11 | Intro to Supply Chain Management

OM 201

Principles of operations management

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Lecture Outline

Topics

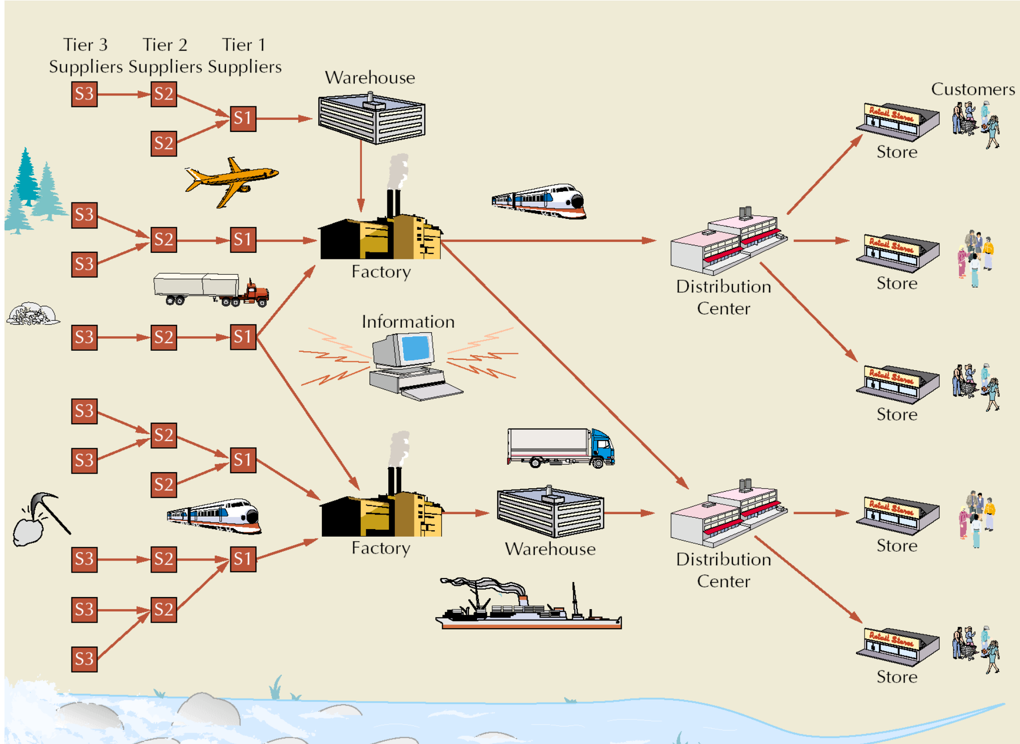
- Supply-Chain Management
- Measuring Supply-Chain Performance
- Bullwhip Effect
- Outsourcing
- Information Technology in SCM

Reference

- Chapter 10
- Roberta Russell & Bernard W. Taylor, (2009), *Operations Management along the supply chain* (CHAPTER 10) Ed 6, John Wiley &Son

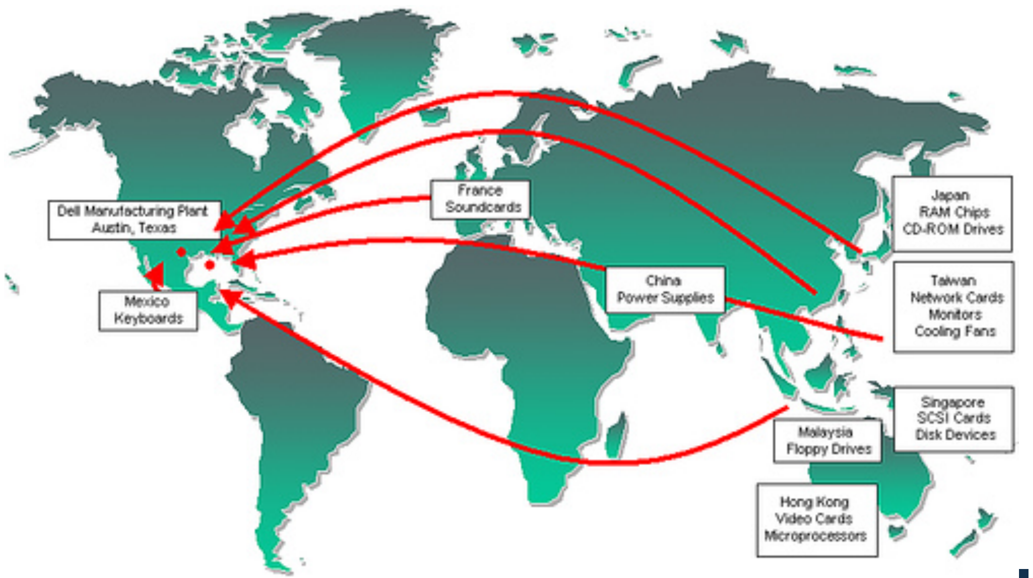
Supply Chain

- All stages involved, directly or indirectly, in fulfilling a customer request
- Includes manufacturers, suppliers, transporters, warehouses, retailers, customers
- Within each company, the supply chain includes all functions involved in fulfilling a customer request
- Customer is an integral part of the supply chain

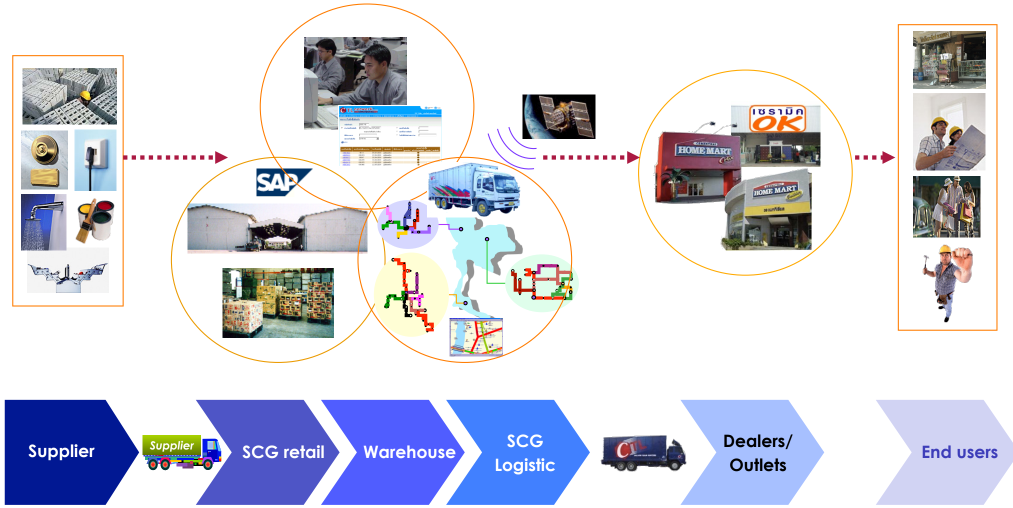


Source: Russell and Taylor (2006)

Issues in Dell's Supply Chain

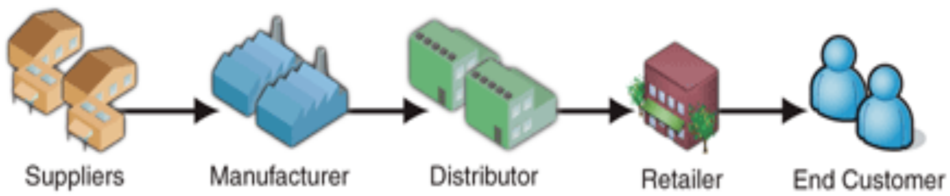


Supply Chain in SCG



Flows in Supply Chain

Product Flow in Supply Chain



Supply Chain Management

- **Supply-chain management** is a total system approach to managing the entire flow of information, materials, and services from raw-material suppliers through factories and warehouses to the end customer

- Managing flow of information through supply chain in order to attain the level of synchronization that will make it more responsive to customer needs while lowering costs

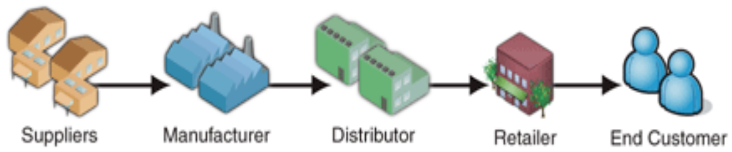
Objectives of SCM

- Sources of supply chain revenue: the customer
- Sources of supply chain cost: flows of information, products, or funds between stages of the supply chain
- The management of flows between and among supply chain stages to **maximize total supply chain profitability**

Supply Chain Drivers

- These drivers determine the performance of a supply chain.
- How these drivers are used in the design, planning, and operation of the supply chain?

Workshop : Understand supply chain



Tasks:

- Identify supply chain key element of any selected industry or company. Be specific.

Objectives:

- To evaluate initial understanding of SCM
- To build awareness of inter-department activities and consequences

Information Technology

Information links all aspects of supply chain

E-business

- replacement of physical business processes with electronic ones

Electronic data interchange (EDI)

- a computer-to-computer exchange of business documents

Bar code and point-of-sale

- data creates an instantaneous computer record of a sale

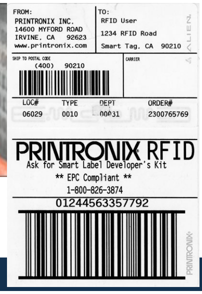
Radio frequency identification (RFID)

- technology can send product data from an item to a reader via radio waves

Internet

- allows companies to communicate with suppliers, customers, shippers and other businesses around the world, instantaneously

RFID Technology in Walmart



RFID Technology in Walmart

- Wal-Mart is the first major retailer that demands manufacturers use RFID
- For the supply chain and operations it provides increased levels of product and asset visibility
- Businesses strive to make their supply chains more efficient by improving the information sharing throughout the supply chain
- RFID help ensuring that Wal-Mart has a more accurate view of its in-store inventory
- Entire shelves of RFID-tagged cartons can be scanned in a few sweeps of a handheld reader
- A single carton can be located in minutes

Facility / Transportation

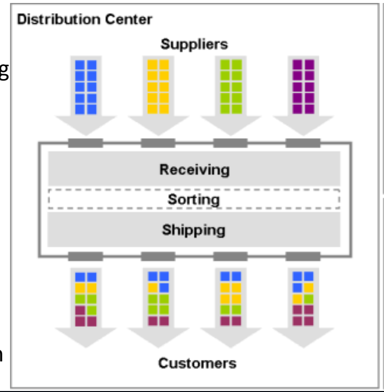
With the objective of minimizing the system-wide costs.

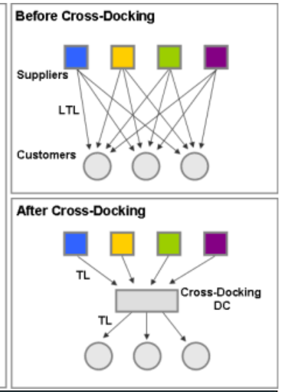
Cross Docking

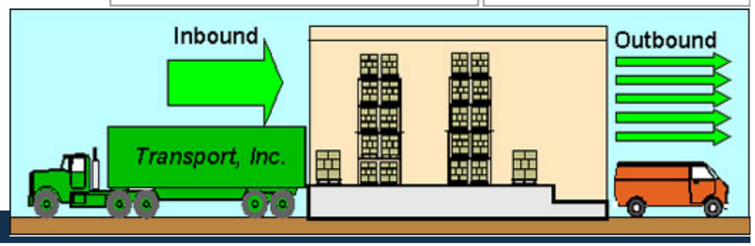
Cross-docking: items are distributed continuously from suppliers throug warehouses to customers

Advantages:
- Lower inventory costs
- Lower lead times

Disadvantages:
- Significant start-up investment
- Very difficult to manage
- Effective only for large distribution systems

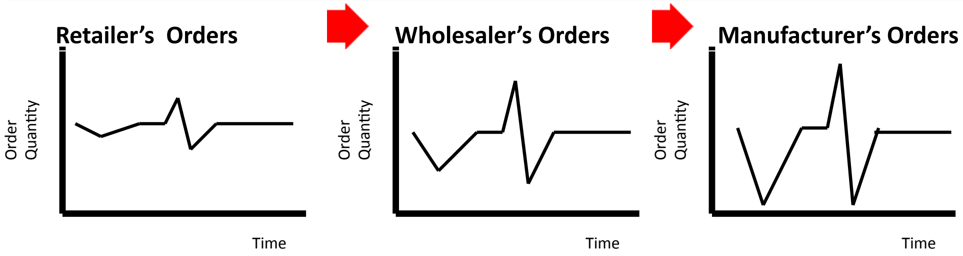






Bullwhip Effect

The magnification of variability in orders in the supply-chain



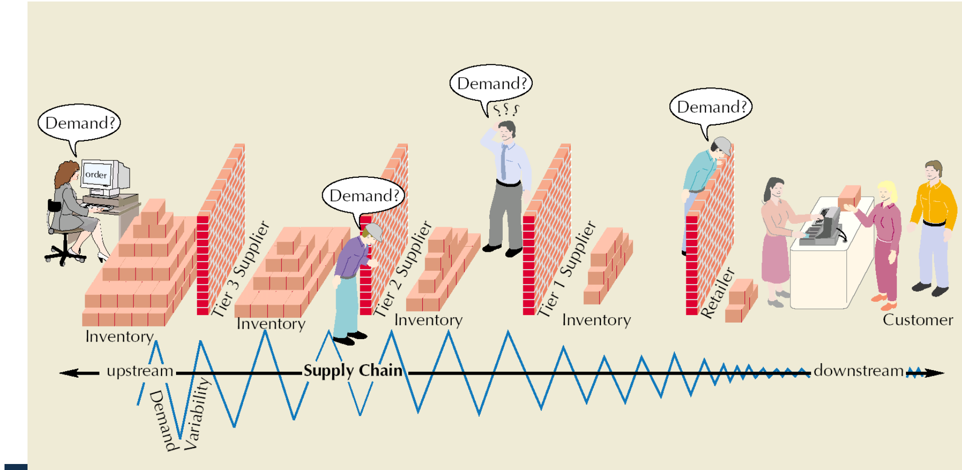
A lot of retailers each with little variability in their orders….

…can lead to greater variability for a fewer number of wholesalers, and…

…can lead to even greater variability for a single manufacturer.

Bullwhip Effect

Occurs when slight demand variability is magnified as information moves back upstream



Next Class

- Supply Chain Management in ZARA