Chapter 2

E-Commerce: Mechanisms, Infrastructures, and Tools

CIS 579 – Technology of E-Business

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Learning Objectives

1. Describe the major electronic commerce (EC) activities and processes and the mechanisms that support them.

2. Define e-marketplaces and list their components.

3. List the major types of e-marketplaces and describe their features.

4. Describe electronic catalogs, search engines, and shopping carts.

5. Describe the major types of auctions and list their characteristics.

Learning Objectives

6. Discuss the benefits and limitations of e-auctions.

7. Describe bartering and negotiating online.

8. Describe virtual communities.

9. List the major Web 2.0 tools and their use in EC.

10. Describe social networks as an EC mechanism.

11. Understand virtual worlds and their use in EC.

12. Describe Web 3.0 and define Web 4.0.

Electronic Commerce Mechanisms: An Overview

- **EC ACTIVITIES AND SUPPORT MECHANISMS**
- **SELLERS, BUYERS, AND TRANSACTIONS**
  - **The Purchasing Process**
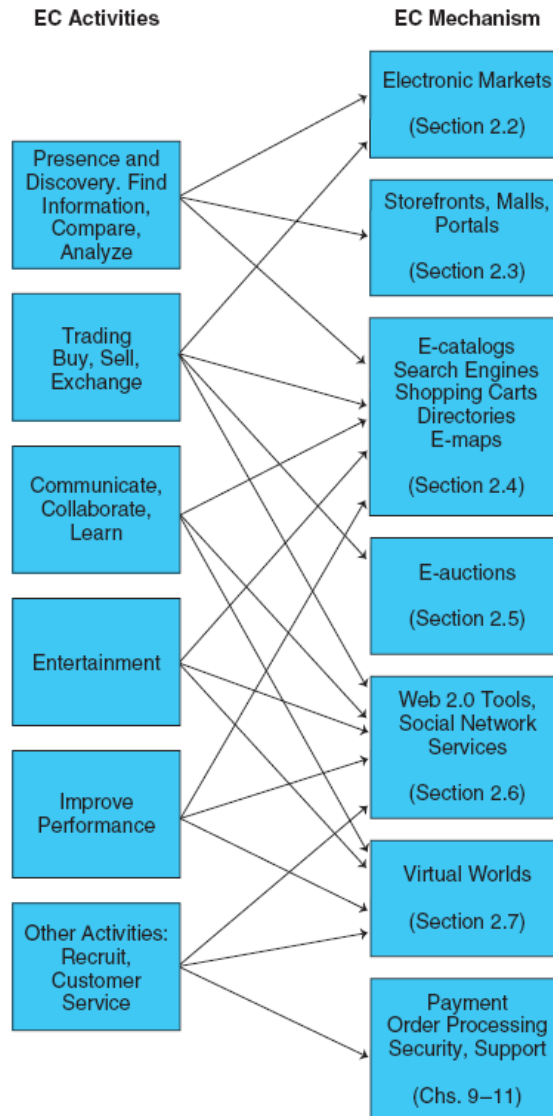
EXHIBIT 2.1 The EC Activities–Mechanism Connection
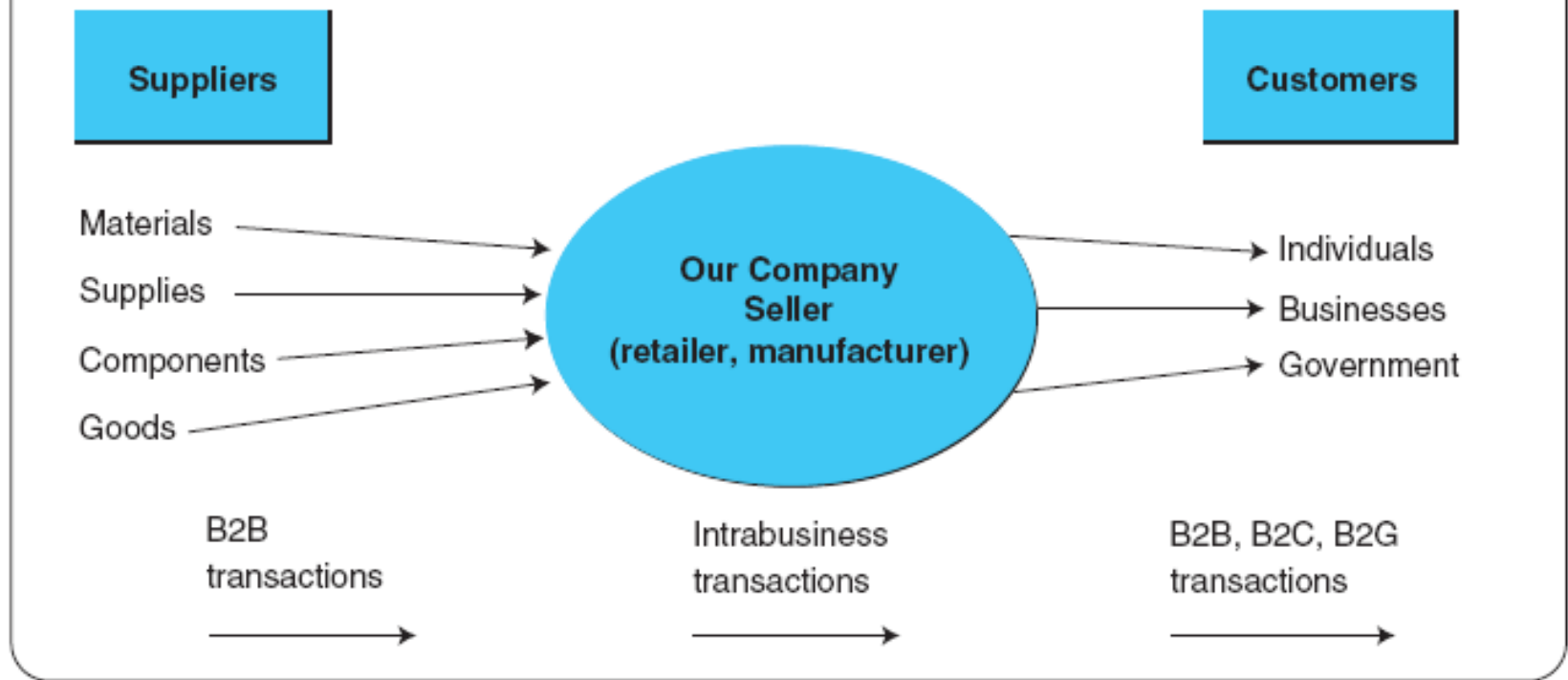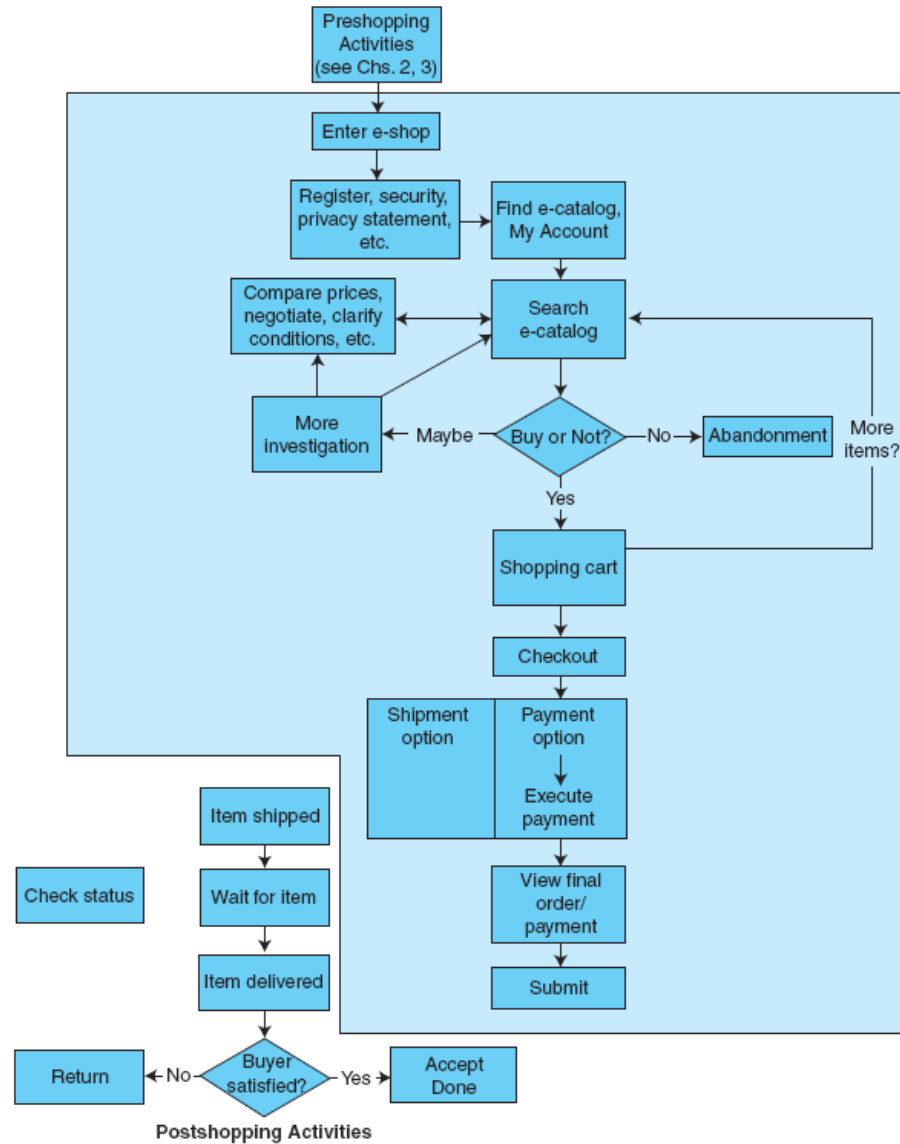
EXHIBIT 2.2 EC Participants and Components

EXHIBIT 2.3 Buying Process in an E-Market

E-Marketplaces

- **e-marketplace**

  An online market, usually B2B, in which buyers and sellers exchange goods or services; the three types of e-marketplaces are private, public, and consortia

- **COMPONENTS OF AND THE PARTICIPANTS IN E-MARKETPLACES**

  - **marketspace**

    A marketplace in which sellers and buyers exchange goods and services for money (or for other goods and services), but do so electronically

E-Marketplaces

- The major components and players in a marketspace are:
  - **Customers**
  - **Sellers**
  - **Products and services**
    - **digital products**
      Goods that can be transformed to digital format and delivered over the Internet
  - **Infrastructure**

E-Marketplaces

- **front end**

  The portion of an e-seller's business processes through which customers interact, including the seller's portal, electronic catalogs, a shopping cart, a search engine, and a payment gateway

- **back end**

  The activities that support online order fulfillment, inventory management, purchasing from suppliers, payment processing, packaging, and delivery

- **intermediary**

  A third party that operates between sellers and buyers

E-Marketplaces

- **TYPES OF E-MARKETPLACES**
  - **sell-side e-marketplace**

    A private e-marketplace in which one company sells either standard and/or customized products to qualified companies
  - **buy-side e-marketplace**

    A private e-marketplace in which one company makes purchases from invited suppliers

Customer Shopping Mechanisms: Storefronts, Malls, and Portals

- **Webstore (storefront)**

A single company's website where products or services are sold; usually has an online shopping cart associated with it

Many Webstores target a specific industry and find their own unique corner of the market.

- **Microsites**

Customer Shopping Mechanisms: Storefronts, Malls, and Portals

- **e-mall (online mall)**

  An online shopping center where many online stores are located

- **TYPES OF STORES AND MALLS**
  - **General stores/malls**
  - **Specialized stores/malls**
  - **Regional versus global stores**
  - **Pure-play versus click-and-mortar stores**

Customer Shopping Mechanisms: Storefronts, Malls, and Portals

- **Web (information) portal**
  A single point of access, through a Web browser, to critical business information located inside and outside (via Internet) an organization
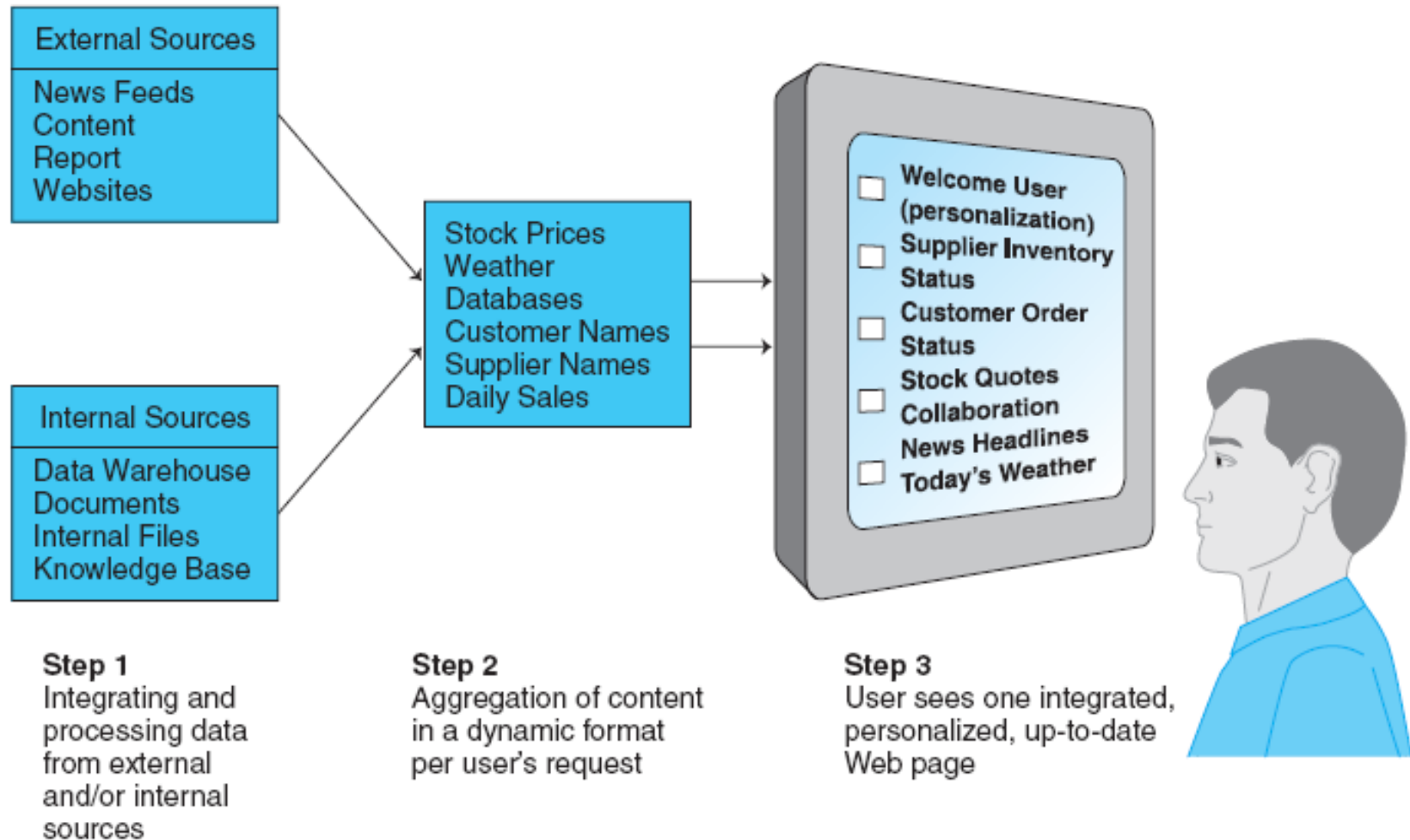 - **Types of Portals**
    - Commercial (public) portals
    - Corporate portals
    - Publishing portals
    - Personal portals
    - **mobile portal**
      A portal accessible via a mobile device.
    - **voice portal**
      A portal accessed by telephone or cell phone.

EXHIBIT 2.5 **How a Portal Works**

External Sources
News Feeds
Content
Report
Websites

Internal Sources
Data Warehouse
Documents
Internal Files
Knowledge Base

Stock Prices
Weather
Databases
Customer Names
Supplier Names
Daily Sales

☐ Welcome User (personalization)
☐ Supplier Inventory Status
☐ Customer Order Status
☐ Stock Quotes
☐ Collaboration
News Headlines
☐ Today's Weather

Step 1
Integrating and processing data from external and/or internal sources

Step 2
Aggregation of content in a dynamic format per user's request

Step 3
User sees one integrated, personalized, up-to-date Web page

Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts

- **electronic catalogs (e-catalogs)**

  The presentation of product information in an electronic form; the backbone of most e-selling sites

  - **Online Catalogs Versus Paper Catalogs**

Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts

- **EC SEARCH ACTIVITIES, TYPES, AND ENGINES**
  - **Types of EC Searches**
    - **Internet/Web Search**
    - **enterprise search**
      The practice of identifying and enabling specific content across the enterprise to be indexed, searched, and displayed to authorized users

Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts

- **desktop search**

  Search tools that search the contents of a user's or organization's computer files, rather than searching the Internet

  The emphasis is on finding all the information that is available on the user's PC, including Web browser histories, e-mail archives, and word-processed documents, as well as in all internal files and databases.

Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts

- **search engine**

  A computer program that can access databases of Internet resources, search for specific information or key words, and report the results

- **Software (Intelligent) Agents**
- **Questions and Answers Online**
- **Voice-Powered Search**
- **Visual Shopping Search Engine**

Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts

- **electronic shopping cart**

  An order-processing technology that allows customers to accumulate items they wish to buy while they continue to shop

- **OTHER MECHANISMS IN MERCHANT SOFTWARE**
  - **Other Shopping Engines**
  - **Product Configuration**

Auctions, Bartering, and Negotiating Online

- **auction**

  A competitive process in which a seller solicits consecutive bids from buyers (forward auctions) or a buyer solicits bids from sellers (backward auctions); prices are determined dynamically by the bids

- **dynamic pricing**

  Prices that change based on supply and demand relationships at any given time

Auctions, Bartering, and Negotiating Online

- **TYPES OF AUCTIONS**
  - **One Buyer, One Seller**
  - **One Seller, Many Potential Buyers**
    - **forward auction**

      An auction in which a seller entertains bids from buyers; bidders increase price sequentially

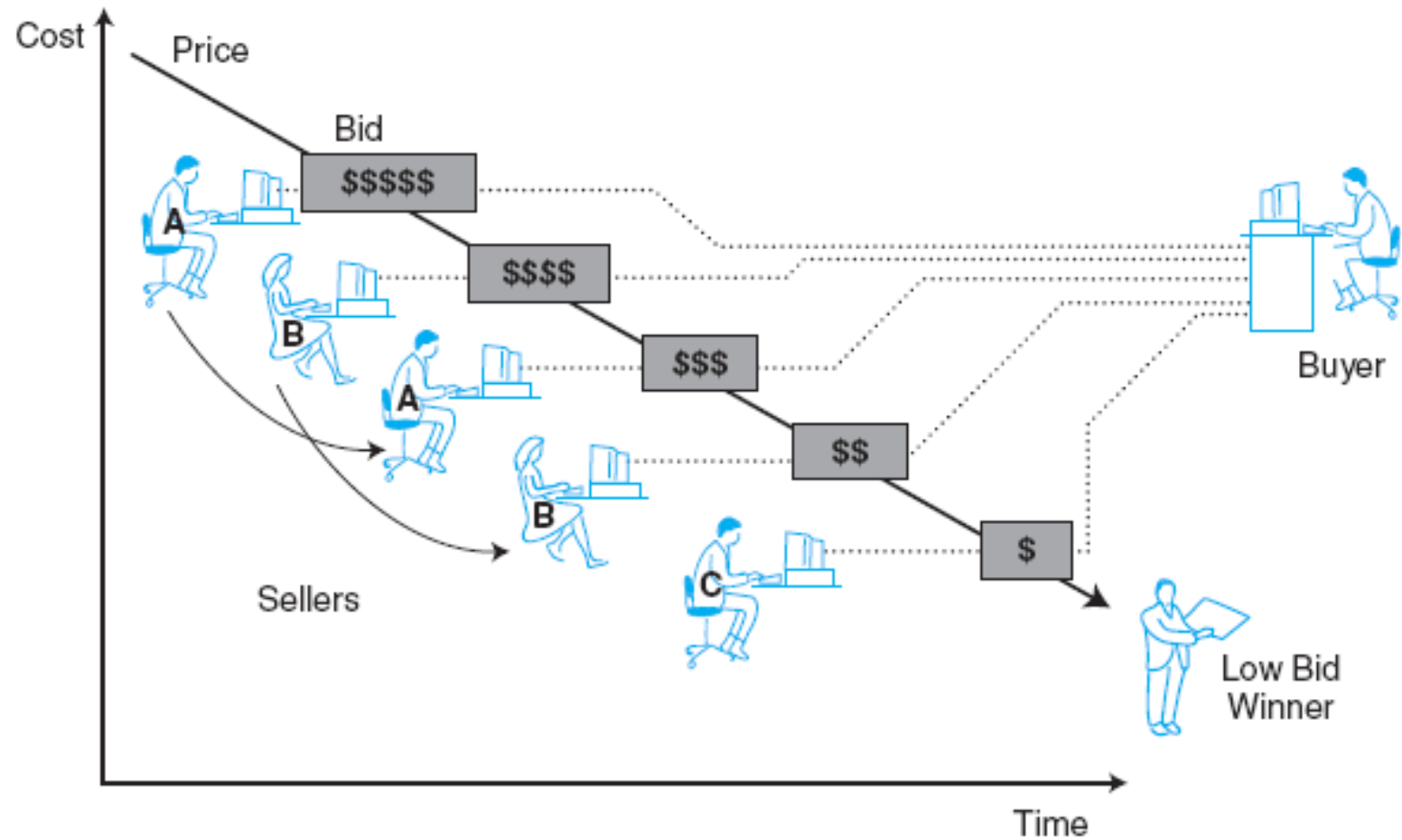# Auctions, Bartering, and Negotiating Online

- **One Buyer, Many Potential Sellers**
- **reverse auction (bidding or tendering system)**

  Auction in which the buyer places an item for bid (tender) on a request for quote (RFQ) system, potential suppliers bid on the job, with the price reducing sequentially, and the lowest bid wins; primarily a B2B or G2B mechanism

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

  Auction model in which a would-be buyer specifies the price (and other terms) he or she is willing to pay to any willing and able seller; a C2B model that was pioneered by Priceline.com.

EXHIBIT 2.6   The Reverse Auction Process

Auctions, Bartering, and Negotiating Online

- **Many Sellers, Many Buyers**
  - **double auction**

    An auction in which multiple buyers and their bidding prices are matched with multiple sellers and their asking prices, considering the quantities on both sides

- **penny auction**

  A formal auction in which participants pay a nonrefundable small fee for each bid; bid level changes by small increments

EXHIBIT 2.7 Benefits of E-Auctions

Benefits to Sellers	Benefits to Buyers	Benefits to E-Auctioneers
• Increased revenues from broadening bidder base and shortening cycle time. Can sell anywhere globally. • Opportunity to bargain instead of selling at a fixed price. Can sell any time and conduct frequent auctions. • Optimal price setting determined by the market (more buyers, more information). • Sellers can gain more customer dollars by offering items directly (saves on the commission to intermediaries; also, physical auctions are very expensive compared with e-auctions). • Can liquidate large quantities quickly. • Improved customer relationship and loyalty (in the case of specialized B2B auction sites and electronic exchanges).	• Opportunities to find unique items and collectibles. • Entertainment. Participation in e-auctions can be entertaining and exciting. • Convenience. Buyers can bid from anywhere, even with a cell phone; they do not have to travel to an auction place. • Anonymity. With the help of a third party, buyers can remain anonymous. • Possibility of finding bargains, for both individuals and organizations.	• Higher repeat purchases. Jupiter Research (*jupiterresearch.com*) found that auction sites, such as eBay, tend to garner higher repeat-purchase rates than the top B2C sites, such as Amazon.com. • High "stickiness" to the website (the tendency of customers to stay at sites longer and come back more often). Auction sites are frequently "stickier" than fixed-priced sites. Stickier sites generate more ad revenue for the e-auctioneer. • Easy expansion of the auction business.

Auctions, Bartering, and Negotiating Online

- **Limitations of E-Auctions**
  - **Minimal Security**
  - **Possibility of Fraud**
  - **Limited Participation**

Auctions, Bartering, and Negotiating Online

- **IMPACTS OF AUCTIONS**
  - **Auctions as a Social Mechanism to Determine a Price**
  - **Auctions as a Highly Visible Distribution Mechanism**
  - **Auctions as an EC Component in a Business Model**
  - **Auctions for Profit for Individuals**

Social Software Tools: From Blogs to Wikis to Twitter

- **social software**

  A software product that enables people to rendezvous, connect, and collaborate through computer-mediated communication

- **blog**

  A personal website that is open to the public to read and to interact with; dedicated to specific topics or issues

  - **vlog (or video blog)**

    A blog with video content

Social Software Tools:
From Blogs to Wikis to Twitter

- **Building Effective Blogs**
- **Commercial Uses of Blogs**
- **Potential Risks of Corporate Blogs**

- **microblogging**

  A form of blogging that allows users to write messages (usually up to 140 characters) and publish them, either to be viewed by anyone or by a restricted group that can be chosen by the user; these messages can be submitted by a variety of means, including text messaging, instant messaging, e-mail, MP3, or just on the Web

Social Software Tools:
From Blogs to Wikis to Twitter

- **Twitter**

  A free microblogging service that allows its users to send and read other users' updates

  - **tweets**

    Text-based posts up to 140 characters in length posted to Twitter

  - **The Essentials of Twitter for Business**

    - The Major Benefits of Twitter

    - Examples of Twitter as Enterprise Tools

Social Software Tools: From Blogs to Wikis to Twitter

- **wiki (wikilog)**

  A blog that allows everyone to participate as a peer; anyone may add, delete, or change content

  - **Business Applications of Wikis**

Social Software Tools:
From Blogs to Wikis to Twitter

- **MECHANISM AIDS FOR WEB 2.0 TOOLS: TAGS, FOLKSONOMY, MASHUPS, AND SOCIAL BOOKMARKS**
  - **tag**

    A nonhierarchical key word or term assigned to a piece of information (such as an Internet bookmark, digital image, video clip, or any computer document)
  - **folksonomy (collaborative tagging, social tagging)**

    The practice and method of collaboratively creating, classifying, and managing tags to annotate and categorize content

Virtual Communities and Social Networks

- **virtual community**

  A group of people with similar interests who interact with one another using the Internet

Virtual Communities and Social Networks

- **CHARACTERISTICS OF TRADITIONAL ONLINE COMMUNITIES AND THEIR CLASSIFICATION**
  - **Types of Communities**
    - Associations
    - Affinity portals
    - Ethnic communities
    - Gender communities
    - Catering to young people
    - Communities of practice
    - Neighborhood communities
    - Social networks sites
    - Virtual worlds

Virtual Communities and Social Networks

- **business-oriented social networks**

  A social network whose major interest is business topics and whose members are professional people; such networks are used mostly for creating contacts, providing requirements, and enlisting members' support for problem solving and knowledge sharing

Virtual Worlds as an Electronic Commerce Mechanism

- **virtual world**

  A user-defined world in which people can interact, play, and do business; the most publicized virtual world is Second Life

- **avatars**

  Animated computer characters that exhibit humanlike movements and behaviors

The Future: Web 3.0 and Web 4.0

- **Web 3.0**

  A term used to describe the future of the World Wide Web; it consists of the creation of high-quality content and services produced by gifted individuals using Web 2.0 technology as an enabling platform

- **Semantic Web**

  An evolving extension of the Web in which Web content can be expressed not only in natural language, but also in a form that can be understood, interpreted, and used by intelligent computer software agents, permitting them to find, share, and integrate information more easily

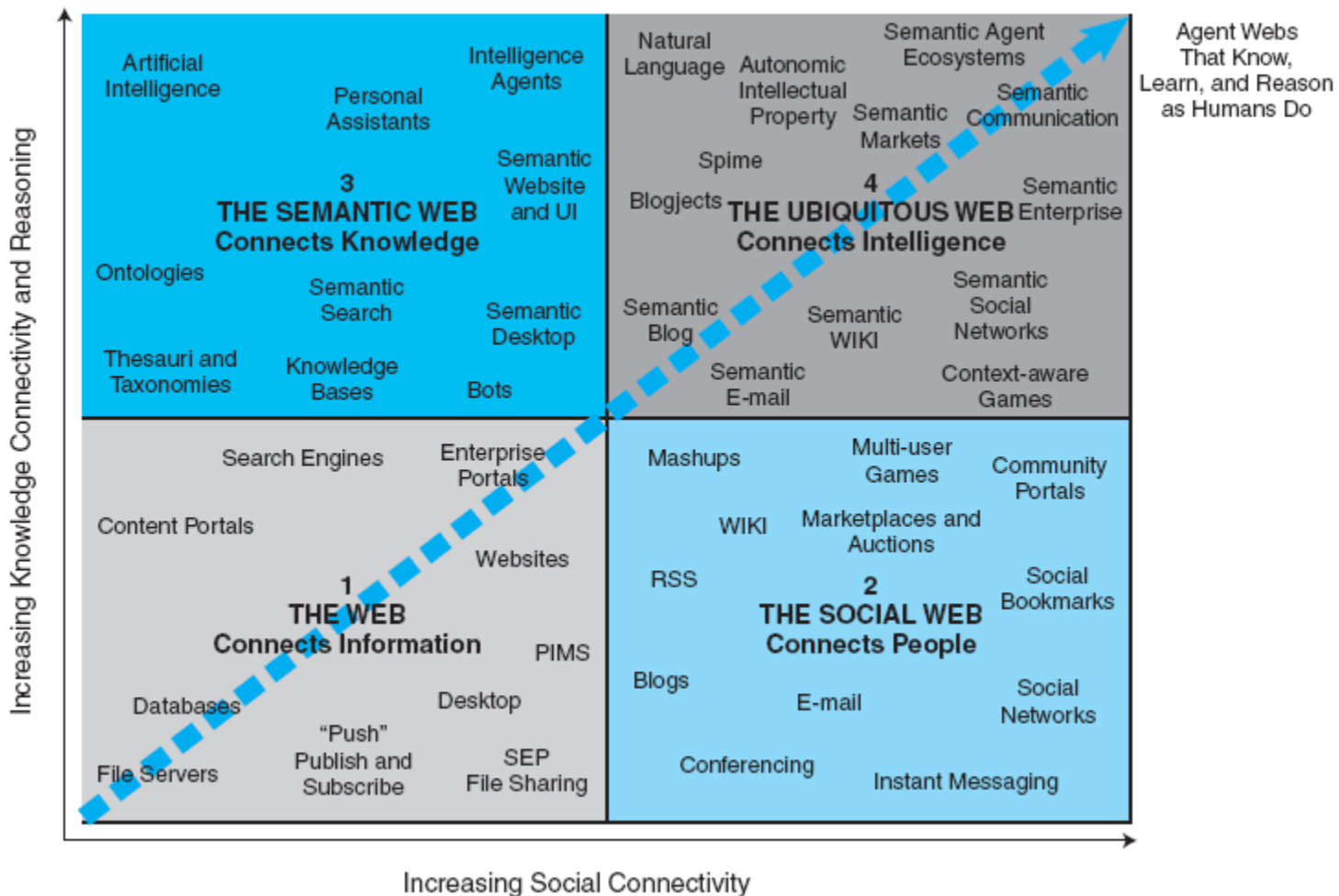# The Future: Web 3.0 and Web 4.0

- **Web 4.0**

   The Web generation after Web 3.0 that is still an unknown entity; however, it is envisioned as being based on islands of intelligence and as being ubiquitous

- **THE TECHNOLOGICAL ENVIRONMENT**
  - **McKinsey & Company's Prediction**
  - **Nicholas Carr's & Company's Prediction**

EXHIBIT 2.10 Evolution from Web 1.0 to Web 4.0

Summary

1. Activities and mechanisms
2. E-marketplaces and their components
3. The major types of e-marketplaces
4. Electronic catalogs, search engines, and shopping carts
5. Types of auctions and their characteristics
6. The benefits and limitations of auctions

Summary

7. Bartering and negotiating
8. The structure and role of virtual communities
9. Web 2.0 tools
10. Social networks as an EC mechanism
11. Virtual worlds
12. Web 3.0 and Web 4.0