

A photograph showing a large stack of shipping containers in a shipping yard. The containers are stacked in several rows, with colors including blue, red, green, and orange. A white diagonal line runs from the bottom left towards the top right, separating the image from the text area.

Supply Chain Management

614

Week 1



<https://recipesformen.com/peanut-butter-and-jelly-mix/>

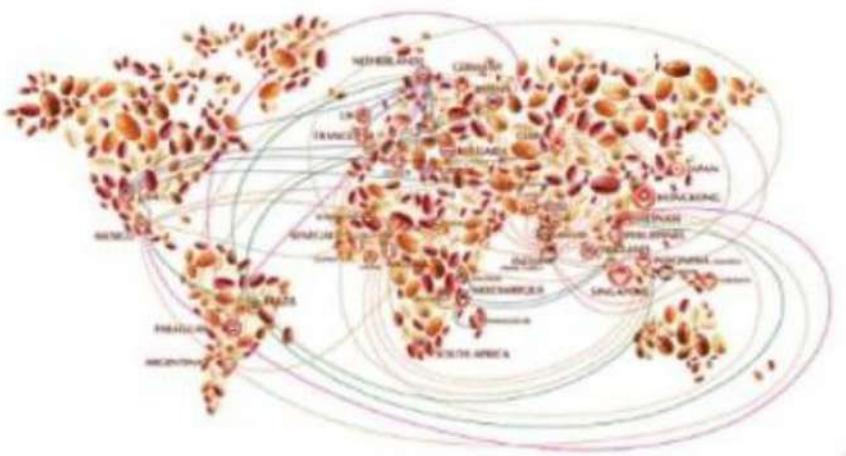
Homemade peanut butter

15 ounces shelled and skinned AB's Roasted Peanuts, recipe follows

1 teaspoon kosher salt

1 1/2 teaspoons honey

1 1/2 tablespoons peanut oil



1 Place the peanuts, salt and honey into the bowl of a food processor. Process for 1 minute. Scrape down the sides of the bowl. Place the lid back on and continue to process while slowly drizzling in the oil and process until the mixture is smooth, 1 1/2 to 2 minutes. Place the peanut butter in an airtight container and store in the refrigerator for up to 2 months.

Roasted Peanuts:

Yield: Approximately 2 pounds roasted peanuts in shell

2 Preheat the oven to 350 degrees F.

3 Rinse the peanuts under cool water to remove excess dirt. Pat dry and place in a large bowl and toss with the peanut oil and salt until well coated.

4 Place on 2 half sheet pans, making sure to spread them out into a single layer. Roast in the oven for 30 to 35 minutes, rotating the pans halfway through cooking. Once you remove the peanuts from the oven, let them cool slightly before eating. They will continue to "cook" and become crunchy as they cool.

5 If using peanuts to make peanut butter, remove shells and discard. Remove the skin by rubbing the peanuts together in your hands held over a salad spinner, allowing the peanuts and skins to fall into the bowl. Once the skin has been loosened from all of the peanuts close the salad spinner and spin until all of the skin has been separated from the peanuts.

Cook's Note

If eating peanuts roasted right out of the shell, use Virginia or Valencia peanuts. If utilizing roasted peanuts to make peanut butter, use Spanish peanuts as they have a higher oil content.

Directions

Homemade strawberry jelly

2 pounds strawberries, trimmed and halved (about 5 cups)

4 cups granulated sugar

3 tablespoons fresh lemon juice

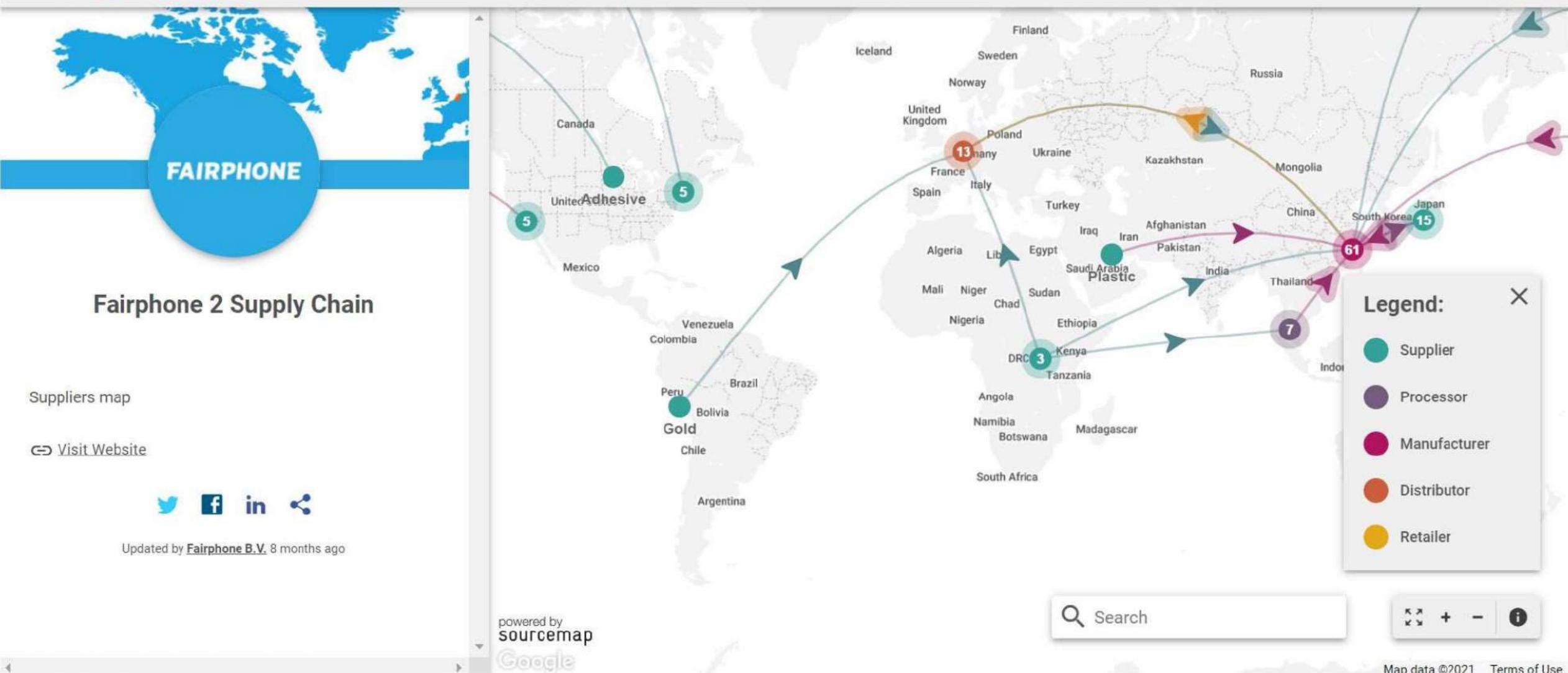


<https://food52.com/recipes/66384-homemade-strawberry-jelly>

<http://cake.style/2016/09/24/lemon-strawberry-cake/>

- ① To sterilize jars: Wash jars, lids, and bands with hot, soapy water and let dry. Place jars in a large pot, cover with water, and bring to a simmer. Place lids and bands in a separate pot of hot water. Leave jars and lids in water until ready to fill.
- ② Make the jelly: Place strawberries in a blender or food processor and blend until smooth; add them to a large nonreactive pot.
- ③ Add sugar, lemon juice, and pectin to the pot and place over medium-high heat. Start stirring until they dissolve in the mixture.
- ④ Bring mixture to a boil and cook, stirring frequently, 3 minutes. Reduce heat to low and simmer until mixture darkens and thickens slightly, 3 to 5 minutes more.
- ⑤ Turn off the heat and skim off the appearing foam with a spoon.
- ⑥ Start filling the mason jars with jelly one at a time with a wide-mouth funnel. Clean the residue from the jar's exterior.
- ⑦ Place the center lids on the jars Tip: Make sure to leave a little space at the top of the jar (they will expand as they cool.)
- ⑧ Fill the canning pot with water and boil for 10 minutes.
- ⑨ Turn off the heat and let the jars cool for five minutes.
- ⑩ Using a jar lifter, remove the jars from the hot water and let them sit at room temperature for 24 hours.
- ⑪ After 24 hours, check the lids for seal. If sealed properly, store the jars in a pantry or kitchen cabinet.

it's
Complicated



Agenda

- Welcome to our class!
- Introduction – a bit about me, a bit about you
- How this class is organized
 - Our BeachBoard site – where is (fill in the blank)?
 - “Flipped classroom” - review video lecture segments, reading prior to class
 - Review syllabus/text
- Course objectives
- Chapter 1: Understanding the SC
- Break
- Case study 1 team formation & brief breakout to exchange information, discuss meeting
- Preparation for next class, plus assignments due



designed by free pik

About me

- Susan.dexter@csulb.edu
 - Allow 48 hours for a response; make sure to put “SCM614 in the title line”
 - Virtual office hours Tuesdays noon-1pm or by appointment
- 30 years industry experience in supply chain/project/program management (aerospace/ automotive)
- Currently writing dissertation on lifecycle assessment of heavy-duty diesel, battery electric, and hydrogen trucks. The question: zero-emission vehicles are good for the community where operations occur, but from a global perspective, it is a good thing?



What is it about teaching that drives me?

What is important to me:

- Making it relevant
- Understanding how concepts can be applied in the workplace
- Tool usage (the basics)
- Being efficient
- Reducing carbon



<https://www.mhlnews.com/technology-automation/article/22048798/move-planning-and-doing-meet-in-todays-wms-and-tms>



KEEP
CALM
AND
IT'S YO UR
TURN

Course Learning Objectives

CLO1 Explain the strategic role of supply chains.

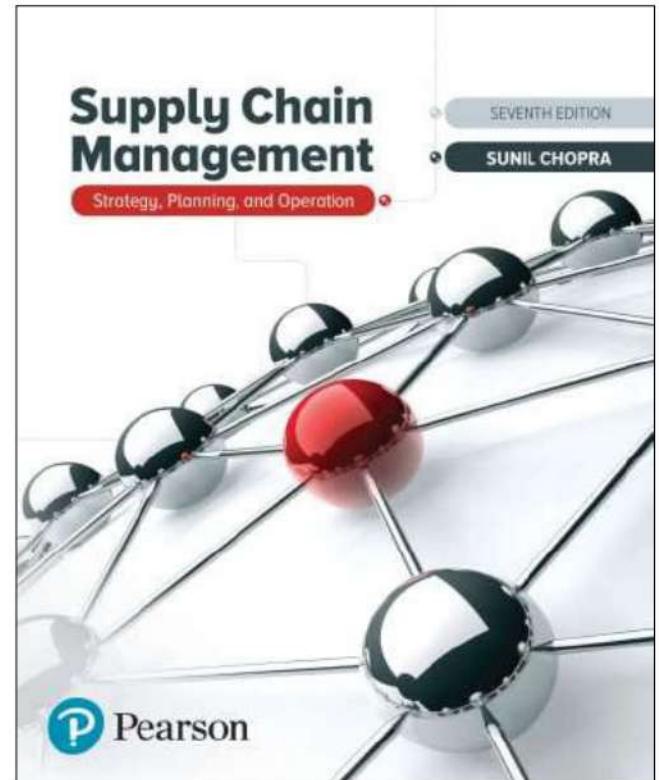
CLO2 Critically appraise and apply appropriate methods and techniques for supply chain analysis.

CLO3 Identify the major drivers and key metrics for supply chain performance.

CLO4 Demonstrate critical awareness of emerging issues in supply chain management.

Our BB site & other tidbits

- Obtain necessary equipment like computer and webcam (yes, I will be requiring you to be on camera during class).
- If you don not already Excel on your device, download it from [Campus Software](#). If you have problems, please contact the Technology Help Desk at 562.985.4959
- Purchase the required [Text](#)
- Become familiar with the homepage information
- Navigate to the Content tab and get familiar with how course materials are organized
- Read the [syllabus](#)
- Add your picture to your BeachBoard Profile
- Set up BeachBoard Notifications to receive an email when I post in News/Announcements and also to you remind of assignment due dates
- Contact Professor Dexter by the end of the first class if you have any questions or need special accommodations
- Complete the [Week 1 Discussion Board](#): What topic is most interesting to you?
- Read the COB's stance on academic integrity at [COB office-of-the-dean academic integrity statement](#). Agree to the [Honor Code](#) by posting your name in Dropbox



Expectations of a flipped classroom



- Before class

- Read text chapter/articles assigned and listen to videos; be prepared to discuss or do exercises in class on this material. Take quiz to test understanding of key concepts.
- Complete homework assigned (Individual and/or team)
- Come to virtual office hours if you need assistance

- In class

- Participate in lecture by asking questions (this is from reading material/videos) plus active participation in all group discussions/problem solving
- Work with your teams on case studies/projects



CALIFORNIA STATE UNIVERSITY
LONG BEACH

College of Business

Review of
syllabus

Syllabus for SCM 614: Supply Chain Management

Section 03, Class No. 10343

Spring 2023

Units: 3

Instructor:

Sue Dexter

P: She/her/hers

Email:

susan.dexter@csulb.edu

Class Day/Time:

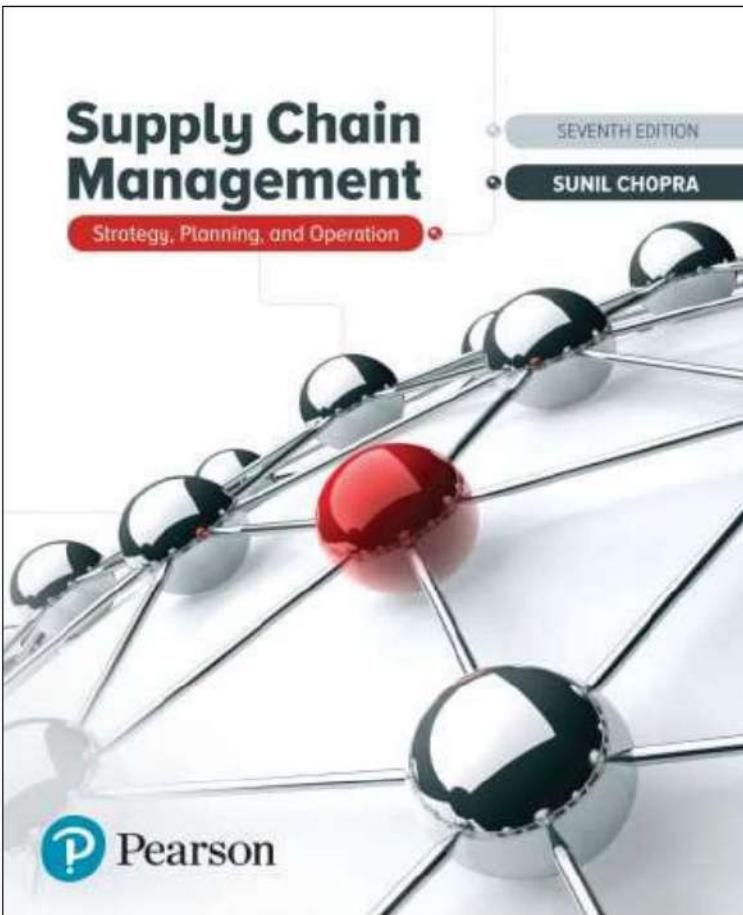
Online Thursdays 7-9:45 p.m.

Office Hours:

Online Tuesday 1 - 2 p.m. or by appointment (request via email) link <https://csulb.zoom.us/j/86231744342>

Supply Chain Management: Strategy, Planning, and Operation

Seventh Edition



Chapter 1

Understanding the Supply
Chain

Learning Objectives

- 1.1** Discuss the goal of a supply chain and explain the impact of supply chain decisions on the success of a firm.
- 1.2** Define the three key supply chain decision phases and explain the significance of each one.
- 1.3** Describe the cycle and push/pull views along with the macro processes of a supply chain.
- 1.4** Identify important issues and decisions to be addressed in a supply chain.
- 1.5** Develop skills that employers have identified as critical to success in the workplace.

What Is a Supply Chain? (1 of 3)

- All parties involved, directly or indirectly, in fulfilling a customer request
- Includes manufacturers, suppliers, transporters, warehouses, retailers, and customers
- Within each organization, the supply chain includes all functions involved in receiving and fulfilling a customer request (new product development, marketing, operations, distribution, finance, customer service)



What Is a Supply Chain? (2 of 3)

- Customer is an integral part of the supply chain
- Includes movement of products from suppliers to manufacturers to distributors and information, funds, and products in both directions
- May be more accurate to use the term “supply network” or “supply web”
- Typical supply chain stages: customers, retailers, wholesalers, distributors, manufacturers, suppliers



What Is a Supply Chain? (3 of 3)

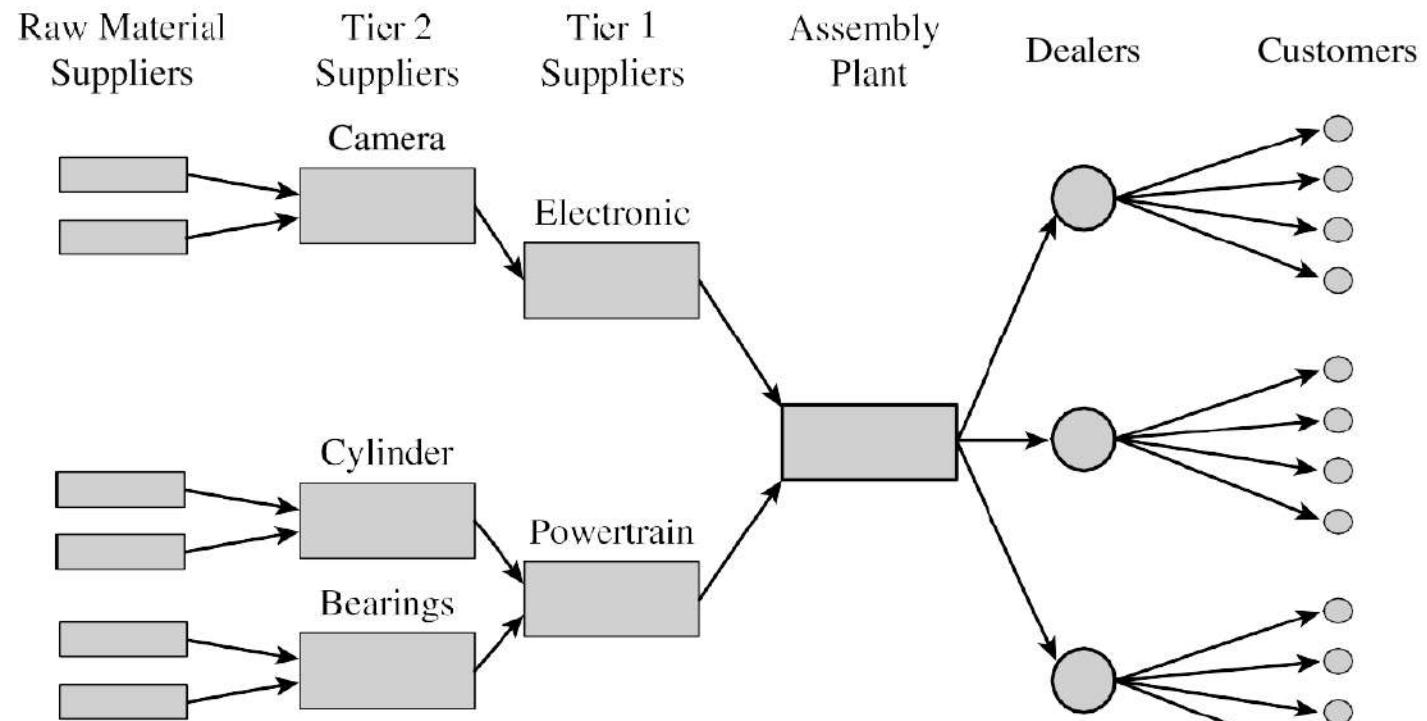


Figure 1-1 Stages of an Automotive Supply Chain

Flows in a Supply Chain

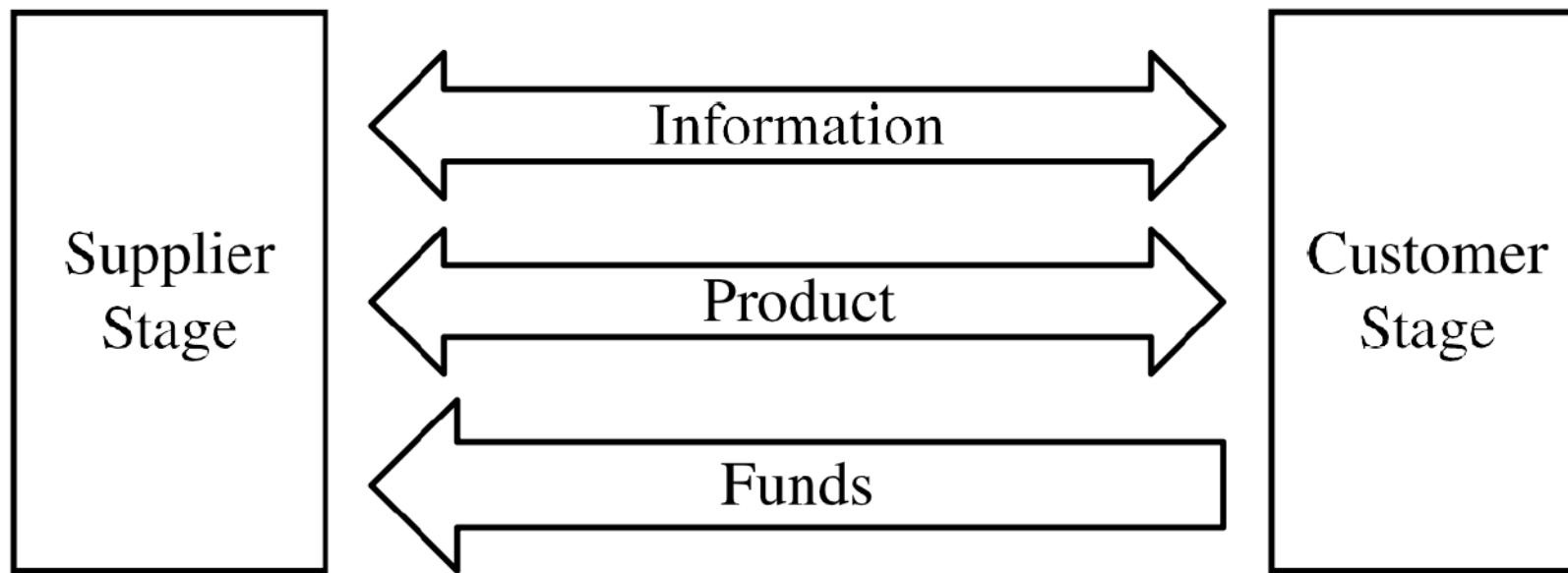


Figure 1-2 The Three Flows in a Supply Chain

The Objective of a Supply Chain (1 of 3)

- Maximize net value generated

Supply Chain Surplus =

Customer Value – Supply Chain Cost



The Objective of a Supply Chain (2 of 3)

Example: a customer purchases a wireless router from Best Buy for \$60 (revenue)

Supply chain incurs costs (convey information, produce components, storage, transportation, transfer funds, etc.)

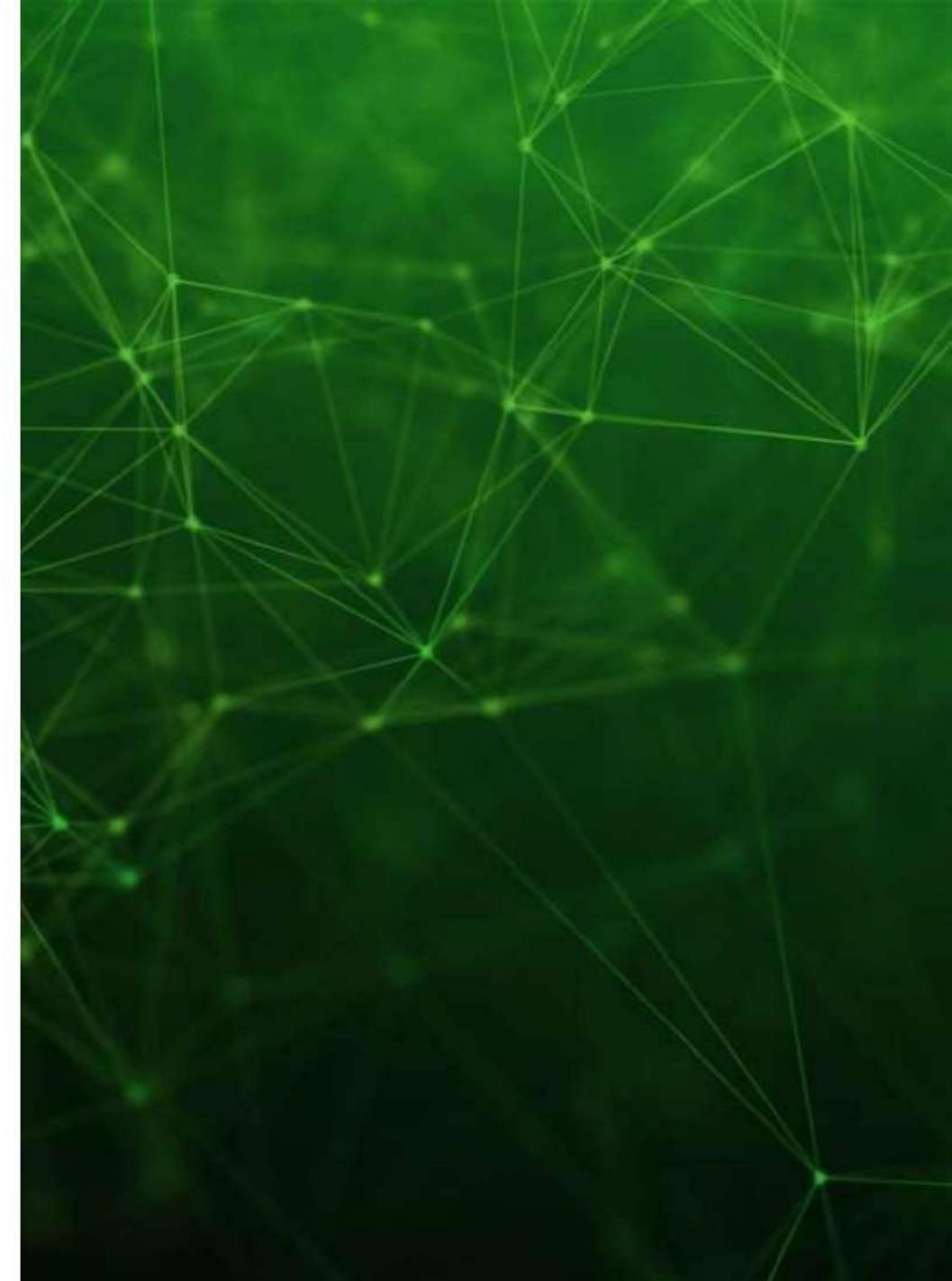
Difference between \$60 and the sum of all of these costs is the supply chain profitability

Supply chain profitability is total profit to be shared across all stages of the supply chain

Success should be measured by total supply chain surplus, not profits at an individual stage

The Objective of a Supply Chain (3 of 3)

- Customer the only source of revenue
- Sources of cost include flows of information, products, or funds between stages of the supply chain
- Effective **supply chain management** involves the management of supply chain assets and product, information, and fund flows to grow the total supply chain surplus



Importance of Supply Chain Decisions

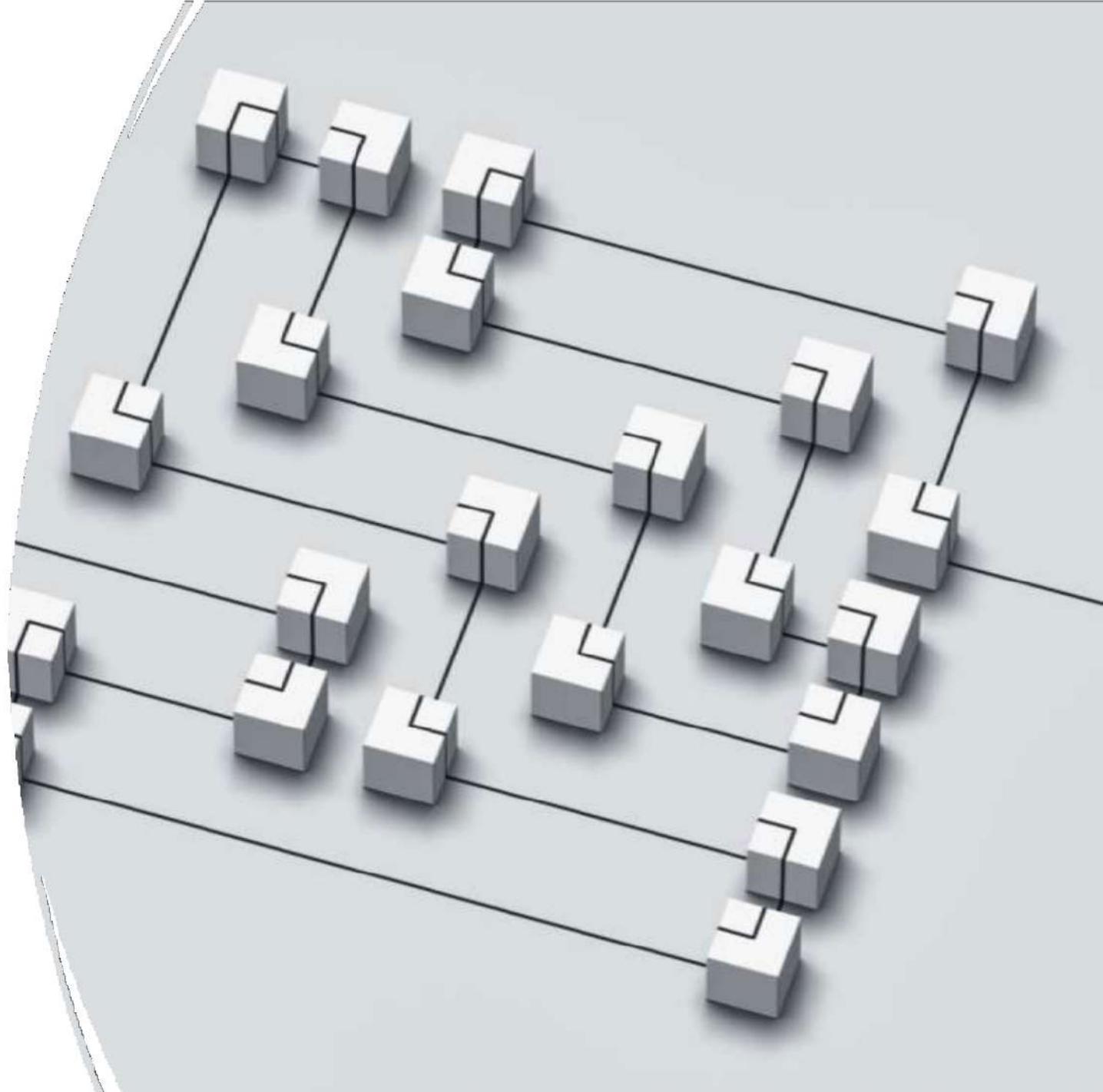
- Wal-Mart, \$1 billion sales in 1980 to \$482 billion in 2016
- Seven-Eleven Japan, ¥1 billion sales in 1974 to ¥2.7 trillion in 2016
- Webvan folded in two years
- Borders, \$4 billion in 2004, declared bankruptcy in 2010
- Dell, \$56 billion in 2006, adopted new supply chain strategies

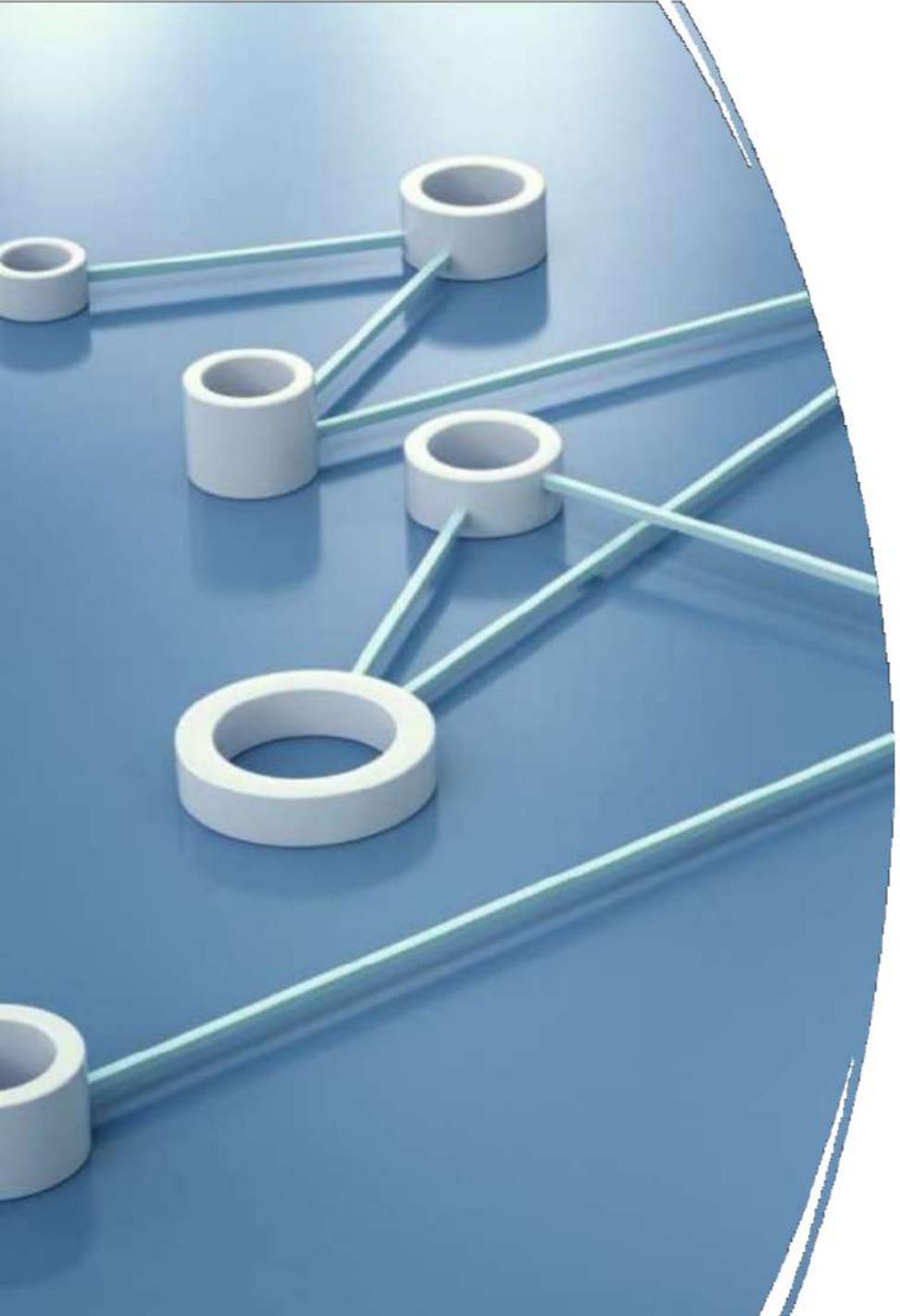
Summary of Learning Objective 1

The goal of a supply chain should be to grow overall supply chain surplus. Supply chain surplus is the difference between the value generated for the customer and the total cost incurred across all stages of the supply chain. A focus on the supply chain surplus increases the size of the overall pie for all members of the supply chain. Supply chain decisions have a large impact on the success or failure of each firm because they significantly influence both the revenue generated and the cost incurred. Successful supply chains manage flows of product, information, and funds to provide a high level of product availability to the customer while keeping costs low.

Decision Phases in a Supply Chain

1. Supply chain strategy or design
 - How to structure the supply chain over the next several years
2. Supply chain planning
 - Decisions over the next quarter or year
3. Supply chain operation
 - Daily or weekly operational decisions





Supply Chain Strategy or Design

- Decisions about the configuration of the supply chain, allocation of resources, and what processes each stage will perform
- Strategic supply chain decisions
 - Outsource supply chain functions
 - Locations and capacities of facilities
 - Products to be made or stored at various locations
 - Modes of transportation
 - Information systems
- Supply chain design must support strategic objectives
- Supply chain design decisions are long-term and expensive to reverse – must take into account market uncertainty

Supply Chain Planning (1 of 2)



DEFINITION OF A SET OF
POLICIES THAT GOVERN
SHORT-TERM OPERATIONS



FIXED BY THE SUPPLY
CONFIGURATION FROM
STRATEGIC PHASE



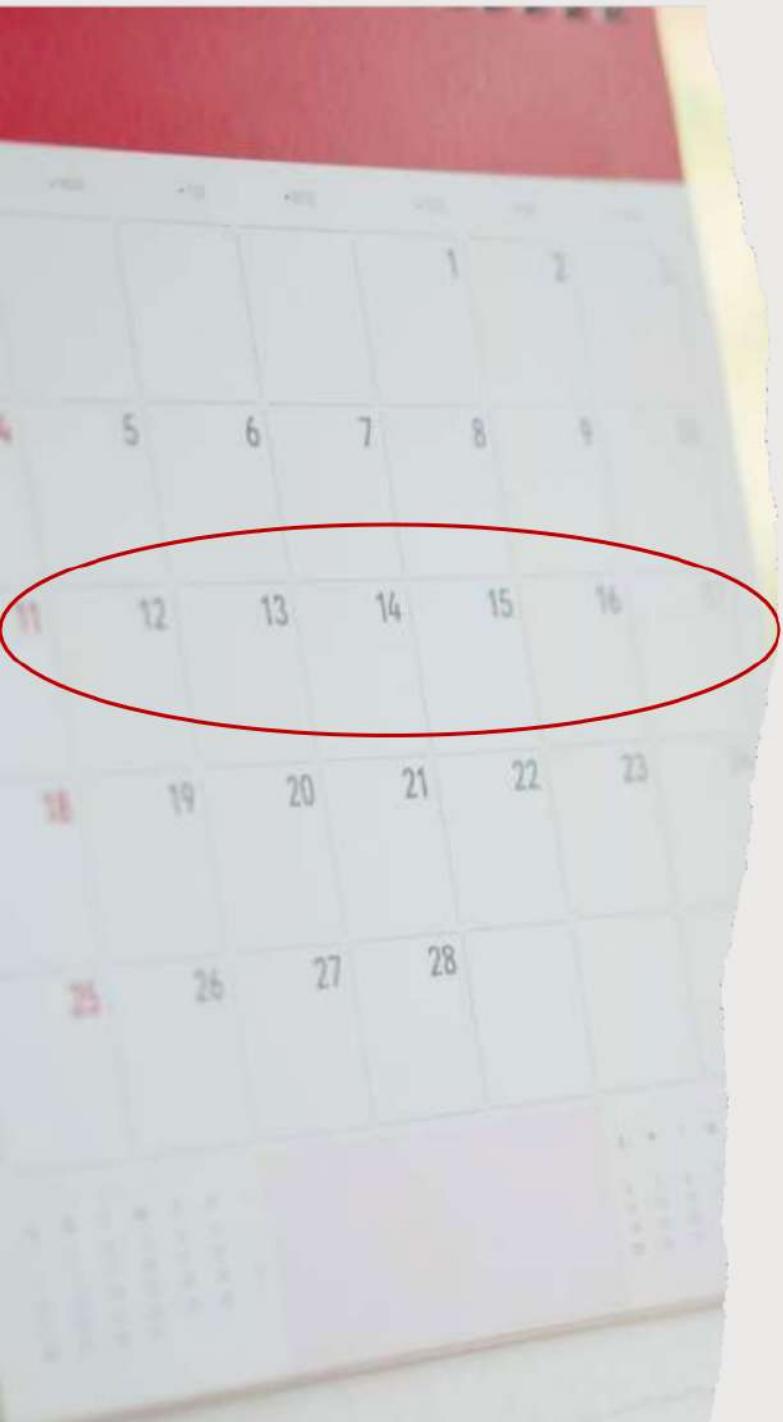
GOAL IS TO MAXIMIZE
SUPPLY CHAIN SURPLUS
GIVEN ESTABLISHED
CONSTRAINTS



STARTS WITH A FORECAST
OF DEMAND IN THE
COMING YEAR

Supply Chain Planning (2 of 2)

- Planning decisions:
 - Which markets will be supplied from which locations
 - Planned buildup of inventories
 - Subcontracting
 - Inventory policies
 - Timing and size of market promotions
- Must consider demand uncertainty, exchange rates, competition over the time horizon in planning decisions



Supply Chain Operation

- Time horizon is weekly or daily
- Decisions regarding individual customer orders
- Supply chain configuration is fixed and planning policies are defined
- Goal is to handle incoming customer orders as effectively as possible
- Allocate orders to inventory or production, set order due dates, generate pick lists at a warehouse, allocate an order to a particular shipment, set delivery schedules, place replenishment orders
- Much less uncertainty (short time horizon)

Summary of Learning Objective 2

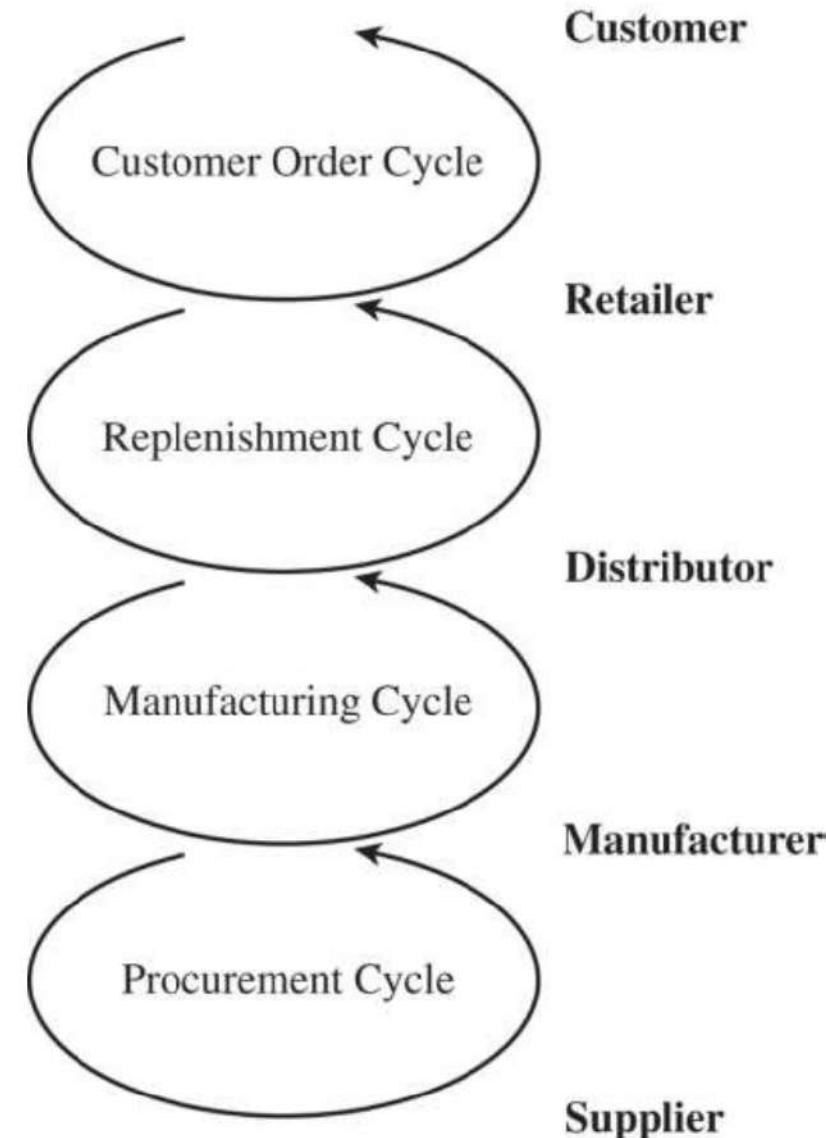
Supply chain decisions may be characterized as strategic (design), planning, or operational, depending on the time horizon over which they apply. Strategic decisions relate to supply chain configuration. These decisions have a long-term impact that lasts for several years. Strategic decisions define the constraints for planning decisions, and planning decisions define the constraints for operational decisions. Planning decisions cover a period of a few months to a year and include decisions regarding production plans, subcontracting, and promotions over that period. Operational decisions span from minutes to days and include sequencing production and filling specific orders.

Process Views of a Supply Chain

- 1. Cycle View:** The processes in a supply chain are divided into a series of cycles, each performed at the interface between two successive stages of the supply chain.
- 2. Push/Pull View:** The processes in a supply chain are divided into two categories, depending on whether they are executed in response to a customer order or in anticipation of customer orders. **Pull** processes are initiated by a customer order, whereas **push** processes are initiated and performed in anticipation of customer orders.

Cycle View of Supply Chain Processes (1 of 2)

Figure 1-3 Supply Chain Process Cycles



Cycle View of Supply Chain Processes (2 of 2)

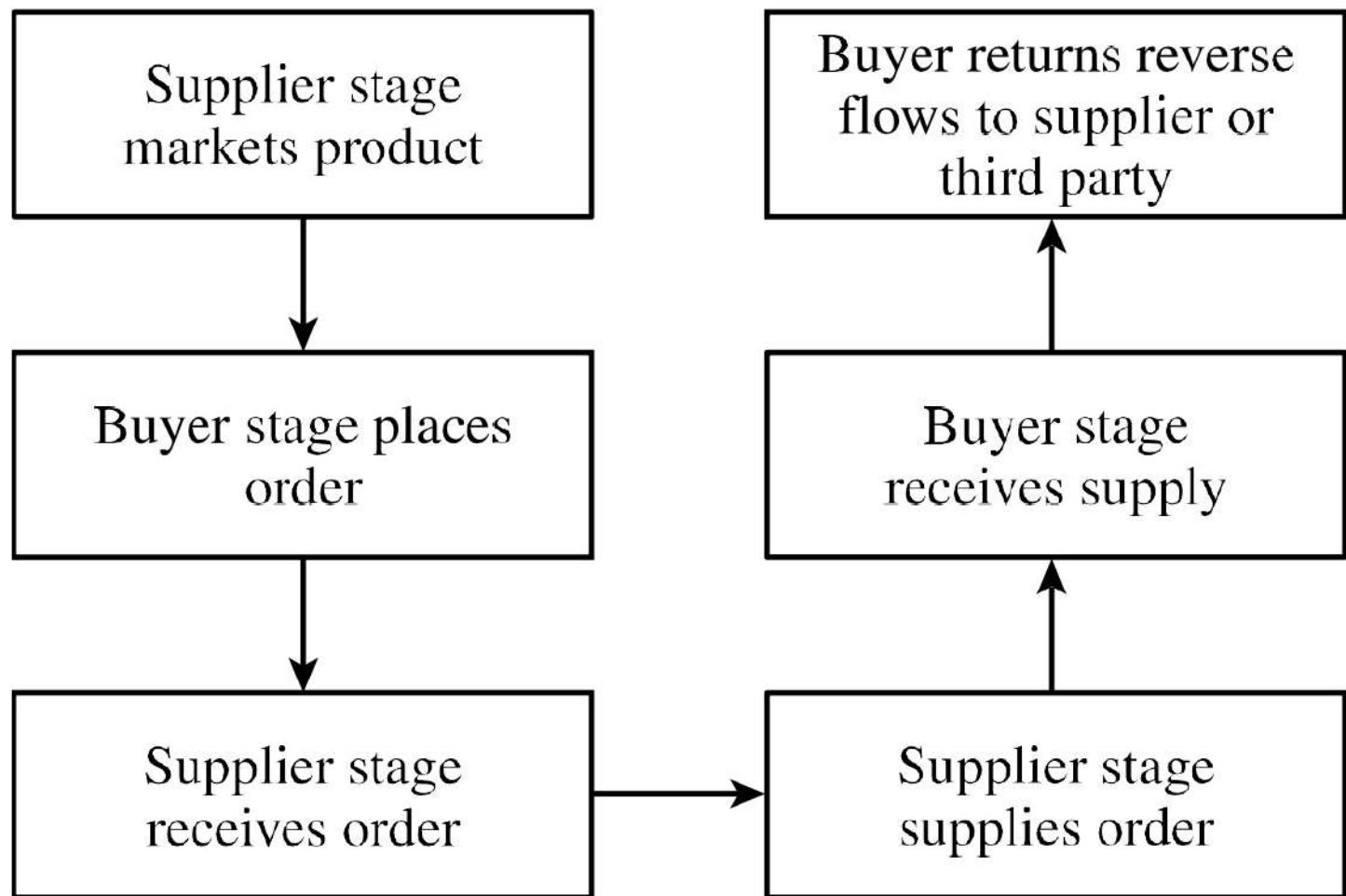
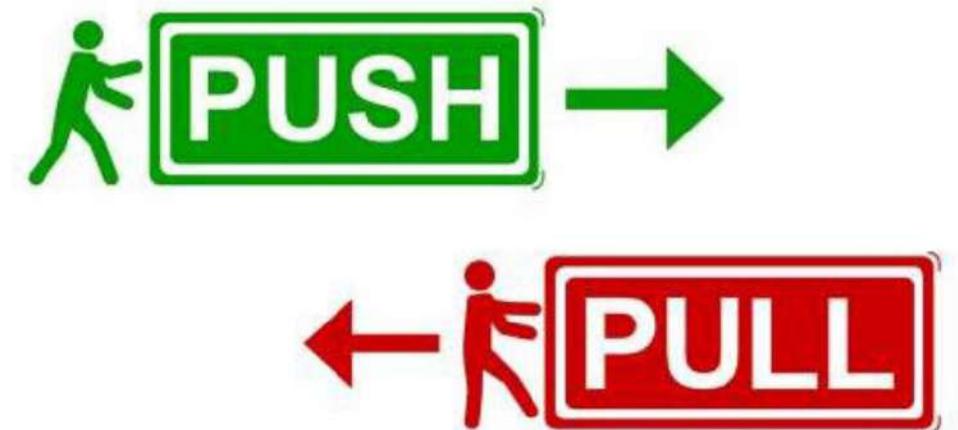


Figure 1-4 Subprocesses in Each Supply Chain Process Cycle

Push/Pull View of Supply Chain Processes

- Supply chain processes fall into one of two categories depending on the timing of their execution relative to customer demand
- Pull: execution is initiated in response to a customer order (**reactive**)
- Push: execution is initiated in anticipation of customer orders (**speculative**)
- **Push/pull boundary** separates push processes from pull processes



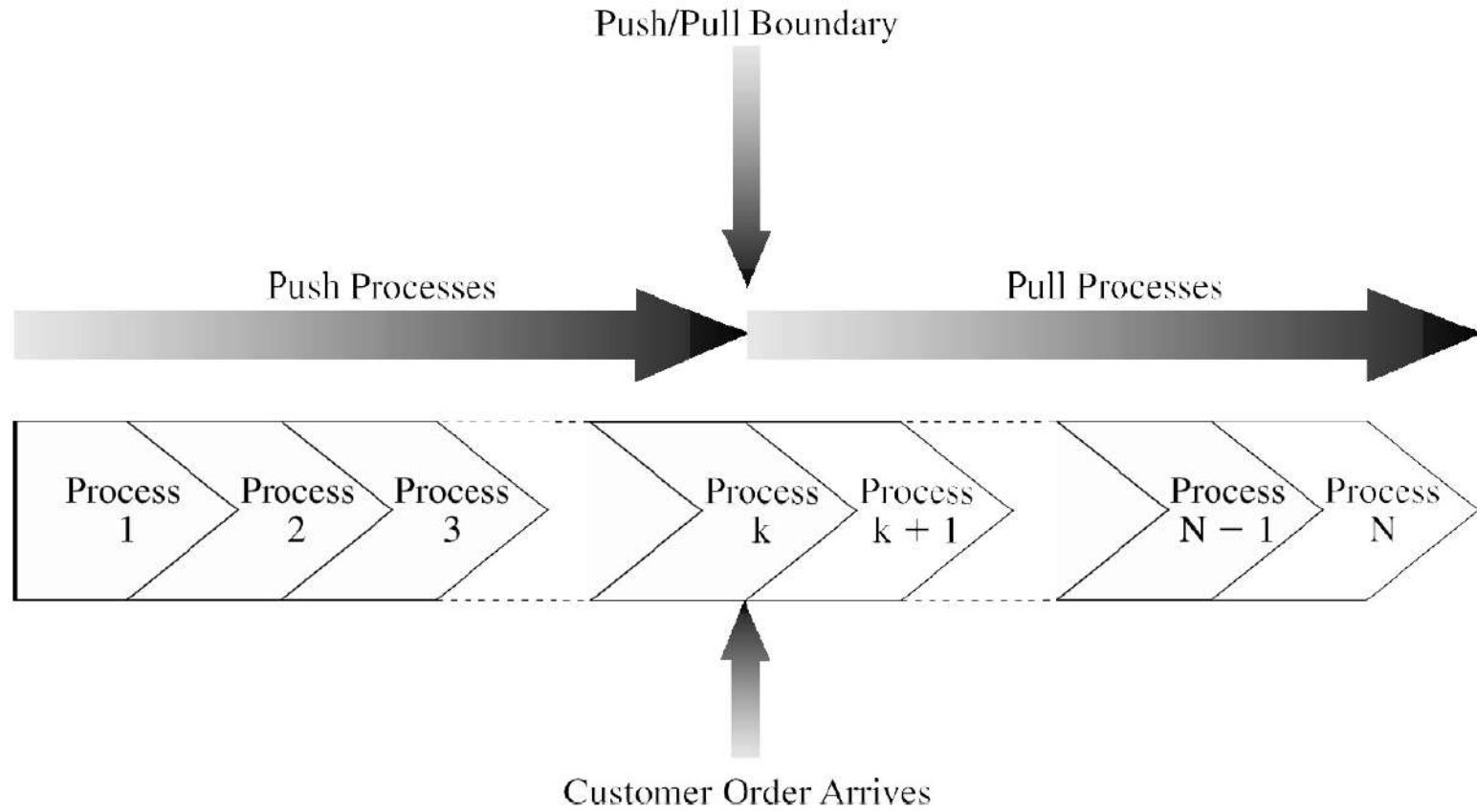
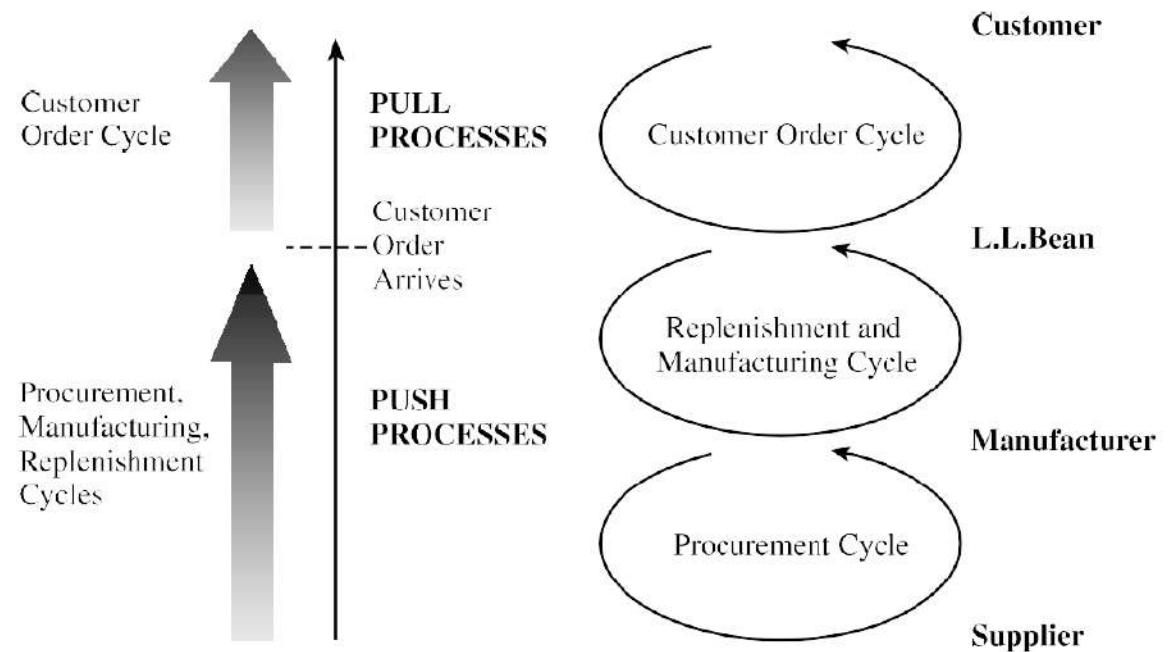


Figure 1-5 Push/Pull View of Supply Chains

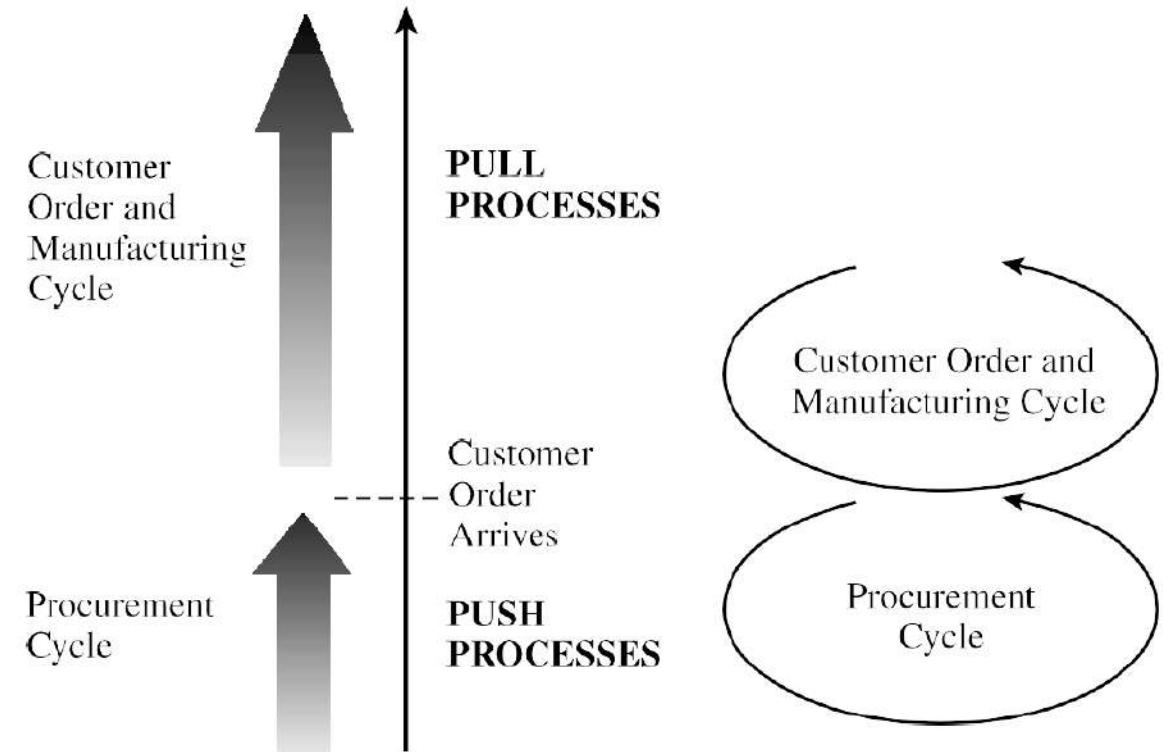
Push/Pull View → L . L. Bean

Figure 1-6 Push/Pull Processes for the L. L. Bean Supply Chain



Push/Pull View → Ethan Allen

Figure 1-7 Push/Pull Processes
for Ethan Allen Supply Chain
for Customized Furniture



Supply Chain Macro Processes

Supply chain processes discussed in the two views can be classified into

1. Customer Relationship Management (C R M):

- all processes at the interface between the firm and its customers

2.

Internal Supply Chain Management (I S C M):

- all processes that are internal to the firm

3. Supplier Relationship Management (S R M):

- all processes at the interface between the firm and its suppliers



Figure 1-8 Supply Chain Macro Processes

Summary of Learning Objective 3

The cycle view divides processes into cycles, each performed at the interface between two successive stages of a supply chain. Each cycle starts with an order placed by one stage of the supply chain and ends when the order is received from the supplier stage. A push/pull view of a supply chain characterizes processes based on their timing relative to that of a customer order. Pull processes are performed in response to a customer order, whereas push processes are performed in anticipation of customer orders.

All supply chain processes within a firm can be classified into three macro processes: CRM, ISCM, and SRM. The CRM macro process consists of all processes at the interface between the firm and the customer that work to generate, receive, and track customer orders. The ISCM macro process consists of all supply chain processes that are internal to the firm and work to plan for and fulfill customer orders. The SRM macro process consists of all supply chain processes at the interface between the firm and its suppliers that work to evaluate and select suppliers and then source goods and services from them. Integration among the three macro processes is crucial for successful supply chain management.



[https://oneeducatorsopinion.wordpress.com/
2014/02/26/brain-breaks-are-good-for-
teachers-too/](https://oneeducatorsopinion.wordpress.com/2014/02/26/brain-breaks-are-good-for-teachers-too/)

Examples of Supply Chains

Gateway & Apple

Zara

w.w. Grainger & McMaster-Carr

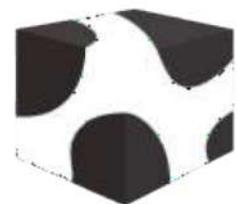
Toyota

Amazon

Macy's

Gateway (Acer) and Apple

1. Why did Gateway choose not to carry any finished-product inventory at its retail stores? Why did Apple choose to carry inventory at its stores?
2. What are the characteristics of products that are most suitable to be carried in finished-goods inventory in a retail store? What characterizes products that are best manufactured to order?
3. How does product variety affect the level of inventory a retail store must carry?
4. Is a direct selling supply chain without retail stores always less expensive than a supply chain with retail stores?
5. What factors explain the success of Apple retail and the failure of Gateway Country stores?



Gateway



Zara

What advantage does Zara gain against the competition by having a very responsive supply chain?

Why has Inditex chosen to have both in-house manufacturing and outsourced manufacturing? Why has Inditex maintained manufacturing capacity in Europe even though manufacturing in Asia is much cheaper?

Why does Zara source products with uncertain demand from local manufacturers and products with predictable demand from Asian manufacturers?

What advantage does Zara gain from replenishing its stores multiple times a week compared to a less frequent schedule?

Do you think Zara's responsive replenishment infrastructure is better suited for online sales or retail sales?

W.W. Grainger and McMaster-Carr



1. How many DCs should be built and where should they be located?
2. How should product stocking be managed at the DCs? Should all DCs carry all products?
3. What products should be carried in inventory and what products should be left with the supplier to be shipped directly in response to a customer order?
4. What products should W.W. Grainger carry at a store?
5. How should markets be allocated to DCs in terms of order fulfillment? What should be done if an order cannot be completely filled from a DC? Should there be specified backup locations? How should they be selected?

Toyota

1. Where should the plants be located, and what degree of flexibility should be built into each? What capacity should each plant have?
2. Should plants be able to produce for all markets or only for specific contingency markets?
3. How should markets be allocated to plants and how frequently should this allocation be revised?
4. How should the investment in flexibility be valued?



Amazon

1. Why is Amazon building more warehouses as it grows?
How many warehouses should it have, and where should they be located?
2. Should Amazon stock every product it sells?
3. What advantage can online players derive from setting up a brick-and-mortar location? How should they use the two channels to gain maximum advantage?
4. What advantages and disadvantages does the online channel enjoy in the sale of shoes and diapers relative to a retail store?
5. For what products does the online channel offer the greater advantage relative to retail stores? What characterizes these products?



Macy's and W.W.
Grainger



1. Should online orders be filled from stores or fulfillment centers? What role(s) should each facility play?
2. How should store inventories be managed in an omni-channel setting?
3. Should returns be kept at a store or sent to a fulfillment center?

Group breakout instructions

- For your assigned company(ies), do a quick investigation of the supply chain(s)
- Answer the questions posed considering:
 - Where to locate facilities? How to size them?
 - Where is the push/pull boundary?
 - What modes of transport to use?
 - How much inventory to carry? In what form?
 - Where to source from?



<https://www.etsy.com/hk-en/listing/555248235/break-dance-clipart-vector-svg-break>

Summary of Learning Objective 4

At a strategic level, a supply chain designer must decide whether to build a responsive supply chain like Zara or focus on lower costs. A decision must be made on the location and capacity of each facility and whether it will be dedicated or flexible in terms of the products it produces and markets it serves. The designer must decide whether products will be sold directly to customers, through distributors like Grainger, or through brick-and-mortar retailers like Macy's. If opting for omni-channel retail, the designer must decide which facilities will fulfill different customer orders.

The planner must then decide on the production levels at each production site and inventory levels at each DC and retail store. As customer orders arrive, the operations manager must decide how each order will be fulfilled given the available inventory and production schedule. The goal when making all these decisions is to maximize the supply chain surplus.



Developing Skills for Your Career

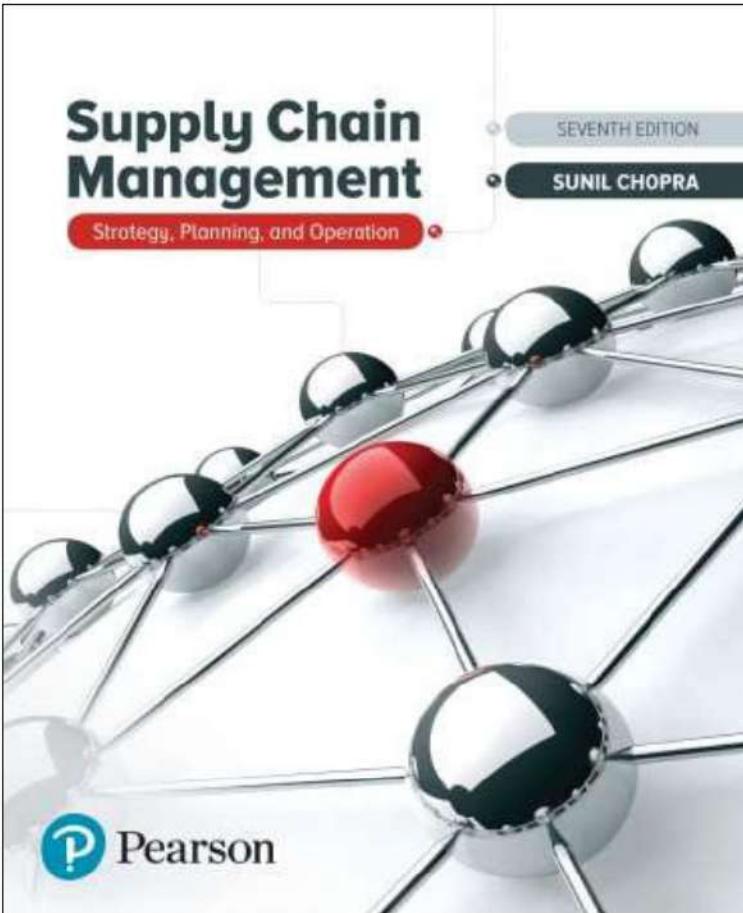
- Lessons learned in this book will help develop career skills no matter what path you take
- Employers have identified communication, critical thinking, collaboration, knowledge application and analysis, business ethics and social responsibility, data literacy, and information technology application and computing skills as critical
- Link between strategic decision making and analytics

Summary of Learning Objective 5

Skills learned in this book will be of great use no matter what path students choose to follow. The book is developed with the premise that good strategic decisions cannot be made without access to relevant analytics, and all analytics should be designed to support decision making. As a result, students will develop critical thinking, the ability to formulate and analyze problems, and support their recommendations with analytics that uses data literacy and computing skills.

Supply Chain Management: Strategy, Planning, and Operation

Seventh Edition



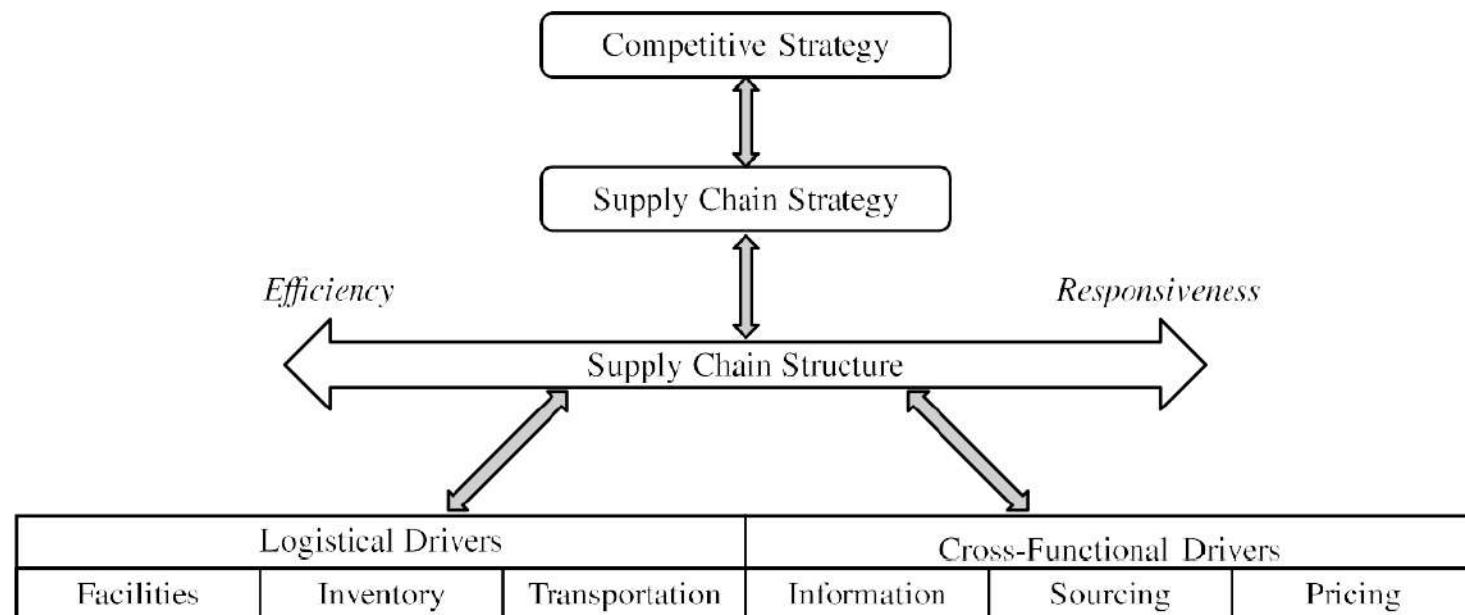
Chapter 3

Supply Chain Drivers and Metrics

See video posted module 1

Framework for Supply Chain Decisions

Figure 3-1 Supply Chain Decision-Making Framework



Facilities (1 of 3)

- Role in the supply chain
 - Production sites and storage sites
 - Increase responsiveness by increasing the number of facilities, making them more flexible, or increasing capacity
- Tradeoffs between facility, inventory, and transportation costs
 - Increasing number of facilities increases facility and inventory costs, decreases transportation costs and reduces response time
 - Increasing the flexibility or capacity of a facility increases facility costs but decreases inventory costs and response time

Facilities (2 of 3)

- Components of facilities decisions
 - **Capability**
 - Flexible, dedicated, or a combination of the two
 - Product focus or a functional focus
 - **Location**
 - Where a company will locate its facilities
 - Centralize for economies of scale, decentralize for responsiveness
 - Consider macroeconomic factors, quality of workers, cost of workers and facility, availability of infrastructure, proximity to customers, location of other facilities, tax effects
 - **Capacity**
 - A facility's capacity to perform its intended function or functions
 - Excess capacity – responsive, costly
 - Little excess capacity – more efficient, less responsive
 - **Demand Allocation**
 - Markets each facility will serve
 - Revisited as conditions change

Facilities (3 of 3)

- **Facility-Related Metrics**

- Capacity
- Utilization
- Processing/setup/down/idle time
- Quality losses
- Production cost per unit
- Theoretical flow/cycle time of production
- Actual average flow/cycle time
- Product variety
- Volume contribution of top 20 percent S K U ' s and customers
- Average production batch size
- Production service level

Inventory

- **Role in the Supply Chain**
 - Mismatch between supply and demand
 - Exploit economies of scale
 - Reduce costs
 - Improve product availability
 - Affects assets, costs, responsiveness, material flow time
- **Overall Trade-Off**
 - Increasing inventory generally makes the supply chain more responsive
 - A higher level of inventory facilitates a reduction in production and transportation costs because of improved economies of scale
 - Inventory holding costs increase

Components of Inventory Decisions (1 of 3)

Cycle Inventory

- Average amount of inventory used to satisfy demand between supplier shipments
- Function of lot size decisions

Safety Inventory

- Inventory held in case demand exceeds expectations
- Costs of carrying too much inventory versus cost of losing sales

Components of Inventory Decisions (2 of 3)

- **Seasonal Inventory**
 - Inventory built up to counter predictable variability in demand
 - Cost of carrying additional inventory versus cost of flexible production
- **Level of Product Availability**
 - The fraction of demand that is served on time from product held in inventory
 - Trade off between customer service and cost
- **Inventory-Related Metrics**
 - C 2 C cycle time
 - Average inventory
 - Inventory turns
 - Products with more than a specified number of days of inventory
 - Average replenishment batch size

Components of Inventory Decisions (3 of 3)

- Average safety inventory
- Seasonal inventory
- Fill rate
- Fraction of time out of stock
- Obsolete inventory

Transportation (1 of 4)

- **Role in the Supply Chain**

- Moves inventory between stages in the supply chain
- Affects responsiveness and efficiency
- Faster transportation allows greater responsiveness but lower efficiency
- Also affects inventory and facilities
- Allows a firm to adjust the location of its facilities and inventory to find the right balance between responsiveness and efficiency

Transportation (2 of 4)

- **Components of Transportation Decisions**
 - **Design of transportation network**
 - Modes, locations, and routes
 - Direct or with intermediate consolidation points
 - One or multiple supply or demand points in a single run
 - **Choice of transportation mode**
 - Air, truck, rail, sea, and pipeline
 - Information goods via the Internet
 - Different speed, size of shipments, cost of shipping, and flexibility

Transportation (3 of 4)

- **Transportation-Related Metrics**
 - Average inbound transportation cost
 - Average income shipment size
 - Average inbound transportation cost per shipment
 - Average outbound transportation cost
 - Average outbound shipment size
 - Average outbound transportation cost per shipment
 - Fraction transported by mode

Transportation (4 of 4)

- **Overall Trade-off: Responsiveness Versus Efficiency**

- The *cost* of transporting a given product (efficiency) and the *speed* with which that product is transported (responsiveness)
- Using fast modes of transport raises responsiveness and transportation cost but lowers the inventory holding cost

Information

- **Role in the Supply Chain**
 - Improve the utilization of supply chain assets and the coordination of supply chain flows to increase responsiveness and reduce cost
 - Information is a key driver that can be used to provide higher responsiveness while simultaneously improving efficiency
- **Role in the Competitive Strategy**
 - Improves visibility of transactions and coordination of decisions across the supply chain
 - Right information can help a supply chain better meet customer needs at lower cost
 - More information increases complexity and cost of both infrastructure and analysis exponentially while marginal value diminishes
 - Share the minimum amount of information required to achieve coordination

Components of Information Decisions (1 of 2)

- **Demand Planning**
 - Best estimate of future demand
 - Include estimation of forecast error
- **Coordination and Information Sharing**
 - **Supply chain coordination**, all stages of a supply chain work toward the objective of maximizing total supply chain profitability based on shared information
 - Critical for success

Components of Information Decisions (2 of 2)

- **Sales and Operations Planning (S & O P)**
 - The process of creating an overall supply plan (production and inventories) to meet the anticipated level of demand (sales)
 - Can be used to plan supply chain needs and project revenues and profits
- **Information-Related Metrics**
 - Forecast horizon
 - Frequency of update
 - Forecast error
 - Variance from plan
 - Ratio of demand variability to order variability

Sourcing

- **Role in the Supply Chain**
 - Set of business processes required to purchase goods and services
 - Will tasks be performed by a source internal to the company or a third party
 - Should increase the size of the total surplus to be shared across the supply chain
- **Role in the Competitive Strategy**
 - Sourcing decisions are crucial because they affect the level of efficiency and responsiveness in a supply chain
 - Outsource to responsive third parties if it is too expensive to develop their own
 - Keep responsive process in-house to maintain control

Components of Sourcing Decisions (1 of 2)

- **In-House or Outsource**
 - Perform a task in-house or outsource it to a third party
 - Outsource if it raises the supply chain surplus more than the firm can on its own
 - Keep function in-house if the third party cannot increase the supply chain surplus or if the outsourcing risk is significant
- **Supplier Selection**
 - Number of suppliers, criteria for evaluation and selection
- **Procurement**
 - Obtain goods and service within a supply chain
 - Goal is to decrease total cost of ownership and increase supply chain surplus

Components of Sourcing Decisions (2 of 2)

- **Sourcing-Related Metrics**
 - Days payable outstanding
 - Average purchase price
 - Range of purchase price
 - Average purchase quantity
 - Supply quality
 - Supply lead time
 - Percentage of on-time deliveries
 - Supplier reliability

Pricing

- **Role in the Supply Chain**

- Pricing determines the amount to charge customers for goods and services
- Affects the supply chain level of responsiveness required and the demand profile the supply chain attempts to serve
- Pricing strategies can be used to match demand and supply
- Objective should be to increase firm profit

Components of Pricing Decisions (1 of 2)

- **Pricing and Economies of Scale**
 - The provider of the activity must decide how to price it appropriately to reflect economies of scale
- **Everyday Low Pricing Versus High-Low Pricing**
 - Different pricing strategies lead to different demand profiles that the supply chain must serve
- **Fixed Price Versus Menu Pricing**
 - If marginal supply chain costs or the value to the customer vary significantly along some attribute, it is often effective to have a pricing menu
 - Can lead to customer behavior that has a negative impact on profits

Components of Pricing Decisions (2 of 2)

- **Pricing-Related Metrics**

- Profit margin
- Days sales outstanding
- Incremental fixed cost per order
- Incremental variable cost per unit
- Average sale price
- Average order size
- Range of sale price
- Range of periodic sales