



Chapter 1

Introduction to Supply Chain Management

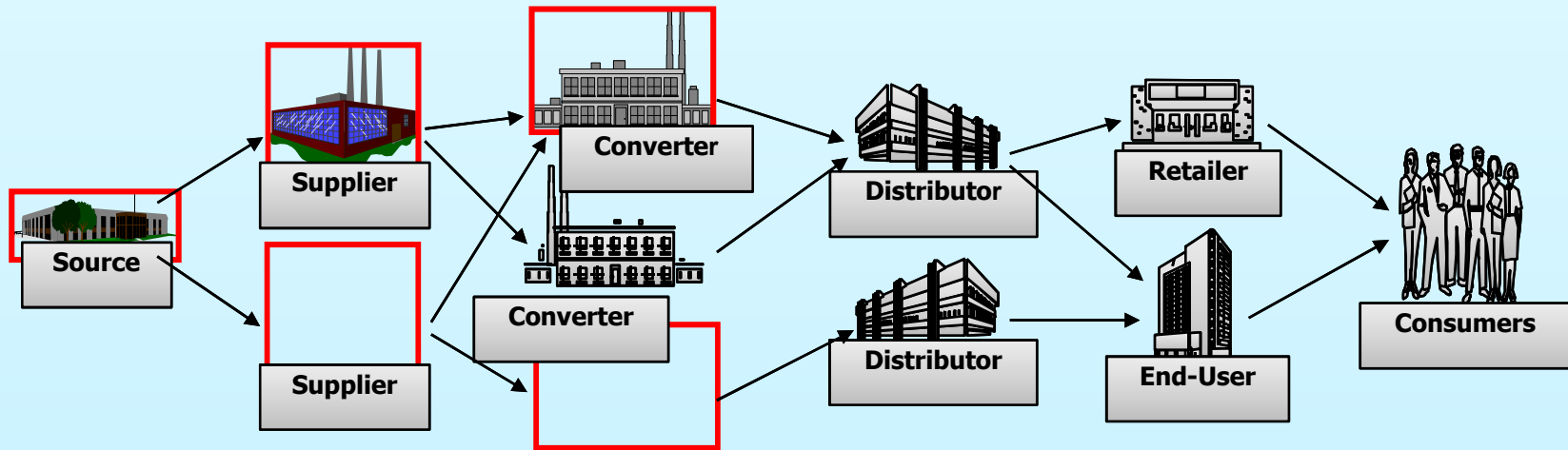
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2012 E.C

Course Content

1. Introduction

- ❖ Concepts of supply chain and supply management
- ❖ Components of Supply Chain and supply management
- ❖ Interest in Supply Chains and Need for Supply Chain Management
- ❖ Supply Chain Integrations and Firms Interactions
- ❖ Role of IT in a supply chain management

1. What Is a Supply Chain?



Material Flow

Cont.

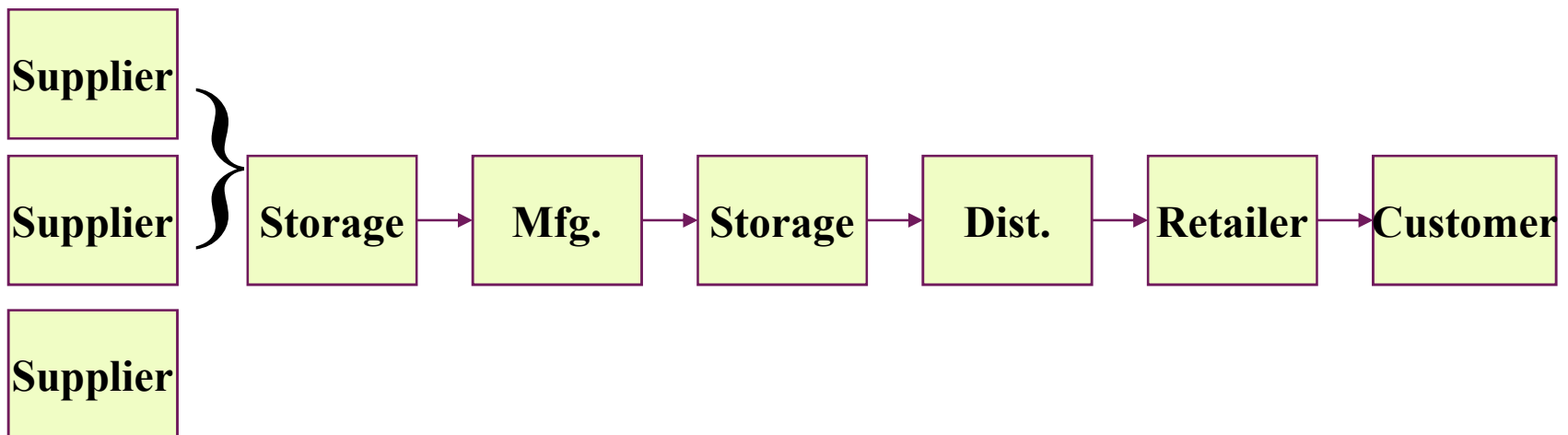
Flow of products and services from:

- Raw materials manufacturers
 - Intermediate products manufacturers
 - End product manufacturers
 - Wholesalers and distributors and
 - Retailers
- ✓ Connected by transportation and storage activities

Cont.

- ✓ Integrated through information, planning, and integration activities
- ✓ Cost and service levels
- A supply chain is a set of organizations directly linked by one or more of the **upstream** and **downstream flows of products**, services, finances, and information from a source to a customer.
- Common **upstream SC**
- **Downstream SC**

Typical Supply Chain for a Manufacturer



Supply Chain Components...



SUPPLIERS

Source of raw materials, component parts, semi-manufactured products and unfinished or non-consumable products that occurs early in the supply chain.



MANUFACTURERS

Makers of final products. Manufacturers perform the task of final assembly or product integration.



DISTRIBUTORS

Responsible for managing, storing and handling of products for organizations that don't want to carry entire variety of products in their own facilities.



LOGISTICS SERVICE PROVIDERS

Commercial provider of individual or multiple integrated service for other entities in the supply chain e.g. transportation management, value-added warehousing and distribution and information technology based services



RETAILERS

The entity that buys from the manufacturer and sell to the final customer.



CONSUMERS

People who go into the stores and buy and consume the product

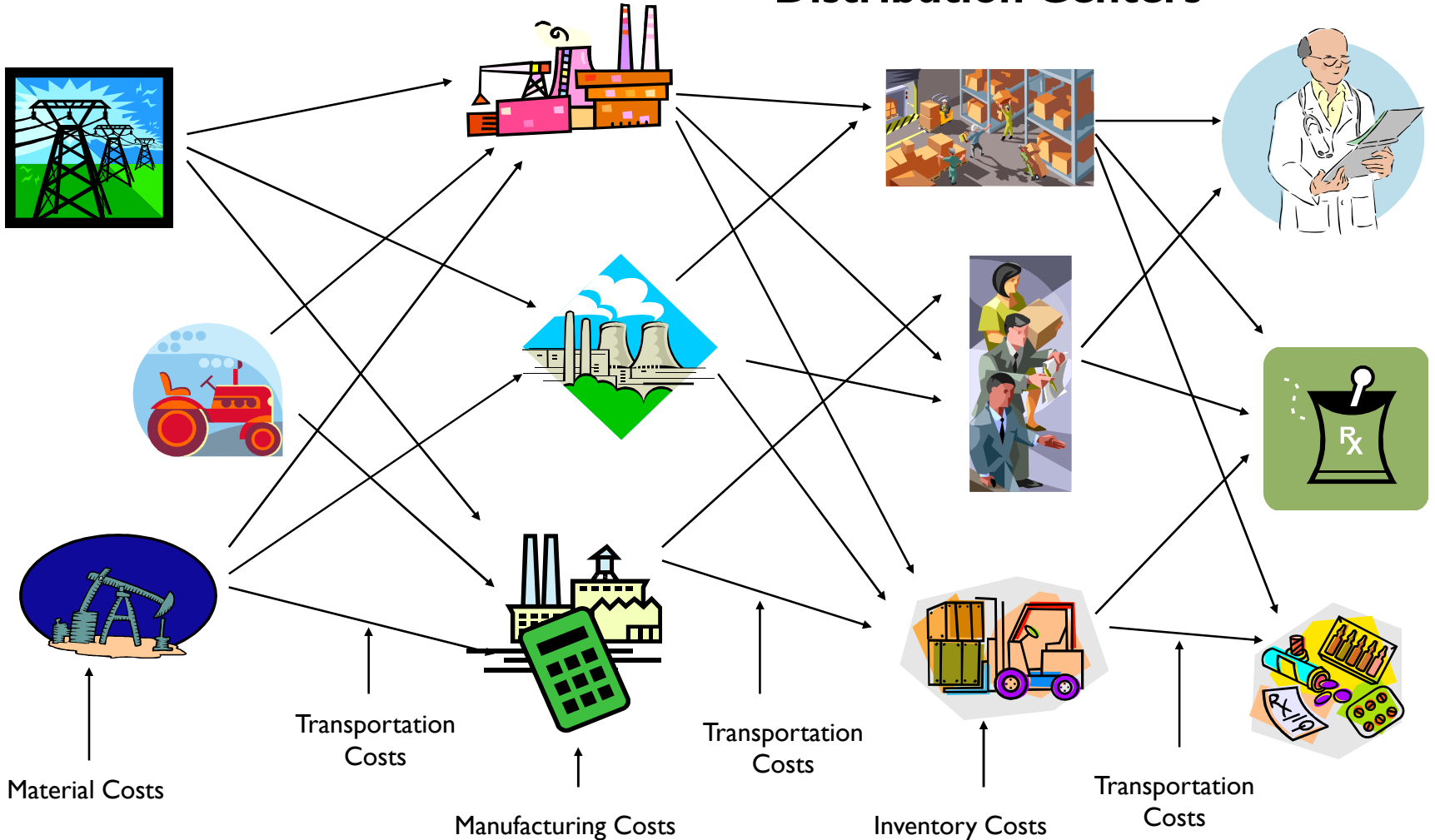
The Supply Chain..

Suppliers

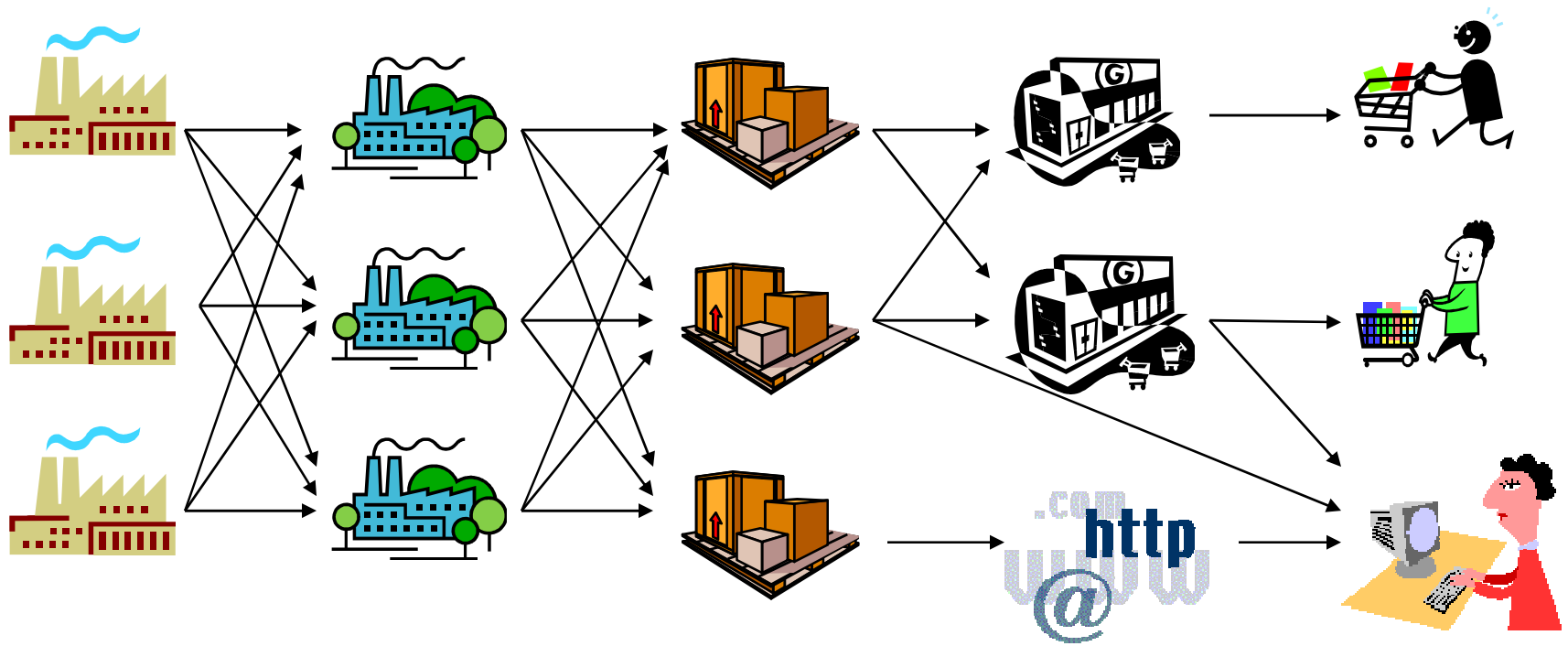
Manufacturers

**Warehouses &
Distribution Centers**

Customers



Supply Chain...



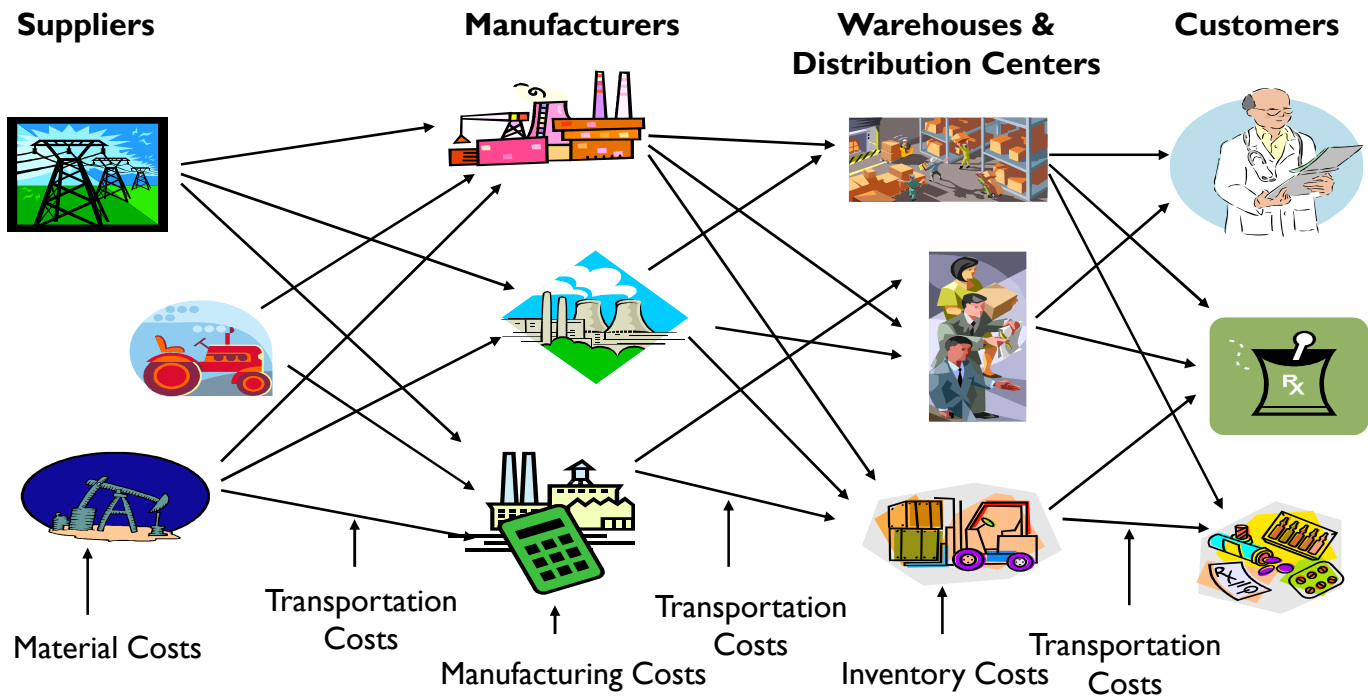
Supplier → Manufacturer → Distributor → Retailer → Customers

Supply Chains...

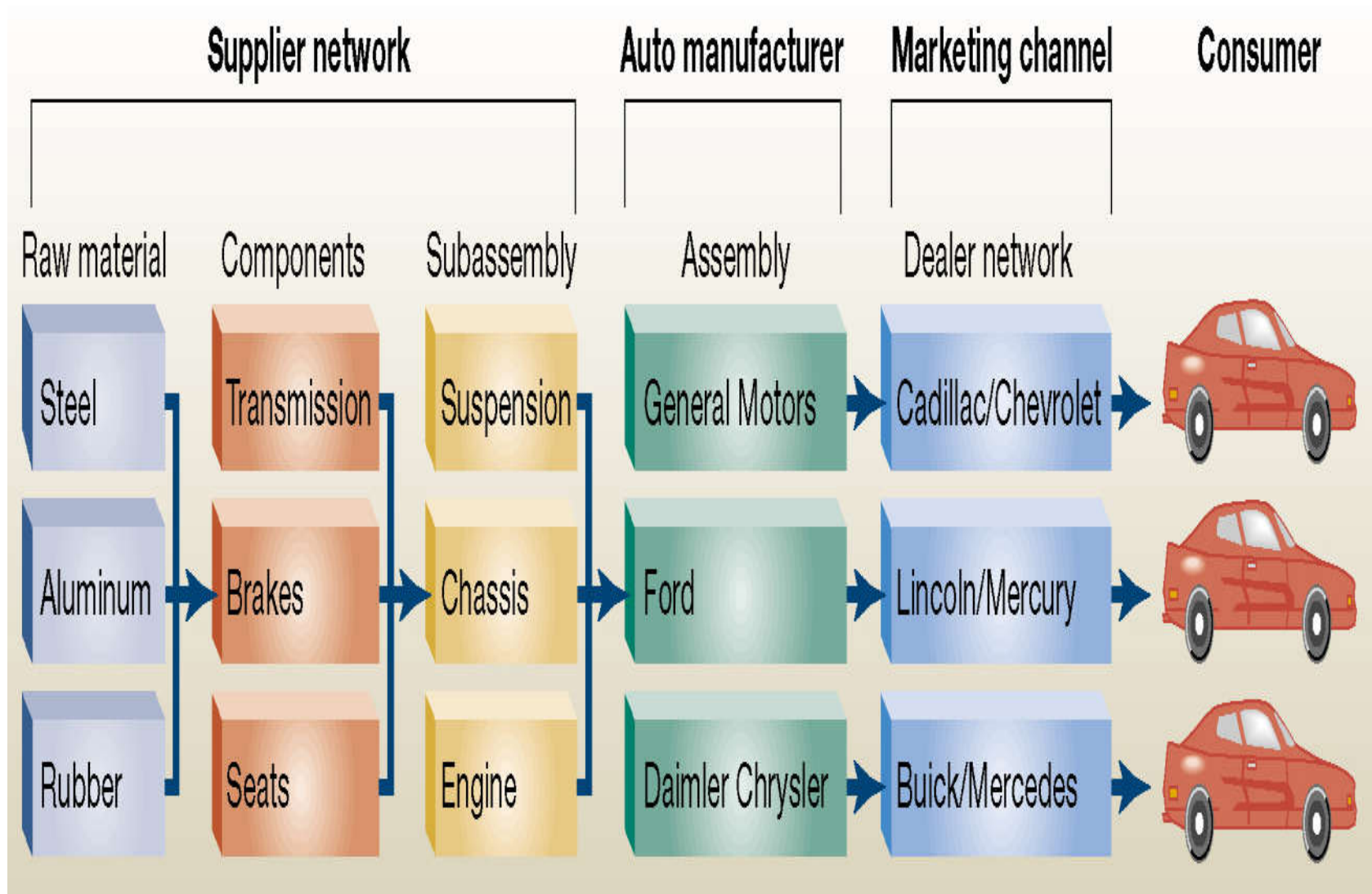
Supply Chain

The connected chain of all of the business entities, both internal and external to the company, that perform or support the logistics function

The Supply Chain – Another View

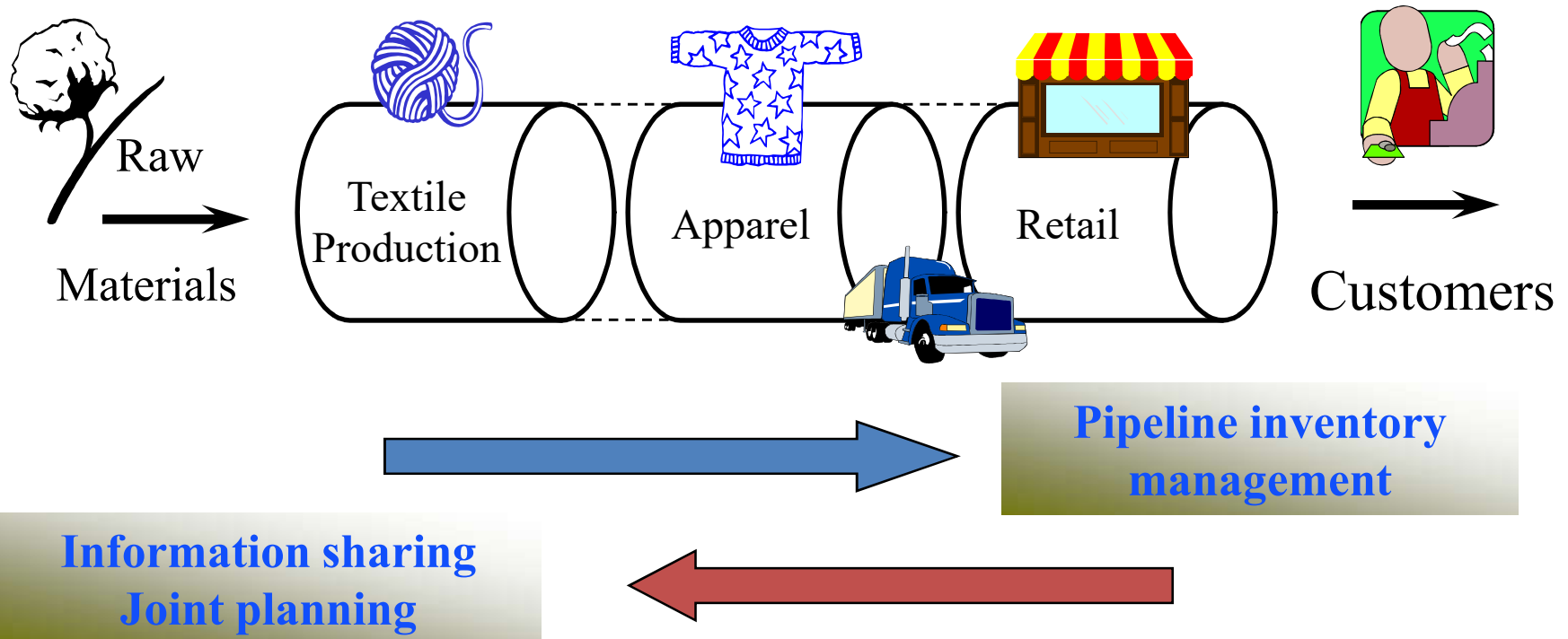


A typical The automotive supply chain



The Supply Chain

Apparel Pipeline



2. Supply Chain Management

- ✓ Supply chain management (SCM) is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers.
- ✓ Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of **origin** to point of **consumption** (supply chain).
- ✓ SCM is a **systematic way of and the management** of the flow of inputs, products, and services, which begins from the origin of products and ends with the product's consumption at the end-user, so as to enhance firm performances(Danese, 2013).

Two Other Formal Definitions of SCM

- ❖ The **design and management** of seamless, value-added process across organizational boundaries to meet the real needs of the end customer

Institute for Supply Management

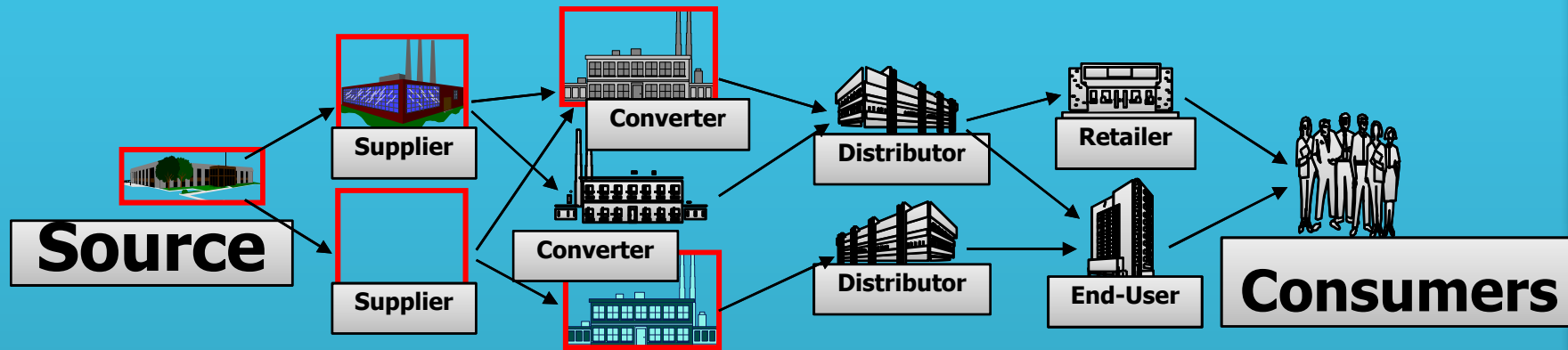
- ✓ Managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer

The Supply Chain Council

SCM Definition

Managements of

Material Flow



Value-Added Services

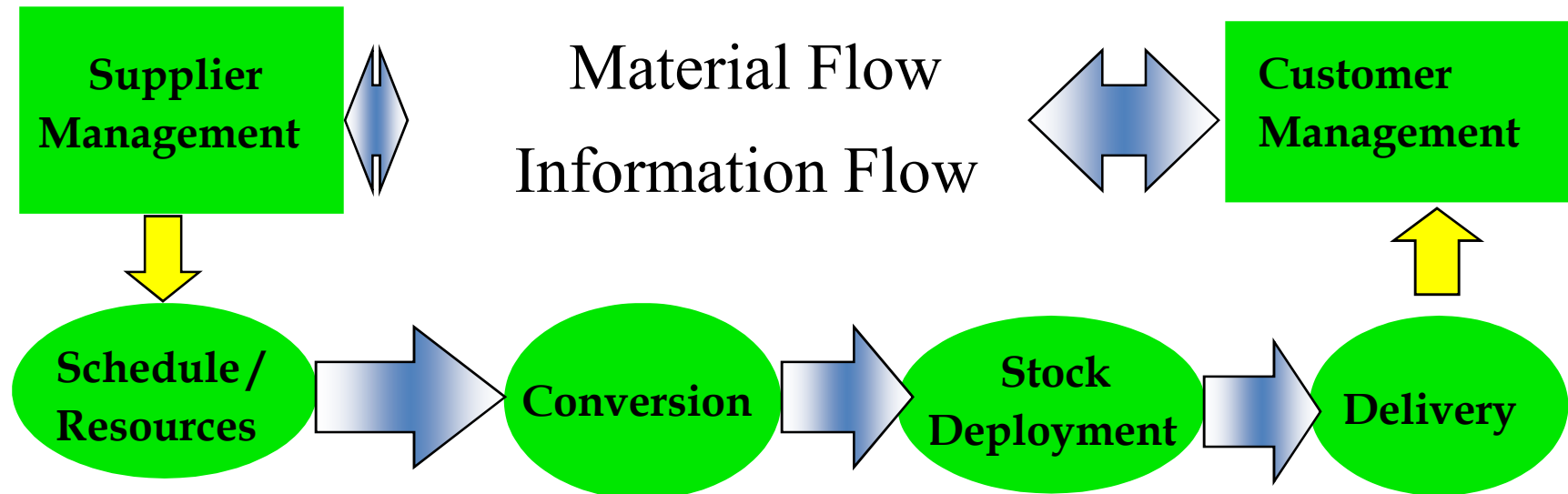
Funds/Demand Flow

Information Flow

Reuse/Maintenance/After Sales Service Flow

What Is Supply Chain Management

" Is the strategic management of activities involved in the acquisition and conversion of materials to finished products delivered to the customer"



Leads to Business Process Integration

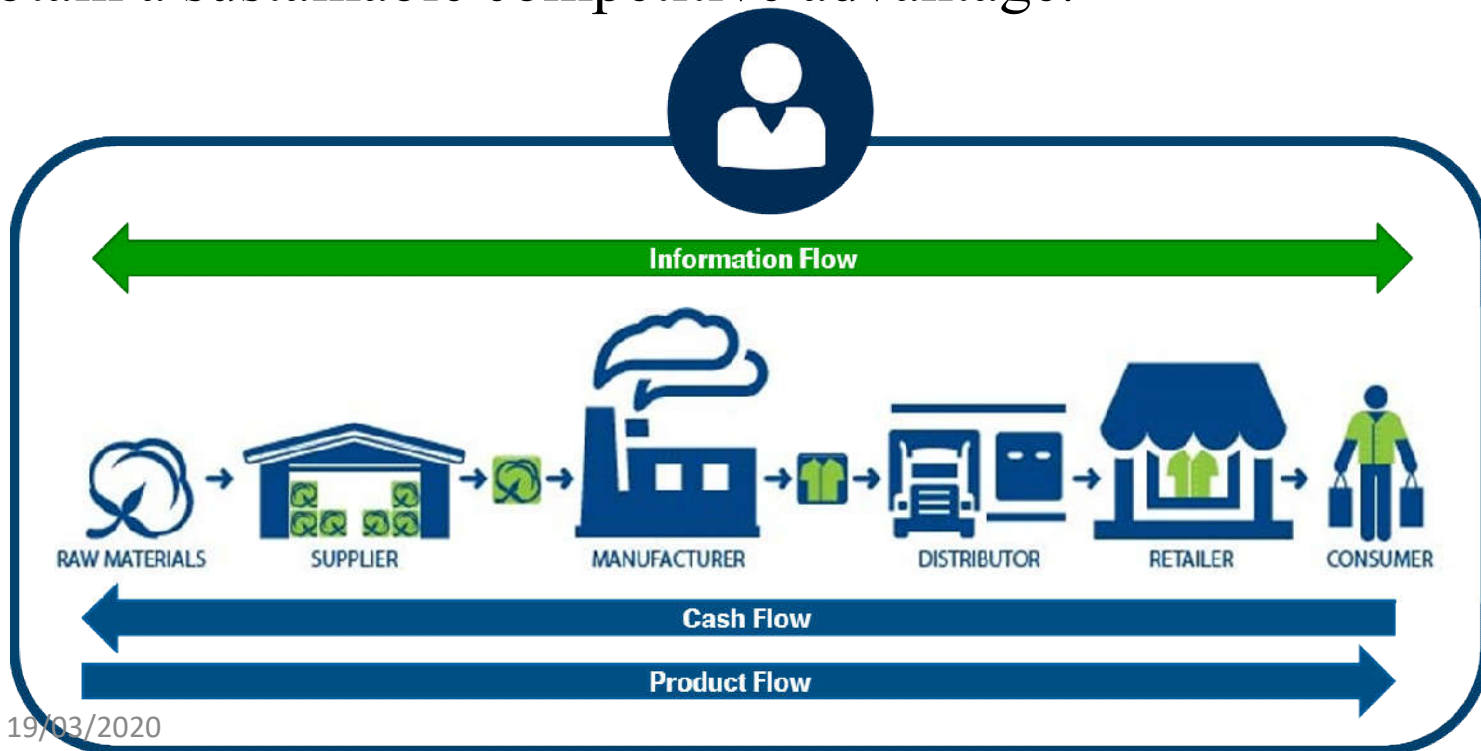
Supply Chains Management...

Supply Chain Management

A management system that coordinates and integrates all of the activities performed by supply chain members into a seamless process, from the source to the point of consumption, resulting in enhanced customer and economic value

Supply Chain Management...

Thus , an *integrated supply chain management* is the coordination and efficient management of information, material and financial flow through improved relationships at all stages of supply chain to obtain a sustainable competitive advantage.



2. The Need for Supply Chain Management

- To improve operations.
- Increasing levels of outsourcing.
- Increasing transportation Performances.
- Competitive pressures.
- Increasing importance of e-commerce.
- Increased performance and profitability

The Need for Supply Chain Management...

- The need to manage inventories
- Lower inventory, transportation, warehousing, and packaging costs
- Greater supply chain flexibility
- Improved customer service
- Higher revenues

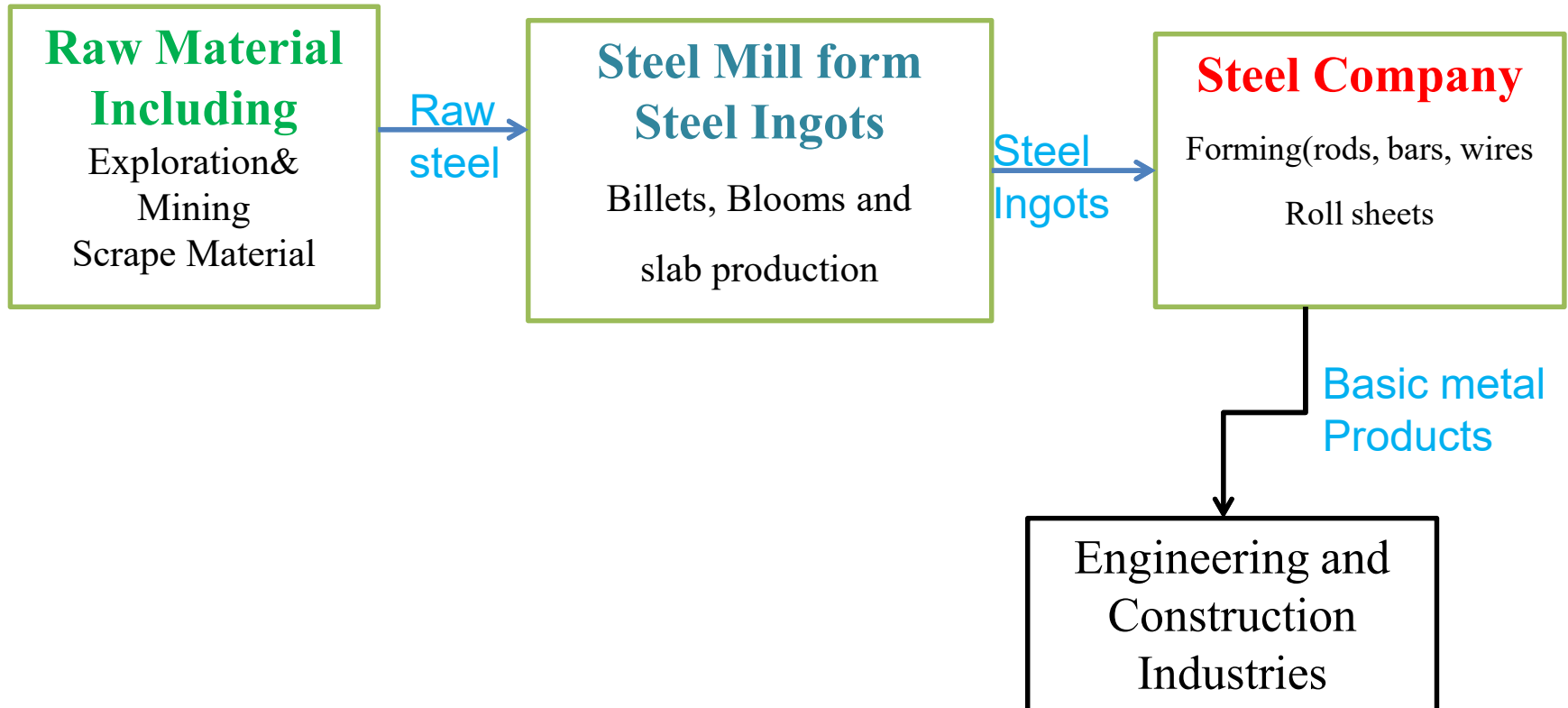
The Importance of Supply Chain Management

- **Dealing with uncertain environments** – matching supply and demand
 - Boeing announced a \$2.6 billion write-off in 1997 due to “raw materials shortages, internal and supplier parts shortages and productivity inefficiencies”
 - U.S Surgical Corporation announced a \$22 million loss in 1993 due to “larger than anticipated inventories on the shelves of hospitals”
 - IBM sold out its supply of its new Aptiva PC in 1994 costing it millions in potential revenue
 - Hewlett-Packard and Dell found it difficult to obtain important components for its PC’s from Taiwanese suppliers in 1999 due to a massive earthquake
- U.S. firms spent \$898 billion (10% of GDP) on supply-chain related activities in 1998

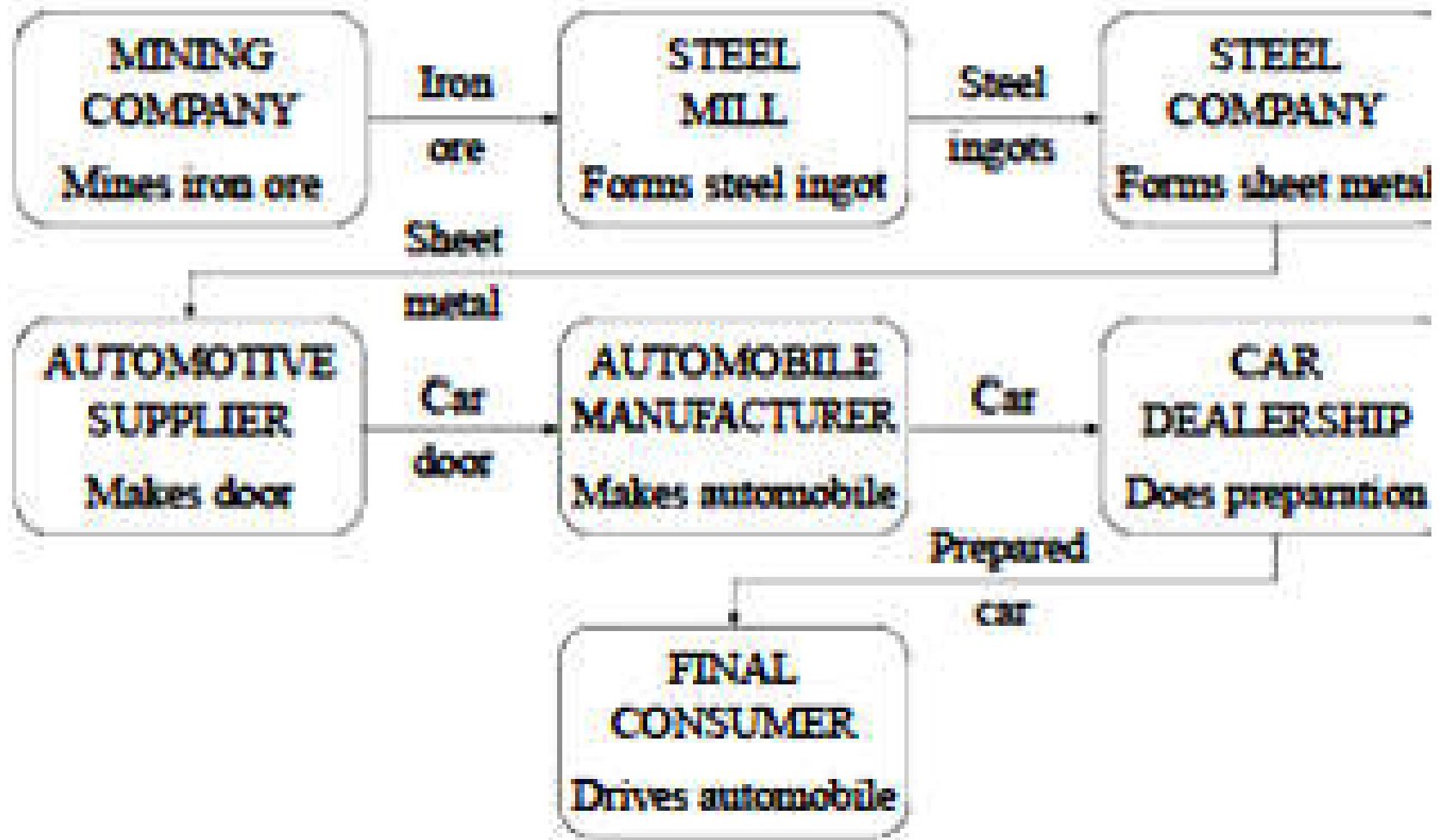
The Importance of Supply Chain Management

- **Shorter product life cycles of high-technology products**
 - Less opportunity to accumulate historical data on customer demand
 - Wide choice of competing products makes it difficult to predict demand
- The growth of technologies such as the Internet enable greater collaboration between supply chain trading partners
 - If you don't do it, your competitor will
 - Major buyers such as Wal-Mart demand a level of “supply chain maturity” of its suppliers
- **Availability of SCM technologies on the market**
 - Firms have access to multiple products (e.g., SAP, Baan, Oracle, JD Edwards) with which to integrate *internal* processes

E.g. Global Steel and Metal Supply Chain



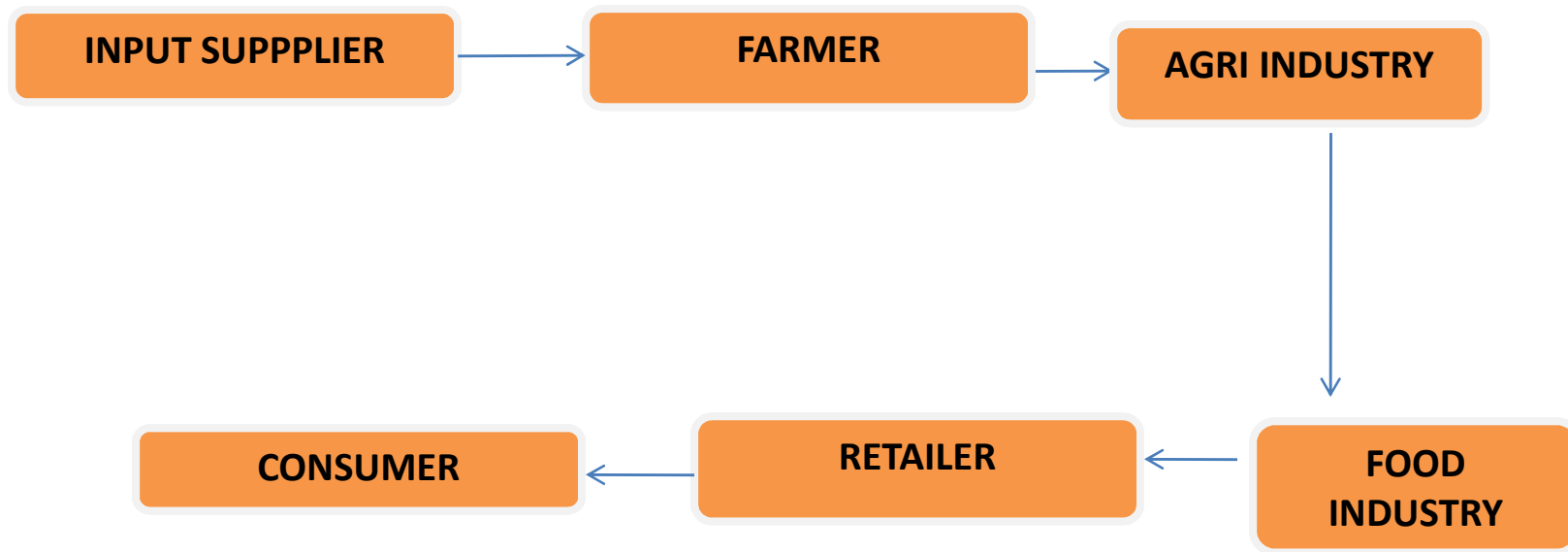
E.g. Steel Supply Chain for Automobile Door



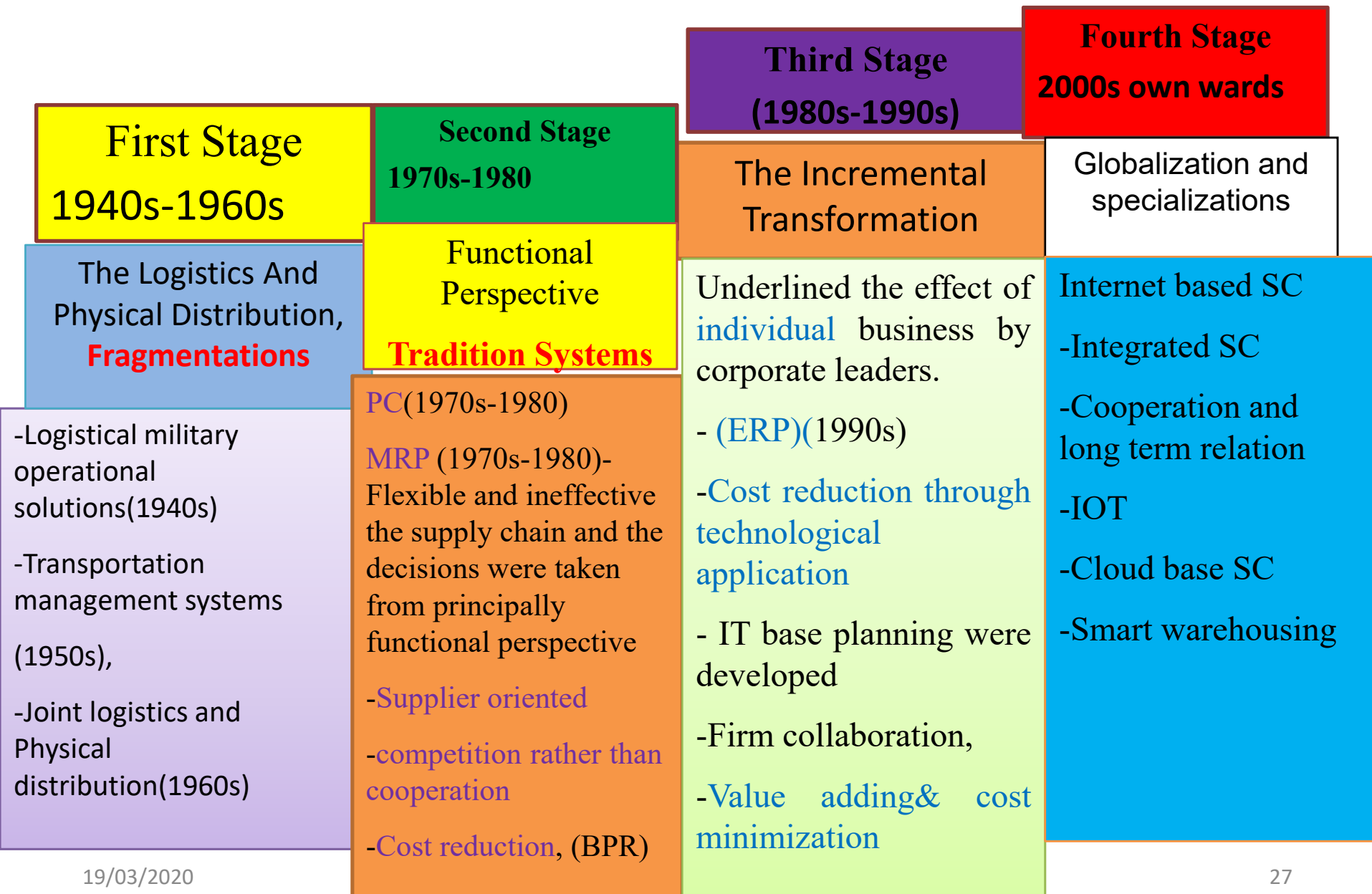
(Souresh Bhattacharya1, 2014), (Source (Macmillan, 2009)

Supply Chain Management

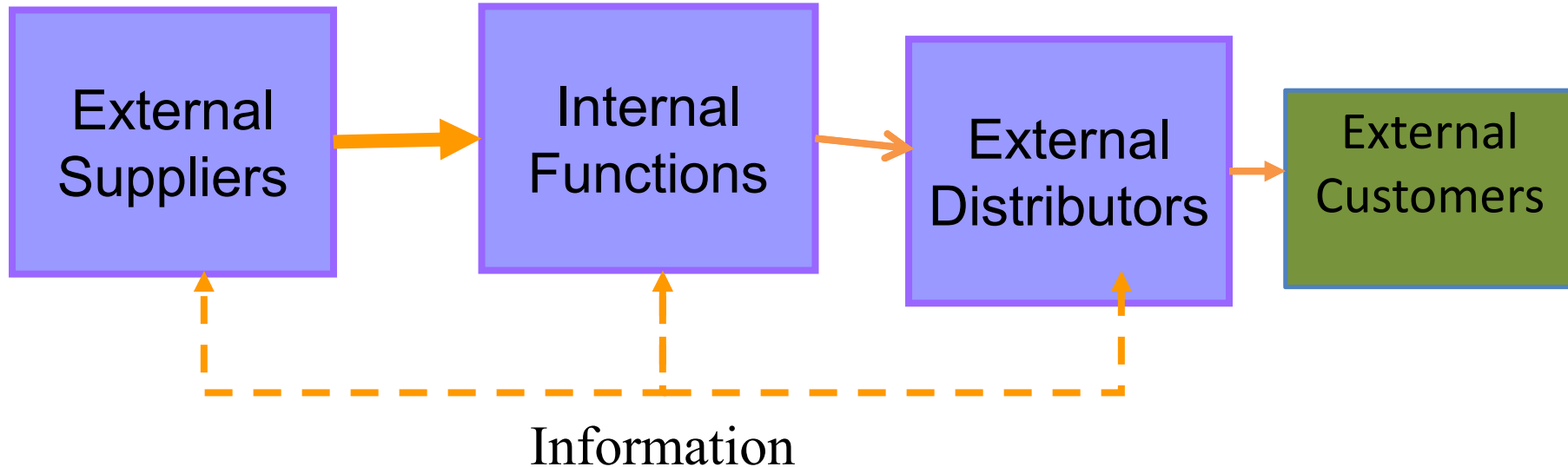
Agricultural Supply Chain Management at global level
Cross-border Supply Chain



Historical Developments In SCM...



Components /Layers of a Typical Supply Chain...



External Suppliers

- ✓ External suppliers provide the necessary raw materials, services, and component parts.
- ✓ Purchased materials & services frequently represent 50% (or more) of the costs of goods sold.
- ✓ Suppliers are frequently members of several supply chains often in different roles.

Suppliers

- Key Material Decisions
 - **Location**
 - **Capacity**
 - Lot sizes; that is, how much to make in a production run
 - Inventory (mainly raw material)
- Key Information & Related Decisions
 - Customer orders
 - Costs, market prices
 - EDI; web-based;...

Functions of Supplier Integrations

- ❖ **Supplier Integrations in Planning and Optimization Process:** In supply chain firms and the supply chain members, organizations or individuals should be continuously involved and integrated for effective flow of material, information and money.
- ❖ In a supply chain integration process the planning are often separated hierarchically into **strategic, tactical, and operational** planning.
- ❖ While, in the strategic planning as the process of identifying the goals for the supply chain firms and sharing them within all functions (Thunberg, 2016).

Functions of Supplier Integrations

Supplier Integrations with Logistics and Transportation Integrations:

- ✓ In a supply chain process integrated logistics process is the mature stage of logistics industry development that provides to improving the logistics system of the firms.
- ✓ Since, logistics integration is provides to enhance right products in the right place at the right time at the right cost and in the right condition in supply chain systems (Kondratjev, 2015).
- ✓ Thus , the logistics industry become a leader in the production chain and coordination and is able to provide the community with a full range of logistics services (Ran, 2009).
- ✓ Thus, strategic integrations have an impact on supplier logistics integrations process. In supply chain systems the logistics system components includes logistics services, information systems, infrastructure or resources.

Internal Functions

Vary by industry & firm, but might include:

- Processing
- Purchasing
- Production Planning & Control
- Warehousing Management
- Quality Assurance
- Shipping

Internal Functions Integrations

Internal Company Integrations in Manufacturing and Production Process

- Integrated production process evolved in industry as an outgrowth of efforts such as concurrent engineering to improve customer satisfaction and competitiveness in a global economy.
- ✓ As well manufacturing integration with suppliers, customers have a key aspect for achieving sustainable competitive advantage (Ely Laureano, 2011).
- ✓ The production integration empowered representatives (stakeholders) from all of the functional areas involved with the production process involving the activities including on design, manufacturing, test and evaluation (T&E), and logistics personnel, and, especially, the customer (Deafens, 1998).

Warehouse/Distribution Centers

- Key Material Decisions
 - Location
 - Capacity
 - Inventory (finished & semi-finished)
- Key Information & Related Decisions
 - Customer orders
 - Manufacturer/Assembler shipments

External Distributors ...

External Distributors transport finished products to appropriate locations

- Logistics managers are responsible for **managing the movement of products between locations**. Includes;
- Traffic management – arranging the method of shipment for both **incoming and outgoing products or material**
- Distribution management – **movement of material from manufacturer to the customer**

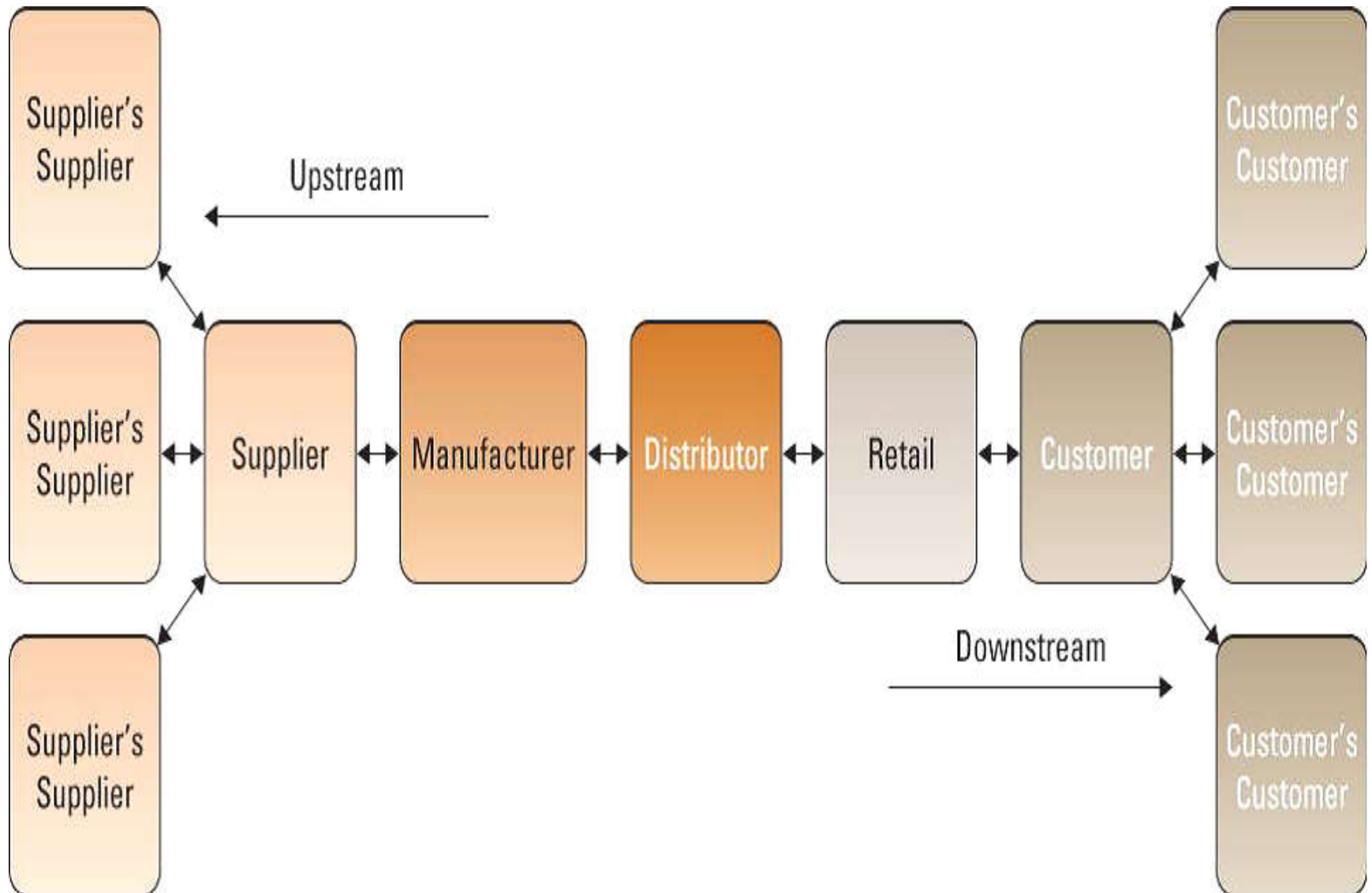
Retailers

- Key Material Decisions
 - Location
 - Inventory (finished goods)
- Key Information & Related Decisions
 - Customer orders
 - Shipments from Warehouses/DCs
 - Market prices

External Customer Integration

- ❖ CI involves directing attention, haring of customer's demand information and resources toward understanding how products and processes interact with the customer's business and
- ❖ Encompasses methods and strategies that improve coordination between the firm (Gizaw, 2016),(Safar Fazlia, 2014), (Pamela Danese, 2011), (Kenneth J. Petersena*, 2005).
- ❖ CI includes aiding producers to understand customer's demand, collaborating and cooperating with customers to design, product development process, innovation (Tim Straub1, 2013),
- ❖ CI in risk management, market level (Gizaw, 2016), (Ellen Enkel, 2005)

Structure of Supply Chain Integrations



Structure of Supply Chain Integrations

Vertical Integration

- ❖ Is defined as “when a company expands its business into areas that are at **different points of the same production path**”(Wangler, 2000).
- ❖ Mainly companies of **different stages of the value** chain are working together.
- ❖ Combination of business units, each at **successive stages in a chain of productive operations for a commodity, into one firm and under one managerial control** is considered as vertical integrations (Ma & Abdulai, 2017)a.

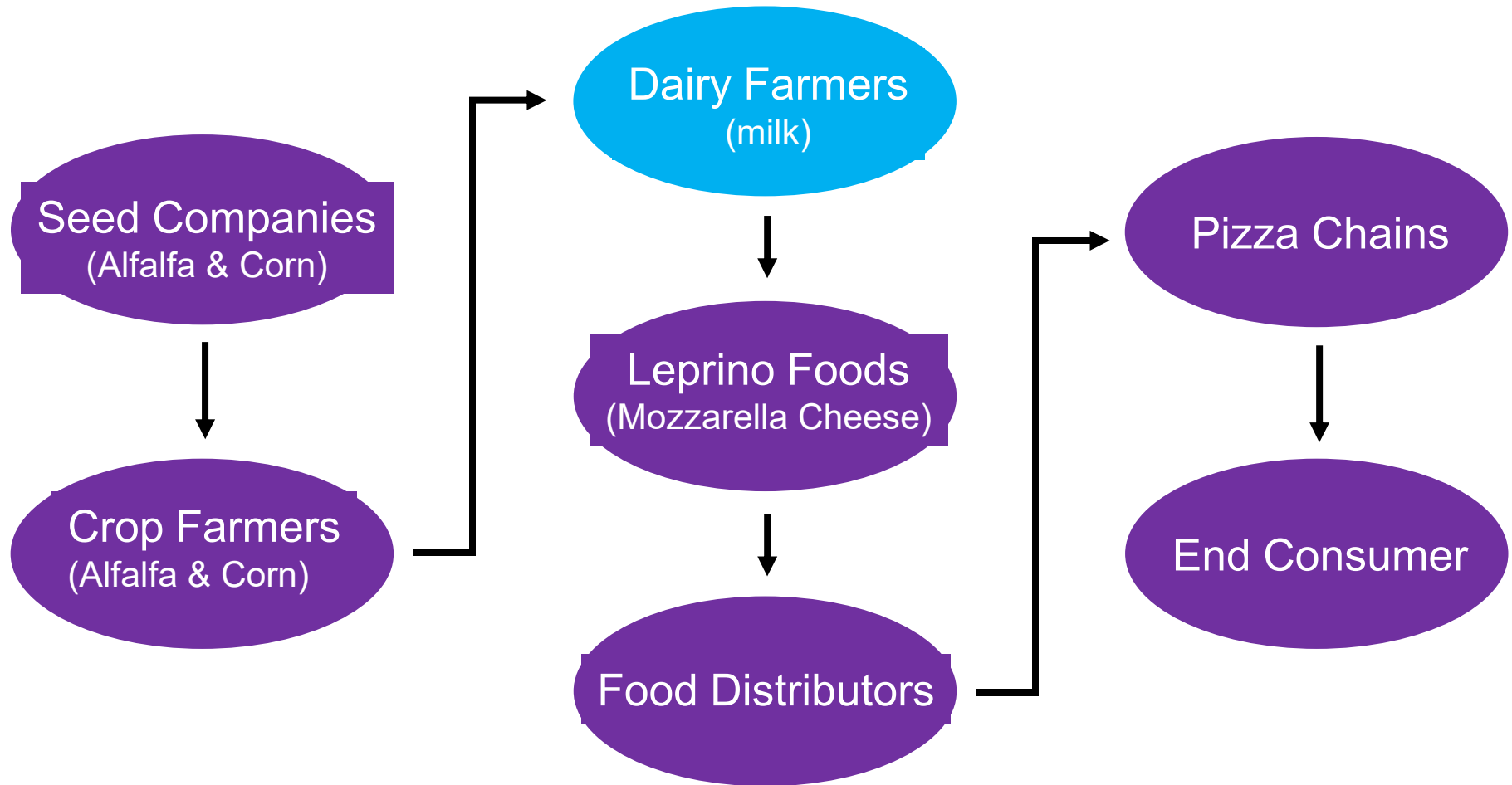
Structure of Supply Chain Integrations...

- ❑ **Vertical integration** in the manufacturing industries, business organizations, which come one after another in the successive stages or levels of production, in the series of operations through which a commodity moves "from the primary producer to the consumer.
- ❑ **For instance**, Carnegie steel company owned mills where the steel was manufactured, **mines** where the iron ore was extracted, **coal mines** that supplied the **coal (upstream)**, **ships and railroads that transported the material(downstream)** is a typical example of vertical integration.

Structure of Supply Chain Integrations...

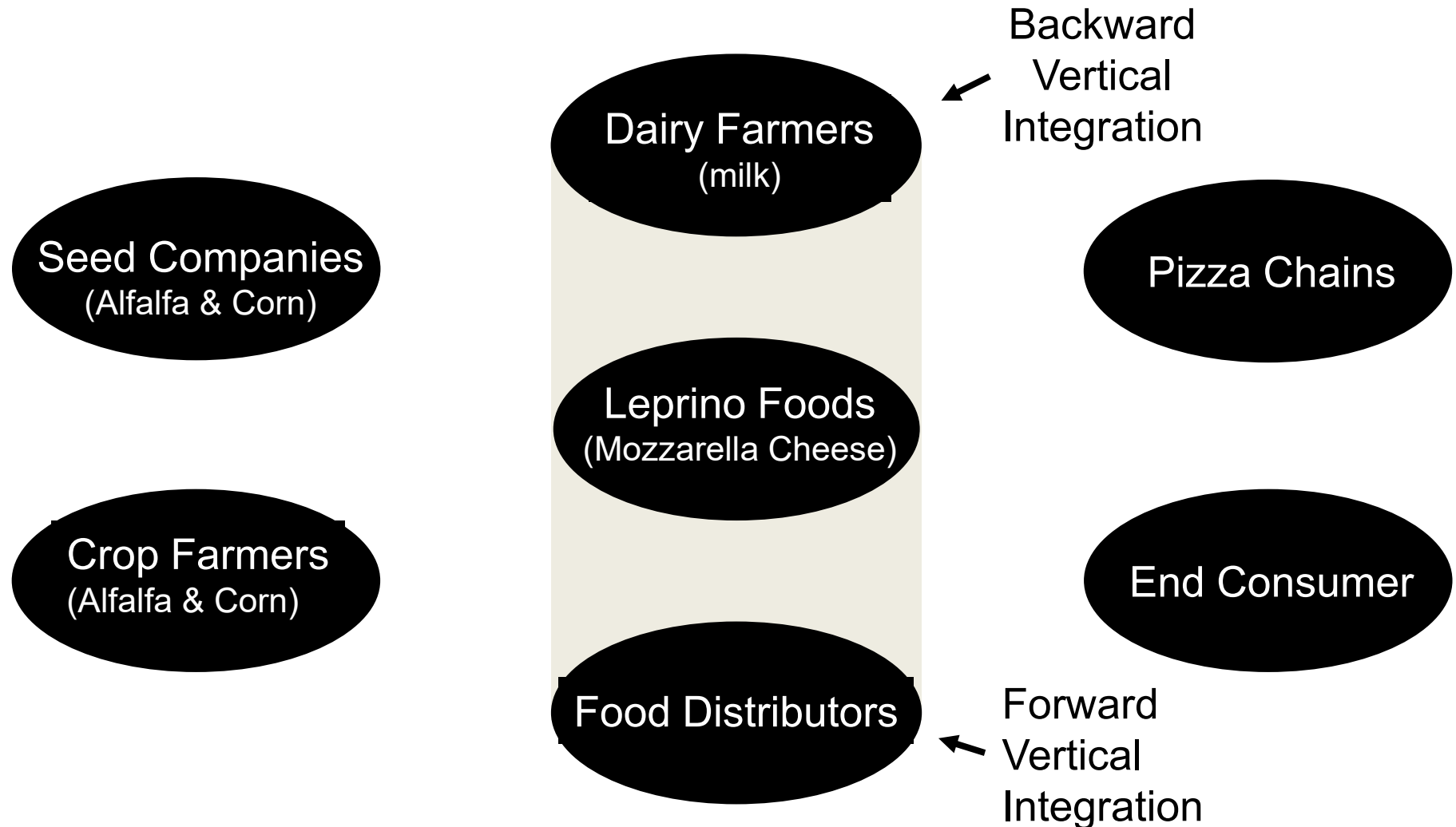
Example Vertical Integration

Where your pizza comes from



Structure of Supply Chain Integrations...

What is Vertical Integration?



Structure of Supply Chain Integrations...

Backward (upstream) vertical integration:

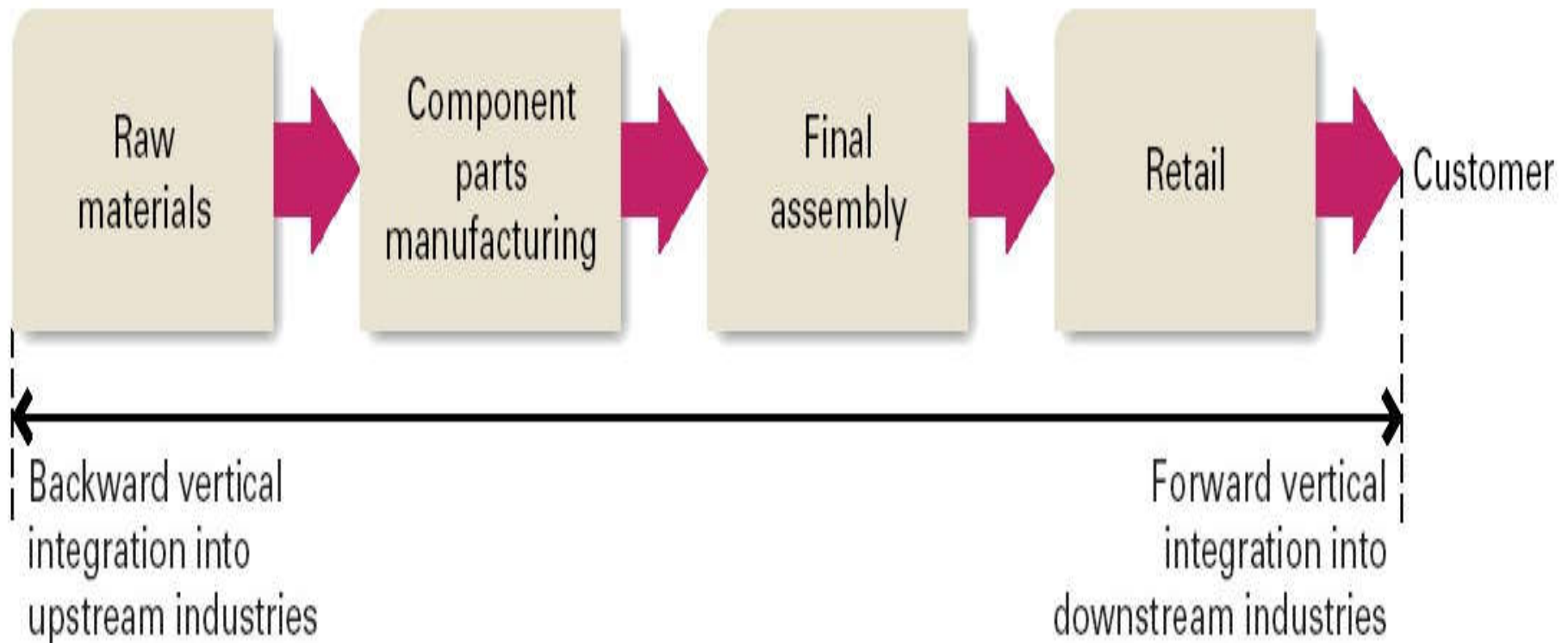
- ✓ When a company owns some of the subsidiaries that produce some of the inputs used in the production of its products.
- ✓ Company expands its operations into an industry that produces inputs to the company's products.
 - Example: When an automobile company owns a tire company

Forward vertical integration: this is when a company owns the subsidiaries that market the product.

- Company expands into an industry that uses, distributes, or sells the company's products.
- A vertical integration is described as being forward when it is initiated at or near the raw material stage of production and is extended toward the finished product and the ultimate consumer (Lafontaine & Slade, 2007).
 - Example is a movie studio that also owns a chain of theaters

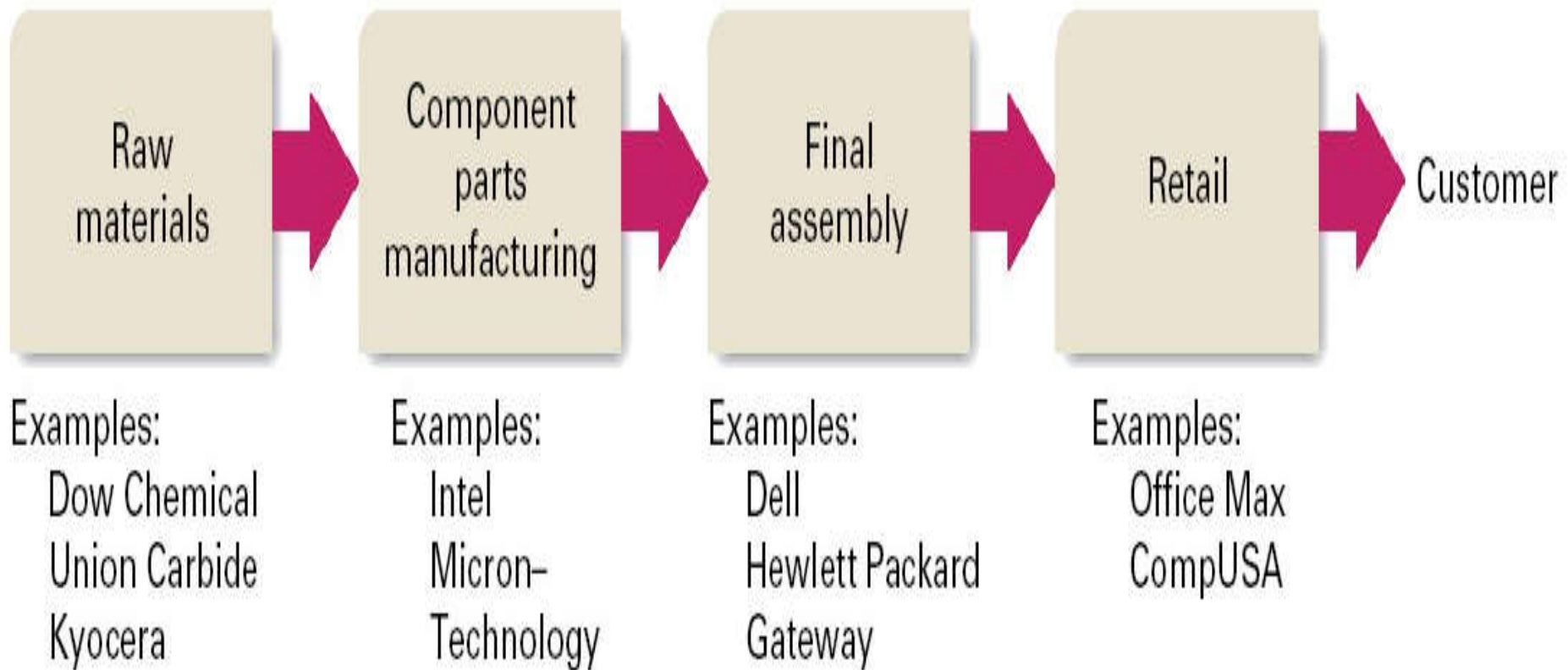
Structure of Supply Chain Integrations

Stages in the Raw Material to Consumer Value Chain



Structure of Supply Chain Integrations

Raw Material to Consumer Value Chain in the Personal Computer Industry



Structure of Supply Chain Integrations...

- **Balanced Vertical Integration:** is a company that sets up subsidiaries that supply them with inputs as well as market their product.
- **Full Integration:** Company produces *all* of a particular input from its own operations(Airlines .F)
 - Disposes of *all* of its completed products through its own outlets.
- **Taper Integration**
 - In addition to company-owned suppliers, the company will also use other suppliers for inputs or independent outlets in addition to company-owned outlets.(University.E

Structure of Supply Chain Integrations...

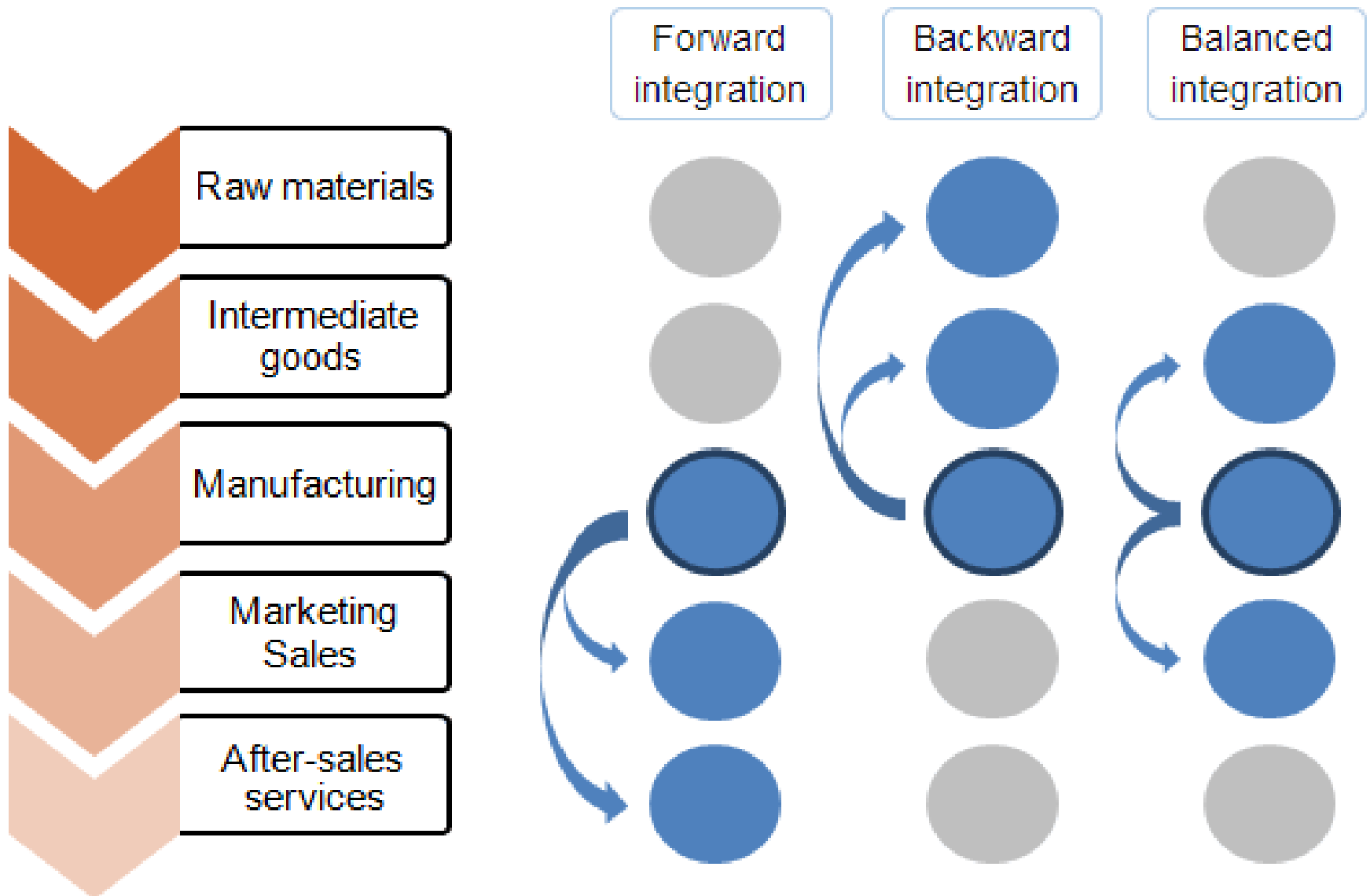


Figure. vertical integration strategies

Structure of Supply Chain Integrations

Full and Taper Integration

FULL INTEGRATION

In house
suppliers

In house
manufacturing

In house
distributors

Customers

TAPER INTEGRATION

In house
suppliers

In house
manufacturing

In house
distributors

Customers

Outside
suppliers

Independent
distributors

Structure of Supply Chain Integrations

Advantages of Vertical Integration

- Reduce transportation cost
- Improve supply chain coordination
- More opportunities to differentiate by means of increased control of inputs
- Capture upstream and downstream profits
- Increase entry barriers to potential competitors

Structure of Supply Chain Integrations...

Disadvantages of Vertical Integration

- Capacity balancing: Making sure that inputs will match outputs at all levels
- Potentially higher cost due to the lack of supplier computation
- Decreased Flexibility
- Developing new competencies may compromise existing competencies
- Increase bureaucratic costs
- Monopolization of markets

Structure of Supply Chain Integrations...

Horizontal Integration

- ✓ Is two or more companies of the same industry and in the same stage of production work together.
- ✓ These companies belong to the same supply chain stage and normally produce or trade the same products(Wangler, 2000).
- ✓ Beside, business organizations operates in different industries or in several branches of the same industry, but remaining at the same level of the production chain is considered as horizontal integrations(Pasutham, 2012).

Structure of Supply Chain Integrations...

Horizontal Integration

- For instance, telecommunications, water, gas and electricity distribution work jointly ,to utilize resources such as the use of similar assets (networks), whose maintenance requires similar skills, synergies in the management of customers, in advertising and in administrative activities, a stronger position in raising financial performances.

1.9. Structure of Supply Chain Integrations...

Advantages of Horizontal Integration

- Economics of scale: Selling more of the same product in different parts of the world
- Economics of Scope: Sharing resources common to different products. “Synergies”
- Increased Market Power
- Reduction in cost

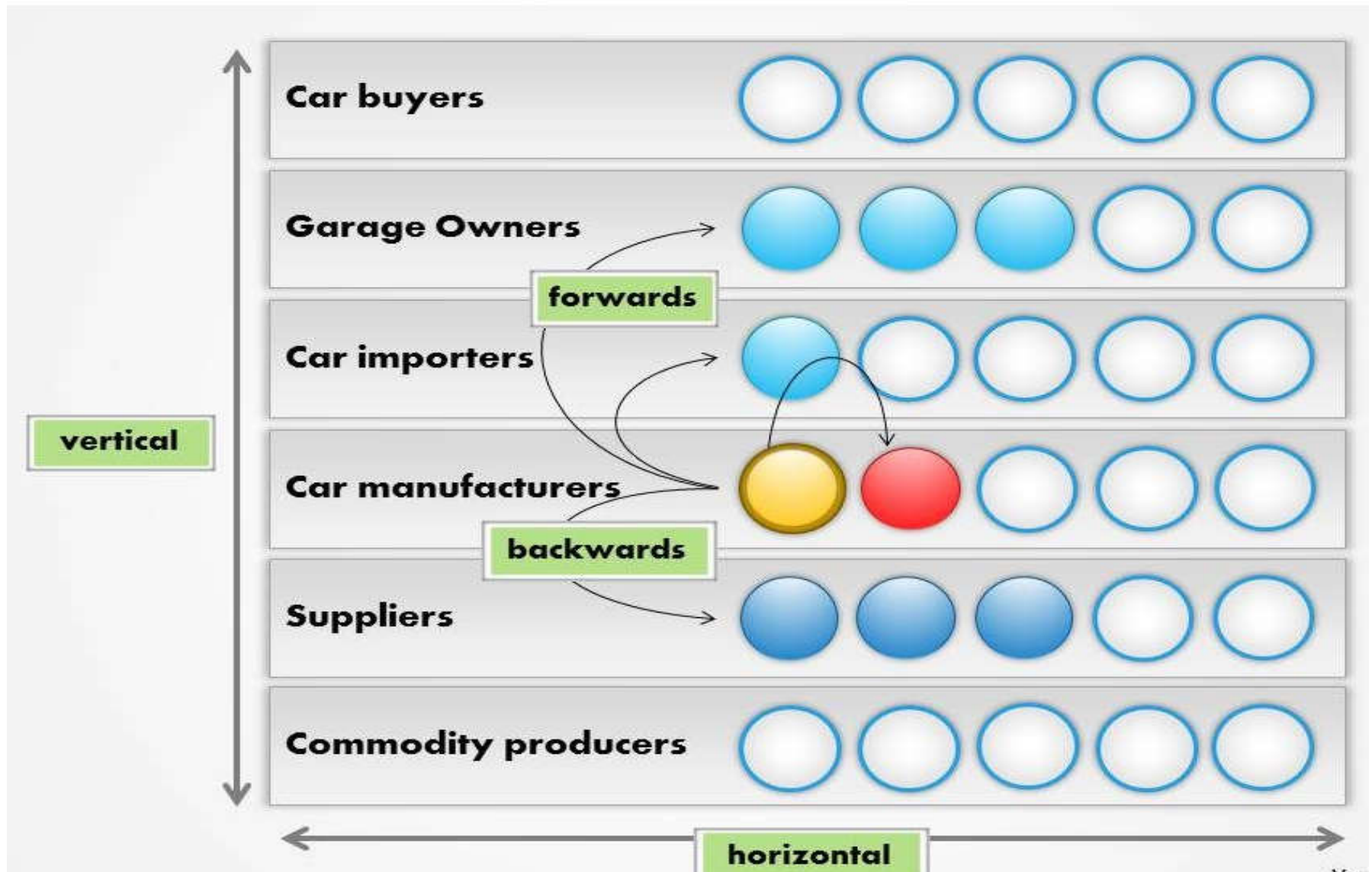
1.9. Structure of Supply Chain Integrations...

Disadvantages of Horizontal Integration

- ❖ Problems associated with merging very different company cultures
- ❖ High management turnover in the acquired company when the acquisition is a hostile one
- ❖ Costs
- ❖ Increased work load
- ❖ Increased Responsibilities
- ❖ Anti-trust issues
- ❖ Creating a monopoly

Vertical Vs Horizontal SC Integration

Horizontal Integration



Important Elements of SCM

Purchasing-	Supplier alliances, supplier management, strategic sourcing
Operations-	Demand management, MRP, ERP, JIT, TQM
Distribution-	Transportation management, customer relationship management, network design, service response logistics
Integration-	Coordination/Integration activities, global integration problems, performance measurement

Important Elements of SCM...

Purchasing:

- ✓ *Long term relationships*
- ✓ **Suppliers:** Monitoring supplier quality, on-time delivery, and flexibility maintaining supplier relations
- ✓ *Supplier management-* improved performance through
- ✓ **Supplier evaluation** (determining supplier capabilities and performance)
- ✓ **Supplier certification** (third party or internal certification to assure product quality and service compliance)
- ✓ *Strategic partnerships-* successful and trusting, long-term relationships with top-performing suppliers

Important Elements of SCM...

Operations:

- Demand management- match demand to available capacity
- Linking buyers & suppliers via *MRP* and *ERP* systems
- Use *JIT* to improve the “*pull*” of materials to reduce inventory levels
- Employ *TQM* to improve quality compliance among buyers and suppliers



Important Elements of SCM...

Distribution:

- ❑ Transportation management- tradeoff decisions between cost & timing of delivery/customer service via trucks, rail, water & air
- ❑ Customer relationship management- strategies to ensure deliveries, resolve complaints, improve communications, & determine service requirements
- ❑ Network design- creating *distribution networks* based on tradeoff decisions between cost & sophistication of distribution system

Important Elements of SCM....

Integration:

- ❖ Supply Chain Integration- when supply chain participants work for common goals.
- ❖ Requires **intrafirm functional integration**.
- ❖ Based on efforts to change attitudes & adversarial relationships
- ❖ Global Supply Chains- advantages that accrue from sourcing from larger global market e.g., lower cost & higher quality suppliers.
- ❖ May involve *operating exposure*, which is risk found in foreign settings
- ❖ Supply Chain Performance Measurement- Crucial for firms to know if procedures are working

Important Elements of SCM...

Also

- **Capacity Planning** : Matching supply and demand
- **Processing** -: Controlling quality, scheduling work
- **Customers**: Determining what products and/or services customers want
- **Forecasting** : Predicting the quantity and timing of customer demand.
- **Location**: Determining the location of facilities
- **Logistics**: Deciding how to best move information and materials
- **Success stories in SCM** Wal-Mart, Dell Computer , Seven-Eleven

3.1 Supply Chain Management Processes

Key Activities and Processes of SCM are

- Primary
 - Setting customer service goals
 - Transportation
 - Inventory management
 - Location
- Secondary, or supporting
 - Warehousing
 - Materials handling
 - Acquisition (purchasing)
 - Protective packaging
 - Product scheduling
 - Order processing

SCM Process and SC Flow Management...

Three types of flow management

– **Product and service flow**

- Involves movement of goods and services from suppliers to customers as well as handling customer service needs and product returns

– **Information flow**

- Involves sharing forecasts and sales data, transmitting orders, tracking shipments, and updating order status

– **Financial flow**

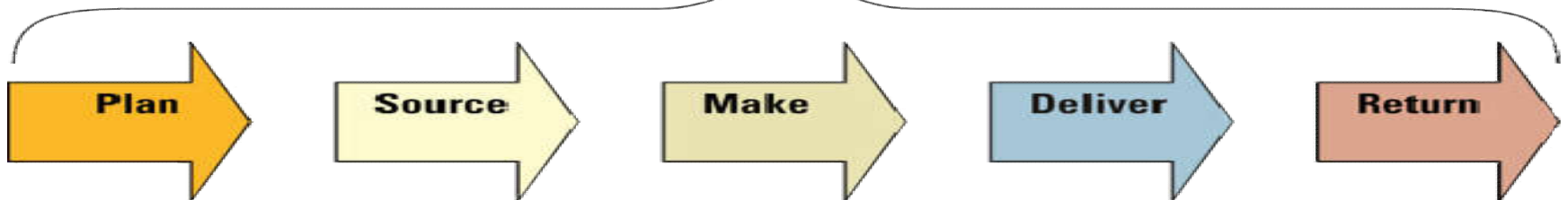
- involves credit terms, payments, and consignment and title ownership arrangements

SCM Process ...

- ✓ Supply chain management is a process used by companies to ensure that their supply chain is efficient and cost-effective.
- ✓ A supply chain is the collection of steps that a company takes to transform raw materials into a final product.
- ✓ The five basic components of supply chain management are the following



Company



Five Basic Component / Process of Supply Chain Management...

1. Planning:

- ❖ The **strategic** portion of supply chain management.
- ❖ A strategy for managing all the resources that goes toward meeting customer demand for your product or service.
- ❖ Balances aggregate demand and supply to develop a course of action which best meets the requirements for:
 - Sourcing
 - Production, and
 - Delivery

Contd.

2. Sourcing:

- ✓ Choose the suppliers that will deliver the goods and services you need to create your product or service.
- ✓ Develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships.
- ✓ Put together processes for managing the inventory of goods and services you receive from suppliers.

Cont.

3. Making: (The manufacturing step.)

- ❖ Schedule the activities necessary for production, testing, packaging and preparation for delivery.
- ❖ Is the most metric-intensive portion of the supply chain, it measures
 - Quality levels
 - Production output, and
 - Worker productivity

4. Delivering: (The "logistics" portion of SCM.)

It Involves:

- ❖ Coordinating the receipt of orders from customers
- ❖ Developing network of warehouses
- ❖ Picking carriers to get products to customers, and
- ❖ Set up an invoicing system to receive payments.

Cont.

5. Return: (The problem part of the supply chain.)

- ✓ Create a network for receiving defective and excess products back from customers
- ✓ Supporting customers who have problems with delivered products.

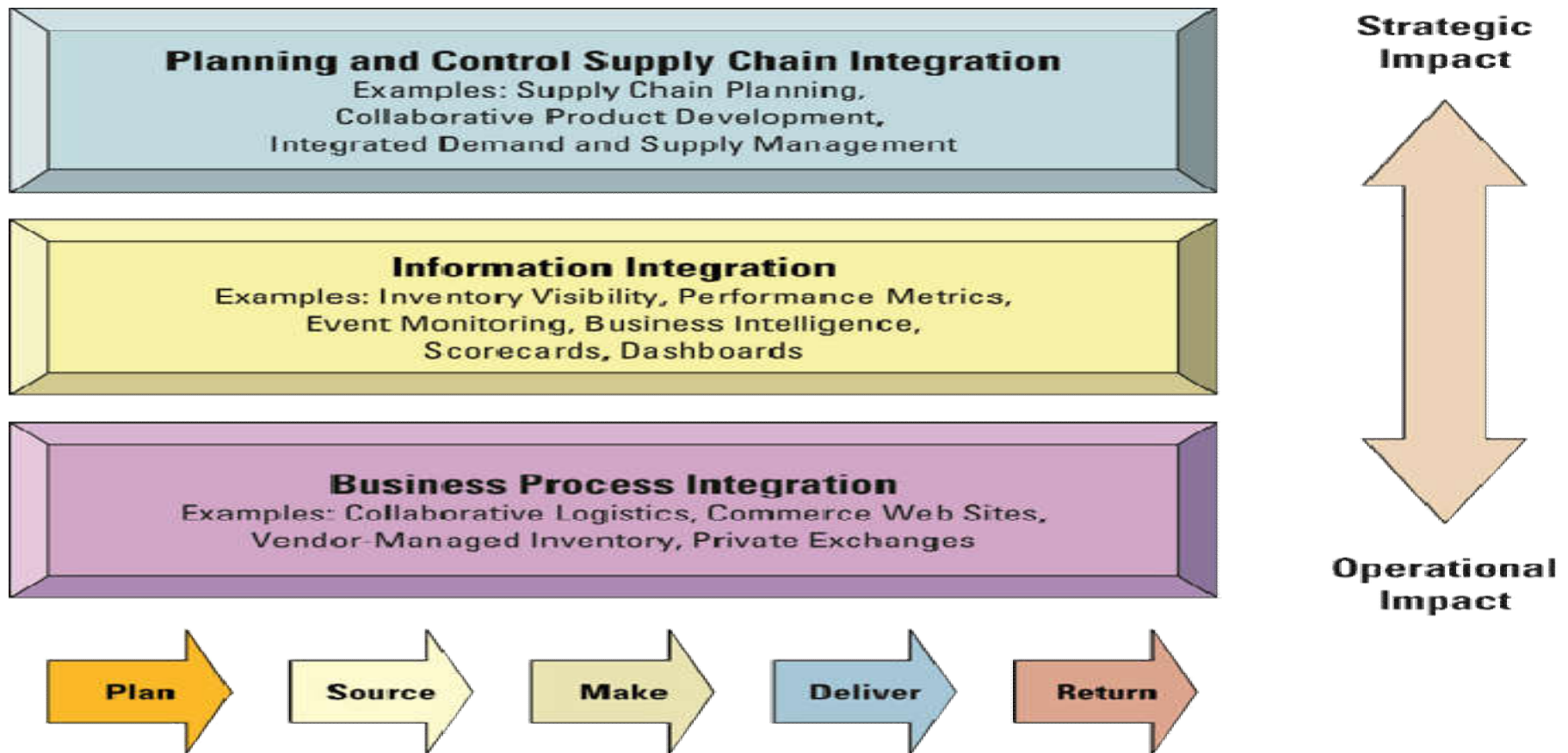
Role of Information Technology in Supply Chain

Role of Information Technology in a Global Supply Chain

- ✓ Digitization makes the supply chain more efficient, agile, and customer-focused.
- ✓ The vision of Industry 4.0 is to be realized, most enterprise processes must become more digitized.
- ✓ A critical element will be the evolution of traditional supply chains toward a connected, smart, and highly efficient supply chain ecosystem.
- ✓ The supply chain today is a series of largely discrete, series of steps taken through marketing, product development, manufacturing, and distribution, and finally into the hands of the customer
- ✓ Digitization brings down those walls, and the chain becomes a **completely integrated** ecosystem that is fully transparent to all the players involved
- ✓ From the suppliers of raw materials, components, and parts, to the transporters of those supplies and finished goods, and finally to the customers demanding fulfilment.
- ✓ **This is done trough IT**

Information Technology's Role In The Supply Chain

- IT's primary role is to create integrations or tight process and information linkages between functions within a firm



Role Of Information Technology In A Supply Chain...

- ❑ Information is the driver that serves as the “glue” to create a coordinated supply chain
- ❑ Information must have the following characteristics to be useful:
 - Accurate
 - Accessible in a timely manner
 - Information must be of the right kind

Role of Information Technology in a Supply Chain...

❖ Information technology (IT)

- Hardware and software used throughout the supply chain to gather and analyze information**
- Captures and delivers information needed to make good decisions**
- Effective use of IT in the supply chain can have a significant impact on supply chain performance**
- ✓ Information provides the basis for supply chain management decisions**
 - Inventory**
 - Transportation**
 - Facility**

The Importance of Information in a Supply Chain...

- ❖ Relevant information available throughout the supply chain allows managers to make decisions that take into account all stages of the supply chain
- ❖ Allows performance to be optimized for the entire supply chain, not just for one stage – leads to higher performance for each individual firm in the supply chain
- ❖ **Information** used at all phases of decision making: **strategic, planning, operational**
- ❖ Examples:
 - Strategic: location decisions
 - Operational: what products will be produced during today's production run

The Supply Chain IT Framework

- The Supply Chain Macro Processes
 - Customer Relationship Management (CRM)
 - Internal Supply Chain Management (ISCM)
 - Supplier Relationship Management (SRM)
 - Plus: Transaction Management Foundation
- Why Focus on the Macro Processes?
- Macro Processes Applied to the Evolution of Software

Customer Relationship Management

- The processes that take place between an enterprise and its customers downstream in the supply chain
- Key processes:
 - Marketing
 - Selling
 - Order management
 - Call/Service center

Customer Relationship Management (CRM)



- ❖ Applications to address all aspects of the customer relationship, including customer service, sales, and marketing.
- ❖ CRM systems examine customers from a multifaceted perspective. These systems use a set of integrated

Internal Supply Chain Management

- Includes all processes involved in planning for and fulfilling a customer order
- ISCM processes:
 - Strategic Planning
 - Demand Planning
 - Supply Planning
 - Fulfillment
 - Field Service
- There must be strong integration between the ISCM and CRM macro processes

Supplier Relationship Management

- Those processes focused on the interaction between the enterprise and suppliers that are upstream in the supply chain
- Key processes:
 - Design Collaboration
 - Source
 - Negotiate
 - Buy
 - Supply Collaboration
- There is a natural fit between ISCM and SRM processes

The Transaction Management Foundation

- ❖ Enterprise software systems (ERP)
- ❖ Earlier systems focused on automation of simple transactions and the creation of an integrated method of storing and viewing data across the enterprise
- ❖ Real value of the TMF exists only if decision making is improved
- ❖ The extent to which the TMF enables integration across the three macro processes determines its value

Information Technology

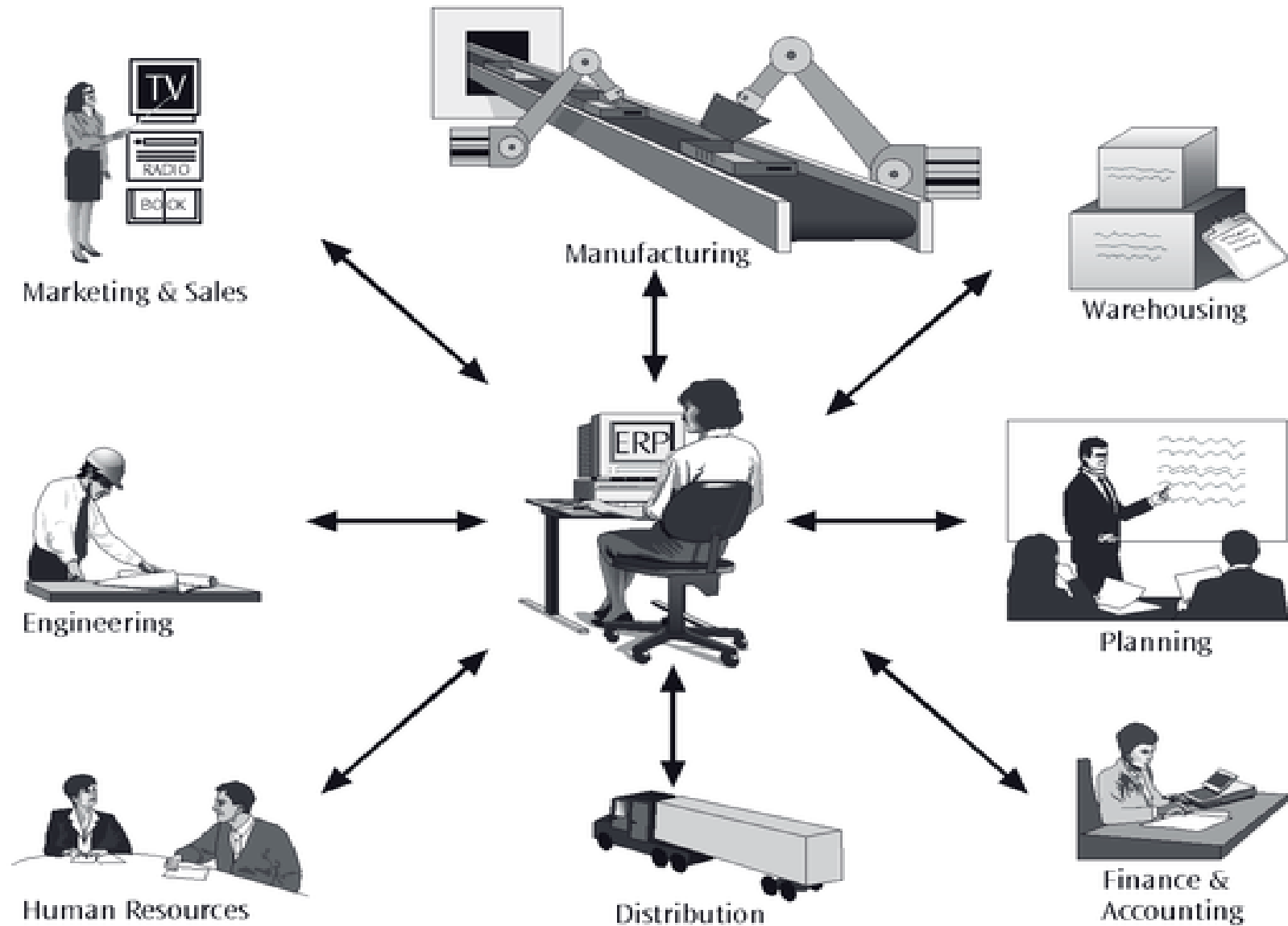
As A Supply Chain Enabler(Enabling Tools

- ❖ 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

Enterprise Resource Planning (ERP) Systems

- Enterprise resource planning (ERP) is a term used to refer to a system that **links individual** applications (for example, accounting and manufacturing applications) into a single application that integrates the data and business processes of the entire business.
- Today, an ERP system can encompass, but is not limited to, the following functions:
 - Sales and order entry
 - Raw materials, inventory, purchasing, production scheduling, and shipping
 - Accounting
 - Human resources
 - Resource and production planning

Enterprise Resource Planning (ERP)...



E-Business and ERP Systems

- An e-business must keep track of and process a tremendous amount of information
- Businesses realized that much of the information they needed to run an e-business — stock levels at various warehouses, cost of parts, projected shipping dates — could already be found in their ERP system databases
- A major part of the online efforts of many e-businesses involved adding Web access to an existing ERP system

E-business and Supply Chain

- Cost savings and price reductions
- Reduction or elimination of the role of intermediaries
- Shortening supply chain response and transaction times
- Gaining a wider presence and increased visibility for companies
- Greater choices and more information for customers

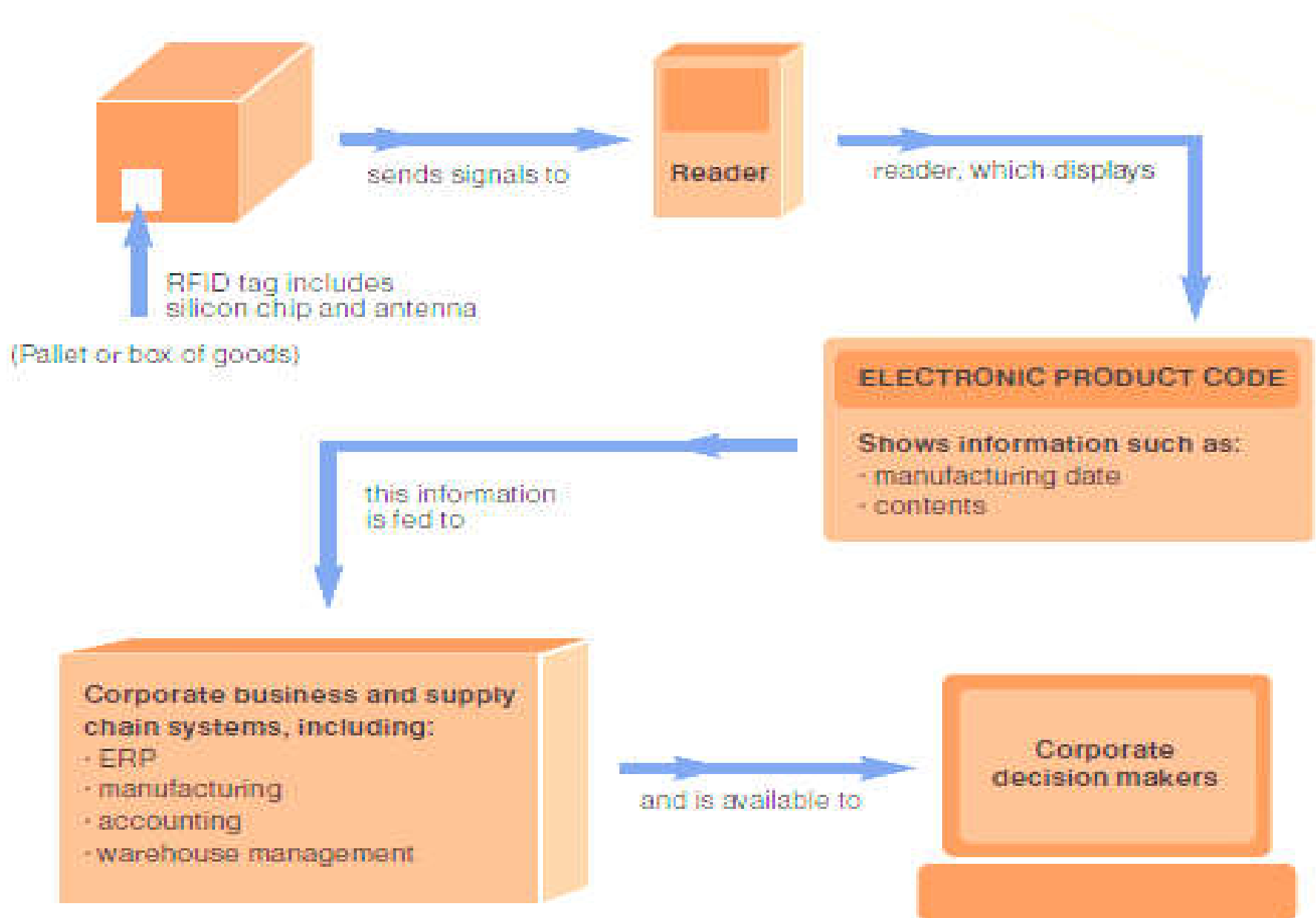
E-business and Supply Chain (cont.)

- Improved service as a result of instant accessibility to services
- Collection and analysis of voluminous amounts of customer data and preferences
- Creation of virtual companies
- Leveling playing field for small companies
- Gaining global access to markets, suppliers, and distribution channels

Radio Frequency Identification

- RFID technology uses radio waves to read data put on a chip embedded within a tag.
- Primarily used for identification and tracking
- Monitor product location at all time, updating both planning and execution systems

RFID in Practice



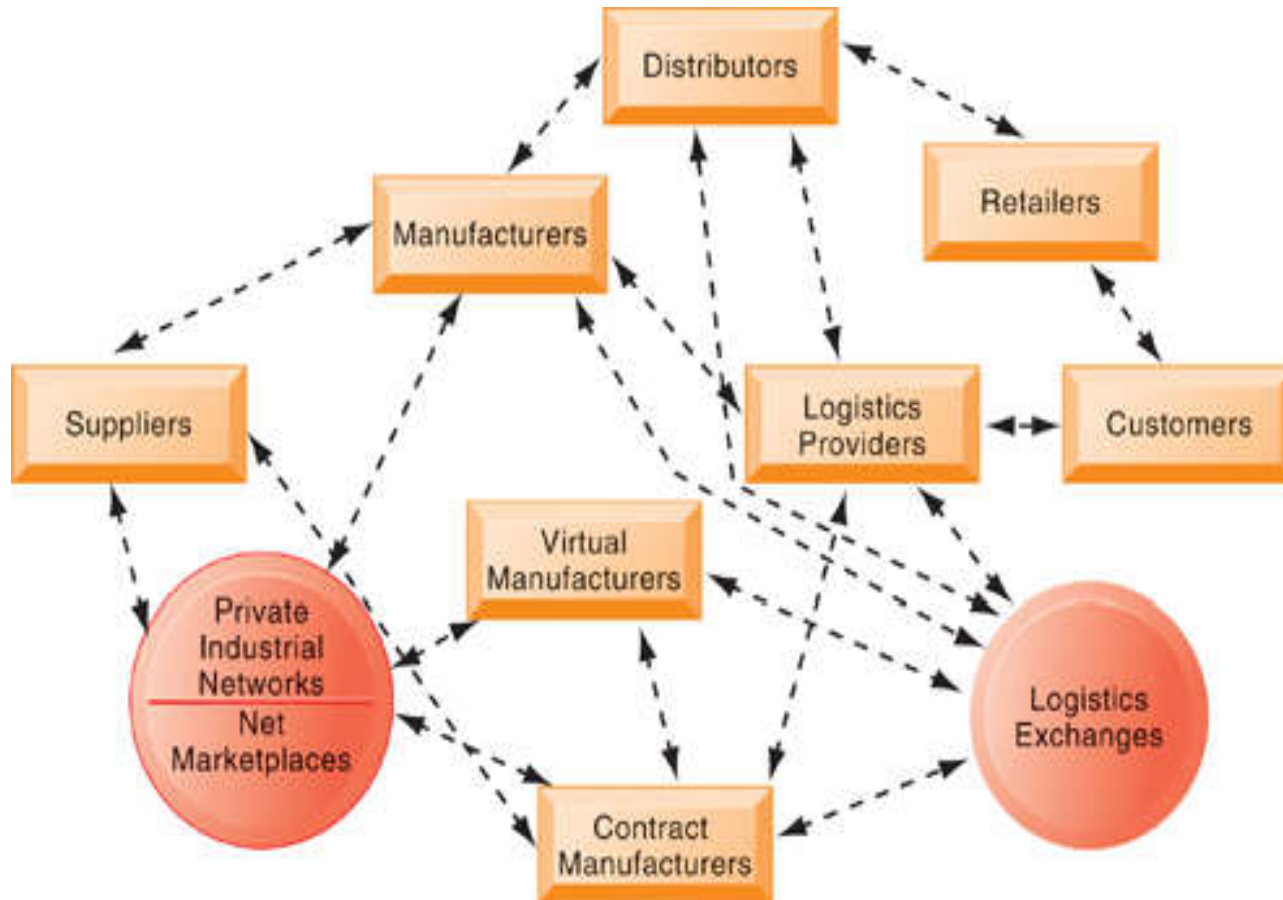
Implementing Supply Chain Information Technology Systems

- ✓ Select an IT system that addresses the company's key success factors
- ✓ Take incremental steps and measure value
- ✓ Align the level of sophistication with the need for sophistication
- ✓ Use IT systems to support decision making, not to make decisions
- ✓ Think about the future

The Future of IT in the Supply Chain

- At the highest level, the three SCM macro processes will continue to drive the evolution of enterprise software
- Software focused on the macro processes will become a larger share of the total enterprise software market and the firms producing this software will become more successful
- Functionality, the ability to integrate across macro processes, and the strength of their ecosystems, will be keys to success
 - Collaborative engineering
 - Collaborative demand planning

The Future Internet-Driven Supply Chain



- ✓ The future Internet-driven supply chain operates like a digital logistics nervous system.
- ✓ It provides multidirectional communication among firms, networks of firms, and e-marketplaces so that entire networks of supply chain partners can immediately adjust inventories, orders, and capacities.