

# Information Systems for Competitive Advantage

# Learning Objectives

- Know the general systems model of the firm.
- Understand the eight-element environmental model as a framework for understanding the environment of a business organization.
- Understand that supply chain management involves the planning and coordination of physical resources that flow from the firm's suppliers, through the firm, and to the firm's customers.
- Recognize that competitive advantage can be achieved with virtual as well as physical resources.

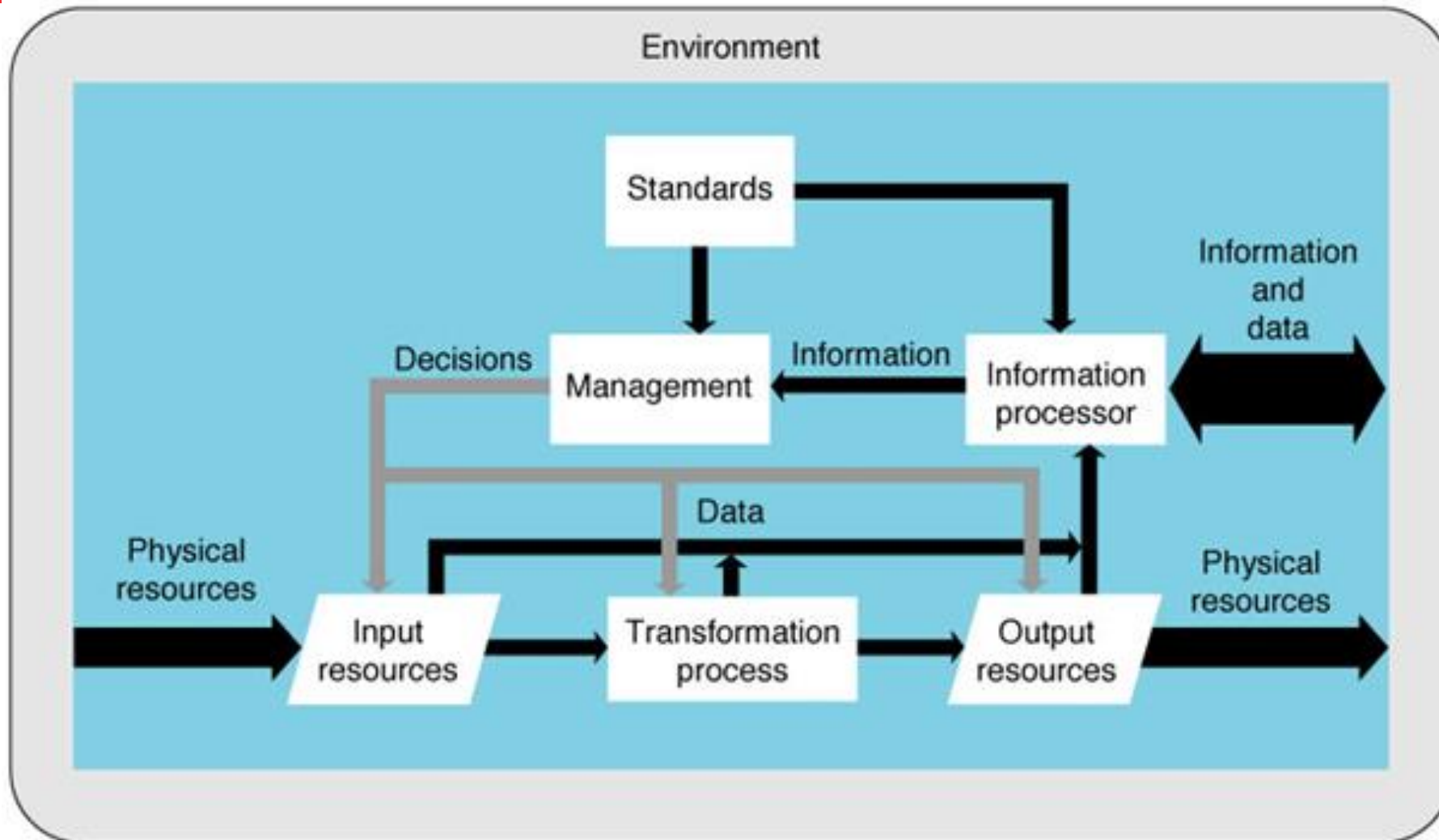
# Learning Objectives (Cont'd)

- Understand Michael E. Porter's concepts of value chains and value systems.
- Know the dimensions of .
- Recognize the increasing challenges from global competitors and the importance of information and coordination in meeting those challenges.
- Understand the challenges of developing global information systems.

# Learning Objectives (Cont'd)

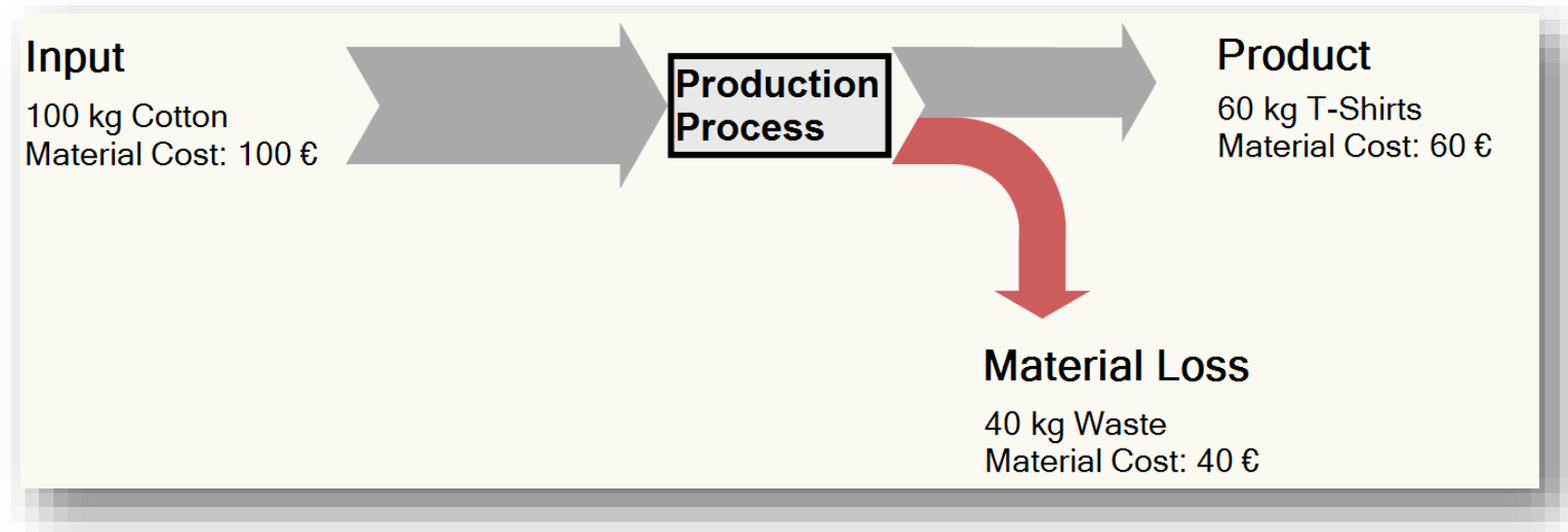
- Know the basic types of information resources available to the firm.
- Know the dimensions of information that should be provided by an information system.
- Know how to manage knowledge in the form of legacy systems, images, and knowledge.
- Understand how a firm goes about strategic planning – for the firm, its business areas, and its information resources.

# The General System Model of the Firm



# The General Systems Model of the Firm

- **Physical resource** flow includes personnel, material, machines, and money.
- **Virtual resource** flow includes data, information, and information in the form of decisions.



# The General Systems Model of the Firm

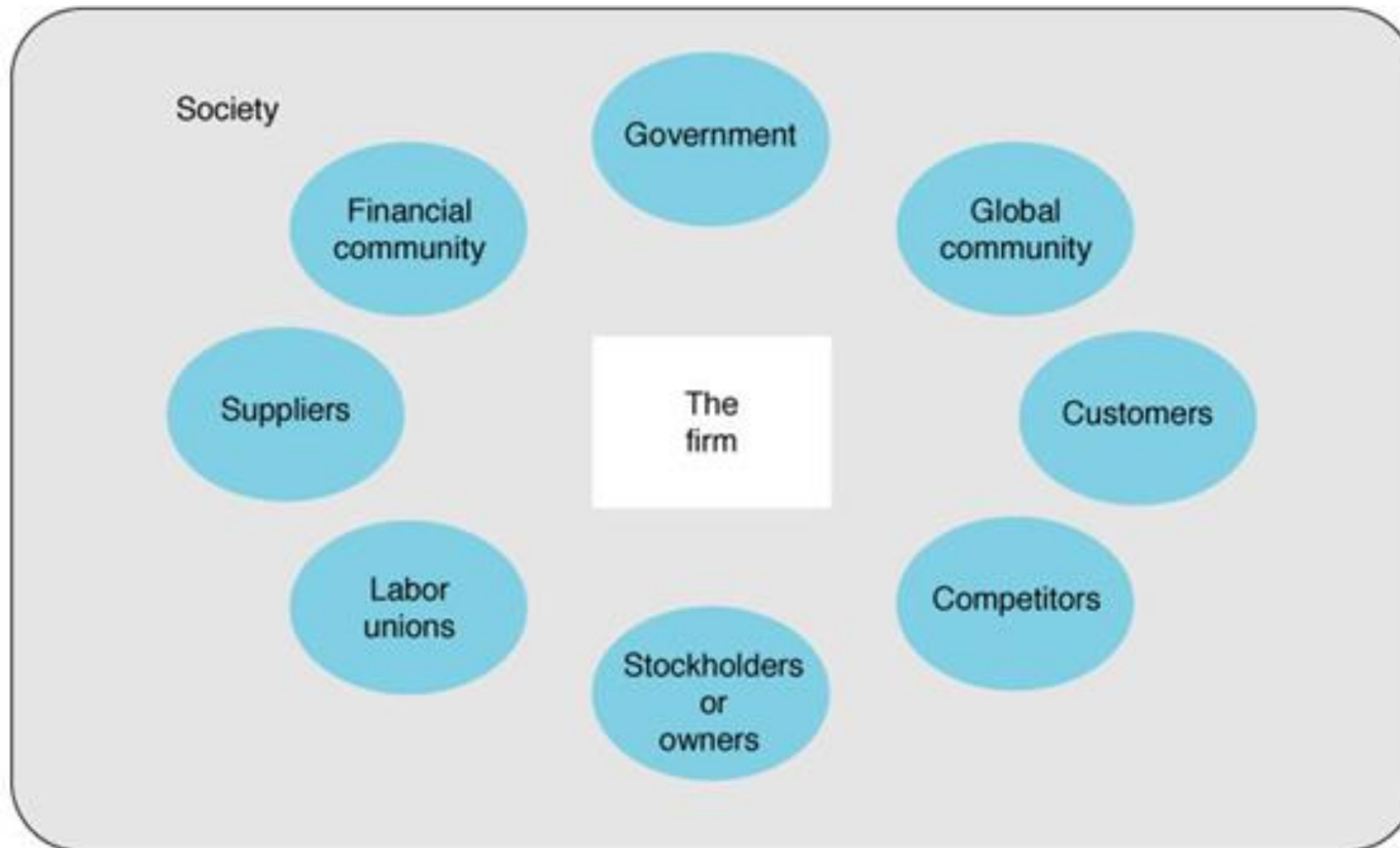
- Firm's **control mechanism** include
  - Performance standards to meet if the firm wants to achieve overall objectives.
  - Firm's management.
  - Information processor that transform data into information.
- **Feedback** loop is composed of the virtual resources.

# The Firm in Its Environment

- **Environmental elements** are organizations and individuals that exist outside the firm and have a direct or indirect influence on it.
  - Such as suppliers, customers, labor unions, financial community, stockholders and owners, competitors, and governments.
- **Global community** is the geographic area where the firm performs its operations.



# Figure 2.2 Eight Environmental Elements



# Environmental Resource Flows

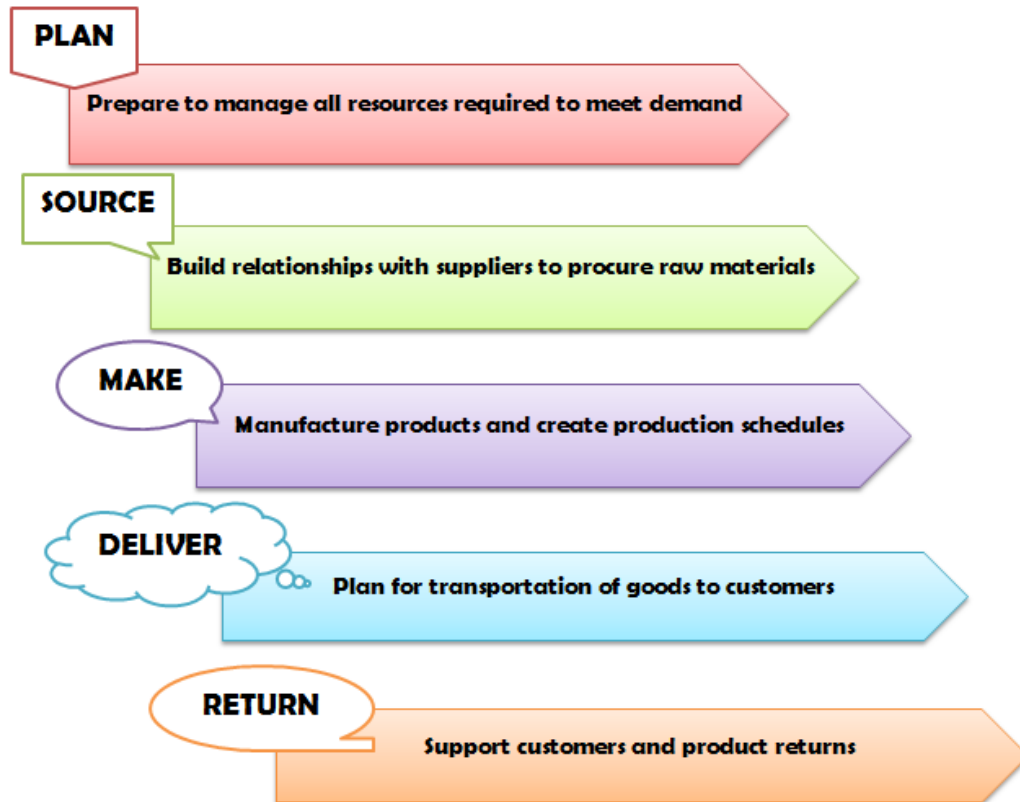
- Information flows from customers. Often.
- Material flow to customers. Often.
- Money flow to stockholders. Often.
- Raw materials flow from suppliers. Often.
- Money flow from government. Less often.
- Material flow to suppliers. Less often.
- Personnel flow to competitors. Less often.

# Managing the Physical Resource Flows– Supply Chain Management

- **Supply chain** is the pathway that facilitates the flow of physical resources from suppliers to the firm and then to customers.
- **Supply chain management** manages the resources through the supply chain to ensure timely and efficient flow.



# Supply Chain Management Activities



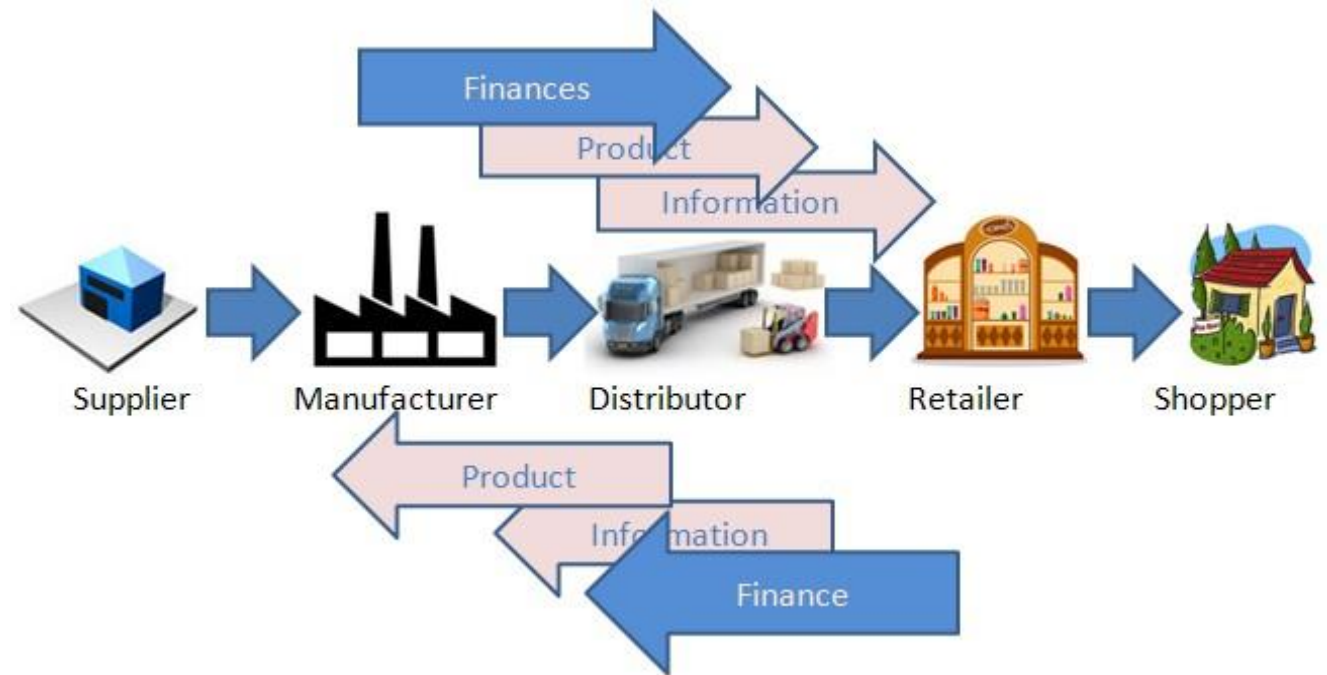
- Forecasting customer demand
- Scheduling production
- Establishing transportation networks
- Ordering replenishment stock from suppliers
- Receiving stock from suppliers

# Supply Chain Management Activities (Cont'd)

- Managing inventory—raw materials, work-in-process, and finished goods
- Executing production
- Transporting resources to customers
- Tracking the flow of resources from suppliers, through the firm, and to customers

# Supply Chain Management

- Firm's information systems can be used to perform the supply chain activities.
- Electronic systems provide the ability to track the flow of the resources as it occurs.
- Is a crucial aspect of a firm's ERP system.





# Competitive Advantage

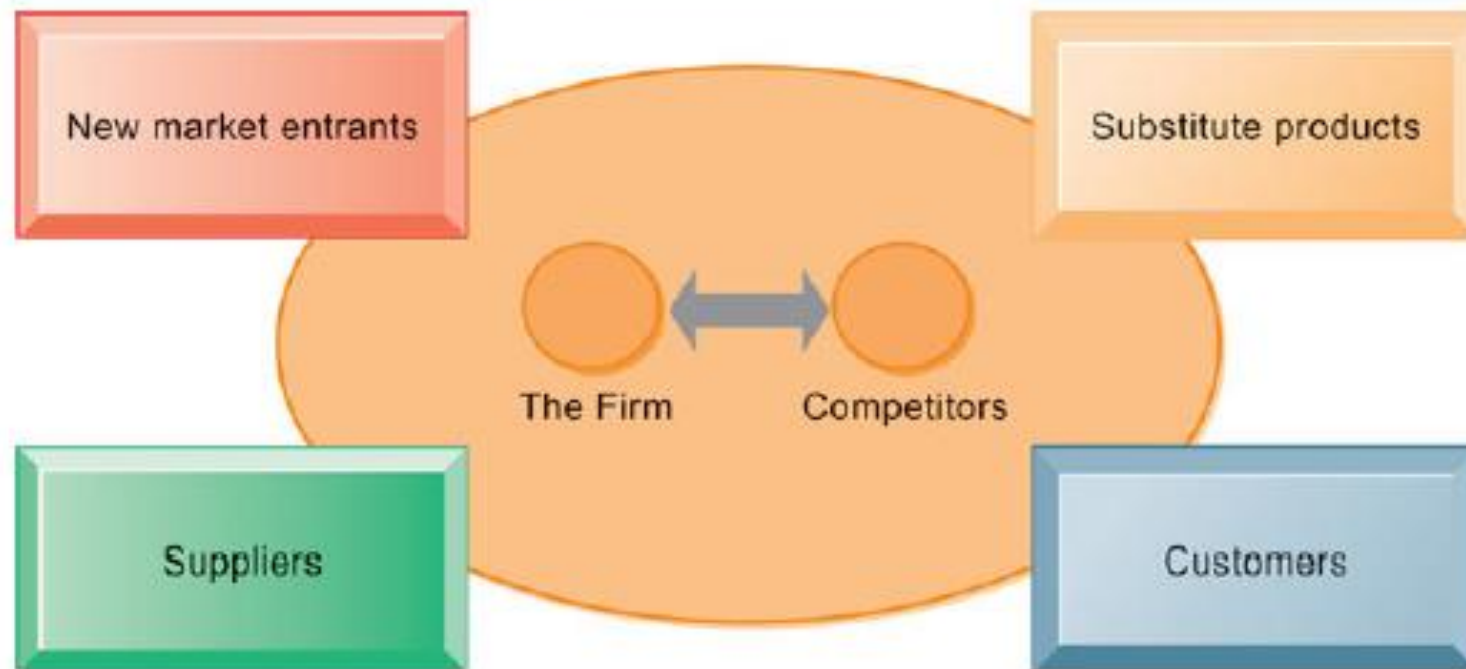


**Competitive advantage** refers to the use of information to gain leverage in the marketplace.

- Uses virtual as well as physical resources.
- Is used to meet the strategic objectives of the firm.

# Competitive Advantage

**FIGURE 3-10 PORTER'S COMPETITIVE FORCES MODEL**



In Porter's competitive forces model, the strategic position of the firm and its strategies are determined not only by competition with its traditional direct competitors but also by four other forces in the industry's environment: new market entrants, substitute products, customers, and suppliers.



# Competitive Advantage

**TABLE 3-3 IT-ENABLED NEW PRODUCTS AND SERVICES PROVIDING COMPETITIVE ADVANTAGE**

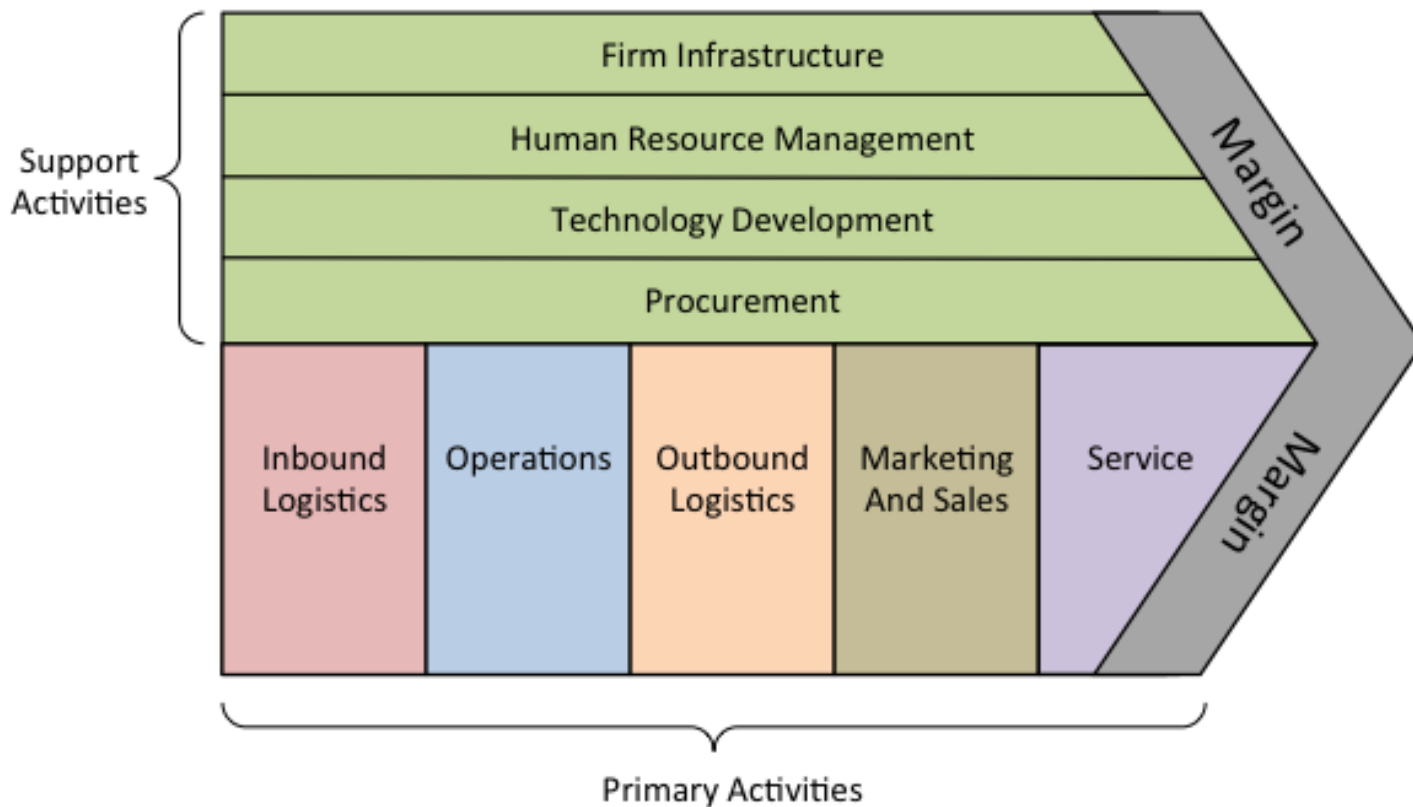
Amazon: One-click shopping	Amazon holds a patent on one-click shopping that it licenses to other online retailers.
Online music: Apple iPod and iTunes	The iPod is an integrated handheld player backed up with an online library of over 13 million songs
Golf club customization: Ping	Customers can select from more than 1 million different golf club options; a build-to-order system ships their customized clubs within 48 hours.
Online bill payment: CheckFree.com	Fifty-two million households pay bills online in 2010.
Online person-to-person payment: PayPal.com	PayPal enables the transfer of money between individual bank accounts and between bank accounts and credit card accounts.

# Competitive Advantage

**TABLE 3-4 FOUR BASIC COMPETITIVE STRATEGIES**

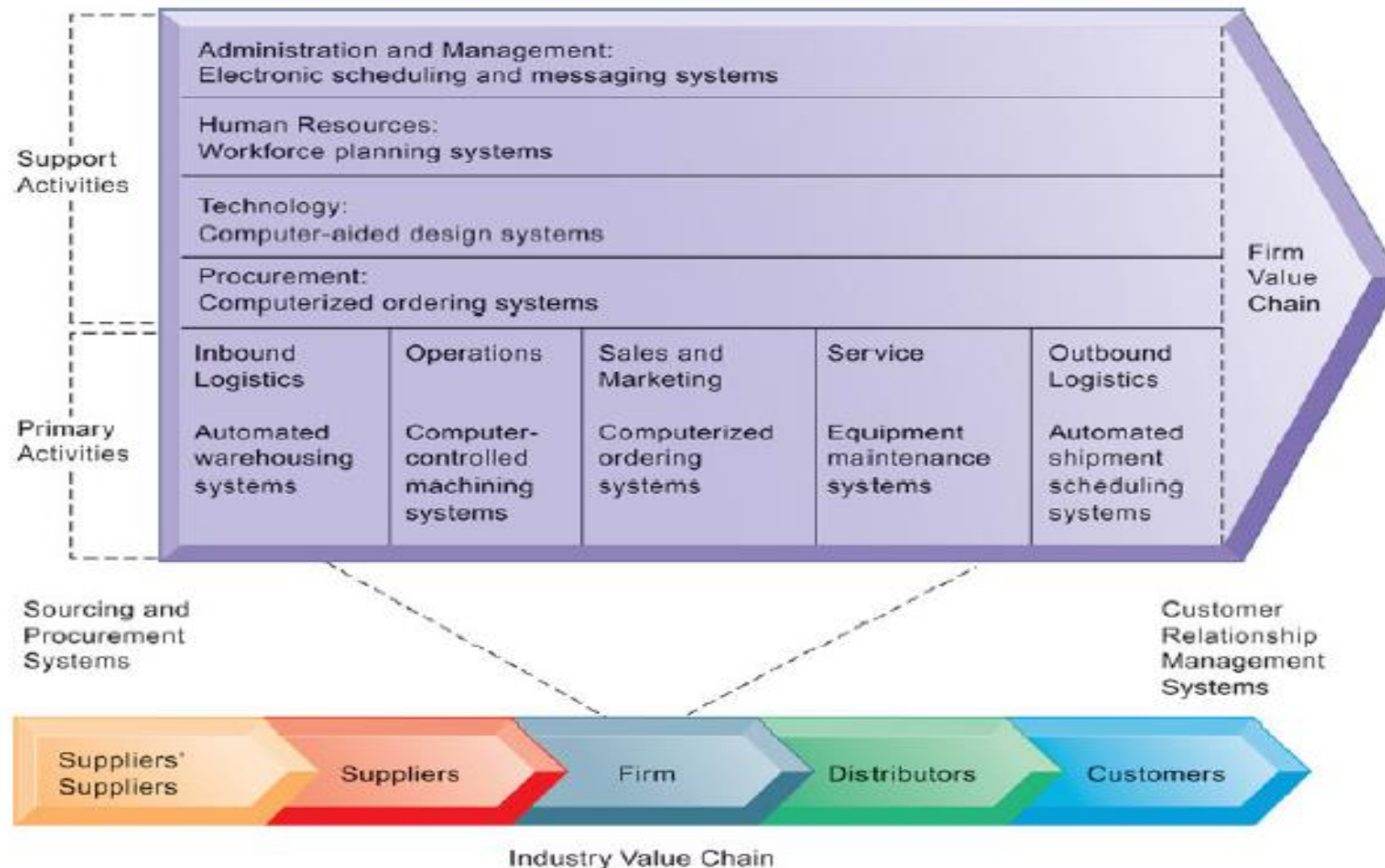
STRATEGY	DESCRIPTION	EXAMPLE
Low-cost leadership	Use information systems to produce products and services at a lower price than competitors while enhancing quality and level of service	Walmart
Product differentiation	Use information systems to differentiate products, and enable new services and products	Google, eBay, Apple, Lands' End
Focus on market niche	Use information systems to enable a focused strategy on a single market niche; specialize	Hilton Hotels, Harrah's
Customer and supplier intimacy	Use information systems to develop strong ties and loyalty with customers and suppliers	Chrysler Corporation Amazon.com

# Porter's Value Chains



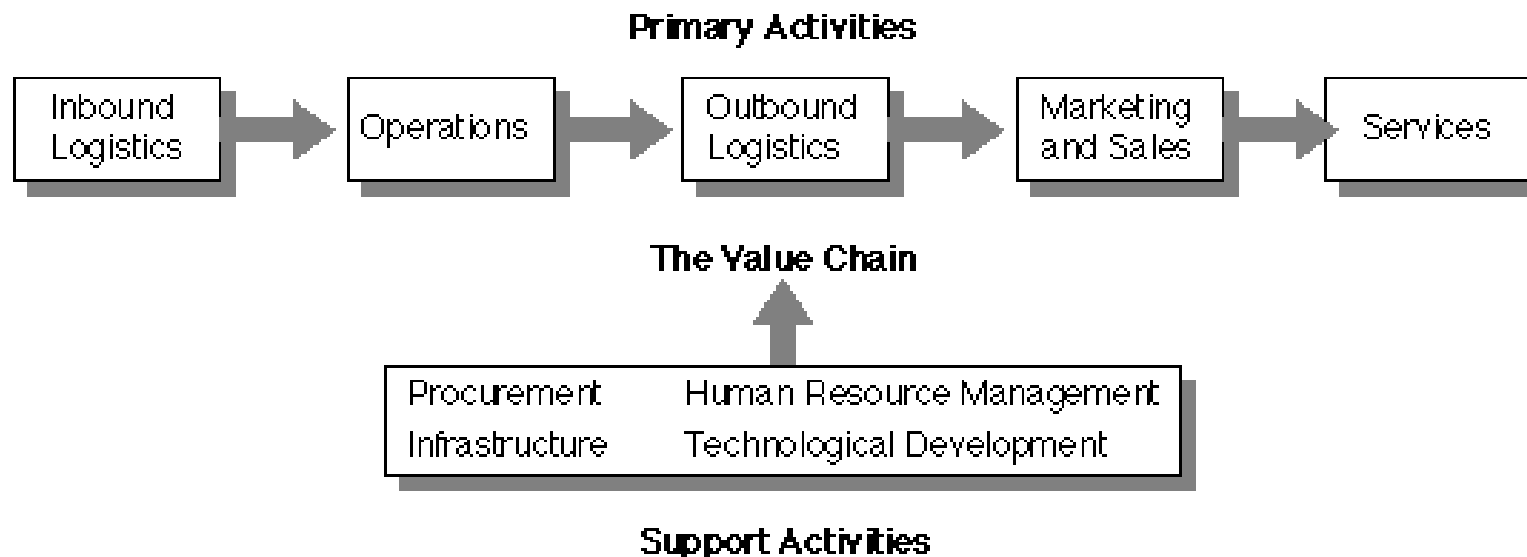
- **Value chain** is created to achieve competitive advantage.
  - Consists of the primary and support activities that contribute to margin.
- **Margin** is the value of the firm's products and services minus their costs, as perceived by the firm's customers.
  - Increased margin is the objective of the value chain.

# The Value Chain Model



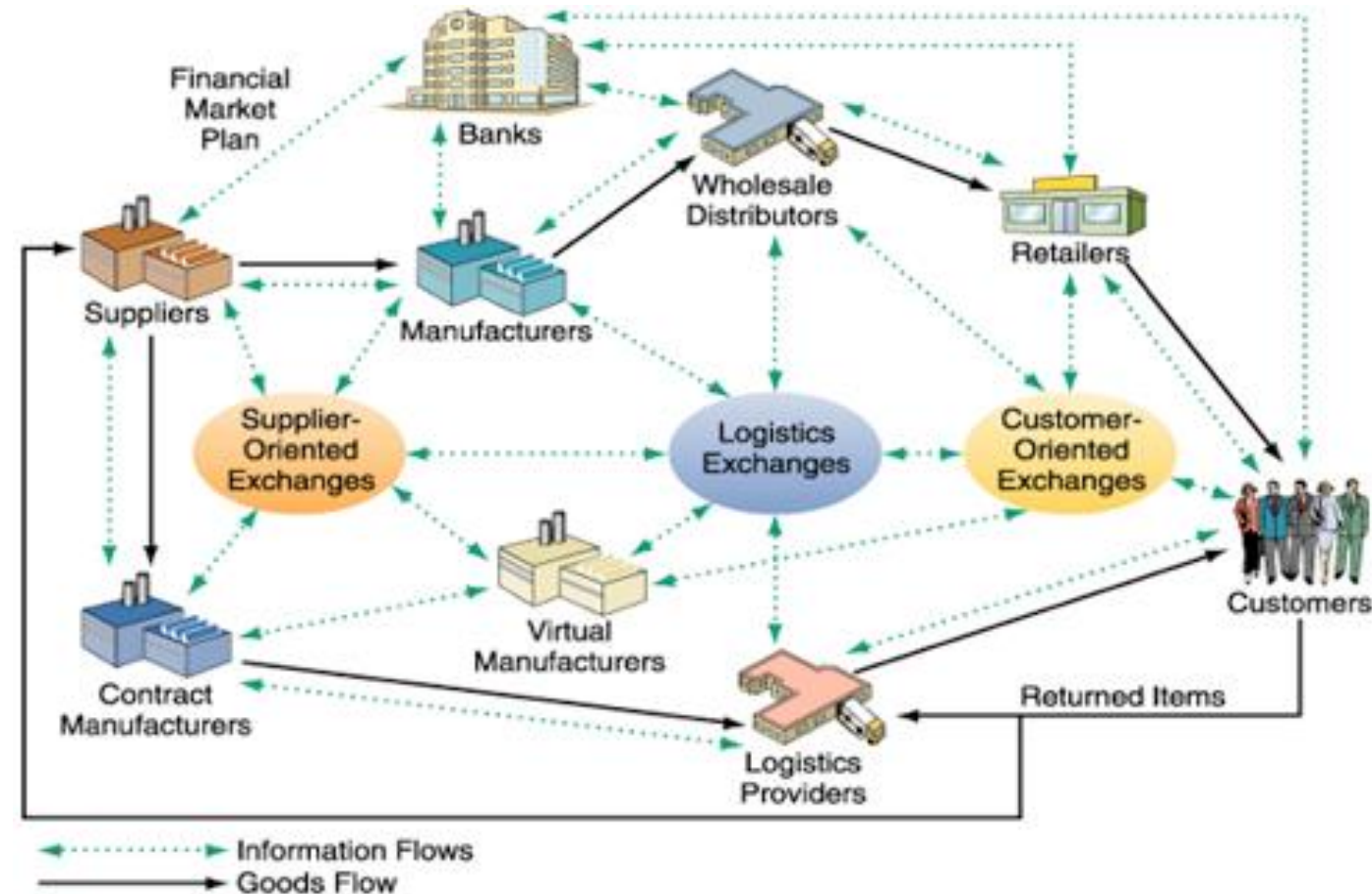
# Porter's Value Activities

- **Primary value activities** manage the flow of physical resources through the firm.
- **Support value activities** include the firm's infrastructure.
  - Each value activity includes purchased inputs, human resources, and technology.



# Expanding the Scope of the Value Chain

- **Interorganizational system (IOS)** is the linking of the firm's value chain to those of other organizations.
- **Business partners** are the participating firms in the IOS.
- **Value system** is the linking of the firm's value chain with those of its distribution channel members.



# The Dimensions of Competitive Advantage

- **Strategic advantage** has a fundamental effect in shaping the firm's operations.
- **Tactical advantage** is when the firm implements a strategy better than its competitors.
- **Operational advantage** deals with everyday transactions and processes.





# Challenges from Global Competitors

- **Multinational corporation (MNC)** is a firm that operates across products, markets, nations, and cultures.
  - It consists of a parent company and its subsidiaries.
  - Information processing is crucial to minimize *uncertainty*.



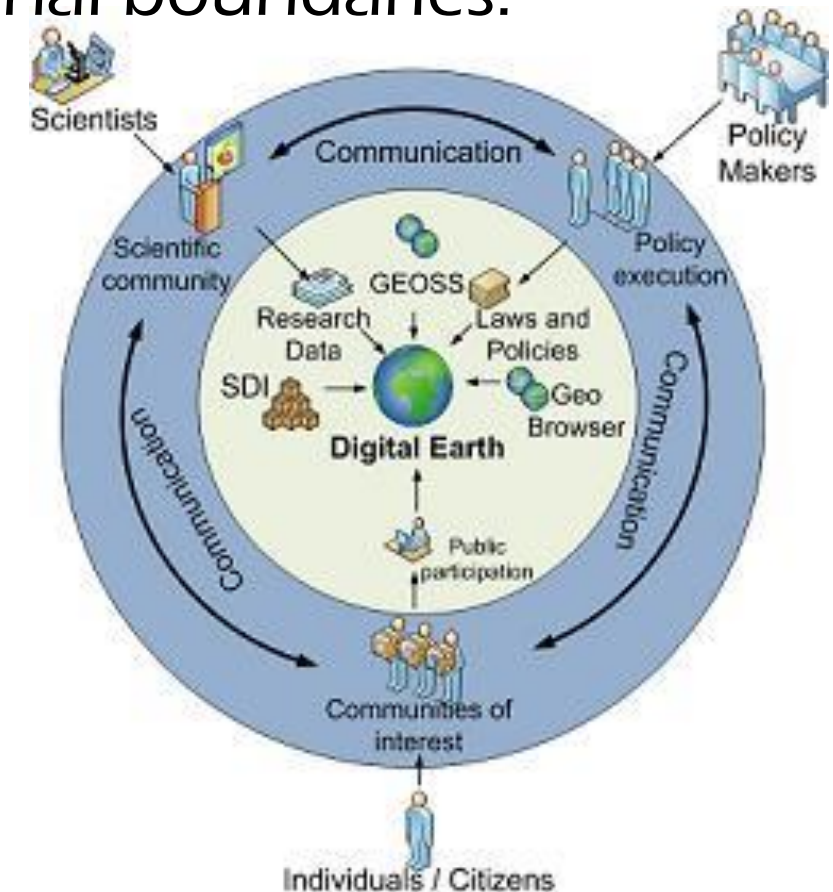


# The Special Need for Coordination in a MNC

- Coordination is key to achieving competitive advantage globally.
- Advantages of coordination include:
  - Flexibility in responding.
  - Ability to respond market by market.
  - Ability to keep abreast of market needs globally.
  - Reduce overall costs of operation.

# Challenges in Developing Global Information Systems

- **Global information system (GIS)** describes an information system that consists of networks that cross national boundaries.
  - **Challenges**
    - Politically imposed constraints.
    - Cultural and communications barriers.



# GIS Challenges (Cont'd)



- Restrictions on
  - hardware purchases and imports
  - Data processing
  - Data communications
- **Transborder data flow (TDF)** is the movement of machine-readable data across national boundaries.

# GIS Subsidiary Challenges

- Technological problems due to level of technology in subsidiary countries
  - Telecommunications speed and quality
  - Software copyrights and licenses
- Lack of support from subsidiary managers

# Knowledge Management

- Information resources consist of hardware, software, information specialists, users, facilities, databases, and information.
- **Knowledge management (KM)** is acquiring data, processing data into information, using and communicating information in the most effective way, and discarding information at the proper time.

# The Dimensions of Information

- **Relevancy**—pertains to the problem at hand.
- **Accuracy**—strive for 100%.
- **Timeliness**—should be available for decision making before a crisis situations develop or opportunities are lost.
- **Completeness**—the correct amount of aggregation and supports all areas of the decision being made.
  - **Information overload** is having too much information.

# The Changing Nature of Knowledge Management

- **Legacy information systems** are earlier systems software and hardware that are incompatible or partially incompatible with current information technology.
  - Produce primarily historical information.
  - Data may not be available in digital format.
- Image management

# Strategic Planning for Information Resources (SPIR)

- Chief Information Officer (CIO)
- Chief Technology Officer (CTO)
- Strategic Planning
  - Enterprise–executive committee
  - Business areas–resources for human, information, financial, marketing, manufacturing



# The SPIR Approach

- Concurrent development of strategic plans for information services and the firm so that the firm's plan reflects the support to be provided by information services.
- The IS plan reflects future demands for systems support.

# Figure 2.7 Strategic Planning for Information Resources



# Core Content of a Strategic Planning for Information Resources

- The objectives to be achieved by each category of systems during the time period.
- The information resources necessary to meet the objectives.
- Self-contained report

Q&A

You have

Questions

We have

Answers

**see u !!!**