

Chapter 2

E-Commerce: Mechanisms,
Infrastructures, and Tools

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

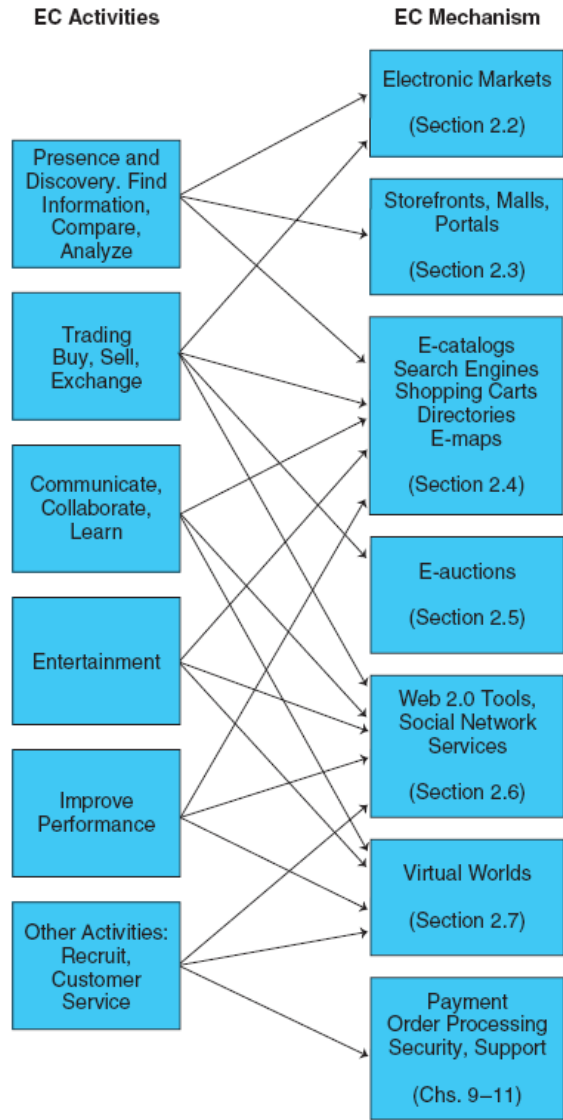


EXHIBIT 2.2 EC Participants and Components

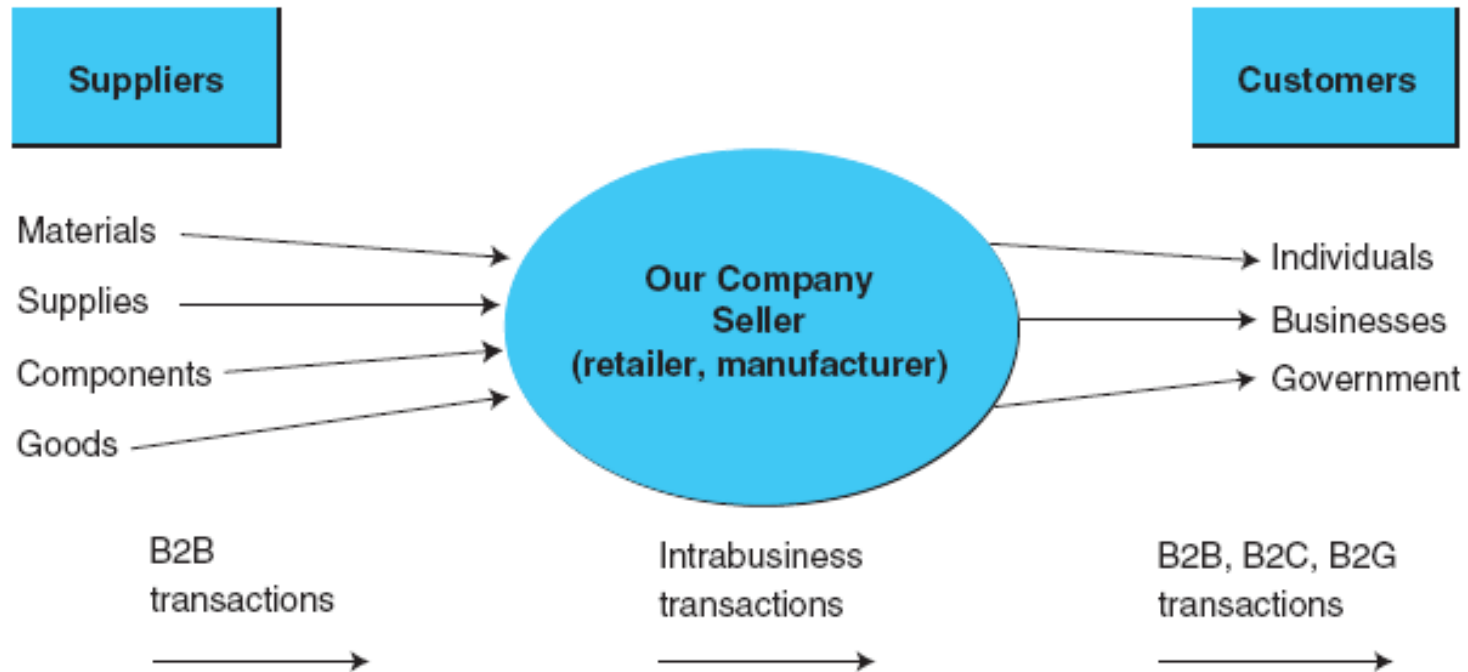
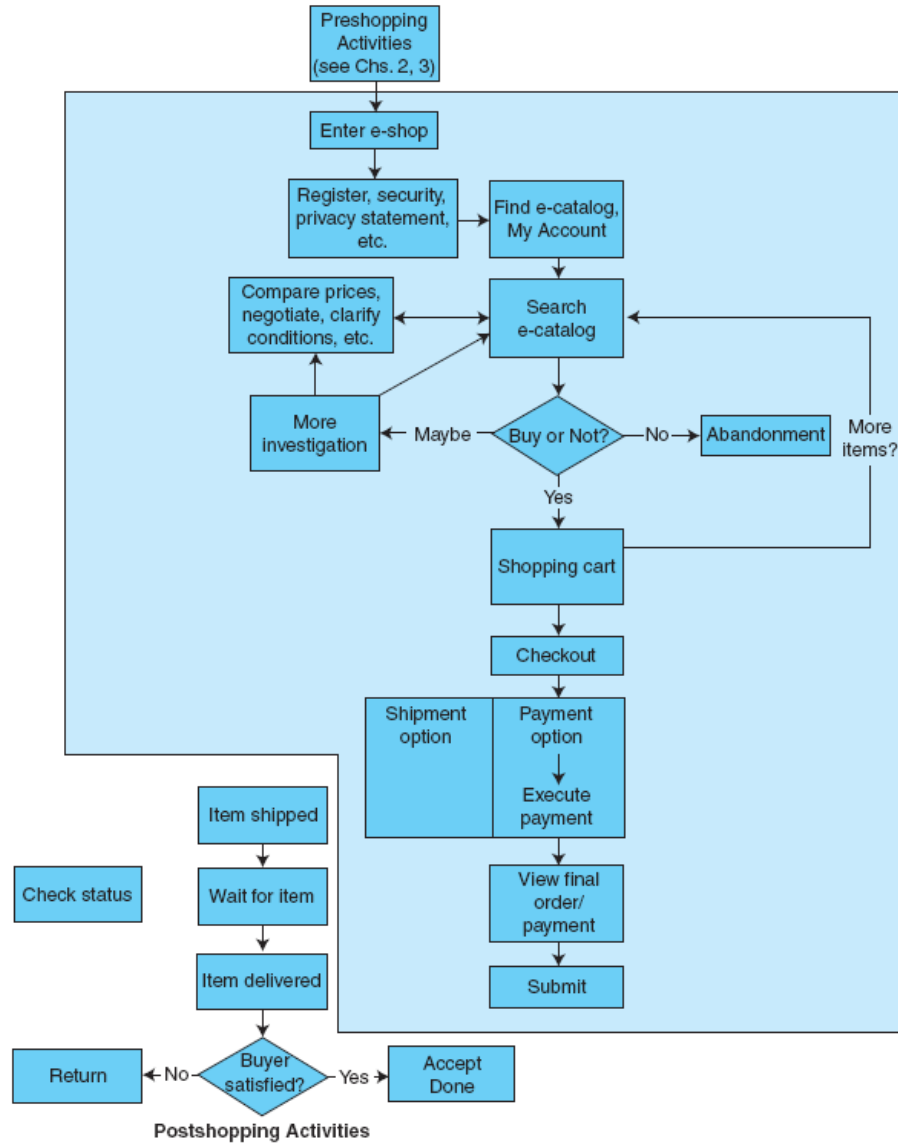


EXHIBIT 2.3 Buying Process in an E-Market



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**

- **marketplace**

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 marketplace 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

- **DISINTERMEDIATION AND REINTERMEDIATION**
 - **disintermediation**
Elimination of intermediaries 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

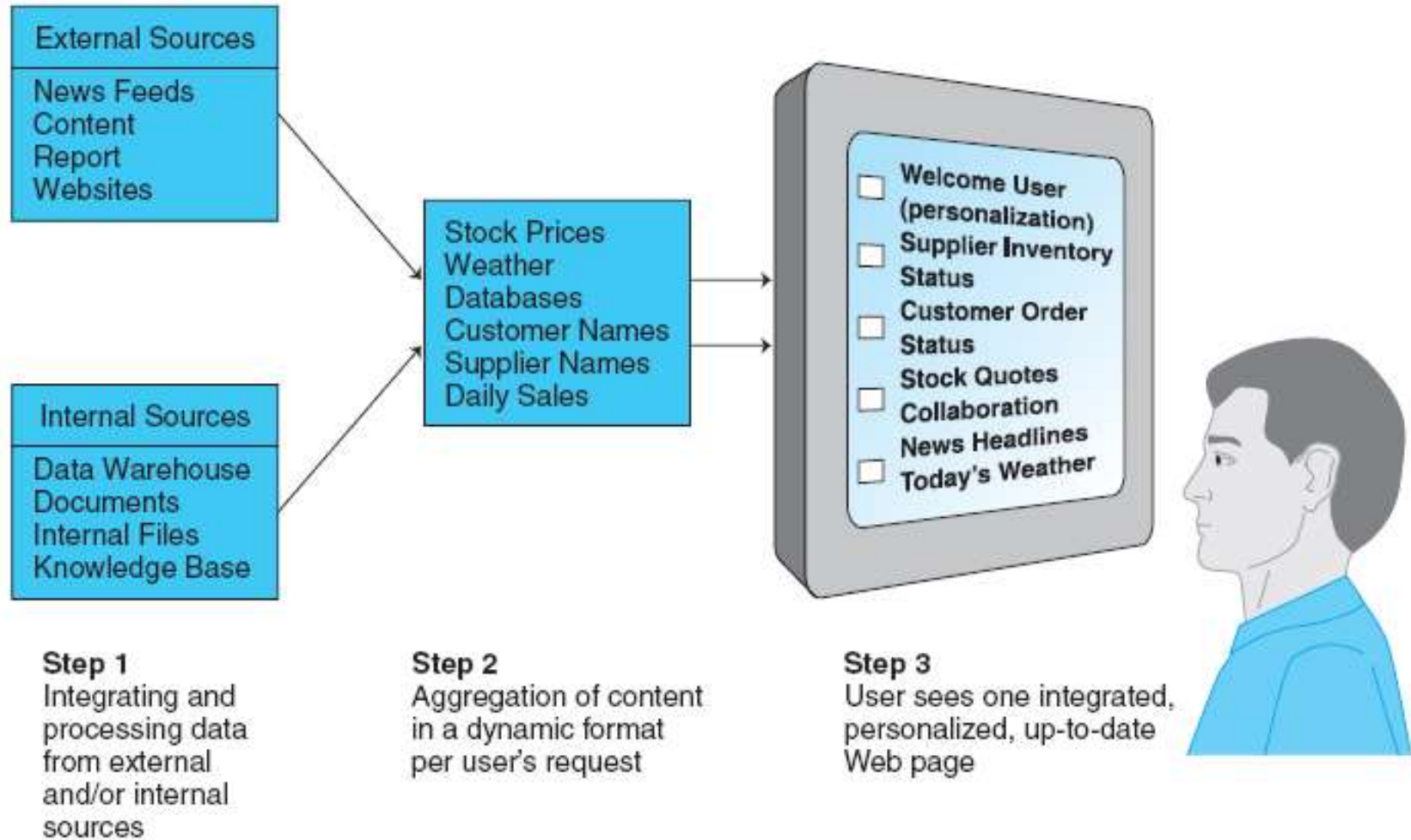
- **Web (information) portal**

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



Customer Shopping Mechanisms: Storefronts, Malls, and Portals

- **THE ROLES AND VALUE OF INTERMEDIARIES IN E-MARKETPLACES**

- **Brokers**

- **infomediaries**

Electronic intermediaries that provide and/or control information flow in cyberspace, often aggregating information and selling it to others

- **e-distributor**

An e-commerce intermediary that connects manufacturers with business buyers (customers) by aggregating the catalogs of many manufacturers in one place—the intermediary's website

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

- **TRADITIONAL AUCTIONS VERSUS E-AUCTIONS**
 - Limitations of Traditional Offline Auctions
 - **electronic auctions (e-auctions)**
Auctions conducted online
- **INNOVATIVE AUCTIONS**

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**

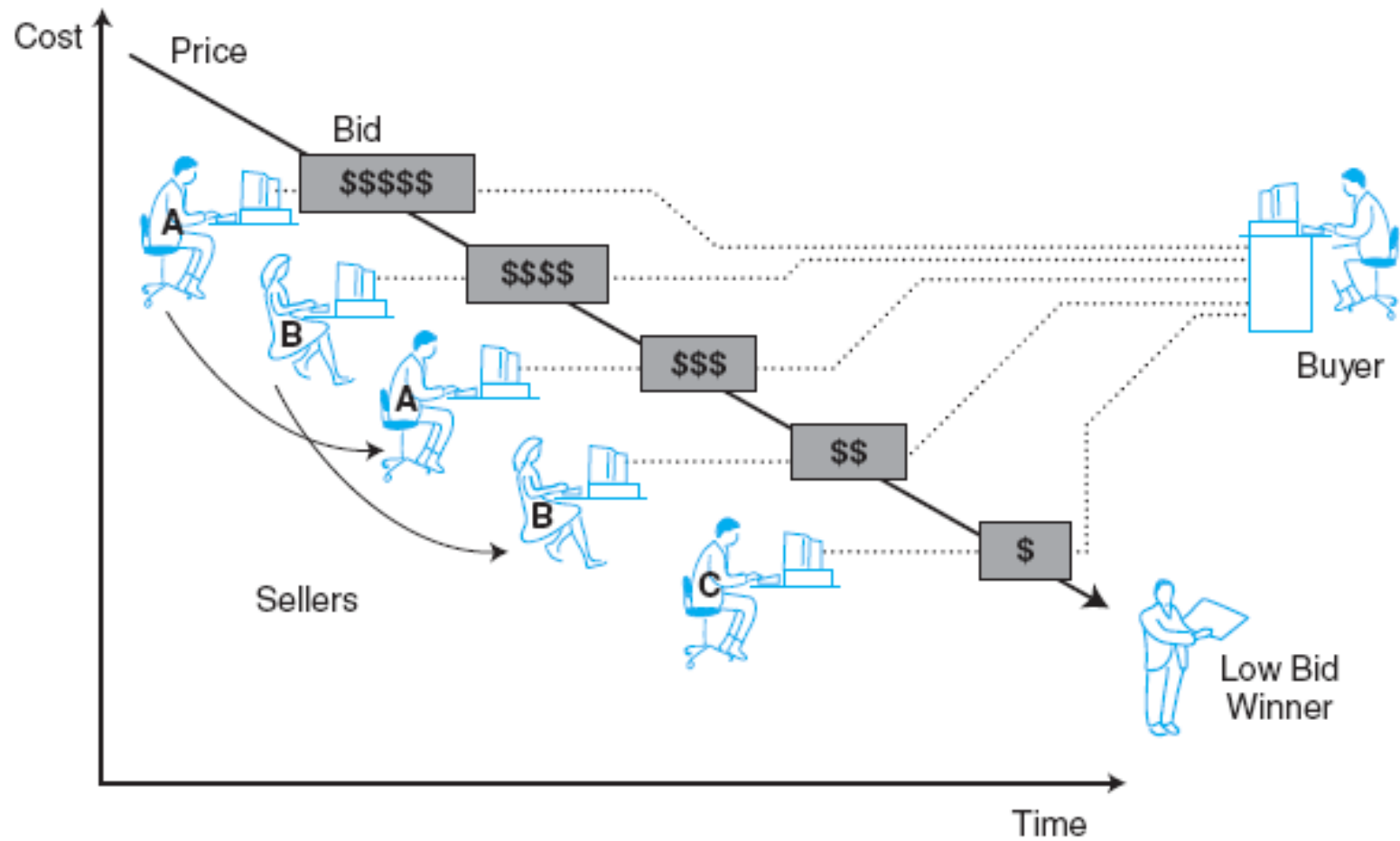
- **reverse auction (bidding or tendering system)**

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

- 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).

Benefits to Buyers

- 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.

Benefits to E-Auctioneers

- 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

Auctions, Bartering, and Negotiating Online

- **ONLINE BARTERING**

- **bartering**

- The exchange of goods and services

- **e-bartering (electronic bartering)**

- Bartering conducted online, usually in a bartering exchange

- **bartering exchange**

- A marketplace in which an intermediary arranges barter transactions

- **ONLINE NEGOTIATING**

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

Social Software Tools:

From Blogs to Wikis to Twitter

- **mashup**

Combination of two or more websites into a single website that provides the content of both sites (whole or partial) to deliver a novel product to consumers

- **social bookmarking**

Web service for sharing Internet bookmarks; the sites are a popular way to store, classify, share, and search links through the practice of folksonomy techniques on the Internet and intranets

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

- Other Classifications of Virtual Communities
 - Public Versus Private Communities
 - Classification Categories
- **ONLINE SOCIAL NETWORKS**
 - A Definition and Basic Information
 - The Size of Social Network Sites
 - A Global Phenomenon
 - Representative Capabilities and Services Provided by Social Network Sites

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 Communities and Social Networks

- Example of a Business-Oriented Social Network
- Some Capabilities of Business-Oriented Networks
- Business Models and Services Related to Social Networking
- Social Network Analysis Software
- Xanga
- Digg
- **mobile social networking**
Members converse and connect with one another using cell phones or other mobile devices.
- **Mobile Community Activities**
- **SOCIAL NETWORK SERVICES**

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

Virtual Worlds as an Electronic Commerce Mechanism

- **BUSINESS ACTIVITIES AND VALUE IN VIRTUAL WORLDS**
 - Collaboration
 - Research and Marketing
 - Virtual Shopping
 - Trading Virtual Properties

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

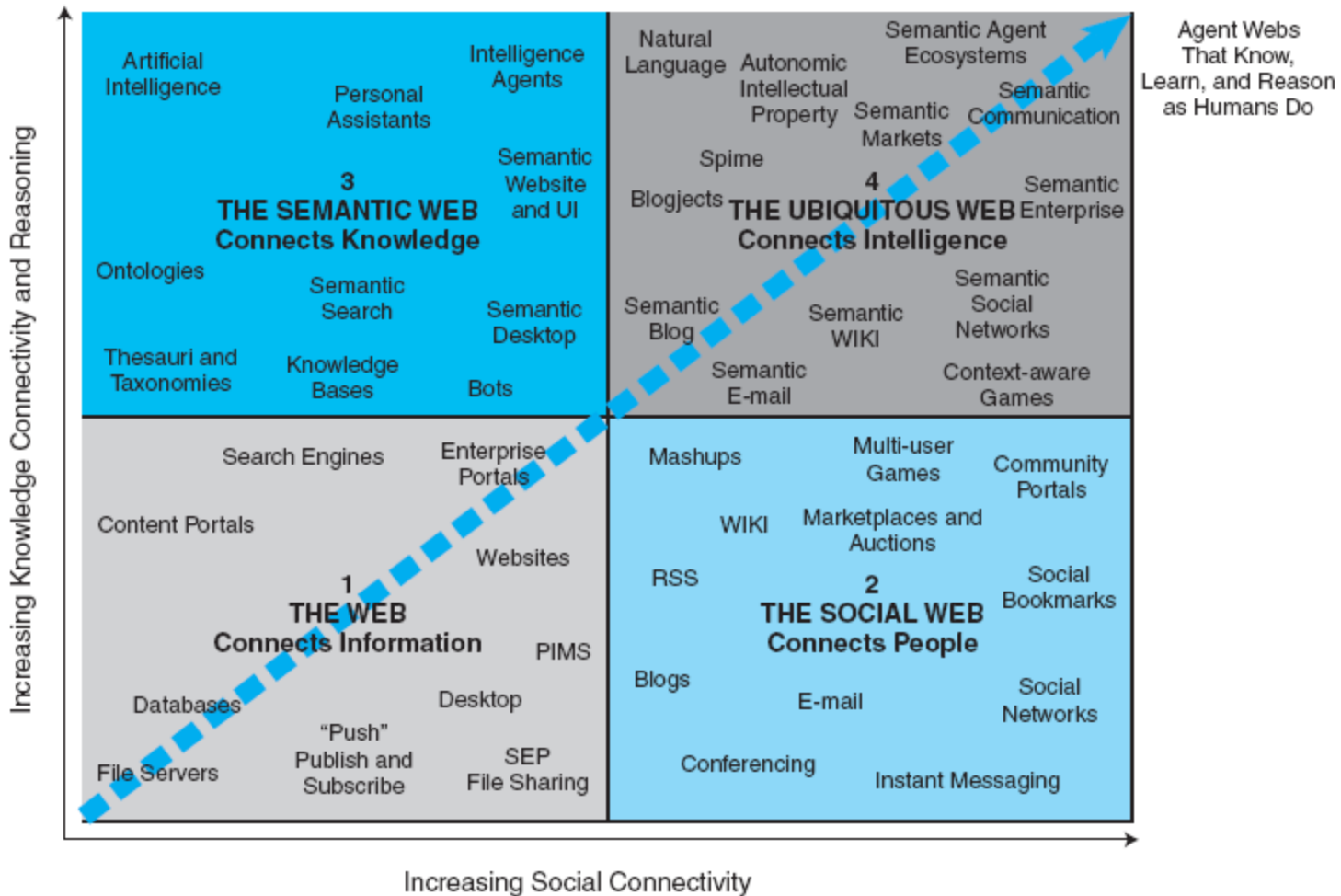
- **Web 4.0**

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



Managerial Issues

1. Should we use auctions for selling?
2. Should we barter?
3. How do we select merchant software?
4. How can we use Facebook and other social networks in our business?
5. How shall we start using Web 2.0 tools?
6. Shall we take part in virtual worlds?
7. How should we deal with Web 2.0 risks?

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