Module 2
Section A: Select Supply Chain Transformation Drivers

Term
Advanced planning and scheduling (APS)

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Term
Artificial intelligence (AI)

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Term
Big data

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Blockchain

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Cloud computing

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Term
Competitive analysis

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Term
Data mining

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Term
Decision support system (DSS)

Computer programs that can learn and reason in a manner similar to humans. The problem is defined in terms of states and operators to generate a search space that is examined for the best solution.

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 continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a cryptographic hash of the previous block, a timestamp, and transaction data. The data in any given block cannot be altered retroactively without the alteration of all subsequent blocks, inherently making it resistant to modification.

Collecting, storing, and processing massive amounts of data for the purpose of converting it into useful information.

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

An emerging way of computing in which data is stored in massive data centers that can be accessed from any computer connected to the internet.

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.

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Deflation

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Term
Digital Capabilities Model (DCM) for Supply Networks

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Term
Enterprise resource planning (ERP)

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Term
Environmental scanning

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Term
Industry 4.0

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Term
Inflation

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Term
Internet of things (IOT)

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Term
Machine learning

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.

An ongoing decrease in the overall level of prices.

A process used to expose an organization's potential strengths, weaknesses, opportunities, and threats. Many experts emphasize opportunities and threats because the tool is primarily external.

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.

An ongoing rise in the overall level of prices.

A concept of organizational and technological changes along with value chain integrations and new business models development that are driven by customer needs and mass customization requirements and enabled by innovation technologies, connectivity, and information technology integration.

Artificial intelligence software that is capable of analysis, self-training, and observation to improve its own performance. It is often used to assist with planning and forecasting.

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.

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Term
Macro environment

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Term
Macroeconomics

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Term
Manufacturing execution systems (MES)

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Master data

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PESTLE analysis

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Portfolio

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Term
Process capability index

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Term
Program

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

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

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

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 and then generate reports, graphical displays, and alarms that inform operations personnel what is going on in the plant currently and what occurred during a very short history into the past. Quality control information is also gathered, and a laboratory information management system may be part of this configuration to tie process conditions to the quality data that is generated. Cause-and-effect relationships can thereby be determined. The quality data at times affects the control parameters that are used to meet product specifications either dynamically or offline.

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

An analysis of the political, economic, social/ethical, technological, legislative, 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.

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

The value of the tolerance specified for the characteristic divided by the process capability. There are several types, including the widely used Cpk and Cp.

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Term
Project

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Term
Quality function deployment (QFD)

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Term
Responsive demand-supply matching (RDSM)

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Smart contracts

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Smart operations

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Term
Supply chain control towers

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Term
Supply chain event management (SCEM)

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Term
Voice of the customer (VOC)

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.

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

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.

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 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.

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.

Actual customer descriptions in words for the functions and features customers desire for goods and services.

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.

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Term

Warehouse management system (WMS)

A computer application system designed to manage and optimize workflows and the storage of goods within a warehouse. It often interfaces with automated data capture and enterprise resource planning systems.