Chapter 1

Overview of Electronic Commerce
electronic commerce (EC)

The process of buying, selling, or exchanging products, services, or information via computer networks
EC is defined through these perspectives

- Communications
- Commercial (trading)
- Business process
- Service
- Learning
- Collaborative
- Community
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.
• 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

The diagram illustrates the different dimensions of electronic commerce, categorized by product and process types. It distinguishes between physical and digital products, and virtual and physical processes, with partial electronic commerce areas and pure electronic commerce at the extremes. The traditional commerce category is located at the lower part of the diagram.
EC organizations

1. **brick-and-mortar organizations**
   Old-economy organizations (corporations) that perform most of their business off-line, selling physical products by means of physical agents

2. **virtual (pure-play) organizations**
   Organizations that conduct their business activities solely online

3. **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
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.
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
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
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
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
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
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
Business Environment Drives EC

• Categories of business pressures
  – market (economic)
  – societal
  – Technological

» What do drive EC? Changes in the above factors
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 has:
  – 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 has:
  – 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

• Typical EC Business Models

1. Online direct marketing

2. Find the best price
   a) 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.

   b) viral marketing
      Word-of-mouth marketing in which customers promote a product or service to friends or other people.
EC Business Models

3. **group purchasing**
   Quantity purchasing that enables groups of purchasers to obtain a discount price on the products purchased

4. **e-co-ops**
   Another name for online group purchasing organizations

5. **Online auctions**

6. **Product and service customization** (the creation of a product or service according to the buyer’s specifications)
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
Benefits to Society

- Telecommuting
- Higher Standard of Living
- Homeland Security
- Hope for the Poor
- Availability of Public Services
## Exhibit 1.7 Limitations of Electronic Commerce

<table>
<thead>
<tr>
<th>Technological Limitations</th>
<th>Nontechnological Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>The telecommunications bandwidth is insufficient, especially for m-commerce.</td>
<td>Lack of trust in EC and in unknown sellers hinders buying.</td>
</tr>
<tr>
<td>Software development tools are still evolving.</td>
<td>Many legal and public policy issues, including taxation, have not yet been resolved.</td>
</tr>
<tr>
<td>It is difficult to integrate Internet and EC software with some existing (especially legacy) applications and databases.</td>
<td>National and international government regulations sometimes get in the way.</td>
</tr>
<tr>
<td>Special Web servers are needed in addition to the network servers, which add to the cost of EC.</td>
<td>It is difficult to measure some of the benefits of EC, such as advertising. Mature measurement methodologies are not yet available.</td>
</tr>
<tr>
<td>Internet accessibility is still expensive and/or inconvenient.</td>
<td>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.</td>
</tr>
<tr>
<td>Order fulfillment of large-scale B2C requires special automated warehouses.</td>
<td>People do not yet sufficiently trust paperless, faceless transactions.</td>
</tr>
<tr>
<td></td>
<td>In many cases, the number of sellers and buyers that are needed for profitable EC operations is insufficient.</td>
</tr>
<tr>
<td></td>
<td>Online fraud is increasing.</td>
</tr>
<tr>
<td></td>
<td>It is difficult to obtain venture capital due to the failure of many dot-coms.</td>
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</tbody>
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corporate portal

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