

Pertemuan 1

## SUPPLY CHAIN MANAGEMENT

Introduction & Course Outline

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## COURSE OUTLINES

- **OBJECTIVES** : To give general understanding on basic SCM concepts, methods, and tools.
- **Teaching Methodology** : lecture, case study, home work.

## Text Books

**The following text books are recommended, but not required :**

- Chopra, S., and Meindl, P. (2007). *Supply chain management: Strategy, planning, and operations*. 3<sup>rd</sup> Ed. New Jersey - Prentice-Hall.
- Handfield, R., and Nichols, Jr., E. L. (2002). *Supply chain redesign : Transforming supply chains into integrated value systems*. New jersey : Financial Times – Prentice Hall.
- Pujawan, I Nyoman .(2005). *Supply Chain Management*. Surabaya: Guna Widya
- Wisner, J. D., Leong, G. K., and Tan, K-C. (2005). *Principles of supply chain management : A balanced approach*. Thomson South-Western.
- Simchi-Levi, D., Kaminski, P., and Simchi-Levi, E. (2000). *Designing and managing the supply chain : Concept, strategies, and case studies*. Irwin McGraw-Hill

## Lecture 1

### Introduction to Supply Chain Management

## Top Performers in SCM



The image displays the logos of six major companies known for their supply chain management performance: Dell, Wal-Mart, GE, P&G, Toyota, and IBM.

## SEVERAL CRITICAL QUESTIONS

- Where do you source your materials?
- Where do you process or convert them?
- What channels of distribution do you use?
- How do you build a strong relationship with your suppliers and customers?
- How do you get direct information from your end-consumers?
- What logistics structure should you impose?
- How do you coordinate your information flows and systems globally?
- And how do you set up incentive systems for all of your partners in the supply chain to optimize overall performance?

## THOSE QUESTIONS SPAN DIFFERENT DECISION HIERARCHY

### Strategic Level

- Network design (for example : number, location, capacity of plants and warehouses)
- Developing partnerships with supplier, 3PL, and distributors.

### Tactical Level

- Setting policies for sourcing, production, delivery, after sales services, and inventory.

### Operational Level

- Executing day to day operations on the above activities.

## Evolution of Challenges Facing Manufacturing Companies

1970 Manufacturing, Mass production  
 1980 Quality → SQC, TQM  
 1990 SCM dan e-SCM

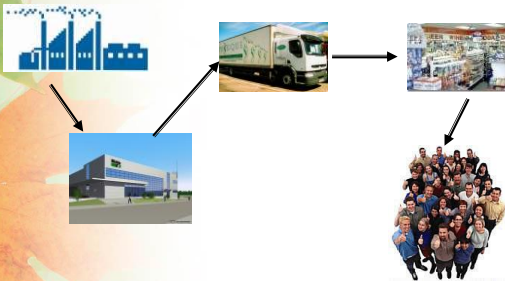
*FORD: any colour as long as it is black*

*SLOAN: a car for every purse and purpose*

Now, the new frontier is the opportunity through coordination, cooperation and collaboration.

- Competition
- More demanding customers
- Globalization

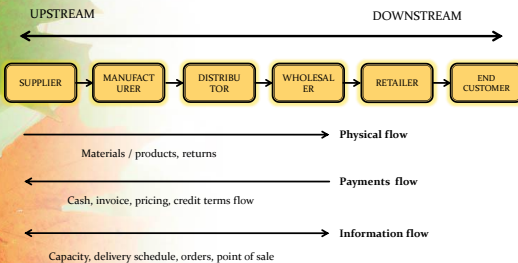
A product flows through a very long process before consumed by customers



## What is SC?

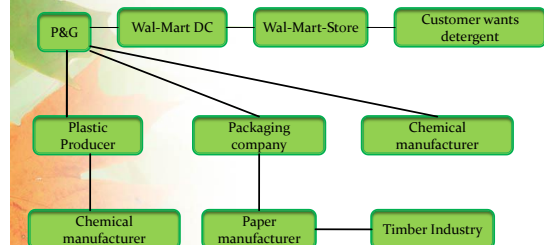
- A series (or network) of companies who work collectively to make and deliver products and services to the end customers. This span from the raw materials extractors (at the upstream end) to the retailers / shops (at the downstream end)
- In a SC there are three flows : materials, information, and cash / funds

## SIMPLE SC STRUCTURE

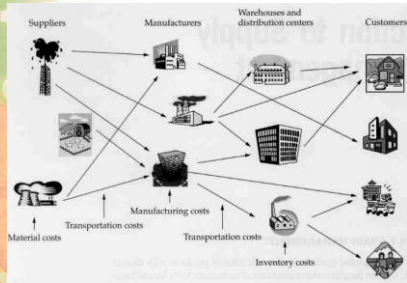


## IN REALITY WE ARE DEALING WITH A NETWORK, NOT A CHAIN

(Copra & Meindl, 2001)



# What is Supply Chain Management



The logistics network

## SUPPLY CHAIN MANAGEMENT DEFINITION

- A process orientation, integrated approach to procuring, producing, and delivering product and services to customers (MIT)
- A collaborative-based strategy to link cross enterprise business operations to achieve a shared vision of market opportunity ( D.J. Bowersox, Michigan State)
- The delivery of enhanced customer and economic value through synchronized management of the flow of physical goods and associated information from sourcing to consumption ( Lalonde, Ohio State)
- The process of strategically managing the procurement, movement and storage of materials, parts, and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfillment of orders (Martin Cristopher, Cranfield University)
- "Supply chain management (SCM)" seeks to integrate into one *synergistic effort* all the relevant operations of a corporation, including *marketing, design, customer service, production, purchasing, logistics, and supplier and inventory management.* (Arthur Anderson)

## Observations from the Definition

- Supply chain management takes into consideration *every facility* that has an impact on cost and plays a role in making the product conform to customer requirements.
- The objective of supply chain management is to be *efficient* and *cost-effective* across the *entire system*. Thus, the emphasis is not on simply minimizing transportation cost or reducing inventories but, rather, on taking a *systems approach* to supply chain management.
- Because supply chain management revolves around efficient integration of suppliers, manufacturers, warehouses, and stores, it encompasses the firm's activities at many levels, from the *strategic* level through the *tactical* to the *operational* level.

## Conflicting Objectives in the Supply Chain

- Purchasing**
  - Stable volume requirements
  - Flexible delivery time
  - Little variation in mix
  - Large quantities
- Manufacturing**
  - Long run production
  - High quality
  - High productivity
  - Low production cost
- Warehousing**
  - Low inventory
  - Reduced transportation costs
  - Quick replenishment capability
- Customers**
  - Short order lead time
  - High in stock
  - Enormous variety of products
  - Low prices

## SUPPLY CHAIN MANAGEMENT FUNCTIONS

Two basic functions :

- Physically converting raw materials and components into products and delivering them to the end customers.

→ Related to physical costs

- Make sure that products/services delivered satisfy customer's aspiration

→ Related to market mediation costs

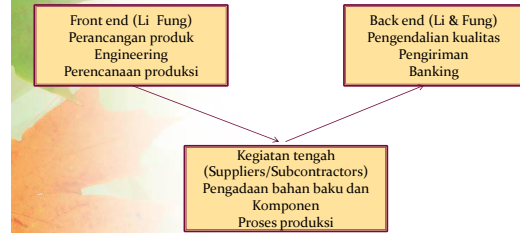
## ACTIVITIES THROUGHOUT THE SUPPLY CHAIN

PHYSICAL	MARKET MEDIATION
Sourcing	Marketing Research
Production	Product Design
Distribution	After Sales Services
Warehousing	Demand Management
Inventory Control	

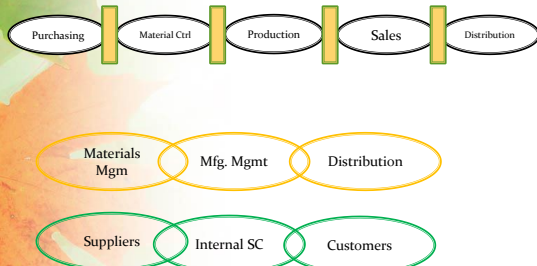
## SCM Related Functions in a Manufacturing Company

Division	Example of Activities / Processes
Product Development	market research, product development, involving supplier in product development
Purchasing	selecting supplier, evaluating supplier performance, purchasing raw material, monitoring supply risk, designing and managing relationships with supplier
Planning and control	demand planning, demand forecasting, capacity planning, material planning, production planning and inventory control, distribution management
Operations/Productions	production execution, quality control
Distribution	designing distribution network, delivery scheduling, selecting logistics service providers, monitoring service levels in each distribution centre

## Case Li & Fung



## SCM REQUIRES SOLID INTERNAL INTEGRATION



## EXAMPLES

### Nabisco, Inc.

#### EXAMPLE 1-5

Nabisco, Inc., delivers 500 types of cookies and more than 10,000 candies to over 80,000 buyers and spends more than \$200 million a year in transportation expenses. Unfortunately, too many trucks arrive at or depart from their destinations half empty. That is why Nabisco is pioneering a collaborative logistics effort, so that Nabisco can share trucks and warehouse space with other companies in order to lower logistics costs. In a recent pilot program, Nabisco shared warehouses and trucks with 25 other manufacturers, including Dole and Leo & Perrins. In one test involving 8,000 orders, grocer Lucky Stores reduced inventory costs by \$4.8 million. Nabisco itself saved \$79,000 in shipping costs, and combined, all of the manufacturers involved in the test saved nearly \$900,000 [80].

- This type of cooperation with other companies requires advanced information systems and entails a variety of risks.
- What systems are necessary for this approach to be a success?
- When should a company undertake this type of complicated partnership?

SCM

### Wal-Mart

#### EXAMPLE 1-7

In 1979 Kmart was one of the leading companies in the retail industry, with 1,891 stores and average revenues per store of \$7.25 million. At that time Wal-Mart was a small niche retailer in the South with only 229 stores and average revenues about half those of Kmart stores. In 10 years Wal-Mart had transformed itself; in 1992 it had the highest sales per square foot and the highest inventory turnover and operating profit of any discount retailer. Today Wal-Mart is the largest and highest-profit retailer in the world. In fact, as of 1999, Wal-Mart accounted for nearly 5 percent of U.S. retail spending [76]. How did Wal-Mart do it? The starting point was a relentless focus on satisfying customer needs. Wal-Mart's goal was simply to provide customers with access to goods when and where they want them and to develop cost structures that enable competitive pricing. The key to achieving this goal was to make the way the company replenishes inventory the centerpiece of its strategy. This was done by using a logistics technique known as cross-docking. In this strategy, goods are continuously delivered to Wal-Mart's warehouses, from where they are dispatched to stores without ever sitting in inventory. This strategy reduced Wal-Mart's cost of sales significantly and made it possible to offer everyday low prices to their customers [145].

- If the *cross-docking* strategy works so well for Wal-Mart, shouldn't all companies use the same strategy? Indeed, many successful retailers employ other distribution strategies: some keep inventory at their warehouses while others ship directly to stores.

SCM

## Key Issues, Questions, and Trade-offs

- **Distribution Network Configuration:** several plants producing products to serve a set of geographically dispersed retailers
- **Inventory Control:** maintain an inventory of a particular product
- **Supply Contracts:** impact from *volume discount* and *revenue sharing, pricing strategies*, incentivizing buyers to order more?
- **Distribution Strategies:** e.g., questions related to *cross-docking*
- **Supply Chain Integration and Strategic Partnering:** *information sharing* and *operational planning* are the keys
- **Outsourcing and Procurement Strategies:** *core competencies*
- **Product Design:** *mass customization*
- **Information Technology and Decision-Support Systems**
- **Customer Value:** the measure of a company's contribution to its customer

## Then and Now

*Just a few years ago, most analysts would have said that these two objectives, improved **service and inventory levels**, could not be achieved at the same time.*

*Recent developments in **information and communications technologies**, together with a **better understanding of supply chain strategies**, have led to innovative approaches that allow the firm to improve both objectives simultaneously.*

**SELAMAT MENDALAMI  
DUNIA SUPPLY CHAIN**