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# Chapter 1

## Overview of Electronic Commerce



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# Learning Objectives



1. Define electronic commerce (EC) and describe its various categories.
2. Describe and discuss the content and framework of EC.
3. Describe the major types of EC transactions.
4. Describe the digital revolution as a driver of EC.

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# Learning Objectives



5. Describe the business environment as a driver of EC.
6. Describe some EC business models.
7. Describe the benefits of EC to organizations, consumers, and society.
8. Describe the limitations of EC.
9. Describe the contribution of EC to organizations responding to environmental pressures.

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# Electronic Commerce: Definitions and Concepts



## **electronic commerce (EC)**

The process of buying, selling, or exchanging products, services, or information via computer networks

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# Electronic Commerce: Definitions and Concepts



- EC is defined through these perspectives
  - Communications
  - Commercial (trading)
  - Business process
  - Service
  - Learning
  - Collaborative
  - Community

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# Electronic Commerce: Definitions and Concepts



## **e-business**

A broader definition of EC that includes not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organization

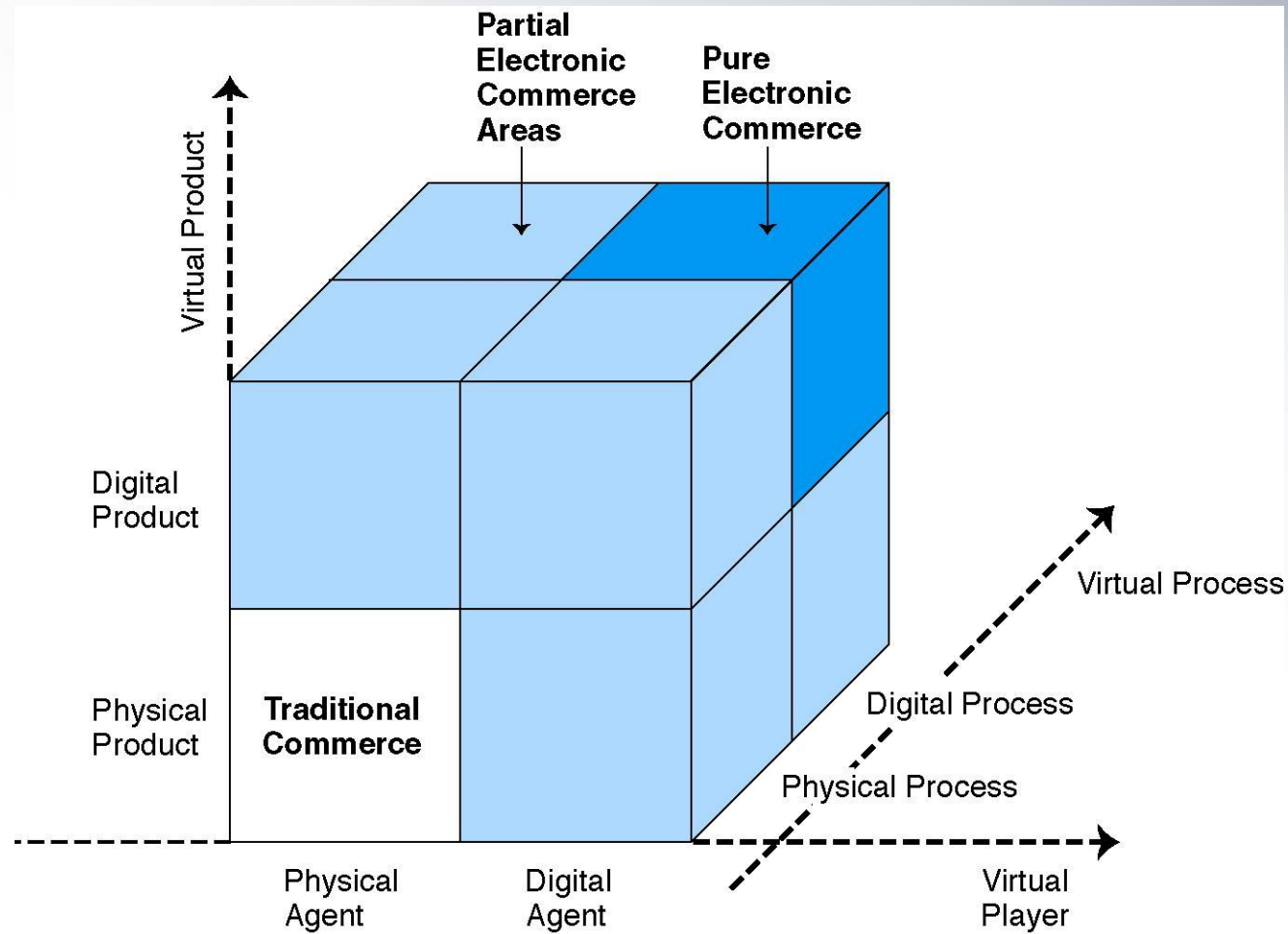
# Electronic Commerce: Definitions and Concepts



- **Pure Versus Partial EC**

- EC takes several forms depending on the *degree of digitization* (the transformation from physical to digital)
  - (1) the *product* (service) sold,
  - (2) the *process*,
  - (3) the *delivery agent* (or intermediary)

# Exhibit 1.1 The Dimensions of Electronic Commerce



# Electronic Commerce: Definitions and Concepts



- **EC organizations**

- brick-and-mortar organizations**

- Old-economy organizations (corporations) that perform most of their business off-line, selling physical products by means of physical agents

- virtual (pure-play) organizations**

- Organizations that conduct their business activities solely online

- click-and-mortar (click-and-brick) organizations**

- Organizations that conduct some e-commerce activities, but do their primary business in the physical world

# Electronic Commerce: Definitions and Concepts



- **Where EC is conducted**

- electronic market (e-marketplace)**

- An online marketplace where buyers and sellers meet to exchange goods, services, money, or information

- interorganizational information systems (IOSs)**

- Communications system that allows routine transaction processing and information flow between two or more organizations

- intraorganizational information systems**

- Communication systems that enable e-commerce activities to go on within individual organizations

# The EC Framework, Classification, and Content



- Networked computing is the infrastructure for EC, and it is rapidly emerging as the standard computing environment for business, home, and government applications
  - *Networked computing* connects multiple computers and other electronic devices located in several different locations by telecommunications networks, including *wireless* ones
  - Allows users to access information stored in several different physical locations and to communicate and collaborate with people separated by great geographic distances

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# The EC Framework



## **intranet**

An internal corporate or government network that uses Internet tools, such as Web browsers, and Internet protocols

## **extranet**

A network that uses the Internet to link multiple intranets

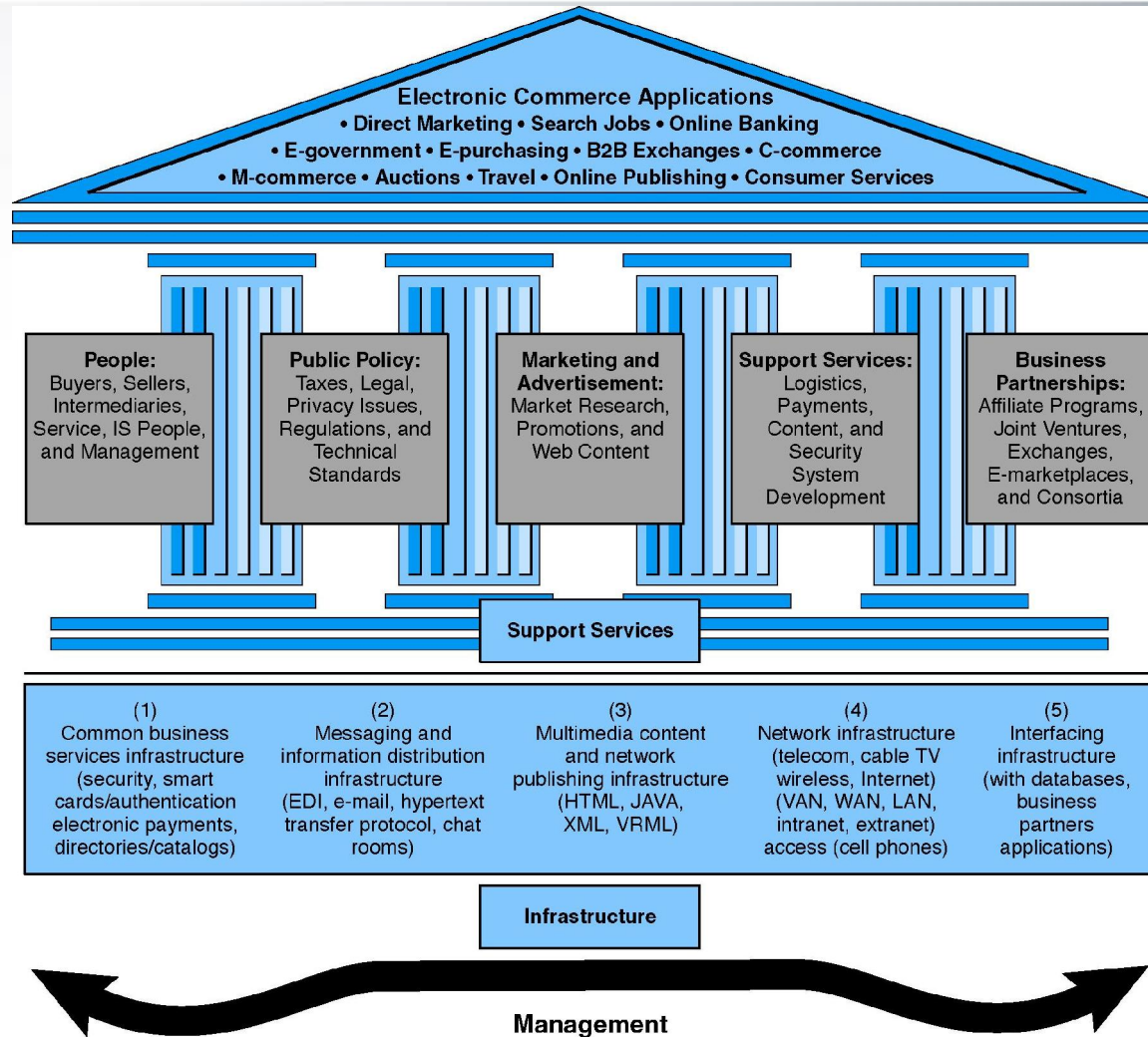
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# The EC Framework, Classification, and Content



- An EC Framework—supports five policymaking support areas
  - People
  - Public policy
  - Marketing and advertisement
  - Support services
  - Business partnerships

# Exhibit 1.2 A Framework for Electronic Commerce



# EC Classification



- Classification by nature of the transactions or interactions

## **business-to-business (B2B)**

E-commerce model in which all of the participants are businesses or other organizations

## **business-to-consumer (B2C)**

E-commerce model in which businesses sell to individual shoppers

# EC Classification



## e-tailing

Online retailing, usually B2C

## business-to-business-to-consumer (B2B2C)

E-commerce model in which a business provides some product or service to a client business that maintains its own customers

# EC Classification



## consumer-to-business (C2B)

E-commerce model in which individuals use the Internet to sell products or services to organizations or individuals seek sellers to bid on products or services they need

## consumer-to-consumer (C2C)

E-commerce model in which consumers sell directly to other consumers

# EC Classification



## peer-to-peer

Technology that enables networked peer computers to share data and processing with each other directly; can be used in C2C, B2B, and B2C e-commerce

## mobile commerce (m-commerce)

E-commerce transactions and activities conducted in a wireless environment

# EC Classification



location-based commerce (l-commerce)

M-commerce transactions targeted to individuals in specific locations, at specific times

intrabusiness EC

E-commerce category that includes all internal organizational activities that involve the exchange of goods, services, or information among various units and individuals in an organization

# EC Classification



## business-to-employees (B2E)

E-commerce model in which an organization delivers services, information, or products to its individual employees

## collaborative commerce (c-commerce)

E-commerce model in which individuals or groups communicate or collaborate online

## e-learning

The online delivery of information for purposes of training or education

# EC Classification



## exchange (electronic)

A public electronic market with many buyers and sellers

## exchange-to-exchange (E2E)

E-commerce model in which electronic exchanges formally connect to one another for the purpose of exchanging information

## e-government

E-commerce model in which a government entity buys or provides goods, services, or information to businesses or individual citizens

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# The Future of EC



- Overall, the growth of the field will continue to be strong into the foreseeable future
- Despite the failures of individual companies and initiatives, the total volume of EC is growing by 15 to 25% every year

# Digital Evolution Drives EC



## **digital economy**

An economy that is based on digital technologies, including digital communication networks, computers, software, and other related information technologies; also called the Internet economy, the new economy, or the Web

- The digital revolution accelerates EC by providing competitive advantage to organizations and enabling innovations

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# Business Environment Drives EC



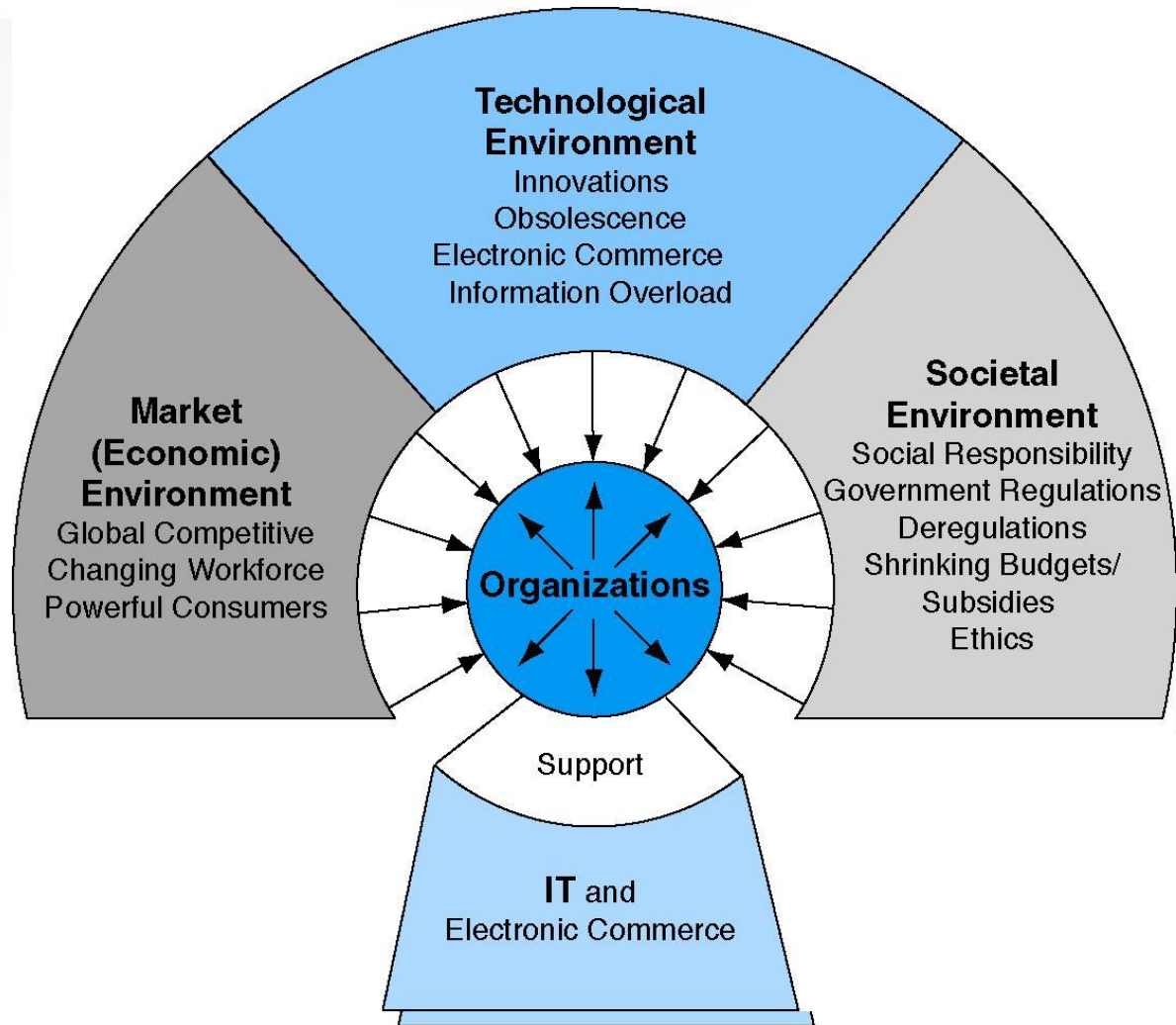
- Economic, legal, societal, and technological factors have created a highly competitive *business environment* in which customers are becoming more powerful

# Business Environment Drives EC



- The environment–response–support model  
Companies must not only take traditional actions such as lowering costs and closing unprofitable facilities, but also introduce innovative actions such as customizing, creating new products, or providing superb customer service

# Exhibit 1.4 Major Business Pressures and the Role of EC



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# Business Environment Drives EC



- Categories of business pressures
  - market (economic)
  - societal
  - technological

# Business Environment Drives EC



- Organizational response strategies
  - Strategic systems
  - Agile systems
  - Continuous improvement efforts and business process restructuring
  - Customer relationship management
  - Business alliances
  - Electronic markets

# Business Environment Drives EC



- Reductions in Cycle Time and Time-to-Market  
**cycle time reduction**

Shortening the time it takes for a business to complete a productive activity from its beginning to end

- Empowerment of Employees

EC allows the decentralization of decision making and authority via empowerment and distributed systems, but simultaneously supports a centralized control

- Supply Chain Improvements

EC can help reduce supply chain delays, reduce inventories, and eliminate other inefficiencies

# Business Environment Drives EC



- Mass Customization: Make-to-Order in Large Quantities

## **mass customization**

Production of large quantities of customized items

- Intrabusiness: From Sales Force Automation to Inventory Control

## **knowledge Management (KM)**

The process of creating or capturing knowledge, storing and protecting it, updating and maintaining it, and using it

# EC Business Models



## **business model**

A method of doing business by which a company can generate revenue to sustain itself

- Business models are a subset of a business plan or a business case
  - See Chapters 14 and 16 and Online Tutorial T1

# EC Business Models



- The Structure of Business Models
  - A description of the *customers* to be served and the company's relationships with these customers (*customers' value proposition*)
  - A description of all *products* and *services* the business will offer
  - A description of the *business process* required to make and deliver the products and services

# EC Business Models



- The Structure of Business Models
  - A list of the *resources* required and the identification of which ones are available, which will be developed in-house, and which will need to be acquired
  - A description of the organization *supply chain*, including *suppliers* and other *business partners*
  - A description of the revenues expected (*revenue model*), anticipated costs, sources of financing, and estimated profitability (*financial viability*)

# EC Business Models



- **Revenue Models**  
**revenue model**

Description of how the company or an EC project will earn revenue

- **Major revenue models**

- Sales
- Transaction fees
- Subscription fees
- Advertising fees
- Affiliate fees
- Other revenue sources

# EC Business Models



- **Value proposition**

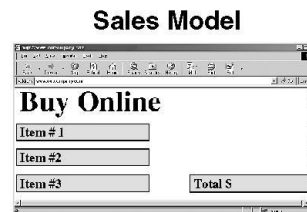
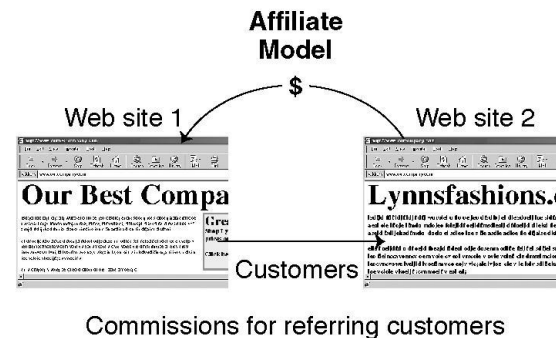
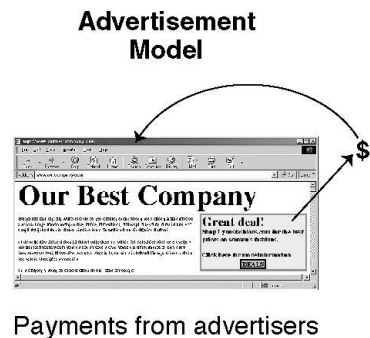
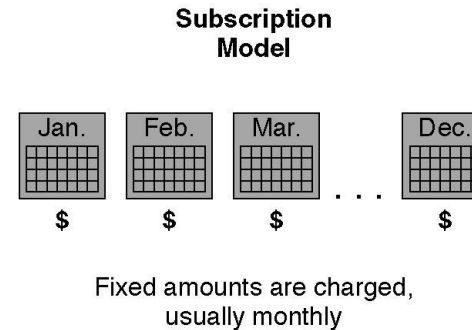
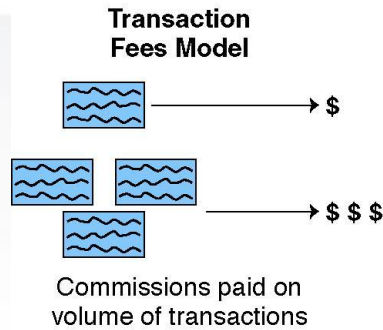
  - value proposition**

  - The benefits a company can derive from using EC

- **How do e-marketplaces create value?** (Amit and Zott 2001)

  - Search and transaction cost efficiency
  - Complementarities
  - Lock-in
  - Novelty

# Exhibit 1.6 Common Revenue Models



# EC Business Models



- Typical EC Business Models
  - **Online direct marketing**
  - **Electronic tendering systems**  
**tendering (reverse auction)**

Model in which a buyer requests would-be sellers to submit bids; the lowest bidder wins

## **name-your-own-price model**

Model in which a buyer sets the price he or she is willing to pay and invites sellers to supply the good or service at that price

# EC Business Models



- Typical EC Business Models

- Find the best price

- affiliate marketing**

- An arrangement whereby a marketing partner (a business, an organization, or even an individual) refers consumers to the selling company's Web site

- viral marketing**

- Word-of-mouth marketing in which customers promote a product or service to friends or other people

# EC Business Models



- Typical EC Business Models

- group purchasing**

- Quantity purchasing that enables groups of purchasers to obtain a discount price on the products purchased

- SMEs**

- Small-to-medium enterprises

- e-co-ops**

- Another name for online group purchasing organizations

# EC Business Models



- Typical EC Business Models

- Online auctions
- Product and service customization  
**customization**

Creation of a product or service according to the buyer's specifications

- Electronic marketplaces and exchanges
- Information brokers

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# EC Business Models



- Typical EC Business Models
  - Bartering
  - Deep discounting
  - Value-chain integrators
  - Value-chain service providers
  - Supply chain improvers

# Benefits of EC



## Benefits to Organizations

- Global Reach
- Cost Reduction
- Supply Chain Improvements
- Extended Hours
- Customization
- New Business Models
- Vendors' Specialization
- Rapid Time-to-Market
- Lower Communication Costs
- Efficient Procurement
- Improved Customer Relations
- Up-to-Date Company Material
- No City Business Permits and Fees
- Other Benefits

# Benefits of EC



## Benefits to Consumers

- Ubiquity
- More Products and Services
- Customized Products and Services
- Cheaper Products and Services
- Instant Delivery
- Information Availability
- Participation in Auctions
- Electronic Communities
- No Sales Tax

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# Benefits of EC



- Benefits to Society
  - Telecommuting
  - Higher Standard of Living
  - Homeland Security
  - Hope for the Poor
  - Availability of Public Services

# Exhibit 1.7 Limitations of EC



## EXHIBIT 1.7 Limitations of Electronic Commerce

### Technological Limitations

Lack of universal standards for quality, security, and reliability.

The telecommunications bandwidth is insufficient, especially for m-commerce.

Software development tools are still evolving.

It is difficult to integrate Internet and EC software with some existing (especially legacy) applications and databases.

Special Web servers are needed in addition to the network servers, which add to the cost of EC.

Internet accessibility is still expensive and/or inconvenient.

Order fulfillment of large-scale B2C requires special automated warehouses.

### Nontechnological Limitations

Security and privacy concerns deter customers from buying.

Lack of trust in EC and in unknown sellers hinders buying.

Many legal and public policy issues, including taxation, have not yet been resolved.

National and international government regulations sometimes get in the way.

It is difficult to measure some of the benefits of EC, such as advertising. Mature measurement methodologies are not yet available.

Some customers like to feel and touch products. Also, customers are resistant to the change from shopping at a brick-and-mortar store to a virtual store.

People do not yet sufficiently trust paperless, faceless transactions.

In many cases, the number of sellers and buyers that are needed for profitable EC operations is insufficient.

Online fraud is increasing.

It is difficult to obtain venture capital due to the failure of many dot-coms.

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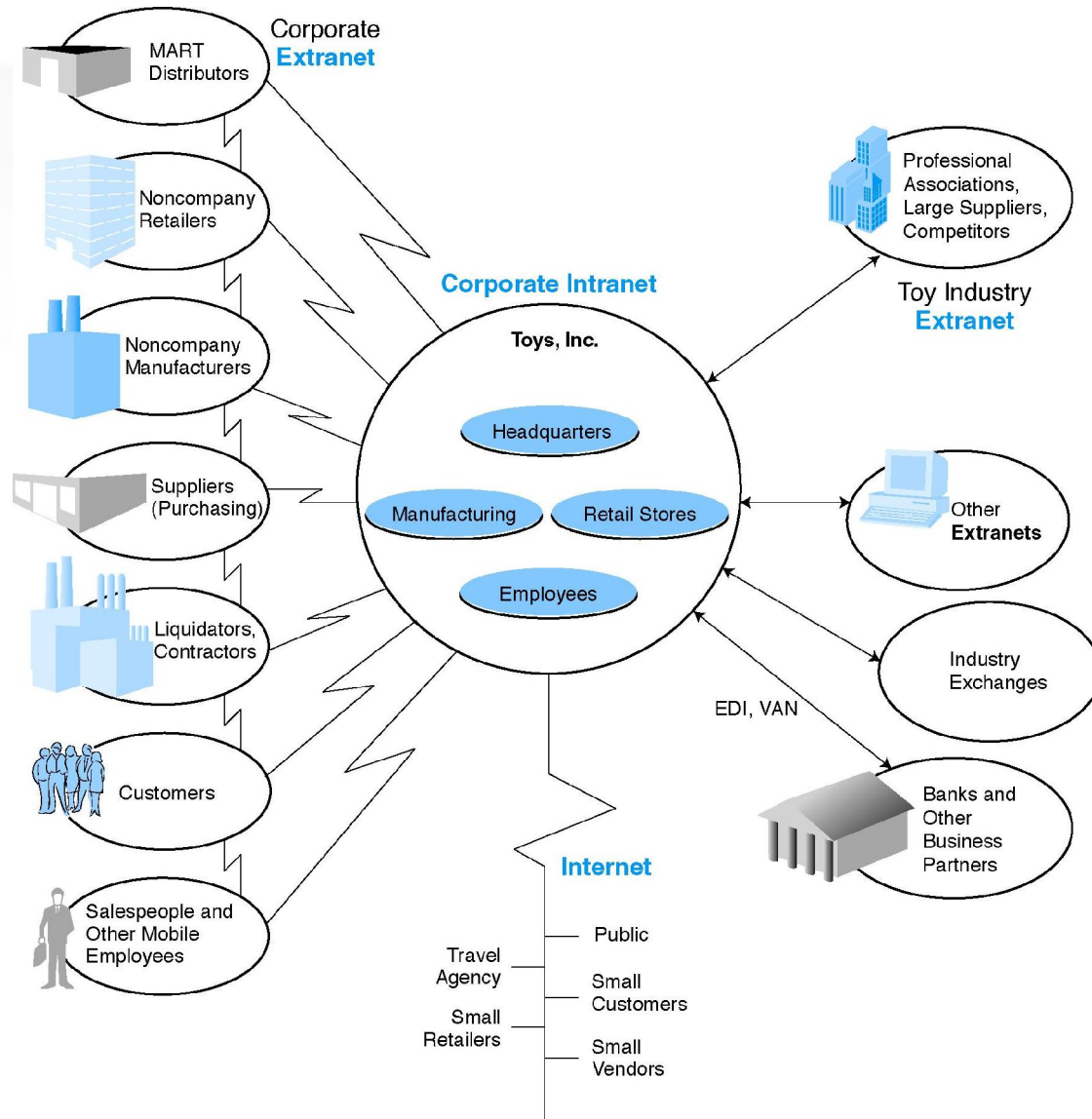
# Networks for EC



## **corporate portal**

A major gateway through which employees, business partners, and the public can enter a corporate Web site

# Exhibit 1.8 The Networked Organization



# Managerial Issues



1. Is it real?
2. Why is B2B e-commerce so attractive?
3. There are so many EC failures—how can one avoid them?
4. How do we transform our organization into a digital one?
5. How should we evaluate the magnitude of business pressures and technological advancement?
6. What should be my company's strategy toward EC?
7. What are the top challenges of EC?

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# Summary



1. Definition of EC and description of its various categories.
2. The content and framework of EC.
3. The major types of EC transactions.
4. The role of the digital revolution.
5. The role of the business environment as an EC driver.

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# Summary



6. The major EC business models.
7. Benefits of EC to organizations, consumers, and society.
8. Limitations of EC.
9. Contribution to organizations responding to environmental changes.