

**Lesson number 1.** Basic concepts, goals and objectives of controlling business processes in supply chains

**Purpose of the lesson:**

to determine the purpose, tasks, functions, objects of study of controlling business processes in supply chains;

to substantiate the stages of strategic and operational controlling, applying the principles of the company's logistic analysis;

**Key words:** controlling business processes, supply chains

**Main questions:**

1. Demand management
2. Supply management
3. Sales and operations planning (S&OP)
4. Product portfolio management

What is the supply chain management process?

The supply chain management process is composed of four main parts: demand management, supply management, S&OP, and product portfolio management.

1. Demand management

Demand management consists of three parts: demand planning, merchandise planning, and trade promotion planning.

Demand planning is the process of forecasting demand to make sure products can be reliably delivered. Effective demand planning can improve the accuracy of revenue forecasts, align inventory levels with peaks and troughs in demand, and enhance profitability for a particular channel or product.

Merchandise planning is a systematic approach to planning, buying, and selling merchandise to maximize the return on investment (ROI) while simultaneously making merchandise available at the places, times, prices, and quantities that the market demands.

Trade promotion planning is a marketing technique to increase demand for products in retail stores based on special pricing, display fixtures, demonstrations, value-added bonuses, no-obligation gifts, and other promotions. Trade promotions help drive short-term consumer demand for products normally sold in retail environments.

2. Supply management

Supply management is made up of five areas: supply planning, production planning, inventory planning, capacity planning, and distribution planning.

Supply planning determines how best to fulfill the requirements created from the demand plan. The objective is to balance supply and demand in a manner that achieves the financial and service objectives of the enterprise.

Production planning addresses the production and manufacturing modules within a company. It considers the resource allocation of employees, materials, and of production capacity.

Production/supply planning consists of:

- Supplier management and collaboration
- Production scheduling

Inventory planning determines the optimal quantity and timing of inventory to align it with sales and production needs.

Capacity planning determines the production staff and equipment needed to meet the demand for products.

Distribution planning and network planning oversees the movement of goods from a supplier or manufacturer to the point of sale. Distribution management is an overarching term that refers to processes such as packaging, inventory, warehousing, supply chain, and logistics.

### 3. Sales and operations planning (S&OP)

[Sales and operations planning \(S&OP\)](#) is a monthly integrated business management process that empowers leadership to focus on key supply chain drivers, including sales, marketing, demand management, production, inventory management, and new product introduction.

With an eye on financial and business impact, the goal of S&OP is to enable executives to make better-informed decisions through a dynamic connection of plans and strategies across the business. Often repeated on a monthly basis, S&OP enables effective supply chain management and focuses the resources of an organization on delivering what their customers need while staying profitable.

### 4. Product portfolio management

[Product portfolio management](#) is the process from creating a product idea creation to market introduction. A company must have an exit strategy for its product when it reaches the end of its profitable life or in case the product doesn't sell well.

Product portfolio management includes:

- New product introduction
- End-of-life planning
- Cannibalization planning
- Commercialization and ramp planning
- Contribution margin analysis
- Portfolio management
- Brand, portfolio, and platform planning

### 5. Supply chain management best practices

To succeed in a growing global market, you need a supply chain that's connected from start to finish, across your enterprise and beyond. Here are five steps we recommend to achieve [connected supply chain planning](#).

Make the move to real-time supply chain planning. When using ERP systems and spreadsheets for planning, companies typically rely only on historical data, resulting in little wiggle room for changes should any disruptions occur in demand or supply. For example, based on the previous year's numbers, a company can estimate the number of products it will sell in the next

quarter. But what if a massive hurricane destroys a key distribution center, leading to too little supply on the shelves? With Anaplan's real-time connected supply chain planning solution, you can create "what-if" scenarios and plan more effectively so you're ready when disruptions occur.

**Unify supply chain planning with enterprise planning**  
A vital second step is connecting traditionally siloed supply chain planning to sales and operations planning and financial planning. Companies can benefit from synchronizing their short-term operational planning with their wider business planning processes to make real-time updates to inventory forecasts and supply. Deploying real-time S&OP solutions that enable enterprise-wide collaboration means that key stakeholders across the business can create new scenarios and quickly assess how to use their resources to optimize profitability when an unforeseen event happens.

**Anticipate the demand of the end customer**  
For consumer packaged-goods companies, anticipating what customers want and when they want it is an ongoing challenge. A solution like Anaplan allows end-to-end visibility across the supply chain and beyond an existing network of wholesalers and retailers to sense demand signals from customers. When changing consumer sentiments can be rapidly identified and changes to demand for the product assessed, the company, partners, and customers benefit from improved profitability, margins, and lead time.

**Leverage real-time data across all points of the supply chain**  
Because supply chain planning typically involves a myriad of suppliers, channels, customers, and pricing schemes, models can become large and potentially unwieldy—especially when spreadsheets are the primary planning tools. Incorporating a solution that uses real-time data allows planning with great accuracy and reduces the risk of stock-outs or surplus inventory.

**Ensure the flexibility to cope with change**  
When technology facilitates efficient planning and quick reactions, disruptions aren't disruptive because re-planning and re-forecasting is easy—resulting in time and money saved and increased profitability.

**Important Supply chain trends**

What will the supply chain look like in the future? Here are a few key trends in supply chain management.

**Artificial intelligence and machine learning**  
History-based forecasting is used to drive supply chain planning, but artificial intelligence (AI) and machine learning (ML) are primed to change that forever. AI- and ML-based predictive models will transform processes like demand sensing, shaping, and orchestration, as well as supply planning. AI will begin to drive dynamic pricing, and new product introductions will be based on predictive market intelligence. AI and ML will also drive new models for product promotions management, as well as responses to disruptions in the supply chain. AI and ML predictions will play a key role in the future of supply chain operations and have a transformative effect on other business processes.

Regulatory challenges and security risks  
With the continued risk of high-profile hacks that compromise the information of millions of consumers, companies will need to raise the standards of their privacy and protection protocols this year. New regulations to protect privacy that go into effect this year, such as General Data Protection Regulation (GDPR), will also affect company operations. Tax reform, Brexit, political instability, oil prices, and resource availability will all require action across the enterprise, including within the supply chain. As a result, supply chain planners will need sophisticated modeling capabilities to plan for all potential scenarios.

Blockchain and beyond  
Blockchain has already transformed the way trading partner networks collaborate. As 2019 progresses, the technology will continue to remove banks from the picture, leverage cryptocurrency, and distributed ledgers, and enable better collaboration. Blockchain will also play a role in making collaboration a bigger factor in supply chain planning and execution. Track and trace, once a radio frequency identification (RFID)-focused movement, uses sensors and devices across assets and machines and will continue to be used in new ways this year. Thanks to the Internet of Things (IoT), data will permeate the supply chain and be used to transform processes once it's analyzed and consumed by AI and ML.

A dynamic, connected future  
Supply chain managers are always looking for new ways to take advantage of opportunities and to overcome obstacles as the modern supply chain evolves. With a connected supply chain planning approach and the use of new technologies, data is brought together, and more people are integrated into decision-making processes. As the supply chain of the future comes into view, these trends will play a key role in supply chain transformation.

What is the Digital Supply Chain and how to be successful

The digital supply chain is the next generation of supply chain management. Companies must recognize that “global digital supply chains” or “the digitalization of supply chains” aligns with the notion that the future of business is heavily rooted in a digital transformation revolution: the blockchain, the internet of things, advanced robotics, and much more. Here are five ways that progressive enterprises are leveraging blockchain for supply chain success.

- Blockchain for smart contracts: Blockchain unravels the immense complexity and interconnectedness of global digital supply chains. It does this by storing all relevant information in a master ledger (the blockchain). Smart contracts ensure that by storing the terms of a contract in the blockchain and measuring all proposed transactions against it, issues with data redundancy are reduced and trading partners can work together much more efficiently.

- Blockchain for sustainable and ethical supply chains: When a product (or batch of products) is sourced or created, it can be given a unique identifier that's encrypted. This identifier can be linked to a token that's time-stamped and follows the product throughout the supply chain. All of this information is stored on the blockchain, enabling supply chain leaders to make sure it was produced or sourced in an ethical, sustainable manner, while concurrently lending operational efficiencies

to the overall process of bringing a product to market. Some companies are also harnessing the power of blockchain to support positive and social-environmental change, such as the opportunity to say “thank you” (in the form of a blockchain token) to people involved in producing the products they buy.

**Blockchain for better security:** Keeping the supply chain secure is a high-stakes issue across enterprises, with valuable inventory and confidential information changing hands at a fast pace across the globe. Because a blockchain ledger is immutable by nature and set up so everyone involved has a complete copy, it’s virtually resistant to hacks and cannot be altered without the sequential permission of pertinent parties. The built-in safeguard of an immutable ledger makes audits easier and data incorruptible. It further decreases the risk of cyber-attacks because it uses a distributed storage system.

**Blockchain for greater efficiency:** Right now, millions of products are traveling across the world via global supply chain operations. These products all have information attached to them, such as origin, destination, serial number, and manufacturer. When blockchain is used, it reduces digital supply chain risk by making it possible to track products through every stage of the journey, and eliminates the need for dedicated software or multiple planners dedicated to monitoring the millions of products traveling through the supply chain.

**Blockchain for greater efficiency:** Because blockchain is immutable and transparent, all parties involved in the digital supply chain can track relevant information to a product and access that information in real-time. This yields a significant boost to supply chain efficiency. Smart contracts help further raise the efficiency bar, as this safeguard can prevent time lost wrangling over contract issues. Because a collection of terms and conditions travel with a product through the supply chain, this prevents recurring searches for blame when disputes over that information arise.

**What skills are needed for supply chain management**

To lead the way into a transformative future, they need to combine technical and business knowledge with collaboration and communication skills. The ability to influence department leaders that partner with supply chain is key, as well as the skills to interact intelligently with leaders across the organization is essential, because supply chain initiatives often reach across business units. And strong business acumen is a must-have—you’ll be more effective working with your counterparts in finance, sales, and marketing if you can speak their lingo. The effective supply chain leader of tomorrow is tech-savvy and comfortable working alongside the world of “machines.”

When speaking of the potential conflict between man and machine, some have said that artificial intelligence won’t replace managers, but managers who work with AI will replace managers who don’t. This highlights the transformation taking place in supply chain: humanity is essential, but so is technology. It’s not a paradox; it’s the new normal. This leader is digitally dexterous, but also skilled with people. And this leader is a storyteller—digging into the countless layers of the supply chain to find the issues and weaving the right story together to help solve them. The many-faceted role of a supply chain leader is changing as we speak. To thrive in this new

world, supply chain professionals should grow their capacities in collaboration, communication, and leadership, and pair those skills with in-depth technical knowledge to become a powerful force for the future of supply chain management software.

### **Questions**

1. What is the supply chain management process?
2. What is the Digital Supply Chain and how to be successful
3. What skills are needed for supply chain management

### **Main literature:**

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