (ASI), expert system.

Techniques that deal with the analysis and planning of logistics and manufacturing during short, intermediate, and long-term time periods. APS describes any application that uses advanced mathematical algorithms or logic to perform optimization or simulation of finite capacity scheduling, sourcing, capital planning, resource planning, forecasting, demand management, etc. These techniques simultaneously consider a range of constraints and business rules to provide real-time planning and scheduling, decision support, available-to-promise (ATP), and capable-to-promise (CTP) capabilities. APS often generates and evaluates multiple scenarios. Management then selects one scenario to use as the "official plan." The five main components of APS systems are (1) demand planning, (2) production planning, (3) production scheduling, (4) distribution planning, and (5) transportation planning.

A technology using a distributed ledger that stores information about transactions that can be viewed by many entities within the supply chain. A blockchain cannot be altered, thereby creating a permanent record of the transaction and facilitating more effective visibility and transparency of product movement throughout the supply chain. See: cryptocurrency, decentralized computer network, lot control.

A data set that cannot be handled by standard data management and analytical tools because it is too large or too complex. See: big data analytics.

An analysis of a competitor that includes its strategies, capabilities, prices, and costs.

The use of computer resources, such as data storage and applications, which are accessed by any computer through the internet. See: hybrid cloud, private cloud, public cloud.

A computer system designed to assist managers in selecting and evaluating courses of action by providing a logical (usually quantitative) analysis of the relevant factors.

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

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Digital Capabilities Model (DCM) for Supply Networks

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Enterprise resource planning (ERP)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Environmental scanning

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Industry 4.0

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Inflation

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Internet of things (IoT)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Machine learning (ML)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Macro environment

Integrated business software that manages all areas of a business, including manufacturing, accounting, distribution, etc. An ERP system provides a framework for standardizing processes and common extensive databanks of information, including master files, financial details, analyses of product and customer hierarchies, and historic and current transactional data.

A reference model for supply chain professionals to guide the development of digital supply networks. The model is designed in a relational manner to help envision and then build the digitally enabled capabilities required to transform linear supply chains into a set of dynamic networks.

Also known as the Fourth Industrial Revolution, the technological changes, value chain integrations, and new business models development of the 21st century. The changes are driven by customer needs and mass customization requirements and enabled by innovation technologies, connectivity, and information technology (IT) integration.

A process used to determine an organization's potential strengths, weaknesses, opportunities, and threats. Many experts emphasize opportunities and threats because the tool is primarily external. See: PESTLE analysis, SWOT analysis.

An environment in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. This allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration between the physical world and computer-based systems.

An ongoing rise in the overall level of prices. Inflation reduces the purchasing power of money.

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

Artificial intelligence (AI) tools that allow machines to learn from experience and be capable of analysis, self-training, and observation to improve their performance.

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Macroeconomics

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Manufacturing execution system (MES)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Master data

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
PESTLE analysis

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Portfolio

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Process capability index

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Program

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Project

A program or system used in shop floor control, including programmable logic controllers and process control computers, to improve the efficiency of production processes and allow companies to track the status of production orders. MES systems gather actual performance information, generate reports, present graphical displays, and provide alarms that inform operations personnel about production status.

The analysis of the collective behavior of economic actors across an entire economy.

An analysis of the political, economic, social and ethical, technological, legal, and environmental factors in the external environment of an organization that can affect performance. This analysis often is used in conjunction with a SWOT (strengths, weaknesses, opportunities, threats) analysis. It aids organizations in determining the environment in which they operate. See: environmental scanning.

An enterprise's essential core data consisting of basic information needed across the enterprise to conduct business. Master data describes the core entities of the enterprise, including products, customers, suppliers, locations, and charts of accounts.

The value of the tolerance specified for the characteristic divided by the process capability. There are several types of process capability indices, including the widely used C_{pk} and C_p.

In project management, a collection of projects that are grouped to facilitate management. They are not necessarily interdependent.

An endeavor with a specific objective to be met within predetermined time and dollar limitations and that has been assigned for definition or execution. See: project manufacturing, project management.

In project management, a coordinated set of related projects, usually including ongoing work.

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Quality function deployment (QFD)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Responsive demand-supply matching (RDSM)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Smart contracts

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Smart operations

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Supply chain control tower

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Supply chain event management (SCEM)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Voice of the customer (VOC)

Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Warehouse management system (WMS)

The ability to sense demand exceptions; target revenue opportunities; and resolve supply challenges through planning of constrained resources (material, labor, and equipment capacity) and the allocation of supply across the network to best meet demand aligned with the business strategy.

A methodology designed to ensure that all the major requirements of the customer are identified and subsequently met or exceeded through the resulting product design process and the design and operation of the supporting production management system. QFD can be viewed as a set of communication and translation tools. QFD tries to eliminate the gap between what the customer wants in a new product and what the product is capable of delivering. QFD often leads to a clear identification of the major requirements of the customers. These expectations are referred to as the voice of the customer. See: design for quality (DFQ), design for six sigma (DFSS), house of quality (HOQ).

A highly responsive, adaptive, digitized, and connected function integrated into the digital supply network that synchronizes all aspects of production and operations. This function drives significant performance and safety improvements in production, particularly in regard to quality and maintenance, repair, and overhaul (MRO).

A self-executing contract with the terms of an agreement between a buyer and a seller written into lines of blockchain code. These contracts use technology to automatically ensure that contract terms are met. If a new action, transaction, or other information is added to the blockchain—or decentralized digital ledger of the agreement—that does not match the terms of the agreement already included in the blockchain, the information will be rejected, thus ensuring that all parties adhere to the contract.

A term associated with supply chain management software applications, in which users have the ability to flag the occurrence of certain supply chain events to trigger some form of alert or action within another supply chain application. SCEM can be deployed to monitor supply chain business processes such as planning, transportation, logistics, or procurement. It can also be applied to supply chain business intelligence applications to alert users to any unplanned or unexpected events. See: performance and event management system.

A centralized hub that provides an integrated, complete view of data across the end-to-end supply chain. The system allows the supplier to see the requirements and inventory levels at the customer's site, enhances the ability to get accurate information about supply location and availability, and highlights any potential excess inventory. Similarly, it helps the customer easily identify supply and demand variations and take necessary actions to return excess inventory. See: digital twin.

A computer application system designed to manage and optimize workflows and the storage of goods within a warehouse, including receiving and storing goods, fulfilling orders, shipping, and tracking movement. It often interfaces with automated data capture, enterprise resource planning (ERP) systems, and robotics.

Actual customer descriptions in words for the functions and features customers desire for goods and services. In the strict definition, as related to quality function deployment, the term customer indicates the external customer of the supplying entity. See: design for six sigma (DFSS), form-fit-function.

Module 2
Section B: Assess Supply Chain Current State

Term
Cash-to-cash cycle time

Module 2
Section B: Assess Supply Chain Current State

Term
Gap analysis

Module 2
Section B: Assess Supply Chain Current State

Term
Performance gap

Module 2
Section C: Conceptualize the Future-State Supply Chain Operating Model

Term
Brainstorming

Module 2
Section C: Conceptualize the Future-State Supply Chain Operating Model

Term
What-if analysis

Module 2
Section D: Identify Initiatives to Address Gaps

Term
Delphi method

Module 2
Section E: Initiate Transformation Work Streams and Projects

Term
Change management

Module 2
Section E: Initiate Transformation Work Streams and Projects

Term
Milestone

The assessment of the differences between the actual performance of a product or service and customer expectations.

An indicator of how efficiently a company manages its assets to improve cash flow. This is calculated as inventory days plus accounts receivable (AR) days minus accounts payable (AP) days. See: cash conversion cycle, operating cycle.

A technique that teams use to generate ideas about a particular subject. Each person on the team is asked to think creatively and write down as many ideas as possible. The ideas are not discussed or reviewed until after the brainstorming session.

The difference between the actual performance level and the expected performance level.

A qualitative forecasting technique in which the opinions of experts are combined anonymously in a series of iterations so that the experts' opinions gradually converge to a consensus forecast. See: management estimation, panel consensus.

The process of evaluating alternate strategies by answering the consequences of changes to forecasts, manufacturing plans, inventory levels, and so forth. See: simulation.

In project management, an important event in a project, usually the realization of a significant deliverable.

The business function that coordinates and monitors all changes to the business processes and applications operated by the business as well as to its 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.

Module 2
Section E: Initiate Transformation Work Streams and Projects

Term
Noise

Module 2
Section E: Initiate Transformation Work Streams and Projects

Term
Resource planning

Module 2
Section E: Initiate Transformation Work Streams and Projects

Term
Uncertainty

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Break-even analysis

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Break-even point

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Contribution margin

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Cost-volume-profit analysis

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Current ratio

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.

The unpredictable or random difference between the observed data and the true process. See: random variation.

A study of the number of units or amount of time required to recoup an investment. See: break-even time.

Unknown future events that cannot be predicted quantitatively within useful limits, such as an accident that destroys facilities, a major strike, or an innovation that makes existing products obsolete.

An amount equal to the difference between sales revenue and variable costs, which is used to estimate profitability.

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. See: total cost curve, break-even chart.

Current assets divided by current liabilities. See: liquidity ratio.

The study of how profits change with various levels of output and selling price.

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Discounted cash flow

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Economic value added

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Net working capital

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Payback period

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Residual income

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Return on investment (ROI)

Module 2
Section F: Develop and Iterate Preliminary Transformation Business Cases

Term
Time value of money

Module 2
Section G: Perform Post-Approval Tasks

Term
Cause-and-effect diagram

In managerial accounting, the net operating profit earned above the cost of capital for a profit center.

A method of investment analysis utilizing the time value of money in which estimated future cash flows are converted (i.e., discounted) to their value at the present time. See: net present value (NPV), present value, time value of money.

The period of time required for the stream of cash flows resulting from a project to equal the project's initial investment.

The current assets of a firm minus its current liabilities. Syn.: working capital.

A relative measure of financial performance that provides a means for comparing various investments by calculating the profits returned during a specified time period. In theory of constraints, ROI is calculated by subtracting operating expenses from throughput and then dividing that amount by the investment. See: payback.

The net operating income that an investment center earns above the minimum required return on its operating assets.

A tool for analyzing process dispersion. It is also referred to as the Ishikawa diagram (because Kaoru Ishikawa developed it) and the fishbone diagram (because the complete diagram resembles a fish skeleton). The diagram illustrates the main causes and sub-causes leading to an effect (symptom). The cause-and-effect diagram is one of the seven tools of quality. Syns.: fishbone chart, fishbone diagram, Ishikawa diagram. See: basic seven tools of quality (B7), fishbone analysis.

The difference in the valuation of an amount of funds at the present time and the value of that same amount of funds at a future time based on the earning power of investing the same funds at the present time at the prevailing interest rate or required rate of return. See: discount rate, discounted cash flow, present value, net present value (NPV).

Module 2
Section G: Perform Post-Approval Tasks

Term
Fishbone analysis

Module 2
Section G: Perform Post-Approval Tasks

Term
Five whys

Module 2
Section G: Perform Post-Approval Tasks

Term
Gantt chart

Module 2
Section G: Perform Post-Approval Tasks

Term
Nominal group technique

A process improvement technique that involves asking why five times when confronted with a problem. By the time the answer to the fifth why is found, the ultimate cause of the problem is identified. Syn.: five W's. See: root cause analysis.

A technique to organize the elements of a problem or situation to aid in the determination of the causes of the problem or situation. See: cause-and-effect diagram, fishbone diagram, five M's.

A technique, similar to brainstorming, used by teams to generate ideas about a particular subject. Team members are asked to silently come up with as many ideas as possible and write them down. Each member is then asked to share one idea, which is recorded. After all the ideas are recorded, they are discussed and prioritized by the group.

A common type of planning and control chart that is designed to depict graphically the relationship between planned performance and actual performance over time. The chart is mainly used for (1) machine loading, in which one horizontal line is used to represent capacity and another to represent load against that capacity; or (2) monitoring job progress, in which one horizontal line represents the production schedule and another parallel line represents the actual progress of the job against the schedule in time. Syns.: job progress chart, milestone chart.