



Electronic Commerce 2012

A MANAGERIAL AND SOCIAL NETWORKS PERSPECTIVE

Seventh Edition

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Electronic Commerce 2012

A Managerial and Social Networks Perspective
Global Edition

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Dedicated to all who are interested in learning
about electronic commerce.

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Online Tutorials

T1	e-CRM
T2	Business Plan and Strategy
T3	RFID
T4	Smart Grid
T5	Supply Chain Management
T6	Mass Customization
T7	Cloud Computing
T8	Business Intelligence, Data, Text, and Web Mining
T9	Knowledge Management
T10	Online Collaboration
T11	EDI, Extranets, and XML
T12	Competition in Cyberspace

Entering the second decade of the 21st century, we are experiencing one of the most important changes to our daily lives—the move to an Internet-based society. Internet World Statistics reported at the end of March 2011 that more than 2 billion people worldwide surf the Internet (per *ABC News* 2011). The number of Internet users worldwide using cell phone access to the Internet was more than 1.2 billion by April 2011 (out of 4.5 billion cell phone users). The number of those people using desktop Internet is also increasing. The advent of less expensive computers (\$150 or less) closes the digital divide, and puts more people on the Internet (Ray 2010). All this contributes to the development and growth of the field of electronic commerce, the subject of this book.

Electronic commerce (EC) describes the manner in which transactions take place over networks, mostly the Internet. It is the process of electronically buying and selling goods, services, and information. Certain EC applications, such as buying and selling stocks and airline tickets on the Internet, are growing very rapidly, exceeding non-Internet trades. But EC is not just about buying and selling; it also is about electronically communicating, collaborating, and discovering information. It is about e-learning, e-government, social networks, and much more. EC is having an impact on a significant portion of the world, affecting businesses, professions, and of course, people.

The most important development in EC that happened since 2010 is the phenomenal growth of social networks, especially Facebook and Twitter, and the trend toward conducting EC in social networks. Also, related business models such as the one devised by Groupon are providing EC with major new areas of growth.

WHAT'S NEW IN THIS EDITION?

The following are the major changes in this edition:

- The number of chapters has been reduced from 18 to 15.
- We replaced the in-text and the online appendices and many online files with 12 tutorials.
- **New chapters.**
 - Social commerce is becoming a major element of EC. Chapter 7 is new, and describes this exciting field.
 - EC implementation is covered in Chapter 13 and deals mostly with cost-benefit analysis, EC systems development, and several other implementation issues such as Gartner's hype cycle and business process restructuring. Also, material from old Chapters 14 and 18 are included in Chapter 13.
- **Chapters with major changes.** Major changes have been made to the following chapters:
 - Chapter 1 now includes social commerce, new business models (e.g., Groupon), and other leading-edge EC-related topics.
 - Chapter 2 includes extensive coverage of Web 2.0 tools, virtual communities, social networks, virtual worlds, and the commercial applications of each.
 - Old Chapters 6 and 12 have been combined to make one unified chapter on order fulfillment and supply chain management (Chapter 11).
 - The m-commerce chapter (now Chapter 6) was extensively revised with the newest enterprise applications and l-commerce.
 - In all chapters, we have significantly expanded the use of social networking in relation to the chapter topics (e.g., real estate and travel in Chapter 3, e-government in Chapter 5).

- **Chapters with less significant changes.** All data in the chapters were updated. About 25 percent of all end-of-chapter material has been updated and/or expanded. Duplications were eliminated and explanations of exhibits have been made more understandable. New topics were added in many of the sections to reflect the Web 2.0 and social networking revolution.

NEW ONLINE TUTORIALS

The following tutorials are not related to any specific chapter. They cover the essentials of the technologies and provide a guide to additional resources.

- T1—e-CRM
- T2—Business Plan and Strategy
- T3—RFID
- T4—Smart Grid
- T5—Supply Chain Management
- T6—Mass Customization
- T7—Cloud Computing
- T8—Business Intelligence, Data, Text, and Web Mining
- T9—Knowledge Management
- T10—Online Collaboration
- T11—EDI, Extranets, and XML
- T12—Competition in Cyberspace

NEW FEATURES

The following new features were added to *all chapters*.

1. Topics for class discussion and debates—5 to 10 topics per chapter.
2. A class assignment that involves the opening case.
3. A class assignment that requires watching short videos (5 to 10 minutes) about a certain technology or a minicase followed by questions or some other engagement.
4. Video recommendations related to specific topics are suggested in the text.
5. Video recommendations with a short description are now available in the instructor's manual (3 to 5 per chapter).
6. Over 75 real-world short examples on specific topics and subtopics.
7. Learning objectives for the entire book.

BOOK'S LEARNING OBJECTIVES (OUTCOMES)

Upon completion of this book, the reader will be able to:

1. Define all types of e-commerce systems and describe their major business and revenue models.
2. Describe all the major mechanisms that are used in e-commerce.
3. Describe all methods of selling products and services online.
4. Understand all online business-to-business activities including procurement, auctions, and collaboration.
5. Describe EC activities other than trading online, such as e-government, e-learning/training, and e-collaboration.
6. Relate the support services of payment, security, order fulfillment, and so forth to e-commerce implementation.
7. Describe social networks, virtual worlds, and social software as facilitators of social commerce.

8. Describe the landscape of social commerce applications including social advertising and shopping, enterprise social commerce, social market research, and crowdsourcing.
9. Understand e-commerce strategy and describe its process and steps including justification, planning, implementation, and assessment.
10. Describe the options of acquiring or building EC systems.
11. Understand the legal, social, ethical, and business environments within which e-commerce operates.
12. Describe the global aspects of e-commerce as well as its use in SMEs and in developing countries.

FEATURES OF THIS BOOK

Several features are unique to this book.

MANAGERIAL ORIENTATION

Electronic commerce can be approached from two major aspects: technological and managerial. This text uses the second approach. Most of the presentations are about EC applications and their implementation. However, we do recognize the importance of the technology; therefore, we present the essentials of security in Chapter 9 and the essentials of infrastructure and systems development in Chapter 13. We also provide some detailed technology material in the 12 online tutorials on the book's website. Managerial issues are also provided at the end of each chapter.

REAL-WORLD ORIENTATION

Extensive, vivid examples from large corporations, small businesses from different industries and services, government, and nonprofit agencies from all over the world make concepts come alive. These examples show students the capabilities of EC, its cost and justification, and the innovative ways real corporations are using EC in their operations.

SOLID THEORETICAL BACKGROUND AND RESEARCH SUGGESTIONS

Throughout the book, we present the theoretical foundations necessary for understanding EC, ranging from consumer behavior to the economic theory of competition. Furthermore, we provide website resources, many exercises, and extensive references to supplement the theoretical presentations. At the end of each chapter, we provide a list of online resources.

MOST CURRENT CUTTING-EDGE TOPICS

The book presents the most current topics relating to EC, as evidenced by the many 2009 to 2011 citations. Topics such as social networking, e-learning, e-government, e-strategy, Web-based supply chain systems, collaborative commerce, mobile commerce, cloud computing, crowdsourcing, RFID, and f-commerce are presented from the theoretical point of view as well as from the application side.

INTEGRATED SYSTEMS

In contrast to other books that highlight isolated Internet-based systems, we emphasize those systems that support the enterprise and supply chain management. Social network-based systems are highlighted as are the latest innovations in global EC and in Web-based applications.

GLOBAL PERSPECTIVE

The importance of global competition, partnerships, and trade is increasing rapidly. EC facilitates exporting and importing, the management of multinational companies, and electronic trading around the globe. International examples are provided throughout

the book. Our authors and contributors are from six different countries. Examples and cases come from over 20 countries.

INTERDISCIPLINARY APPROACH

E-commerce is interdisciplinary, and we illustrate this throughout the book. Major EC-related disciplines include accounting, finance, information systems, marketing, management, operations management, and human resources management. In addition, some nonbusiness disciplines are related, especially public administration, computer science, engineering, psychology, political science, and law. Finally, economics plays a major role in the understanding of EC.

EC FAILURES AND LESSONS LEARNED

In addition to EC success stories, we also present EC failures and, where possible, analyze the causes of those failures with lessons learned (e.g., in Chapters 12 and 13).

ORGANIZATION OF THE BOOK

The book is divided into 15 chapters grouped into 5 parts.

PART 1—INTRODUCTION TO E-COMMERCE AND E-MARKETPLACES

In Part 1, we provide an overview of today's business environment as well as the fundamentals of EC and some of its terminology (Chapter 1). A discussion of electronic markets and their mechanisms and impacts is provided in Chapter 2 where special attention is given to virtual communities and social (Web 2.0) software tools.

PART 2—EC APPLICATIONS

In Part 2, we describe EC B2C applications in three chapters. Chapter 3 addresses e-tailing and electronic service industries (e.g., travel, e-banking), as they relate to individual consumers. In Chapter 4 we examine the one-to-many B2B models including auctions, and the many-to-many models including trading exchanges. In Chapter 5 we present several interesting applications, such as e-government, e-learning, collaborative commerce, and consumer-to-consumer EC.

PART 3—EMERGING EC PLATFORMS

Chapter 6 explores the developing applications in the world of wireless EC (m-commerce, l-commerce, and pervasive computing). Finally, in Chapter 7 we explore the new world of social commerce.

PART 4—EC SUPPORT SERVICES

There are four chapters in this part. Chapter 8 is dedicated to market research and advertising. Chapter 9 begins with a discussion of the need to protect computer systems. It also describes various types of computer attacks including fraud, and then it discusses how to minimize these risks through appropriate security programs. Chapter 10 describes a major EC support service—electronic payments. Chapter 11 concentrates on order fulfillment, supply chain improvement, the role of RFID, CPFR, and the use of intelligent agents.

PART 5—E-COMMERCE STRATEGY AND IMPLEMENTATION

Chapter 12 discusses strategic issues in implementing and deploying EC. The chapter also presents global EC and EC for small businesses. Chapter 13 deals with implementation issues, concentrating on justification and cost-benefit analysis, system acquisitions and developments, and impacts of EC. Chapter 14 deals with legal, ethical, and societal issues concentrating on regulatory issues, compliance, and green IT.

ONLINE PART 6—LAUNCHING ONLINE BUSINESSES AND EC PROJECTS

Chapter 15 is unique; it describes how to build an e-business from scratch, as well as how to build a webstore. It takes the reader through all the necessary steps and provides guidelines for success.

LEARNING AIDS

The text offers a number of learning aids to the student:

- **Chapter Outlines.** A listing of the main headings (“Content”) at the beginning of each chapter provides a quick overview of the major topics covered.
- **Learning Objectives.** Learning objectives at the beginning of each chapter help students focus their efforts and alert them to the important concepts to be discussed.
- **Opening Cases.** Each chapter opens with a real-world example that illustrates the importance of EC to modern corporations. These cases were carefully chosen to call attention to some of the major topics to be covered in the chapters. Following each opening case is a short section titled “What We Can Learn . . .” that links the important issues in the case to the subject matter of the chapter.
- **EC Application Cases.** In-chapter cases highlight real-world problems encountered by organizations as they develop and implement EC. Questions follow each case to help direct student attention to the implications of the case material.
- **Exhibits.** Numerous attractive exhibits (both illustrations and tables) extend and supplement the text discussion.
- **Review Questions.** Each section ends with a series of review questions about that section. These questions are intended to help students summarize the concepts introduced and to digest the essentials of each section before moving on to another topic.
- **Marginal Glossary and Key Terms.** Each key term is defined in the margin when it first appears. In addition, an alphabetical list of key terms appears at the end of each chapter and at the end of the book, with a page reference to the location where the term is discussed.
- **Managerial Issues.** At the end of every chapter, we explore some of the special concerns managers face as they prepare to do business in cyberspace. These issues are framed as questions to maximize readers’ active engagement with them.
- **Chapter Summary.** The chapter summary is linked one-to-one with the learning objectives introduced at the beginning of each chapter.
- **End-of-Chapter Exercises.** Different types of questions measure students’ comprehension and their ability to apply knowledge. Discussion Questions are intended to provoke individuals to express their thinking about relevant topics. Topics for Class Discussion and Debates promote discussions and develop critical-thinking skills. Internet Exercises are challenging assignments that require students to surf the Internet and apply what they have learned. Over 250 hands-on exercises send students to interesting websites to conduct research, investigate an application, download demos, or learn about state-of-the-art technology. The Team Assignments and Projects are challenging group projects designed to foster teamwork.
- **Closing Cases.** Each chapter ends with a comprehensive case, which is presented in somewhat more depth than the in-chapter EC Application Cases. Questions follow each case relating the case to the topics covered in the chapter.
- **List of Online Resources.** At the end of each chapter we provide a list of the chapter’s online files with a brief description of their content. In addition we provide a list of URLs linked to relevant resources for the chapter.

USING WIKIPEDIA AS A REFERENCE

We increased substantially the number of references to Wikipedia. While at the beginning there were many criticisms of the quality of the online encyclopedia, the situation has been changed in the last five years. Wikipedia introduced significant quality assurance measures

and its reliability is increasing (e.g., see en.wikipedia.org/wiki/reliability_of_wikipedia). This entry includes many academic testimonials. Also see Davidson (2007).

The academic world's view of Wikipedia has improved during the last few years, as can be inferred from the increase in the number of citations in international scientific journals. A search in the *Science Direct* (2010) database (a large online collection of published scientific research papers produced by Elsevier) for academic and scientific journal articles that are citing Wikipedia in their references yields the following results from January through June 2010.

Year Article Published	No. of Articles Citing Wikipedia
Before 2003	0
2003	1
2004	9
2005	31
2006	133
2007	330
2008	451
2009	614
2010 (January–June 2010)	478

We see several advantages to using Wikipedia as a reference. The major ones are:

- ▶ The material there is constantly updated.
- ▶ Due to space limitation, the presentation in the book is frequently too short. The presentation in Wikipedia is comprehensive.
- ▶ The presentation in Wikipedia includes, in many cases, both the positive and negative aspects.
- ▶ The presentation in Wikipedia includes many references to academic and trade sources.

SUPPLEMENTARY MATERIALS

The following support materials are also available.

ONLINE INSTRUCTOR'S RESOURCE CENTER: PEARSONGLOBALEDITIONS.COM/TURBAN

This convenient online *Instructor's Resource Center* includes all of the supplements: Instructor's Manual, Test Item File, TestGen, PowerPoint Lecture Notes, and Image Library (text art).

The **Instructor's Manual**, written by Jon Outland, includes answers to all review and discussion questions, exercises, and case questions. The **Test Item File**, written by Lisa Miller, is an extensive set of multiple-choice, true-false, and essay questions for each chapter. It is available in Microsoft Word and TestGen.

The **PowerPoint Lecture Notes**, by Judy Lang, are oriented toward text learning objectives.

COMPANION WEBSITE: PEARSONGLOBALEDITIONS.COM/TURBAN

The book is supported by a companion website that includes:

- ▶ Online Chapter 15.
- ▶ Online tutorials.
- ▶ Bonus EC Application Cases and other features can be found in each chapter's online files.
- ▶ All of the Internet Exercises from the end of each chapter in the text are provided on the website for convenient student use.

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OVERVIEW OF ELECTRONIC COMMERCE

Content

Opening Case: Net-a-Porter: Dress for Success

- 1.1 Electronic Commerce: Definitions and Concepts
- 1.2 The Electronic Commerce Field: Classification, Content, and a Brief History
- 1.3 E-Commerce 2.0: From Social Commerce to Virtual Worlds
- 1.4 The Digital World: Economy, Enterprises, and Society
- 1.5 The Changing Business Environment, Organizations' Response, and EC Support
- 1.6 Electronic Commerce Business Models
- 1.7 Benefits, Limitations, and Impacts of Electronic Commerce
- 1.8 Overview of This Book

Managerial Issues

Closing Case: E-Commerce at the German Soccer League (Bundesliga)

Learning Objectives

Upon completion of this chapter, you will be able to:

- 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. Discuss e-commerce 2.0.
- 5. Describe social commerce and social software.
- 6. Understand the elements of the digital world.
- 7. Describe the drivers of EC as they relate to business pressures and organizational responses.
- 8. Describe some EC business models.
- 9. Describe the benefits of EC to organizations, consumers, and society.
- 10. List and describe the major limitations of EC.

NET-A-PORTER: DRESS FOR SUCCESS

Will a woman buy a \$2,000 dress online without trying it on? Chic digital merchant Net-a-Porter (a UK online retailer, known as “the Net”) bet on it and proved that today’s women will purchase their dresses (for success) with a click on their iPhones, especially if the luxury clothing and accessories are international brands such as Jimmy Choo, Givenchy, or Calvin Klein.

The Opportunity

When talking about e-commerce (EC) most people think about buying online books, vitamins, CDs, or other commodity items. And this indeed was what people bought in the mid-1990s, when EC began. But in 2000,

Natalie Massenet, a fashion journalist and stylist, saw an opportunity because of the success of luxury online stores such as Blue Nile (see Chapter 2) and the fact that professional women are very busy and are willing to do more purchasing online.

The Solution

On one website, Massenet combined the efficiency of online shopping and the thrill of shopping at a chic boutique. In addition to selling items it designs in house, the Net sells merchandise from more than 300 top designers (which very few large physical stores can offer). The Net ships to 170 different countries (also something that physical stores cannot match). The offline cycle for designers has always been to show spring fashions in the fall and fall fashions in the spring so buyers would have six months lead time to buy for physical outlets. The online cycle for designers is much shorter, and therefore the Net can predict fashion trends quickly. Also, customers do not have to wait 4 to 6 months after a runway fashion show to buy a new style dress. The store offers same-day delivery (Chapter 3) in London and New York City.

The Net is running its own fashion shows in London and New York. The company also offers an online discount channel called the *Outnet*. The company uses EC and IT extensively. The Internet enables the company to offer a huge selection of items. The Internet also enables live fashion shows of top brands in real-time. Two giant flat screens in the company’s headquarters track orders as they come in (with prices and locations) to motivate the staff. The over 2 million unique visitors that come

to the sites every week are also offered the company’s online fashion magazine. Furthermore, the Net’s collection is considered to be the best in the world.

Order fulfillment is very important for the Net, and it must be done quickly. The solution includes a global distribution system. For regular orders, the company uses UPS in the United States and DHL for the rest of the world. For rush orders in London and New York, the company uses its own delivery vehicles staffed by good-looking and well-mannered employees.

A key success factor for the Net is the ability to buy what customers want from designers. Both the Net and some designers collect new information over the Internet, including from social networks, so they can shorten the lead time of new merchandise to the market.

Yet another success factor for the Net is the superb customer service that is provided both online and in the physical stores. Finally, Massenet’s knowledge of the fashion industry combined with her understanding of modern professional women’s attitudes toward online shopping helped in the design and proper operation of the Net’s site.

The company plans to take advantage of the social media environment that is changing the fashion industry (Rowe 2010).

The Results

In 2008, the company grossed \$135 million for a \$16.6 million profit. The company became profitable one year after being in business. The initial customers were friends and family followed by media executives, financiers, and wealthy women. The company was so successful that luxury goods company Richemont purchased a major financial stake in the business.

During the economic crisis of 2009, the Net’s total sales were up 45 percent, versus a 14 percent decrease for one of its major competitors (Neiman Marcus Direct, Web and paper catalog sales).

In June 2010 when the company celebrated its 10th anniversary, it opened a new website dedicated entirely to menswear, selling labels such as Ralph Lauren, YSL, Lanvin, and Burberry. With success comes competition, and the

Net’s competitors include Bluefly (low prices), Shopbop (an Amazon.com company, but it lacks of the Net’s prestige), and high-end department stores with their own online stores (Nordstrom, Neiman Marcus). But the Net has the highest prestige and growth rate. A major threat may come from eBay, which has been reaching out to high-end designers about creating their own virtual stores (hosted by eBay) where they can sell in fixed prices and also use auctions. Finally, note that in late 2010, Google entered the fashion field of e-commerce with its Boutiques.com. To stay on top of the competition, the Net is planning new ventures and expanding its business model even to include children’s clothes.

Sources: Compiled from en.wikipedia.org/wiki/Net-A-Porter (accessed April 2011), Brodie (2009), Rowe (2010), fashionablymarketing.me (accessed April 2011), and netaporter.com (accessed April 2011).



Source: Courtesy of Net-a-Porter.com. Used with permission.

WHAT WE CAN LEARN . . .

The Net's case illustrates a story of a very successful Internet start-up company that is doing business almost exclusively online. Doing business electronically is one of the major activities of e-commerce (EC), the subject of this book. Selling online is a popular and very competitive activity. In this case, a business is selling to individual customers in what is known as business-to-customer (B2C). The case demonstrates several of the topics that you will learn in this chapter and throughout the book. These are:

- a. You need to have the right idea, capitalizing on the capabilities of online business.
- b. These capabilities include the ability to offer a very large number of products so that no single company in the physical world can even come close to your inventory. You can do it because your customer base is huge, and people can buy from anywhere at any time. You can also do it with less cost since you do not need physical stores.
- c. Every company needs a business model that describes how the company operates, how it generates sales, how it provides value to the customers, and eventually provides profits to its owners. This model is a part of EC strategy and can be changed over time.
- d. In online businesses customers cannot see the physical product, store, or sellers. Therefore, a good business needs to provide services such as superb customer care, a good return policy, detailed information about the products including a superb 3-D visual presentation of each product, and trust in the brand.
- e. In a regular store you pay and pick up the merchandise. In an online business the product is shipped to you or to a pick-up location (the two physical stores in London and New York). Therefore, order fulfillment needs to be very efficient and timely.
- f. There are a few barriers of entering an online business. Success brings out the imitators very quickly, therefore competitive strategy is a must, and it may lead to a change in the business model.
- g. One advantage of EC is the ability to go global, which expands your customers' base. (The Net is selling in 170 countries.) This is part of today's business environment, which provides both threats and opportunities (these topics are discussed in this chapter).
- h. Finally, an online business is a business first, and it must use all basic and critical success factors of a business, such as having a business strategy, operating an effective supply chain, having financial viability, providing superb customer service, providing a superb relationship with its business partners (notably the suppliers), and, perhaps most important, being innovative, creative, and open-minded in order to maintain a strategic advantage.

The Net case covers major topics related to B2C and doing business online in general. These topics are discussed throughout the book. Chapter 1 provides an introduction to the field and an overview of the book. The chapter also covers the digital economy, the business environment and drivers, benefits, and limitations of EC. Finally, the chapter introduces the emerging topics of social networks and social commerce.

1.1 ELECTRONIC COMMERCE: DEFINITIONS AND CONCEPTS

Let's begin by looking at what the management guru Peter Drucker had to say about EC in 2002:

The truly revolutionary impact of the Internet Revolution is . . . e-commerce—that is, the explosive emergence of the Internet as a major, perhaps eventually the major, worldwide distribution channel for goods, for services, and, surprisingly, for managerial and professional jobs. This is profoundly changing economics, markets and industry structure, products and services and their flow; consumer segmentation, consumer values and consumer behavior; jobs and labor markets. But the impact may be even greater on societies and politics, and above all, on the way we see the world and ourselves in it. (Drucker 2002, pp. 3–4)

DEFINING ELECTRONIC COMMERCE

electronic commerce (EC)

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

Electronic commerce (EC) is the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, mostly the Internet and intranets. For an overview, see en.wikipedia.org/wiki/E-commerce. EC is often confused with e-business.

DEFINING E-BUSINESS

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.

Some people view the term *commerce* as describing only buying and selling transactions conducted between business partners. If this definition of commerce is used, the term *electronic commerce* would be fairly narrow. Thus, many use the term *e-business* instead. **E-business** refers to a broader definition of EC, not just the buying and selling of goods and services, but also servicing customers, collaborating with business partners, conducting e-learning, and conducting electronic transactions within an organization. However, others view e-business as comprising those activities that do not involve buying or selling over the Internet, such as collaboration and intrabusiness activities; that is, it is a *complement* of the narrowly defined e-commerce. In this book, we use the broadest meaning of electronic commerce, which is basically equivalent to the broadest definition of e-business. The two terms will be used interchangeably throughout the text.

MAJOR EC CONCEPTS

Several other concepts are frequently used in conjunction with EC. The major ones are as follows.

Pure Versus Partial EC

EC can take several forms depending on the degree of digitization (the transformation from physical to digital) of: (1) the ordering system (order, payment), (2) the processing (e.g., create product/service), and (3) the shipment (delivery) method. The possible configurations of these three dimensions (Exhibit 1.1) determine different levels of EC. Each dimension may be physical or digital. These alternatives create eight cubes, each of which has three dimensions. In traditional commerce, all three dimensions of the cube are physical (lower-left cube); in pure EC, all dimensions are digital (upper-right cube). All other cubes include a mix of digital and physical dimensions.

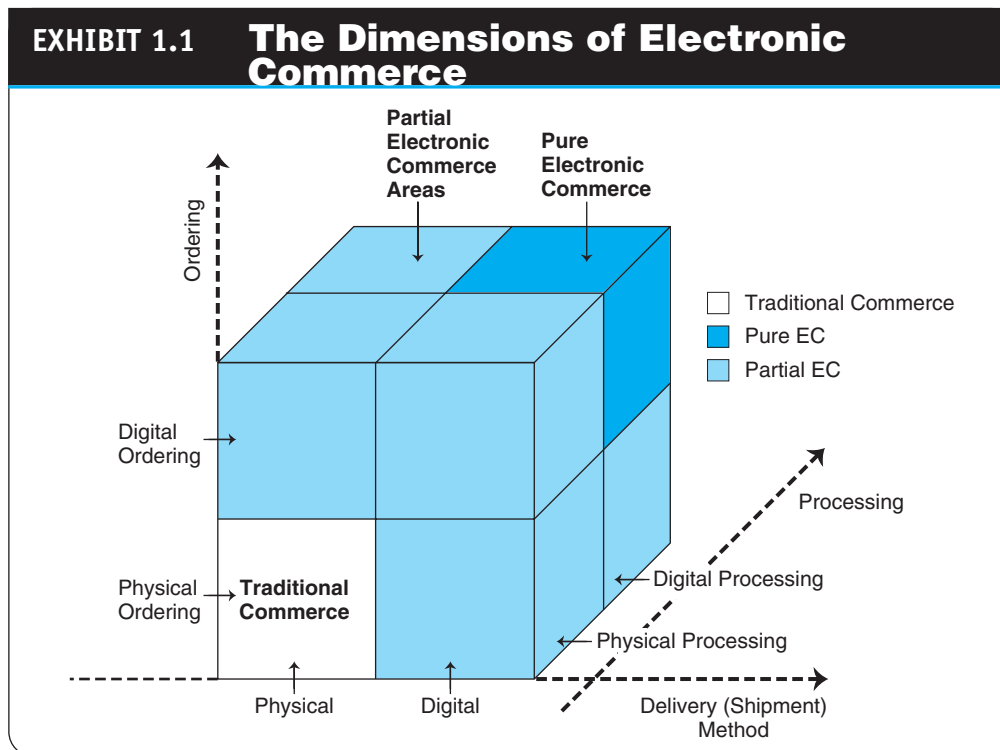
If there is at least one digital dimension, we consider the situation EC, but only partial EC. For example, purchasing a computer from Dell's website or a book from Amazon.com is partial EC, because the merchandise is physically delivered. However, buying an e-book from Amazon.com or a software product from Buy.com is pure EC, because ordering, processing and delivery to the buyer are all digital.

EC Organizations

Purely physical organizations (companies) are referred to as **brick-and-mortar (old economy) organizations**, whereas companies that are engaged only in EC (pure or partial) are

brick-and-mortar (old economy) organizations

Old-economy organizations (corporations) that perform their primary business offline, selling physical products by means of physical agents.



Source: Drawn by E. Turban.

considered **virtual (pure-play) organizations**. **Click-and-mortar (click-and-brick) organizations** are those that conduct some EC activities, usually as an additional marketing channel. Gradually, many brick-and-mortar companies (e.g., Sears, Walmart, Target) are changing to click-and-mortar ones (see the closing case about IKEA in Chapter 3).

ELECTRONIC MARKETS AND NETWORKS

EC can be conducted in an **electronic market (e-marketplace)** where buyers and sellers meet online to exchange goods, services, money, or information. Electronic markets are connected to sellers and buyers via the Internet or to its counterpart within organizations, an *intranet*. An **intranet** is a corporate or government network that uses Internet tools, such as Web browsers, and Internet protocols. Another computer environment is an **extranet**, a network that uses the Internet to link intranets of several organizations in a secure manner.

Section 1.1 ► REVIEW QUESTIONS

1. Define EC and e-business.
2. Distinguish between pure and partial EC.
3. Define click-and-mortar and brick and mortar organizations.
4. Define electronic markets.
5. Define intranets and extranets.

1.2 THE ELECTRONIC COMMERCE FIELD: CLASSIFICATION, CONTENT, AND A BRIEF HISTORY

The EC field is diversified so some classification can help. A good example of how a company effectively uses EC is Dell (Online File W1.1).

The Dell case demonstrates several ways that businesses can use EC to improve their bottom line. Dell is not the only company that is doing business online. Thousands of other

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, usually as an additional marketing channel.

electronic market (e-marketplace)

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

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.



companies, from retailers to hospitals, are moving in this direction. In general, selling and buying electronically can be either business-to-consumer (B2C) or business-to-business (B2B). In B2C, online transactions are made between businesses and individual consumers, such as when a person purchases a dress at net-a-porter.com or a computer at dell.com. In B2B, businesses make online transactions with other businesses, such as when Net-a-Porter electronically buys merchandise from its designers. Net-a-Porter also collaborates electronically with its partners and provides customer service online (e-CRM). Several other types of EC will be described later in this chapter.

According to the U.S. Census Bureau (2010), e-commerce sales in 2008 accounted for 39 percent of total sales of all manufacturing activities in the United States, 20.6 percent of merchant wholesalers, 3.6 percent of all retailing, and 2.1 percent of all sales in selected service industries. The grand total of EC has been \$3,708 billion of which \$3,416 billion was B2B (92.2 percent) and \$288 billion was B2C (7.9 percent). The results over 5 years are shown in Exhibit 1.2. Notice the sharp increase in manufacturing compared to other sectors (e.g., see Tode 2009). For a more detailed breakdown, see the U.S. Census Bureau Report as well as Plunkett Research (2011).

Note that in China EC is exploding. According to eMarket Services News (2010), EC sales in China have doubled in the first six months of 2010.

These activities comprise the essence of EC, the elements of which are shown in the following framework.

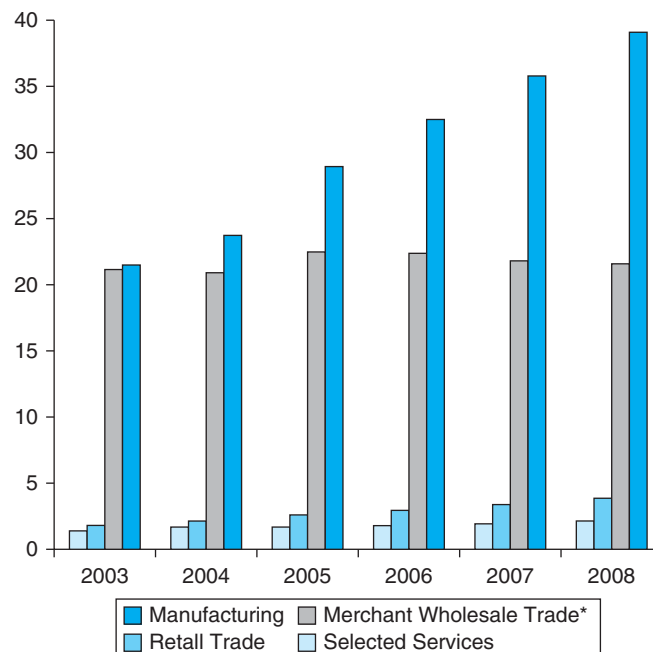
AN EC FRAMEWORK

The EC field is a diverse one, involving many activities, organizational units, and technologies. Therefore, a framework that describes its contents can be useful. Exhibit 1.3 introduces one such framework.



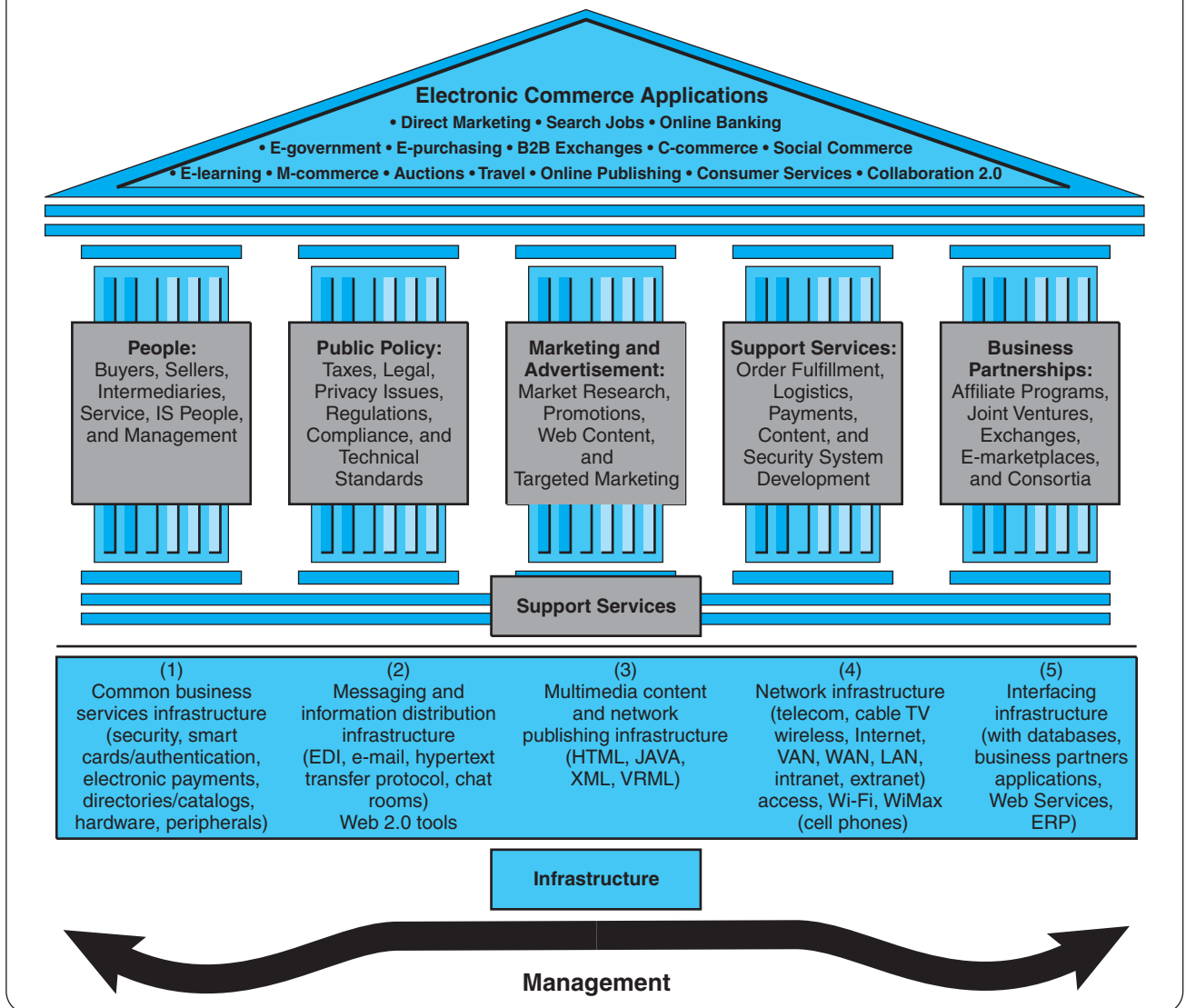
As shown in the exhibit, there are many EC applications (top of exhibit), some of which are illustrated in Online File W1.1 about Dell; others will be shown throughout the book (see also en.wikipedia.org/wiki/E-commerce). To execute these applications, companies need

EXHIBIT 1.2 E-Commerce as Percent of Total Value: 2003–2008



* Merchant Wholesale Trade data include MSBOs in 2003–2008.

Source: census.gov/estats (accessed December 2010).

EXHIBIT 1.3 A Framework for Electronic Commerce

the right information, infrastructure, and support services. Exhibit 1.3 shows that EC applications are supported by infrastructure and by the following five support areas (shown as pillars in the exhibit):

- **People.** Sellers, buyers, intermediaries, information systems and technology specialists, other employees, and any other participants comprise an important support area.
- **Public policy.** Legal and other policy and regulatory issues, such as privacy protection and taxation, which are determined by governments. Included as part of public policy is the issue of technical standards, which are established by government and/or industry-mandated policy-making groups. Compliance with regulations is an important issue.
- **Marketing and advertising.** Like any other business, EC usually requires the support of marketing and advertising. This is especially important in B2C online transactions, in which the buyers and sellers usually do not know each other.

- ▶ **Support services.** Many services are needed to support EC. These range from content creation to payments to order delivery.
- ▶ **Business partnerships.** Joint ventures, exchanges, and business partnerships of various types are common in EC. These occur frequently throughout the *supply chain* (i.e., the interactions between a company and its suppliers, customers, and other partners).

The infrastructure for EC is shown at the bottom of the exhibit. *Infrastructure* describes the hardware, software, and networks used in EC. All of these components require good *management practices*. This means that companies need to plan, organize, motivate, devise strategy, and restructure processes, as needed, to optimize the business use of EC models and strategies.

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.

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 who seek sellers to bid on products or services they need.

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.

CLASSIFICATION OF EC BY THE NATURE OF THE TRANSACTIONS AND THE RELATIONSHIPS AMONG PARTICIPANTS

A common classification of EC is by the nature of the transactions or the relationship among the participants. The major types of EC transactions are listed below:

Business-to-Business (B2B)

All the participants in **business-to-business (B2B)** e-commerce are either businesses or other organizations. Today, over 90 percent of EC volume is B2B. For Dell, the entire wholesale transaction is B2B. Dell buys all of its parts through e-commerce, and sells its products to businesses (and individuals) using e-commerce.

Business-to-Consumer (B2C)

Business-to-consumer (B2C) EC includes retail transactions of products or services from businesses to individual shoppers. The Net-a-Porter opening case illustrates B2C. The typical shopper at Net-a-Porter or Amazon.com is an individual. This EC type is also called **e-tailing**.

Business-to-Business-to-Consumer (B2B2C)

In **business-to-business-to-consumer (B2B2C)** EC, a business provides some product or service to a client business. The client business maintains its own customers, who may be its own employees, to whom the product or service is provided. An example is godiva.com. The company sells chocolates directly to business customers. Those businesses may then give the chocolates as gifts to employees or to other businesses. Godiva may mail the chocolate directly to the recipients (with compliments of . . .). Another interesting example of B2B2C can be found at wishlist.com.au.

Consumer-to-Business (C2B)

The **consumer-to-business (C2B)** category includes individuals who use the Internet to sell products or services to organizations and individuals who seek vendors to bid on products or services for them. Priceline.com is a well-known organizer of C2B travel service transactions.

Intrabusiness EC

The **intrabusiness EC** category includes all internal EC organizational activities that involve the exchange of goods, services, or information among various units and individuals in that organization. Activities can range from selling corporate products to one's employees, to online training, and to collaborative design efforts.

Business-to-Employees (B2E)

The **business-to-employees (B2E)** category is a subset of the intrabusiness category in which an organization delivers services, information, or products to individual employees. A major category of employees is *mobile employees*, such as field representatives or repair services that go to customers. EC support to such employees is also called *business-to-mobile employees (B2ME)*.

Consumer-to-Consumer (C2C)

In the **consumer-to-consumer (C2C)** category consumers transact directly with other consumers. Examples of C2C include individuals selling residential property, cars, and so on in online classified ads. EBay's auctions are mostly C2C. The advertising of personal services over the Internet and the online selling of knowledge and expertise are other examples of C2C.

Collaborative Commerce

When individuals or groups communicate or collaborate online, they may be engaged in **collaborative commerce (c-commerce)**. For example, business partners in different locations may design a product together using collaborative software and online procedures (see Chapter 5).

E-Government

In **e-government** EC, a government entity buys or provides goods, services, or information from or to businesses (G2B) or from or to individual citizens (G2C). Governments can deal also with other governments (G2G).

The previous categories are illustrated in Exhibit 1.4.

Many examples of the various types of EC transactions will be presented throughout this book.

business-to-employees (B2E)

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

consumer-to-consumer (C2C)

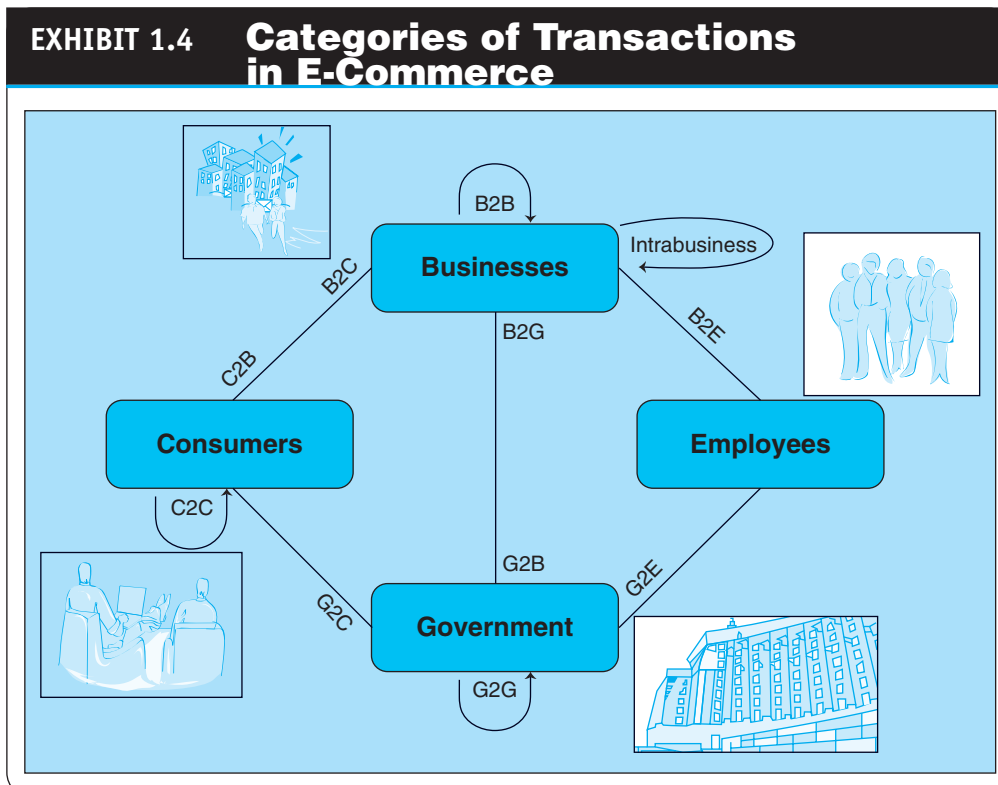
E-commerce model in which consumers sell directly to other consumers.

collaborative commerce (c-commerce)

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

e-government

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



A BRIEF HISTORY OF EC



EC applications were first developed in the early 1970s with innovations such as *electronic funds transfer (EFT)* (see en.wikipedia.org/wiki/Guide_to_E-payments), whereby funds could be routed electronically from one organization to another. However, the use of these applications was limited to large corporations, financial institutions, and a few other daring businesses. Then came *electronic data interchange (EDI)*, a technology used to electronically transfer routine documents, which later expanded from financial transactions to other types of transactions (see Online Tutorial T11 for more on EDI). EDI enlarged the pool of participating companies from financial institutions to manufacturers, retailers, services, and many other types of businesses. Such systems were called *interorganizational systems (IOS)* applications, and their strategic value to businesses has been widely recognized. More new EC applications followed, ranging from travel reservation systems to online stock trading.

The Internet began life as an experiment by the U.S. government in 1969, and its initial users were a largely technical audience of government agencies, academic researchers, and scientists. Some users started to place personal classifieds on the Internet. A major milestone in the development of EC was the introduction of the World Wide Web in the early 1990s. This allowed companies to have a presence on the Internet with both text and photos. When the Internet became commercialized and users began flocking to participate in the World Wide Web in the early 1990s, the term *electronic commerce* was coined. EC applications rapidly expanded. A large number of so-called dot-coms, or *Internet start-ups*, also appeared. One reason for this rapid expansion was the development of new networks, protocols, and EC software. The other reason was the increase in competition and other business pressures (see discussion in Section 1.5).

Since 1995, Internet users have witnessed the development of many innovative applications. Almost every medium- and large-sized organization in the world now has a website, and most large U.S. corporations have comprehensive portals through which employees, business partners, and the public can access corporate information. Many of these sites contain tens of thousands of pages and links. In 1999, the emphasis of EC shifted from B2C to B2B, and in 2001 from B2B to B2E, c-commerce, e-government, e-learning, and m-commerce. In 2005, social networks started to receive quite a bit of attention, as did m-commerce and wireless applications. As of 2009 EC added social commerce channels, in what is known as f-commerce—the commercial activities on Facebook (see Chapter 7). Given the nature of technology and Internet usage, EC will undoubtedly continue to grow, shift, and change. More and more EC successes are emerging. For a comprehensive ready-reference guide to EC including statistics, trends, and in-depth profiles of hundreds of companies, see Plunkett (2011) and en.wikipedia.org/wiki/E-commerce.

While looking at the history of EC, one must keep in mind the following.

The Interdisciplinary Nature of EC

Because EC is a new field, it is just now developing its theoretical and scientific foundations. From just the brief overview of the EC framework and classification, you can probably see that EC is related to several different disciplines. The major academic EC disciplines include the following: *accounting, business law, computer science, consumer behavior, economics, engineering, finance, human resource management, management, management information systems, marketing, public administration, and robotics*.

The Google Revolution

During its early years, EC was impacted by companies such as Amazon.com, eBay, AOL, and Yahoo!. However, since 2001 no other company has probably had more of an impact on EC than Google. Google related Web searches to targeted advertisements much better than its competitors did. Today, Google is much more than just a search engine; it employs many innovative EC models, it is involved in many EC joint ventures, and it impacts both organizational activities and individual lives. For more details, see Visé and Malseed (2008).

F-Commerce

Given the popularity of Facebook and the rapidly increasing commercial activities on the site, some believe that Facebook is revolutionizing e-commerce. Thus, they coin the term **f-commerce**, pointing to the increased role of Facebook in the e-commerce field as of 2009.

f-commerce

E-commerce activities conducted on Facebook or influenced by the site.

EC Failures

Starting in 1999, a large number of EC companies, especially e-tailing and B2B exchanges, began to fail (see disobey.com/ghostsites). Well-known B2C failures include eToys, Xpedito, MarchFirst, Drkoop, Webvan, and Boo. Well-known B2B failures include Chemdex, Vento, and Verticalnet. (Incidentally, the history of these pioneering companies is documented in David Kirch's "The Business Plan Archive" [businessplanarchive.org].) A survey by Strategic Direction (2005) found that 62 percent of dot-coms lacked financial skills, and 50 percent had little experience with marketing. Similarly, many companies failed to ensure they had the inventory and distribution setup to meet the fluctuating and increasing demand for their products. The reasons for these and other EC failures are discussed in Chapters 3, 4, and 11. In 2008, many start-ups related to Web 2.0 and social commerce started to collapse (per blogs.cioinsight.com/knowitall/content001/startup_deathwatch_20.html).

Does the large number of failures mean that EC's days are numbered? Absolutely not! First, the dot-com failure rate is declining sharply. Second, the EC field is basically experiencing consolidation as companies test different business models and organizational structures. Third, some pure EC companies, including giants such as Amazon.com, are expanding operations and generating increased sales. Finally, the click-and-mortar model seems to work very well especially in e-tailing (e.g., Sears, Walmart, Target, and Best Buy).

EC Successes

The last few years have seen the rise of extremely successful virtual EC companies such as eBay, Google, Facebook, Yahoo!, Amazon.com, VeriSign, AOL, and E*TRADE. Click-and-mortar companies such as Cisco, Target online, General Electric, IBM, Intel, and Schwab also have seen great success. Additional success stories include start-ups such as Alloy.com (a young-adults-oriented portal), Blue Nile (Chapter 2), Ticketmaster, Zappos (Application Case 1.1), Expedia, Net-a-Porter, and Campusfood (see Online File W1.2).



THE FUTURE OF EC

Today's predictions about the future size of EC, provided by respected analysts such as comScore, eMarketer.com, and Forrester, vary. For a list of sites that provide statistics on EC, see Chapter 3, Exhibit 3.1. For example, in 2008, 80 percent of Generation X (Internet users ages 33 to 44) shopped online. Of Generation Y (users ages 18 to 32) 71 percent shopped online. Interest in online shopping is considerably lower among the youngest and oldest groups; 38 percent of online teens buy products online, as do 56 percent of Internet users ages 64 to 72, and 47 percent ages 73 and older (reported by Jones and Fox 2009).

The number of Internet users worldwide was estimated to be around 2 billion in 2010, up from 1.5 billion in 2008 (Schonfeld 2009). According to IDC's Digital Marketplace Model and Forecast, 50 percent of all Internet users will shop online by 2009 (IDC 2008). EC growth will come not only from B2C, but also from B2B and from newer applications such as e-government, e-learning, B2E, and c-commerce. 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 has been growing every year. With more people on the Internet more EC will come.

The rising price of petroleum, along with repercussions of the 2008–2010 financial meltdown, should motivate people to shop online and look for bargains where price comparison is easy and fast (e.g., try buy.com). Another important factor is the increase in mobile devices and especially smartphones. According to Weintraub (2010) the number of smartphones almost doubled from 2008–2009, and the number of mobile devices is overtaking PCs. This makes EC activities easier (from any place, any time).

Finally, EC is now entering its second phase of life as illustrated next.

CASE 1.1

EC Application

ZAPPOS: A SUCCESS STORY OF SELLING FOOTWEAR ONLINE

Zappos.com Inc. ("Zappos.com;" zappos.com) is an online retailer with one of the largest selection of shoes anywhere—online or offline. It is owned by Amazon.com.

The Opportunity

Nick Swinmurn founded the company in 1999 after spending a day at a San Francisco mall looking for a pair of shoes and returning home empty-handed. If one store had the right style, it did not have the right color; the next store had the right color, but it did not have the correct size. Nick tried to locate the shoes he wanted online, but after a frustrating day of browsing, he discovered that he was unable to find online what he wanted.

Swinmurn discovered that there was no major online retailer that specialized in shoes. So, he decided to create a website that offered the very best selection in shoes in terms of brands, styles, colors, sizes, and widths.

The Solution

The company's strategy was to offer such a huge selection that the customers would say WOW! And by 2010 this selection exceeded 3.4 million items (from over 1,300 vendors)—unmatchable by any online or offline store.

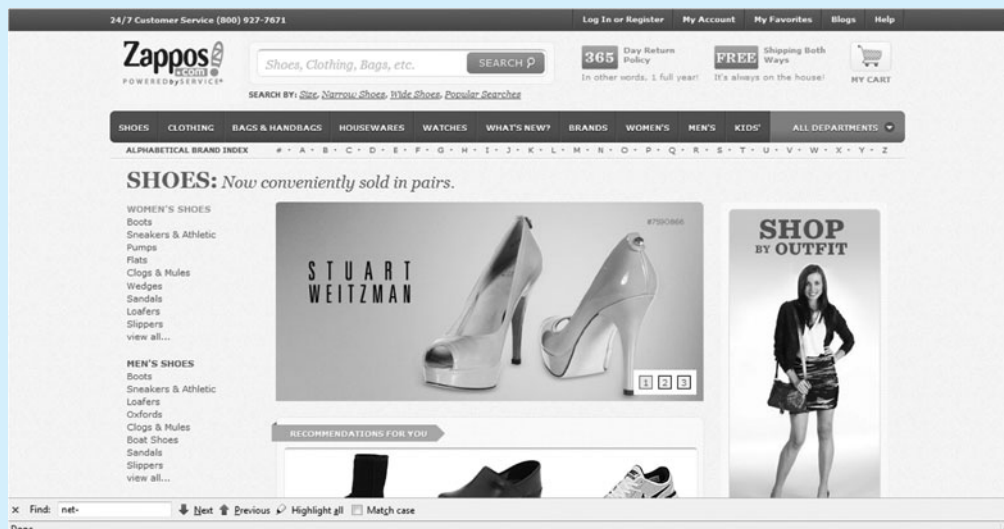
The company's initial business model was to sell only online, and only shoes. This model has evolved to also sell several related products, ranging from jewelry to clothes, (and even electronics and video games) and to also sell via a few physical outlets.

Believing that the speed at which a customer receives an online purchase plays a very important role in customer retention, Zappos constructed huge warehouses containing

everything it advertises. The company offers free shipping with domestic orders and often delivers the next day.

In order to ensure fast order fulfillment, the company worked with Arup, a global firm of designers, engineers, planners, and business consultants providing a diverse range of professional services to its suppliers; designers; and other business partners around the globe. For example, the logistics designers worked with the Zappos warehouse automation team to design a world-class "direct-to-customer" fulfillment system. The high-speed material handling system (from FKI Logistex) is fully automated and housed in a Shepherdsville, Kentucky, 800,000 square foot warehouse. The system allows rapid delivery to customers no matter where they are located. The Zappos shopping experience also features extensive website search options and clear views of every product (see photo below). Unlike most other online retailers, Zappos does not offer an item for sale unless it is physically available in its warehouse. Once the last size or color of a shoe is shipped out, it is no longer offered on the website. The moment a new style, size, or color is available in the warehouse, it instantly pops up on the website. This "live inventory" is made possible by a full-service photo lab in the fulfillment center, where digital photographs of each item are taken from a variety of angles and immediately uploaded to Zappos.com. The photo lab even includes a studio to shoot live human models for certain shoes, apparel, and accessories.

The company's culture is also a key to the success of the business. Without dedicated and excited employees, the company becomes an adequate company, not the best.



Source: Courtesy of Zappos.com. Used with permission.

(continued)

CASE 1.1 (continued)

The culture has matured over the life of the company to include 10 core values from which the company developed the culture, brand, and business strategies. These values can be found online at the company's website.

Zappos also realized that, along with the best selection, customer service is also a key success factor (see Hsieh 2010b). Therefore, Zappos operates under the theory that providing an excellent shopping experience (instead of maximizing profits) will be followed by sales growth.

The company's "WOW" philosophy of customer experiences and the huge selection are supplemented by 365-day free returns and 24/7 customer service. The company uses EC Web 2.0 mechanisms such as blogs, Tweets, discussion forums, e-newsletters, user-contributed videos by customers (watch at Zappos.com/video-experience), and more to create a community of loyal buyers and foster its relationship with its customers. The company now has a presence on Facebook and Twitter (e.g., see twitter.zappos.com).

The employees are members of an enterprise social network, (an in-house social network) and it is used to keep employees happy and, therefore, more productive. Employees are well trained to work as individuals, as well as in teams. The company provides EC mechanisms to foster individual and team work.

Doing business online requires a security system to protect customers' and vendors' data. Zappos provides encryption and other security measures to protect customer data.

The Results

Gross merchandise sales started at "almost nothing" in 1999 and doubled every year to reach more than \$1 billion in 2008. The total number of employees grew from 3 in 1999 to over 1,500 in 2009.

By focusing on service and product selection that WOWs the customers, employees, and vendors, Zappos is on its way to fulfilling its vision that one day 30 percent of all retail transactions in the United States of shoes and related items will be sold online; and people will buy from the company with the best service and the best selection—Zappos will be that company. Zappos is facing strong competition (see list at wikipedia.org), but so far its competitive advantage has worked very well.

In July 2009, Amazon.com "acquired" Zappos. However, the Zappos brand continues to be separate from the Amazon.com brand. Zappos has access to many of Amazon.com's resources, but continues to build the brand and culture just as it has in the past. The Zappos mission remains the same: delivering happiness to all stakeholders, including employees, customers, and vendors. Zappos plans to continue to maintain its relationships with its vendors, and Amazon.com will continue to maintain its relationships it has with its own vendors.

Sources: Compiled from zappos.com (accessed April 2011), Hsieh 2010a and 2010b, *Logistics Online* (2008), Taylor (2008), *Wall Street Journal* (2009), and en.wikipedia.org/wiki/Zappos.com (accessed April 2011).

Questions

1. List the major critical success factors of the company.
2. Why was Amazon.com interested in the company?
3. What is "WOW" about?
4. Why did the company change its business model?
5. How is order fulfillment being done?
6. Access wikihow.com/customize-your-shoes. Discuss how such customization may affect Zappos's business.

Section 1.2 ► REVIEW QUESTIONS

1. List the major components of the EC framework.
2. List the major transactional types of EC.
3. Describe the major landmarks in EC history.
4. List some EC successes and failures.
5. Summarize the future of EC.

1.3 E-COMMERCE 2.0: FROM SOCIAL COMMERCE TO VIRTUAL WORLDS

The first generation of EC involved mainly trading, e-services, and corporate-sponsored collaboration. We are moving now into the second generation of EC, which we call e-commerce 2.0. It is based on Web 2.0 tools, social networks, and virtual worlds, the result of social computing.

social computing

An approach aimed at making the human-computer interface more natural.

SOCIAL COMPUTING

Social computing is computing that is concerned with the intersection of social behavior and information systems. It is performed with a set of tools that includes blogs, mashups, instant messaging, social network services, discussion forums, wikis, social bookmarking, and other *social software*, and marketplaces (see Chapter 2). Whereas traditional computing systems concentrate on supporting organizational activities and business processes and zero in on cost reduction and increases in productivity, social computing concentrates on improving collaboration and interaction among people and on user-generated content. It is a shift from traditional top-down management communication to a bottom-up strategy where individuals in communities become a major organizational power. In social computing and commerce, people can collaborate online, get advice from one another and from trusted experts, and find goods and services that their friends, whom they trust, recommend.

Example. Advances in social computing are affecting travel decisions and arrangements. Travelers share information and warn others of bad experiences at sites such as tripadvisor.com.

The premise of social computing is to make socially produced information available to all. This information may be provided directly, as when systems show the number of users who have rated a book or a movie (e.g., at amazon.com and netflix.com). Or, the information may be provided indirectly, as is the case with Google's page rank algorithms, which sequence search results based on the number of page hits. In all of these cases, information is produced by individuals and it is available to all, usually for free. Social computing is largely facilitated by Web 2.0 tools.

WEB 2.0**Web 2.0**

The second generation of Internet-based services that lets people collaborate and share information online in new ways, such as social networking sites, wikis, communication tools, and folksonomies.

The term **Web 2.0** was coined by O'Reilly Media in 2004 to refer to a supposed second generation of Internet-based tools and services that let people generate and control content and collaborate and share information online in perceived new ways, such as social networking sites, wikis, communication tools, and folksonomies. O'Reilly Media, in collaboration with MediaLive International, used the phrase as a title for a series of conferences. Since then, it has become a popular, ill-defined, and often criticized buzzword in the technical and marketing communities.

O'Reilly (2005) divided Web 2.0 into the following four levels:

- ▶ Level 3 applications, the most "Web 2.0" oriented, exist only on the Internet, deriving their effectiveness from interhuman connections and from the network effects that Web 2.0 makes possible and growing in effectiveness as people make more use of them. O'Reilly offered eBay, Craigslist, Wikipedia, delicio.us, Skype, Dodgeball, and AdSense as examples of level 3 applications.
- ▶ Level 2 applications can operate offline but gain advantages from going online. O'Reilly cited Flickr as an example, which benefits from its shared photo database and from its community-generated tag database.
- ▶ Level 1 applications operate offline but gain features online. O'Reilly pointed to Writely (now Google Docs & Spreadsheets) and iTunes (because of its music store portion) as examples.
- ▶ Level 0 applications work as well offline as online. O'Reilly offered the examples of MapQuest, Yahoo! Local, and Google Maps.

Karakas (2009) views Web 2.0 as a new digital ecosystem, which can be described through five C's: creativity, connectivity, collaboration, convergence, and community.

For more information on Web 2.0, see en.wikipedia.org/wiki/WEB_2.0. The major characteristics of Web 2.0 are presented in Online File W1.3. The major tools of Web 2.0 are described in Chapter 2, and the applications are described in most chapters. Also, browse Don Hinchcliffe's socialcomputingjournal.com for an open forum about the



Internet, society, collective intelligence, and the future. For Web 2.0 definitions, explanations, and applications see en.wikipedia.org/wiki/Web_2.0 and Chapter 7.

SOCIAL NETWORKS AND SOCIAL NETWORK SERVICES

The most interesting e-commerce application in recent years has been the emergence of social and enterprise social networks. Originating from online communities (Chapter 2), these networks are growing rapidly and providing for many new EC initiatives, revenue models, and business models. (See innovative.com for “new business models.”)

A **social network** is a social structure composed of nodes (which are generally individuals, groups, or organizations) that are tied by one or more specific types of interdependencies, such as values, visions, ideas, financial exchange, friendship, kinship, dislike, conflict, or trade. The structures are often very complex.

In its simplest form, a social network can be described as a map of all relevant ties (connection) between the nodes. The network can also be used to determine the social capital of individual participants. These concepts are often displayed in a social network diagram, where nodes are the points and ties are the lines.

Participants in a *social network* congregate on a website where they can create their own homepage for free and on which they can write blogs and wikis; post pictures, videos, or music; share ideas; and link to other Web locations they find interesting. Social networkers chat using instant messaging and Twitter and tag the content they post with their own key words, which makes the content searchable and facilitates the conduct of people-to-people interactions and transactions.

Social Networking Services

Social networking services (SNSs), such as LinkedIn and Facebook, provide a Web space for people to build their homepages, which the services organizations host for free, and they also provide basic communication and other support tools for conducting different activities. Social networks are people oriented. For example, a 15-year-old Filipino singer named Pempengco thought her music career was doomed after she lost a local singing competition in 2006, but YouTube gave her a “cyber” of a lifetime when a video clip of her singing Jennifer Holliday’s “And I’m Telling You I Am Not Going” caught the attention of TV host Ellen DeGeneres and Grammy Award-winning producer David Foster. Initially, social networks were used for only social activities. Today, corporations are starting to have an interest in the business aspects of social networks (e.g., see linkedin.com, a network that connects businesses by industry, functions, geography, and areas of interest). For more on social networking, see De Jonge (2008) and en.wikipedia.org/wiki/Social_networking.

Social Networking

We define **social networking** as the execution of any Web 2.0 activity, such as blogging and/or having a presence in a social network.

The following are examples of representative social network services:

- ▶ **Facebook.com**: The most visited social network website.
- ▶ **YouTube.com** and **metacafe.com**: Users can upload and view video clips.
- ▶ **Flickr.com**: Users share and comment on photos.
- ▶ **Friendster.com**: Provides a platform to find friends and make contacts.
- ▶ **Hi5.com**: A popular global social network.
- ▶ **Cyworld.nate.com**: Asia’s largest social networking website.
- ▶ **Habbo.com**: Entertaining country-specific sites for kids and adults.
- ▶ **MySpace.com**: Facilitates socialization for people of all ages.

ENTERPRISE SOCIAL NETWORKS

Business-oriented social networks can be public, such as LinkedIn.com. As such, they are owned and managed by an independent company. Another type of business-oriented social

social network

A category of Internet applications that help connect friends, business partners, or individuals with specific interests by providing free services such as photo presentation, e-mail, blogging, and so on using a variety of tools.

social networking service (SNS)

A service that builds online communities by providing an online space for people to build free homepages and that provides basic communication and support tools for conducting different activities in the social network.

social networking

The creation or sponsoring of a social network service and any activity, such as blogging, done in a social network (external or internal).

network is private, owned by corporations and operated inside them. These are known as *enterprise social networks*.

Example of an Enterprise Social Network

Carnival Cruise Lines sponsors a social networking site (carnivalconnections.com) to attract cruise fans. Visitors use the site to exchange opinions, organize groups for trips, and much more. It cost the company \$300,000 to set up the site, but Carnival anticipates that the cost will be covered by increased business.

SOCIAL COMMERCE

E-commerce activities are conducted in social networks by using social software (i.e., Web 2.0 tools) are referred to as **social commerce**. As of 2009, and rapidly increasing in 2010 and 2011, social commerce began to explode. We will return to social commerce in Chapter 7.

Here are some examples of social commerce.

social commerce

The e-commerce activities conducted in social networks and/or by using social software (i.e., Web 2.0 tools).

- ▶ Dell computer claims to have made \$6.5 million by selling computers on Twitter in two years (Nutley 2010). Also Dell generates ideas from community members (Idea Storm site).
- ▶ Procter & Gamble sells its Max Factor brand cosmetics through Facebook.
- ▶ Disney allows people to book tickets on Facebook without leaving the social network.
- ▶ PepsiCo gives a live notification when its customers are close to physical stores (grocery, restaurants, gas stations) that sell Pepsi products. Then PepsiCo sends them coupons and discount information using Foursquare (see Chapter 7).
- ▶ Starbucks is using extensive promotions on Facebook including generating ideas from the members via Starbucks Idea website (see Chapter 7 for details).
- ▶ Mountain Dew attracts video game lovers and sport enthusiasts via Dewmocracy contests. The company also uses the most dedicated community members to contribute ideas. The company used Facebook, Twitter, and YouTube to unite consumers through a common interest.
- ▶ Levi's advertises on Facebook by enabling consumers to autopopulate a "shopping cart" based on what their friends think they would like. There is also a video on YouTube to educate consumers on how to use Facebook to shop for and with their friends. (See web-strategist.com/blog/2010/04/30/social-commerce-breakdown-how-levis-and-facebook-prompt-your-friends-to-get-you-to-buy for details.)
- ▶ Wendy's uses Facebook and Twitter to award \$50 gift cards to those who have the funniest and quirkiest responses to various challenges.

Overall, close to 1 million companies have had a presence on Facebook by summer 2010. For more applications see Chapter 7.

VIRTUAL WORLDS AND SECOND LIFE

virtual world

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

A special class of social networking is the *virtual world*. A **virtual world**, also known as a *metaverse*, is a 3-D computer-based simulated environment built and owned by its residents. In addition to creating buildings, people can create and share cars, clothes, and many other items. Community members inhabit virtual spaces and interact via *avatars*. These avatars are usually depicted as textual, 2-D, or 3-D graphical presentations, although other forms are possible. The essentials of virtual worlds and the prime example, Second Life (secondlife.com), are presented in Chapter 2.

Until 2007, virtual worlds were most often limited to 3-D games, including massively multiplayer online games. More recently, they have become a new way for people to socialize, and even do business. For example, there.com focuses more on social networking activities, such as chatting, creating avatars, interacting, playing, and meeting people.

How Students Make Money in a Virtual World

If you cannot get a summer (or other) job, try a job in a virtual world. With summer jobs in short supply, more young people are pursuing money-making opportunities in virtual worlds. According to Alter (2008), a new breed of young entrepreneurs is honing their computer skills to capitalize on the growing demand for virtual goods and services.

Alter provides examples of six young and successful entrepreneurs:

- ▶ Mike Mikula, age 17, uses graphic design tools to build virtual buildings. His avatar in Teen Second Life, Mike Denny, helps him to earn \$4,000 a month as a builder and renovator of sites on Second Life.
- ▶ Ariella Furman, age 21, earns \$2,000 to \$4,000 a month using her avatar Ariella Languish in Second Life. She is a machinima, a filmmaker who works exclusively in Second Life. She directs avatars using a virtual producer and works in the virtual world for companies like IBM and Nestlé.
- ▶ John Eikenberry, age 25, earns \$2,000 to \$4,000 a month building Second Life neighborhoods, creating malls, coffee shops, and an auditorium over 16 landscaped acres called regions. His avatar is Lordfly Digeridoo in Second Life.
- ▶ Kristina Koch, age 17, is a character designer. Her avatar in Teen Second Life, Silver Bu, earns \$600 to \$800 a month using Second Life tools to add effects, such as shadows, to avatars. She and her boyfriend also design and sell virtual fairy wings and wizard's robes to dress avatars.
- ▶ Mike Everest, age 18, is a virtual hunter and trader, selling the skins of what he hunts. He also learned how to transform virtual ore into virtual weapons, which he sells. His avatar in the virtual world of Entropia Universe, Ogulak Da Basher, earns \$200 to \$1,000 a month. He is the family's primary money maker, and he was able to finance his brother's college education.
- ▶ Twins Andy and Michael Ortman, age 19, are inventors. Their avatars in Teen Second Life, Alpha Zaius and Ming Chen, earn about \$2,500 a month each. The engineering majors work for Deep Think Labs, a virtual world development company based in Australia. They program Open Simulator, which allows companies and individuals to hold private meetings and training sessions in virtual environments similar to Second Life.

THE MAJOR TOOLS OF WEB 2.0

Web 2.0 uses dozens of tools such as wikis, RSS feeds, blogs, and microblogs (e.g., Twitter). You can transmit to a list of recipients short messages (up to 140 characters) via the Internet and wireless or wireline devices. As of 2009, Twitter became a major tool of Web 2.0 with diversified business applications. These are described in Chapter 2.

Section 1.3 ▶ REVIEW QUESTIONS

1. Define social computing and list its characteristics.
2. Define Web 2.0 and list its attributes.
3. Define social networks.
4. Describe the capabilities of social network services (SNSs).
5. Describe Facebook. Why is it so popular?
6. What is an enterprise social network?
7. Define social commerce.
8. Describe e-commerce activities on Facebook. Why is it referred to as f-commerce?
9. Define virtual worlds and list their characteristics.
10. Describe some ways for students with computer skills to make money from virtual worlds.

1.4 THE DIGITAL WORLD: ECONOMY, ENTERPRISES, AND SOCIETY

The digital revolution is upon us. We see it every day at home and work, in businesses, in schools, in hospitals, on the roads, in entertainment, and even in wars. Next, we describe three elements of the digital world: economy, enterprises, and society.

THE DIGITAL ECONOMY

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 economy*.

The **digital economy** refers to an economy that is based on digital technologies, including digital communication networks (e.g., the Internet, intranets, extranets, and VANS), computers, software, and other related information technologies. The digital economy is sometimes called the *Internet economy*, the *new economy*, or the *Web economy*. This platform displays the following characteristics:

- ▶ A vast array of digitizable products—databases, news and information, books, magazines, TV and radio programming, movies, electronic games, musical CDs, and software—are delivered over a digital infrastructure anytime, anywhere in the world, interconnected by a global grid (see Bisson et al. 2010). We are moving from analog to digital, even the media is getting digital (TVs as of February 2009).
- ▶ Consumers and firms conduct financial transactions digitally through digital currencies that are carried via networked computers and mobile devices.
- ▶ Microprocessors and networking capabilities are embedded in physical goods such as home appliances and automobiles.
- ▶ Information is transformed into a commodity.
- ▶ Knowledge is codified.
- ▶ Work and production are organized in new and innovative ways.

The term *digital economy* also refers to the convergence of computing and communications technologies on the Internet and other networks and the resulting flow of information and technology that is stimulating EC and vast organizational changes. This convergence enables all types of information (data, audio, video, etc.) to be stored, processed, and transmitted over networks to many destinations worldwide. Exhibit 1.5 describes the major characteristics of the digital economy.

The digital revolution accelerates EC mainly by providing competitive advantage to organizations. The digital revolution also enables many innovations, and new ones appear almost daily. The digital revolution provides the necessary technologies for EC and creates major changes in the business environment, as described in Section 1.5.

THE DIGITAL ENTERPRISE

digital enterprise

A new business model that uses IT in a fundamental way to accomplish one or more of three basic objectives: reach and engage customers more effectively, boost employee productivity, and improve operating efficiency. It uses converged communication and computing technology in a way that improves business processes.

The term *digital enterprise* has a number of interpretations. It usually refers to an enterprise, such as Net-a-Porter, Amazon.com, Google, Facebook, or Ticketmaster, that uses computers and information systems to automate most of its business processes. The **digital enterprise** is a new business model that uses IT in a fundamental way to accomplish one or more of three basic objectives: (1) reach and engage customers more effectively, (2) boost employee productivity, and (3) improve operating efficiency. It uses converged communication and computing technology in a way that improves business processes. The major characteristics of a digital enterprise are listed in Exhibit 1.6, where they are compared with those of a traditional enterprise.

A digital enterprise uses networks of computers to facilitate the following:

- ▶ All internal communication is done via an intranet, which is the counterpart of the Internet inside the company.
- ▶ All business partners are reached via the Internet, or via a group of secured intranets, called an extranet, or via value-added private communication lines.

EXHIBIT 1.5 Major Characteristics of the Digital Economy

Area	Description
Globalization	Global communication and collaboration; global electronic marketplaces and competition.
Digital system	From TV to telephones and instrumentation, analog systems are being converted to digital ones.
Speed	A move to real-time transactions, thanks to digitized documents, products, and services. Many business processes are expedited by 90 percent or more.
Information overload and intelligent search	Although the amount of information generated is accelerating, intelligent search tools can help users find what they need.
Markets	Markets are moving online. Physical marketplaces are being replaced by electronic markets; new markets are being created, increasing competition.
Digitization	Music, books, pictures, videos, and more are digitized for fast and inexpensive distribution.
Business models and processes	New and improved business models and processes provide opportunities to new companies and industries. Cyberintermediation and no intermediation are on the rise.
Innovation	Digital and Internet-based innovations continue at a rapid pace. More patents are being granted than ever before.
Obsolescence	The fast pace of innovation creates a high rate of obsolescence.
Opportunities	Opportunities abound in almost all aspects of life and operations.
Fraud	Criminals employ a slew of innovative schemes on the Internet. Cybercons are everywhere.
Wars	Conventional wars are changing to cyberwars.
Organizations	Organizations are moving to digital enterprises.

EXHIBIT 1.6 The Digital Versus Brick-and-Mortar Company

Brick-and-Mortar Organizations	Digital Organizations (Enterprises)
Selling in physical stores	Selling online
Selling tangible goods	Selling digital goods as well
Internal inventory/production planning	Online collaborative inventory forecasting
Paper catalogs	Smart electronic catalogs
Physical marketplace	Electronic marketplace
Use of telephone, fax, VANs, and traditional EDI	Use of computers, smartphones, the Internet, and extranets
Physical auctions, infrequently	Online auctions, everywhere, any time
Broker-based services, transactions	Electronic infomediaries, value-added services
Paper-based billing	Electronic billing
Paper-based tendering	Electronic tendering (reverse auctions)
Push production, starting with demand forecasting	Pull production, starting with an order (build-to-order)
Mass production (standard products)	Mass customization, build-to-order
Physical-based commission marketing	Affiliated, virtual marketing
Word-of-mouth, slow and limited advertisement	Explosive viral marketing, in particular in social networks
Linear supply chains	Hub-based supply chains
Large amount of capital needed for mass production	Less capital needed for build-to-order; payments can be collected before production starts
Large fixed cost required for plant operation	Small fixed cost required for plant operation
Customers' value proposition is frequently a mismatch (cost > value)	Perfect match of customers' value proposition (cost ≤ value)

corporate portal

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

The vast majority of EC is done on computers connected to these networks. Many companies employ a **corporate portal**, which is a gateway for customers, employees, and partners to reach corporate information and to communicate with the company.

The major concern of many companies today is how to transform themselves into digital (or at least partially) enterprises so that they can take part in the digital economy. For example, Harrington (2006) describes why and how, as a CEO, he transformed the Thomson Corp. from a traditional \$8 billion publishing business into an electronic information services provider and publisher for professionals in targeted markets. In five years, revenue increased over 20 percent and profit increased by more than 65 percent.

Note that the term *enterprise* refers to any kind of organization, small or large. An enterprise can be a manufacturing plant, a hospital, a university, a TV network or even an entire city. They are all moving toward being digitized.

THE DIGITAL SOCIETY

The final, and perhaps most important, element of the *digital world* is people and the way they live. Clearly, the digital society has changed contemporary life with regard to almost any activity we can think of—work, play, shopping, entertainment, travel, medical care, education, and much more. Almost every day new digital applications are developed. Just think about your digital camera, your digital TV, your digital car, and almost anything else. It is only natural that people are utilizing EC at an accelerating rate. Let's take a look at some examples:

- ▶ **Kaboodle.com** makes it easy to shop online as a community with your friends (see Chapter 7). You can share recommendations and discover new products and services with your community friends. Shopping at Kaboodle can be fun. You can discover many useful things from people with similar tastes and styles and discuss with them certain vendors and products. You can even enrich your life with a wish list.
- ▶ Google has developed cars that drive themselves automatically in traffic (autonomous vehicles). It might seem like an unusual project for Google, but it could actually have big benefits. The cars are running on Google's Android operating system. Safety is the project's main purpose. Google believes that the technology could nearly half the number of automobile-related deaths because computers are supposedly better at driving than humans in the right circumstances. There are other hypothetical benefits too. The vehicles' instant reaction time and 360-degree awareness allow them to drive closer together on the highway than humans can, reducing traffic congestion. They could be more careful when operating the gas, reducing fuel consumption. Another benefit would be the hour or so of daily commute time the car owner would save. Instead of driving, he or she could either be productive or entertained in the vehicle, doing work on a wireless Internet connection or watching television. Unfortunately, the most optimistic projection put this technology at least eight years away from market, though. Legal hassles are among the myriad problems; all of the current traffic laws assume that a human driver is present in the vehicle. A related smart car is being developed by GM (see Franklin 2009).
- ▶ As of 2008, high school girls are able to solicit feedback from their friends regarding 70 different prom dresses that were displayed by Sears on Facebook. This enabled Sears to extend the shopping experience into the social sphere.
- ▶ As of 2009, users can use *social smartphones* (e.g., the Android handset from Motorola) to connect quickly and easily to mobile features in social networks such as Facebook. For example, users can communicate directly in messages with networks members' friends who are on their phone contact lists.
- ▶ According to Farivar (2004), VIP patrons of the Baja Beach Club in Barcelona, Spain, can have RFID chips, which are the size of a grain of rice, implanted into



their upper arms, allowing them to charge drinks to a bar tab when they raise their arm toward the RFID reader. The RFID (see Online Tutorial T3) is a tiny tag that contains a processor and antenna; it can communicate wirelessly with a detecting unit in a reader over a short distance. “You don’t call someone crazy for getting a tattoo,” says Conrad Chase, director of Baja Beach Clubs International. “Why would they be crazy for getting this?”

- ▶ Dryers and washers in some college dorms are hooked to the Web. Students can punch a code into their cell phones or sign in at esuds.net and check the availability of laundry machines. Furthermore, they can receive e-mail alerts when their wash and dry cycles are complete. Once in the laundry room, a student activates the system by swiping a student ID card or keying in a PIN number. The system automatically injects premeasured amounts of detergent and fabric softener, at the right cycle time.
- ▶ Using his blog site (oneredpaperclip.blogspot.com), Kyle MacDonald of Canada was able to trade a red paper clip into a three-bedroom house. He started by advertising in the barter section of craigslist.org that he wanted something bigger or better for one red paper clip. In the first iteration, he received a fish-shaped pen, and he posted on Craigslist again and again. Following many iterations and publicity on TV, after one year, he traded for a house (MacDonald 2007).
- ▶ Camera-equipped cell phones are used in Finland as health and fitness advisors. A supermarket shopper using the technology can snap an image of the bar code on a packet of food. The phone forwards the code number to a central computer, which sends back information on the item’s ingredients and nutritional value. The computer also calculates how much exercise the shopper will have to do to burn off the calories based on the shopper’s height, weight, age, and other factors.
- ▶ Doggyspace.com allows dog lovers from around the globe to come together. You can build a page and a profile and post a video or photos to show off your dog, creating a social experience around the pets you care about. The site offers medical and other advice. Like in any other social network, people can create groups of friends (e.g., with the same type of dog) with whom to share their doggy experiences.
- ▶ A remote medical monitoring system can help with early diagnosis of heart failure. A person stands on a special bathroom scale that can wirelessly transmit data to a clinician’s screen. A computer analyzes the weight change and triggers an alarm for a suspected anomaly that predicts possible trouble. A medical technician then calls the person to discuss medication, the need to see a doctor, and so forth. The system keeps patients healthier and cuts health care costs.
- ▶ Online dating and matching services are becoming more and more popular. Companies such as eHarmony, Match.com, JDate, and Yahoo! Personals are leading hundreds of other companies worldwide that are making matches. For example, Match.com has begun offering free profile and photo tips via an online video with Jay Manuel, of the television show *America’s Next Top Model*. The company also sells services for \$2 to \$6 a month that offer advice on dating and ways to make profiles and photographs stand out. Match.com treats online dating as if the candidates are on stage and being viewed by thousands of prospects. It suggests spending some time backstage getting ready. Several companies can help you to get ready, mostly for free (e.g., dating-profile.com and e-cyrano.com).
- ▶ A Polish priest has installed an electronic reader in his church for schoolchildren to leave their fingerprints in order to monitor their attendance at mass. The pupils mark their fingerprints every time they go to church over three years and if they attend 200 masses they will be freed from the obligation of having to pass an exam prior to their confirmation. The pupils like the idea and also the priest

who invented it. The students say that they do not have to stand in a line to get the priest's signature (confirming presence at the mass).

- ▶ Bicycle computers (by Bridgestone Cycle Co.) can automatically keep track of your travel distance, speed, time, and calorie consumption. Travel data are stored for 30 days, and you can transmit it to your computer. For cycling communities websites see bikewire.net and cyclingforum.com.
- ▶ Queen Elizabeth II opened several pages on Facebook telling people what she is doing every day. Her family and staff opened pages too.
- ▶ During his presidential campaign, Barack Obama purchased Internet ads featured in 18 video games through Microsoft's Xbox Live Service. His objective was to target young adult males, who are difficult to reach through traditional campaign advertising. It is estimated that this and similar activities netted him at least 2 percent of the vote. Some claim that without such tactics Obama would have lost the election.
- ▶ Champions of the World Series of Poker used to be people in their 50s and 60s who spent years playing the game to gain the experience needed to win. But in 2009, Joe Cada from the United States won the main event at the World Series of Poker, at the age of 21. Cada regularly plays about a dozen tournaments at a time online, or three at a time in heads-up cash games, which have allowed him to gain a vast amount of experience in a short period of time.



A comprehensive example of the use of several EC models in the 2008 Olympics is provided in Online File W1.4. One of the most interesting phenomena of the digital society is the change in the way that politicians interact with the public. This topic will be discussed in Chapter 5.

Section 1.4 ▶ REVIEW QUESTIONS

1. Define the digital revolution and list its components.
2. List the characteristics of the digital economy.
3. Define a digital enterprise.
4. Compare traditional and digital enterprises.
5. Describe the digital society.
6. Visit doggyspace.com and dogtoys.com. Compare the two sites and relate their contents to the digital society.

1.5 THE CHANGING BUSINESS ENVIRONMENT, ORGANIZATIONS' RESPONSE, AND EC SUPPORT

EC is driven by many technological, economic, and social factors. These are frequently related to global competition and rapid changes in the business environment.

THE CHANGING BUSINESS ENVIRONMENT

Economic, legal, societal, and technological factors and the trend for globalization have created a highly competitive business environment in which customers are becoming more and more powerful. These environmental factors can change quickly, vigorously, and sometimes in an unpredictable manner. Companies need to react quickly to both the problems and the opportunities resulting from this new business environment. Because the pace of change and the level of uncertainty are expected to accelerate,

organizations are operating under increasing pressures to produce more products, faster, and with fewer resources. For example, the financial crisis of 2008–2010 has resulted in many companies going out of business or being acquired by other companies. It has also presented the opportunity for large banks, for example, to buy even larger ones. These business environment changes impact the manner in which companies operate, and many firms have restructured themselves and their information systems, as well as their EC initiatives.

Let's see how all of these impact organizational performance.

PERFORMANCE, BUSINESS PRESSURES, AND ORGANIZATIONAL RESPONSES AND EC SUPPORT

Most people, sports teams, and organizations are trying to improve their *performance*. For some, it is a challenge; for others, it is a requirement for survival. Yet for others it is the key to improved quality of life, profitability, or reputation.

Most organizations measure their performance periodically, comparing it to some metrics and to the organization's mission, objectives, and plans. Unfortunately, in business, performance often depends not only on what you do but also on what others are doing, as well as on what is happening in the business and physical environments. The *business environment* may create significant pressures that can impact performance in uncontrollable, or sometimes even in unpredictable, ways.

The Business Environment and Performance Impact Model

The model shown in Exhibit 1.7 illustrates how the business environment (left) creates pressures, problems, and opportunities that drive what organizations are doing in their business processes (the “Our Company” box). Other drivers are the organization's mission, goals, strategy, and plans. Business processes include competencies, activities, and responses to the environmental pressures that we call *critical response activities* or *solutions*. The business processes and activities result in measurable performance, which provides solutions to problems/opportunities, as well as feedback to the attainment of the mission, strategy, goals, and plans.

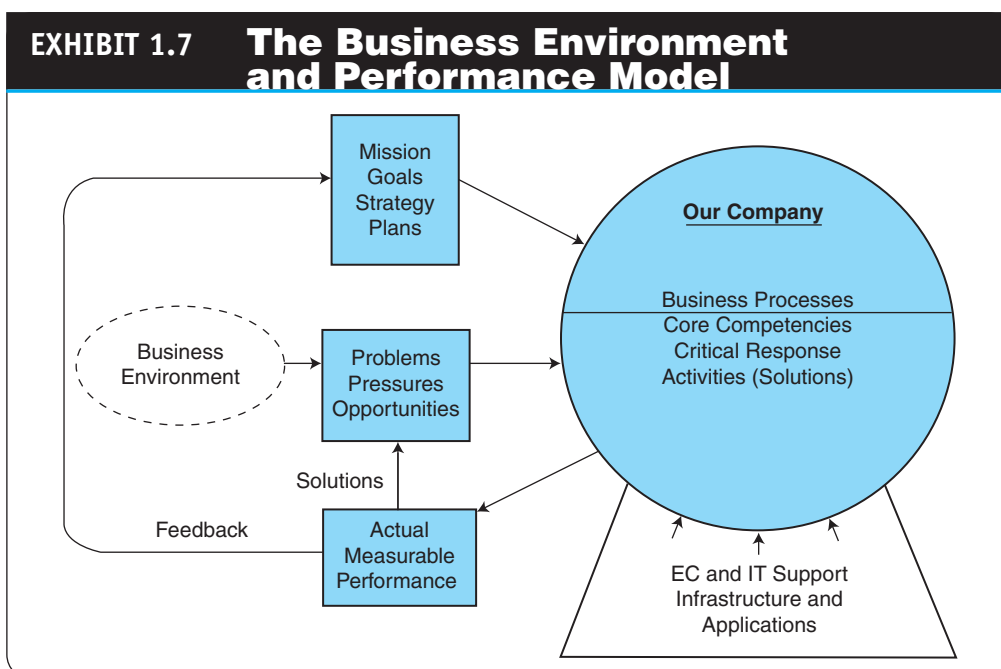


EXHIBIT 1.8 Major Business Pressures

Market and Economic Pressures	Societal Pressures	Technological Pressures
Strong competition	Changing nature of workforce	Increasing innovations and new technologies
Global economy	Government deregulation, leading to more competition	Rapid technological obsolescence
Regional trade agreements (e.g., NAFTA)	Compliance (e.g., Sarbanes-Oxley Act)	Increases in information overload
Extremely low labor costs in some countries	Shrinking government subsidies	Rapid decline in technology cost versus labor cost (technology becomes more and more attractive)
Frequent and significant changes in markets	Increased importance of ethical and legal issues	
Increased power of consumer	Increased societal responsibility of organizations	
Political and government	Rapid political changes	
	Terrorism	

Notice that in Exhibit 1.7 EC and IT provide support to organizations' activities and to the resultant performance, countering the business pressures. Now, let's examine the two major components of the model: business pressures and organizational responses.

Business Pressures

In this text, business pressures are divided into the following categories: market (economic), societal, and technological. The main types of business pressures in each category are listed in Exhibit 1.8. (Note that some of the business environment conditions create opportunities.)

Organizational Response Strategies

How can organizations operate in such an environment? How can they deal with the threats and the opportunities? To begin with, many traditional strategies are still useful in today's environment. However, because some traditional response activities may *not* work in today's turbulent and competitive business environment, many of the old solutions need to be modified, supplemented, or discarded. Alternatively, new responses can be devised. Critical response activities can take place in some or all organizational processes, from the daily processing of payroll and order entry to strategic activities such as the acquisition of a company. Responses can also occur in the supply chain (see the Dell case in Online File W1.1). A response activity can be a reaction to a specific pressure already in existence, or it can be an initiative that will defend an organization against future pressures. It can also be an activity that exploits an opportunity created by changing conditions as shown in the opening case of Net-a-Porter.

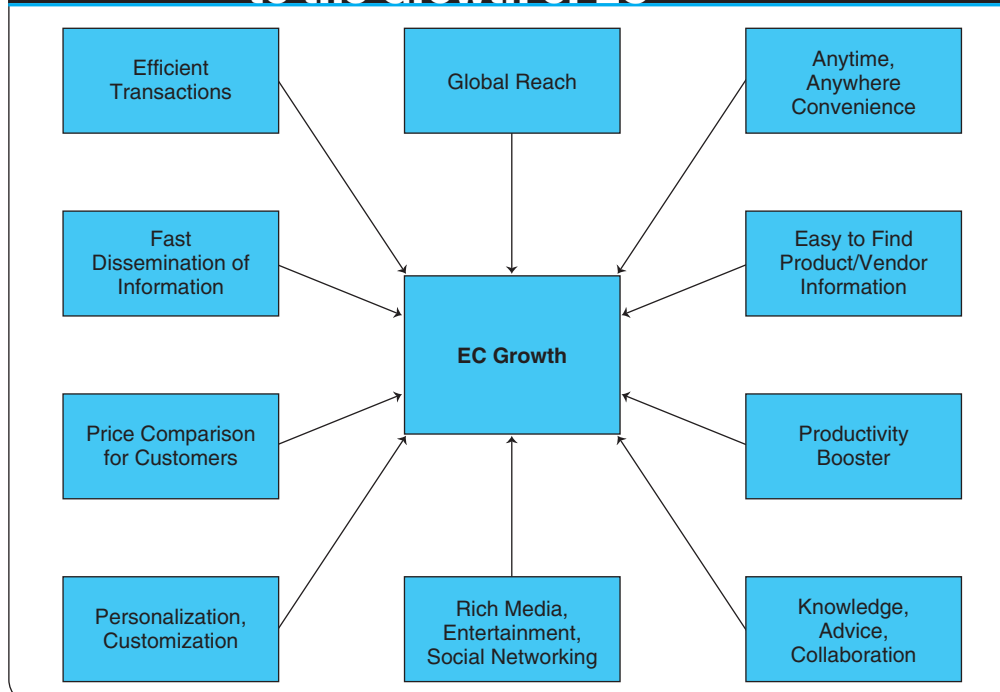
The Support of EC Many response activities can be greatly facilitated by EC, and this fuels the growth of the field. In some cases, EC is the *only* solution to certain business pressures. The reasons for this are to the capabilities of EC. Representative EC-supported response activities are provided in Exhibit 1.9 and in Online File W1.5.

The Major Capabilities of E-Commerce

EC initiatives play an increasing role in supporting innovations and strategies that help companies to compete and flourish, especially companies that want to be proactive and introduce changes rather than be reactive and respond to them. What makes EC suitable for such a role is a *set of capabilities and technological developments*; the major capabilities and developments are summarized in Exhibit 1.10.

EXHIBIT 1.9 Innovative Organizational Responses

Response Strategy	Descriptions
Strategic systems	Improve strategic advantage in industry.
Agile systems	Increase ability to adapt to changes and flexibility.
Continuous improvements and business process management	Using enterprise systems to improve business processes. Introduce e-procurement.
Customer relationship management	Introduce programs to improve customer relationships using the Internet and EC models.
Business alliances and partner relationship management (PRM)	Create joint ventures, partnerships, e-collaboration, virtual corporations, and others for win-win situations—even with competitors.
Electronic markets	Use both private and public electronic markets to increase efficiency and effectiveness.
Cycle time reduction	Increase speed of operation and reduce time to market.
Empowering employees, especially on the front line (interacting with customers, partners)	Provide employees with computerized decision aids so they can make quick decisions on their own.
Mass customization in a build-to-order system	Produce customized products (services) rapidly at reasonable cost to many, many customers (mass) as Dell does.
Intrabusiness use of automation	Many intrabusiness activities, from sales force automation to inventory management can be improved with e-commerce and m-commerce.
Knowledge management	Appropriate creation, storage, and dissemination of knowledge using electronic systems, increases productivity, agility, and competitiveness.
Customer selection, loyalty, and service	Identify customers with the greatest profit potential; increase likelihood that they will want the product or service offering; retain their loyalty.
Human capital	Select the best employees for particular tasks or jobs, at particular compensation levels.
Product and service quality	Detect quality problems early and minimize them.
Financial performance	Better understand the drivers of financial performance and the effects of nonfinancial factors.
Research and development	Improve quality, efficacy, and where applicable, safety of products and services.
Social networking	Innovative marketing, advertising, collaboration, and innovation using the power of the crowd.

EXHIBIT 1.10 Major Capabilities That Contribute to the Growth of EC

The essential capabilities that drive EC are the ability to



- ▶ Provide efficient and effective business transactions.
- ▶ Provide global reach for selling, buying, or finding business partners.
- ▶ Conduct business anytime, from anywhere, in a convenient way. For example, there are more than 250 million wireless subscribers in the United States (Burns 2007).
- ▶ Disseminate information rapidly, frequently in real time (e.g., the Beijing Olympics case, see Online File W1.4).
- ▶ Compare prices.
- ▶ Customize products and personalize services.
- ▶ Use rich media in advertisement, entertainment, and social networking.
- ▶ Receive experts' and other users' advice quickly.
- ▶ Collaborate in different ways, both internally and externally.
- ▶ Share information and knowledge.
- ▶ Increase productivity and performance, reduce costs, and compress time (e.g., by having smarter applications).
- ▶ Easily and quickly find information about vendors, products, and competitors.

Because EC technology is improving over time and decreasing in cost, its comparative advantage is continuously increasing, further contributing to the growth of EC.

Section 1.5 ▶ REVIEW QUESTIONS

1. List the components of the business environment performance model and explain the model.
2. List the major factors in today's business environment.
3. List some of the major response activities taken by organizations.
4. List and briefly discuss five capabilities of EC (consult Exhibit 1.8).

1.6 ELECTRONIC COMMERCE BUSINESS MODELS

One of the major characteristics of EC is that it enables the creation of new business models (Pralhad and Krishnan 2008). A **business model** is a method of doing business by which a company can generate revenue to sustain itself. The model also spells out where the company is positioned in the value chain; that is, by what activities the company adds value to the product or service it supplies. (The *value chain* is the series of value-adding activities that an organization performs to achieve its goals, such as making profit, at various stages of the production process.) In many cases one company may have several business models.

Business models are a subset of a business plan (see the Online Tutorial T2 at the book's website).

Note that the January-February 2011 issue of *Harvard Business Review* is dedicated to business model innovations (5 articles), including several topics related to e-commerce.

THE STRUCTURE AND PROPERTIES OF BUSINESS MODELS

Several different EC business models are possible, depending on the company, the industry, and so on.

A comprehensive business model is composed of the following elements:

- ▶ A description of the *customers* to be served and the company's relationships with these customers, including what constitutes value from the customers' perspective (*customers' value proposition*).
- ▶ A description of all *products* and *services* the business will offer and the markets in which they will be sold.

business model

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



- ▶ A description of the *business process* required to make and deliver the products and services including distribution and marketing strategies.
- ▶ 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 (including human resources).
- ▶ A description of the organization's *supply chain*, including *suppliers* and other *business partners*.
- ▶ A list of the major competitors, their market share, and strengths/weaknesses.
- ▶ The competitive advantage offered by the business model.
- ▶ The anticipated organizational changes and any resistance to change.
- ▶ A description of the revenues expected (*revenue model*), anticipated costs, sources of financing, and estimated profitability (*financial viability*).

Models also include a *value proposition*, which is an analysis of the benefits of using the specific model (tangible and intangible), both the customers and the organization. A detailed discussion of and examples of business models and their relationship to business plans is presented in Online Tutorial T2.

This chapter presents two of the models' elements: *revenue models* and *value propositions*.



Revenue Models

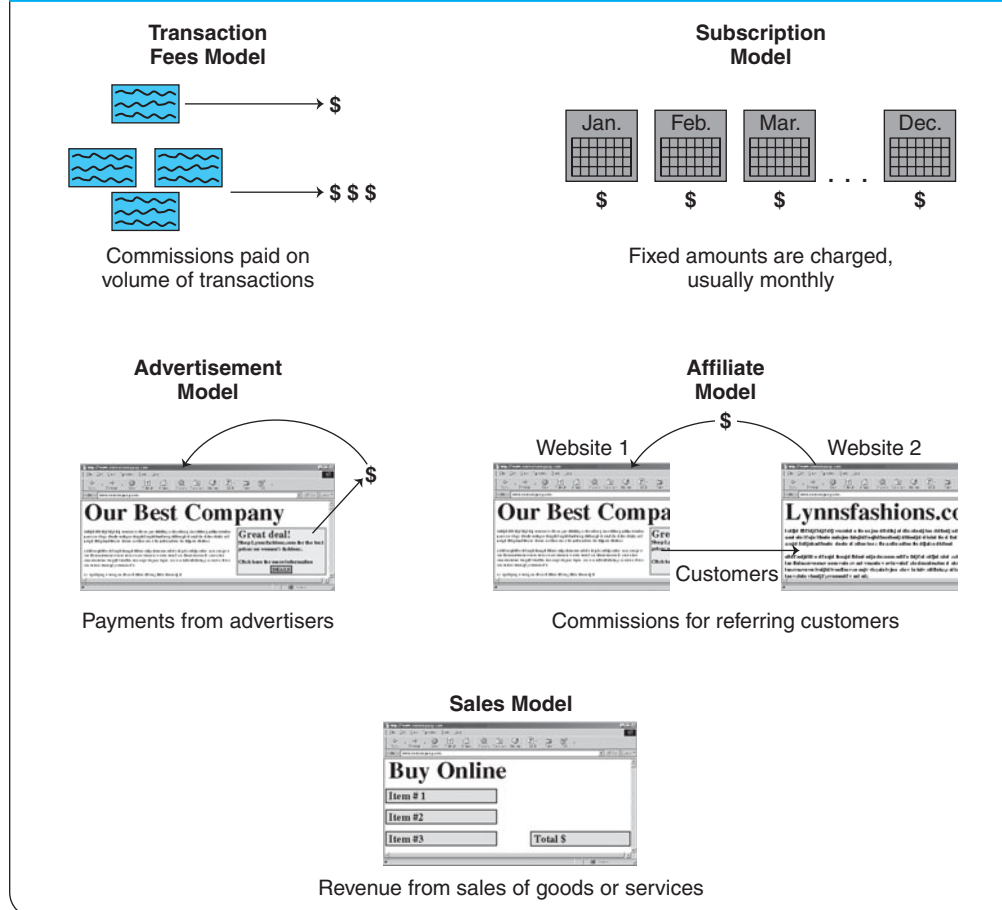
A revenue model outlines how the organization, or the EC project, will generate revenue. For example, the revenue model for Zappos shows revenue from online sales of shoes. The major revenue models are:

- ▶ **Sales.** Companies generate revenue from selling merchandise or services on their websites. An example is when Net-a-Porter, Amazon.com, or Godiva sells a product online.
- ▶ **Transaction Fees.** A company receives a commission based on the volume of transactions made. For example, when a home owner sells a house, he or she typically pays a transaction fee to the broker. The higher the value of the sale, the higher the total transaction fee. Alternatively, transaction fees can be levied *per transaction*. With online stock trades, for example, there is usually a fixed fee per trade, regardless of the volume.
- ▶ **Subscription Fees.** Customers pay a fixed amount, usually monthly, to get some type of service. An example would be the access fee for AOL. Thus, AOL's primary revenue model is subscription (fixed monthly payments).
- ▶ **Advertising Fees.** Companies charge others for allowing them to place a banner on their sites (see Chapter 8).
- ▶ **Affiliate Fees.** Companies receive commissions for referring customers to others' websites. A good program is available at Amazon.com.
- ▶ **Licensing Fees.** Another revenue source is licensing fees (e.g., see datadirect-technologies.com). Licensing fees can be assessed as an annual fee or a per usage fee. Microsoft receives fees from each workstation that uses Windows NT, for example.
- ▶ **Other Revenue Sources.** Some companies allow people to play games for a fee or to watch a sports competition in real time for a fee (e.g., see espn.go.com).

A company uses its *revenue model* to describe how it will generate revenue and its *business model* to describe the *process* it will use to do so. Exhibit 1.11 summarizes five common revenue models.

The revenue model can be part of the value proposition or it may supplement it.

EXHIBIT 1.11 Common Revenue Models



Innovative Revenue Models for Individuals. The Internet allows for innovative revenue models, some of which can be utilized even by individuals, as demonstrated by the following two examples.

Example 1: Buy Low–Sell High. This strategy has been known for generations, but now you have a real chance. How about buying stuff cheap on Craigslist (or other online classified sites) and resell it for a 50 to 200 percent profit in an auction on eBay? Try it, you might make money. Some people make it even bigger. The person who bought the domain name *pizza.com* for \$20 in 1994 sold it for \$2.6 million in April 2008 (one of the many he purchased).

Example 2: Traffic Arbitrage. This is a more complex implementation of buy low–sell high. Basically, you buy ad space on less expensive search engines (such as Microsoft's Ad Center). The search engine then directs traffic to your website via key words. Then you fill your personal website with Google's ads (see Chapter 8 for AdSense). When users come to your website and click on Google's ads, they are directed to advertisers' websites. The advertisers pay Google for the referrals, and Google shares the fees with you.

Value Proposition

value proposition

The benefits a company can derive from using EC.

Business models also include a value-proposition statement. A **value proposition** refers to the benefits, including the intangible, nonquantitative ones, that a company can derive from using the model. In B2C EC, for example, a value proposition defines how a company's product or service fulfills the needs of customers. The *value proposition* is an important part of the marketing plan of any product or service.

Specifically, how do e-marketplaces create value? Amit and Zott (2001) identify four sets of values that are created by e-business: search and transaction cost efficiency, complementarities, lock-in, and novelty. *Search and transaction cost efficiency* enables faster and more informed decision making, wider product and service selection, and greater economies of scale—cost savings per unit as greater quantities are produced and sold (e.g., through

demand and supply aggregation for small buyers and sellers). *Complementarities* involve bundling some goods and services together to provide more value than from offering them separately. Lock-in is attributable to the high switching cost that ties customers to particular suppliers. *Novelty* creates value through innovative ways for structuring transactions, connecting partners, and fostering new markets.

Functions of a Business Model

Business models have the following functions or objectives:

- ▶ Describe the major business processes of a company.
- ▶ Describe the business models' (the venture's) positioning within the value network linking suppliers and customers (includes identification of potential complementors and competitors). Also, describe the supply and value chains.
- ▶ Formulate the venture's competitive strategy and its long-range plans.
- ▶ Articulate a customer value proposition.
- ▶ Identify a market segment (who will use the technology for what purpose; specify the revenue-generation process; where the company will operate).
- ▶ Define the venture's specific value chain structure.
- ▶ Estimate the cost structure and amount and profit potential.

TYPICAL EC BUSINESS MODELS

There are many types of EC business models. Examples and details of EC business models can be found throughout this text and in Rappa (2010). The following are five common models. Additional models are listed in Online File W1.6.

1. **Online direct marketing.** The most obvious model is that of selling products or services online. Sales may be from a *manufacturer* to a customer, eliminating intermediaries or physical stores (e.g., Dell Computer), or from *retailers* to consumers, making distribution more efficient (e.g., Net-a-Porter, Walmart online). This model is especially efficient for digitizable products and services (those that can be delivered electronically). This model has several variations (see Chapters 3 and 4) and it uses different mechanisms (e.g., auctions). It is practiced in B2C (where it is called *e-tailing*) and in some B2B types of EC.
2. **Electronic tendering systems.** Large organizational buyers, private or public, usually make large-volume or large-value purchases through a **tendering (bidding) system**, also known as a *reverse auction*. Such tendering can be done online, saving time and money. Pioneered by General Electric Corp., e-tendering systems are gaining popularity. Indeed, several government agencies mandate that most of their procurement must be done through e-tendering. (Details are provided in Chapter 4.)
3. **Electronic marketplaces and exchanges.** Electronic marketplaces existed in isolated applications for decades (e.g., stock and commodities exchanges). But as of 1996, hundreds of e-marketplaces (old and new) have introduced new methods and efficiencies to the trading process. If they are well organized and managed, e-marketplaces can provide significant benefits to both buyers and sellers. Of special interest are vertical marketplaces that concentrate on one industry. For details see Chapter 4.
4. **Viral marketing.** According to the viral marketing model (see Chapters 7 and 8), people use e-mail and social networks for spreading word-of-mouth advertising. Thus, an organization can increase brand awareness or even generate sales by inducing people to send influencing messages to other people or to recruit friends to join certain programs. It is basically Web-based *word-of-mouth* advertising, and it is popular in social networks.
5. **Group purchasing.** Group purchasing is a well-known offline method, especially for companies. It is based on the concept of quantity discounts ("cheaper-by-the-dozen"). The Internet model allows individuals to get together, so they can gain the large-quantity advantage. This model was not popular until 2010 when Groupon introduced



tendering (bidding) system

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

a modified model in which people are grouped around special deals as illustrated in Case 1.2 and in Chapter 7.



Note that a company may use several EC models as demonstrated in the DFL closing case, Dell case (Online File W1.1), and the Beijing Olympic case (Online File W1.4).

CASE 1.2

EC Application

GROUPON

Groupon is a deal-of-the-day website combined with group buy, which is localized to major geographic markets in the United States and many other countries. As of January 2011, Groupon serves more than 160 markets in North America and 110 markets in Europe, Asia, and South America and has amassed 40 million registered users. Groupon was founded in November 2008 and is considered as the fastest-growing company, ever.

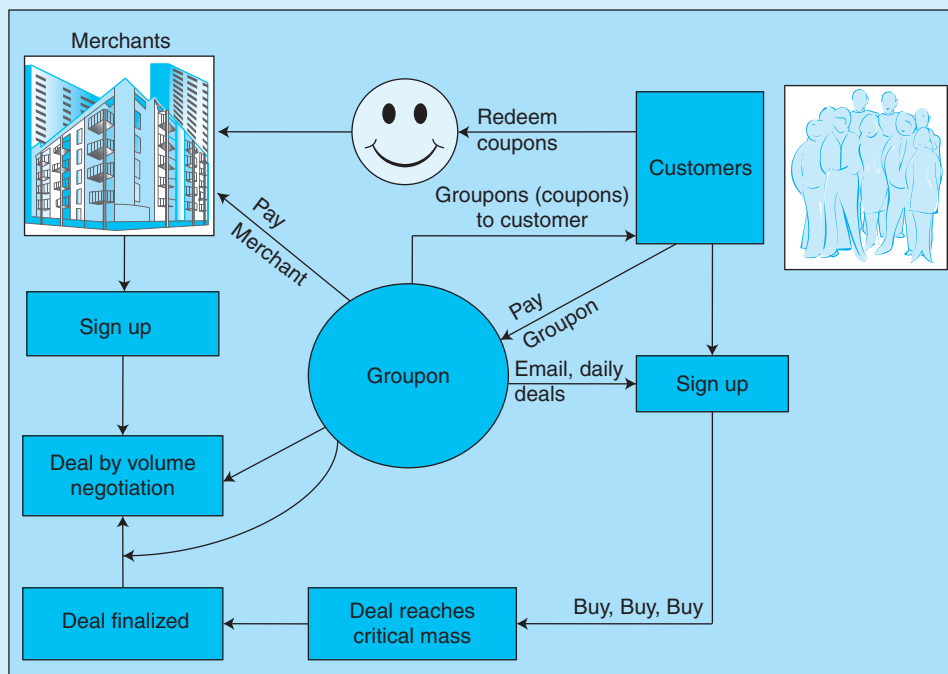
Groupon is projecting that the company is on pace to make \$1 billion in sales faster than any other business. In 2010 the company rejected a \$6 billion buyout offer from Google. Groupon is preparing for a \$15 billion IPO in 2011. Groupon also owns a several international operations, all of which were originally deal-of-the-day services or similar to it, but then re-branded under the Groupon name after acquisition.

The Business Model and Transaction Process

The company offers one “Groupon” (“group coupon”) per day in each of the markets it serves. The Groupon works as an assurance contract; if a certain number of people sign up for the offer, then the deal becomes available to all; if the

predetermined minimum is not met, no one gets the deal that day. This reduces risk for retailers who can treat the coupons as quantity discounts, as well as sales promotion tools. Groupon makes money by getting a cut of each deal from the retailers. The process is illustrated in the exhibit below; it is a combination of group buy and deal flash models.

Groupon business strategy is to break into new markets by identifying successful local businesses, first by sending in an advance squad of employees to research the local market; when it finds a business with outstanding reviews, salespeople approach it and explain the business model and try to sign up the vendors. Groupon’s promotional text for the deals has been seen as a contributing factor to the popularity of the site. Groupon uses social marketing sites such as Facebook to further promote the idea. The Groupon model shows the logic of why merchants are willing to offer 50 to 80% discount to volume shoppers. By fulfilling demand direct from consumers in aggregate, both large chains and SMBs can fulfill orders more efficiently and reduce sales and marketing expenses and overhead.



The Business Model and Process of Groupon

(continued)

CASE 1.2 (continued)**Limitations of the Model**

As will be described in Section 7.6 a small business can be temporarily swamped with too many customer orders creating the possibility that customers will be unsatisfied, or that there would not be enough product to meet the demand. GAP, a large clothing retailer, was able to handle 445,000 coupons in a national deal (although it experienced server problems at one point), but a smaller business could become suddenly flooded with customers. As will be described in Section 7.6 a restaurant in Hong Kong was unable to feed all its customers in a timely manner. One coffee shop in Portland was swamped with a stampede of over 1,000 customers on the first day of Groupon's sale. In response to similar problems, Groupon officials stated that "deal" subscriptions should be capped in advance to a reasonable number.

Benefits and Expansion

Groupon's model is a win-win one.

The major benefits to customers are:

- ▶ Deep discounts (50 to 90%)
- ▶ Discovery of new/specialized services products
- ▶ "Side" deals offered by Groupon
- ▶ Personalized deals
- ▶ Learn to know vendors in your area
- ▶ Can tell your friends/family

The major benefits to merchants are:

- ▶ Can sell larger quantities quickly
- ▶ Save advertising and marketing expenses
- ▶ Repeat customers (if they like the deal and the service)
- ▶ Lower customer acquisition cost

The Competition

As with any successful business, here too, there is a large number of companies that want to clone Groupon.

According to en.wikipedia.org/wiki/Groupon 200 similar sites have sprung up in North America with some sites even copying the color, font, and logo. Worldwide, there are over 500 similar sites. In China there are over 1,000 companies but they use a different business model. However, by January 2011, only one competitor, LivingSocial, has been described as a serious competitor; it received an investment from Amazon of \$175 million. Other notable competitors include BuyWithMe, Jasmere.com, Weforia (Powered by Yellowbook), Groop Swoop, Groupalia, TownHog, TeamGrab.com, Agenzy.com, DailyQ.com, and eWinWin. Some sites, such as Dealradar, Dealery, Yipit, and SocialDealMap, collate deals from many other websites.

Groupon has been aggressively expanding its market into emerging markets. Recently, it acquired an Indian competitor, SoSasta.com, and is attempting to penetrate the Chinese market.

Facebook, Google, and Other Competitors

As described in the closing case in chapter 7, Facebook Deals is an attempt to enter this market. At the time this book was written it was difficult to assess the magnitude of this attempt. Google, after failing to acquire Groupon, created Google Offers in 2011 to compete with Groupon and

the hundreds of smaller sites. At the time the book was written the impact of Google's efforts was not clear (see groups.google.com/group/buy).

Upcoming competitors include Yahoo!, eBay, Yelp, local and national newspapers, Craigslist, and large vendors (e.g., Dell).

Factors in the Competition

Given the large size of Groupon, its financial might, its many dedicated employees, its policies and strategies, and it is not going to be easy to compete with this company. Therefore, the competitors use strategies such as concentrating on a niche market (e.g., one product, one industry). Also, some concentrate on a small territory (e.g. a city) in which they have a competitive advantage. Similarly, group deals for certain communities (e.g., nurses, electrical engineers) may be very successful. For a discussion see stratagrouppbuy.com/another-group-buy-website.

The success of Groupon was enabled by the ability of the company to create groups of buyers large enough to assure a quantity discount. Also, its relationship with the merchants is excellent (see an example of an interview at lexicom/blog/2010/12/one-merchants-experience-with-groupon).

Sources: Compiled from Carpenter (2010), en.wikipedia.org/wiki/Groupon, grouponworks.com/merchant-services, and groupon.com/learn (all accessed March 2011).

Questions

1. It is difficult to do business with Groupon. About 85% of merchants' suggestions are dismissed by Groupon. Why do you think Groupon is so strict and how will this policy impact the competition?
2. Some claim that Groupon is basically an e-mail list that charges advertisers to send out their coupons (called Groupons). Comment.
3. Why does Groupon use Facebook to promote its business, while Facebook is its competitor?
4. Read Carpenter (2010) and write a short essay on Groupon's chance of survival in the intensely competitive environment. Examine its revenue model and expansion plans.
5. Learn more about Groupon's order fulfillment (e.g., ability to handle volume, control of deliveries, and dealing with marketing and competitors). Write a report.
6. Research Groupon's global efforts. Start with Emma Hall's article "Groupon Clones in Europe Say They Offer Better Deals and Treatment of Merchants" at adage.com/article/global-news/groupon-clones-europe-win-consumers-merchants/147689.
7. Groupon uses classified ads for rental apartments. How does this fit with its business model?
8. Groupon now deals in B2B. Search the Internet and find out how it is being done.

Section 1.6 ■ REVIEW QUESTIONS

1. What is a business model? Describe its functions and properties.
2. Describe a revenue model and a value proposition. How are they related?
3. Describe the following business models: direct marketing, tendering system, electronic exchanges, viral marketing, and social networking/commerce.
4. Identify some business models related to buying and those related to selling.
5. Describe how viral marketing works.

1.7 BENEFITS, LIMITATIONS, AND IMPACTS OF ELECTRONIC COMMERCE

Few innovations in human history encompass as many benefits as EC does. The global nature of the technology, the opportunity to reach hundreds of millions of people, its interactive nature, the variety of possibilities for its use, and the resourcefulness and rapid growth of its supporting infrastructures, especially the Web, result in many potential benefits to organizations, individuals, and society. These benefits are just starting to materialize, but they will increase significantly as EC expands. It is not surprising that some maintain that the EC revolution is as profound as the change that accompanied the Industrial Revolution.

THE BENEFITS AND IMPACTS OF EC

EC provides benefits to *organizations*, *individual customers*, and *society*. These benefits are summarized in Exhibit 1.12. Many benefits can be found in the list of EC resources in Online File W1.7.



EC as a Provider of Competitive Advantage

The business models created by EC and the benefits of the technology may result in significant changes in the way business is conducted. These changes may positively impact corporate operations resulting in a competitive advantage for the firms using EC. For a description and discussion see Online Tutorial T12.



THE LIMITATIONS AND BARRIERS OF EC

Barriers to EC can be classified as either technological or nontechnological. Representative major barriers are listed in Exhibit 1.13.

According to a 2006 study (Harmony Hollow Software 2006), the major barriers to EC are (1) resistance to new technology, (2) implementation difficulties, (3) security concerns, (4) lack of technology skills, (5) lack of potential customers, and (6) cost. Van Toorn et al. (2006) classified the barriers into: sectoral barriers (e.g., government, private sector, international organizations), internal barriers (e.g., security, lack of technical knowledge, and lack of time and resources), and external barriers (e.g., lack of government support). Van Toorn et al. (2006) also list the top barriers with regards to global EC: cultural differences, organizational differences, incompatible B2B interfaces, international trade barriers, and lack of standards. These limitations need to be addressed when implementing EC. One important area is that of ethics.

Ethical Issues

Ethical issues can create pressures or constraints on EC business operations. Yet, ethical sites increase trust and help EC vendors. **Ethics** relates to standards of right and wrong, and *information ethics* relates to standards of right and wrong in information technology and EC practices. Ethical issues have the power to damage the image of an organization and morale of employees. Ethics is a difficult area, because ethical issues are not cut-and-dried. What is considered ethical by one person may seem unethical to another. Likewise, what is considered ethical in one country may be unethical in another. For further discussions of EC ethical issues see Chapter 14 and Gaskin and Evans (2010).

ethics

The branch of philosophy that deals with what is considered to be right and wrong.

EXHIBIT 1.12 Benefits of E-Commerce

Benefit	Description
Benefits to Organizations	
Global reach	Locating customers and/or suppliers worldwide, at reasonable cost and fast.
Cost reduction	Lower cost of information processing, storage, distribution.
Facilitate problem solving	Solve complex problems that have remained unsolved.
Supply chain improvements	Reduce delays, inventories, and cost.
Business always open	Open 24/7/365; no overtime or other costs.
Customization/personalization	Make it to consumer's wish, fast and at reasonable cost.
Seller's specialization (niche market)	Seller can specialize in a narrow field (e.g., dog toys), yet make money.
Ability to innovate, use new business models	Facilitate innovation and enable unique business models.
Rapid time to market and increased speed	Expedite processes; higher speed and productivity.
Lower communication costs	The Internet is cheaper than VAN private lines.
Efficient procurement	Saves time and reduces costs by enabling e-procurement.
Improved customer service and relationship	Direct interaction with customers, better CRM.
Fewer permits and less tax	May need fewer permits and be able to avoid sales tax.
Up-to-date company material	All distributed material is up-to-date.
Help SME to compete	EC may help small companies to compete against large ones by using special business models.
Lower inventories	Using customization inventories can be minimized.
Lower cost of distributing digitizable product	Delivery online can be 90 percent cheaper.
Provide competitive advantage	Innovative business models.
Benefits to Consumers	
Inventory	Huge selection to choose from (vendor, products, styles).
Ubiquity	Can shop any time from any place.
Customized products/services	Can customize many products and/or services.
Cheaper products/services	Can compare and shop for lowest prices.
Instant delivery	Digitized products can be downloaded immediately upon payment.
Information availability	Easy finding what you need, with details, demos, etc.
Convenient auction participation	Do auctions any time and from any place.
No sales tax	Sometimes.
Enable telecommuting	Can work or study at home.
Electronic socialization	Can socialize online in communities yet be at home.
Find unique items	Using online auctions, collectible items can be found.
Comfortable shopping	Shop at your leisure without pushy sales clerks bothering you.
Benefits to Society	
Enable telecommuting	Facilitate work at home; less traffic, pollution.
More public services	Make education, health, etc., available for more people. Rural area can share benefits; more services for the poor.
Improved homeland security	Facilitate domestic security.
Increased standard of living	Can buy more and cheaper goods/services.
Close the digital divide	Allow people in developing countries and rural areas to accept more services and purchase what they really like.

Implementing EC use may raise ethical issues ranging from employee e-mail monitoring to invasion of privacy of millions of customers whose data are stored in private and public databases. In implementing EC, it is necessary to pay attention to these issues and recognize that some of them may limit, or even prohibit, the use of EC. An example of this can be seen in the attempted implementation of RFID tags (Online Tutorial T3) in retail stores due to the potential invasion of buyers' privacy.

Despite these barriers, EC is expanding rapidly. As experience accumulates and technology improves, the cost-benefit ratio of EC will increase, resulting in even greater rates of EC adoption.



EXHIBIT 1.13 Limitations of Electronic Commerce

Technological Limitations	Nontechnological Limitations
Lack of universal standards for quality, security, and reliability. The telecommunications bandwidth is insufficient, especially for m-commerce, videos, and graphics. 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.	Security and privacy concerns deter customers from buying. Lack of trust in EC and in unknown sellers hinders buying. People do not yet sufficiently trust paperless, faceless transactions. Many legal and public policy issues, including taxation, have not yet been resolved or are not clear. National and international government regulations sometimes get in the way. It is difficult to measure some of the benefits of EC, such as online 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. 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.

WHY STUDY E-COMMERCE?

The academic area of e-commerce started around 1995 with only a few courses and textbooks. Today, many universities offer complete programs in e-commerce or e-business (e.g., majors in e-commerce, minors in e-commerce and certificate programs; see University of Virginia, University of Maine). Recently, e-commerce topics have been integrated into all functional fields (e.g., Internet marketing, electronic financial markets). The reason for this proliferation is that e-commerce is penetrating more and more into business areas, services, and governments.

However, there are also some very tangible benefits to increased knowledge of EC. First, your chances of getting a good (or better) job are higher. The demand for both technical and managerial EC skills is growing rapidly, and so are the salaries (e.g., see salary comparison sites such as salary.com, cbsalary.com, and monster.com). Second, your chances for promotion could be higher if you understand EC and know how to seize its opportunities. Finally, it gives you a chance to become a billionaire, like the founders of Google, Facebook, YouTube, Amazon.com and Yahoo!, or to make lots of money on eBay (see Joyner 2007). Even if you are not so lucky you can still make good money in Second Life (see Alter 2008 and Rymaszewski et al. 2008) or simply by selling on eBay, Yahoo!, Facebook, Craigslist, or your own website. And you can do it while you are a student, as Lily, Shu, and Adrian did (see Case 1.3).

Lily, Shu, and Adrian are not the only students engaged in making money from EC. Diane Keng, an entrepreneur from Cupertino Monte Vista High School in California, initiated three Web 2.0 successful start-up companies, making substantial money (see Fowler 2010).

There are many other opportunities for young people to make money from EC in addition to the examples in this book of Second Life and selling on eBay. Hunt (2010) suggests the following ways to earn extra cash online: (1) sell your craft; (2) make money from your talent; (3) be a nurse on call; (4) write, edit, or proofread; (5) design graphics and websites; (6) tutor kids or adults; (7) give advice; (8) provide customer service; (9) launch a blog; (10) give your opinion (for a fee); (11) search the Internet; and (12) do online tasks. Hunt also provides examples, URLs, and advice regarding scams.

Web 2.0 also creates many opportunities for full-time jobs. For a list and discussion, see Tice (2010).

CASE 1.3

EC Application

HOW COLLEGE STUDENTS BECOME ENTREPRENEURS

Stanford University students Lily Kim, Shu Lindsey, and Adrian Mak use computers and the Internet extensively. They also do extensive writing (on paper) and especially like using ultra thin pens with a tip half the width of the average ballpoint. They learned about these pens when they visited Japan. Because these pens were not available in U.S. stores, they purchased them online directly from Japan. When they showed the pens to their friends (an example of the power of social marketing), they found that there was great interest in such pens in the United States.

Sensing the opportunity, in 2004 they decided to use their \$9,000 savings to open a business, called JetPens (jetpens.com), selling pens they imported from Japan to their classmates. To keep costs low, they used open source free software (from osCommerce) to build and run the store. Soon after they opened an online storefront, they began advertising their products via e-mail to other students. The number of registered users on the site grew rapidly. To meet the demand, they initially kept an inventory of pens in their bedrooms, but now they rent storage space.

They also have a small advertising budget for Google ads. By using smart key words, their store ranks at the top of search engine discoveries when a user searches for “Japanese pens.” This strategy is called *search engine (site) optimization* (SEO) see Chapter 8 and en.wikipedia.org/wiki/Search_engine_optimization for details.

In 2007, the owners expanded the product line by adding interesting office supplies, including a best-selling

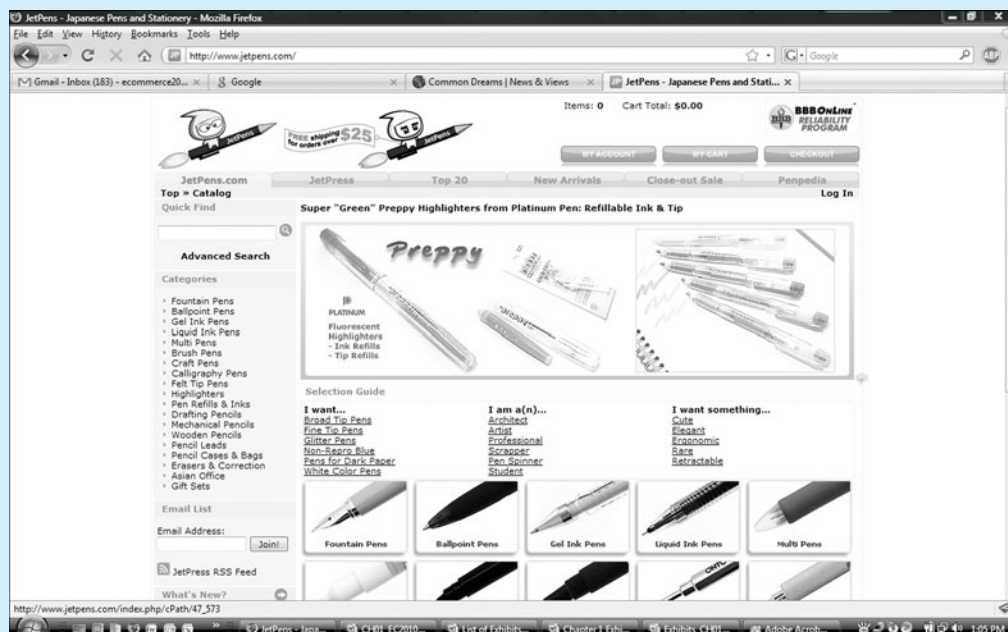
eraser with 28 corners, which increased their sales volume to over 10,000 items per month. Other best sellers include a pen with a tip fine enough to write on a grain of rice, the Uni-ball Alpha Gel ballpoint pen with a squishy silicone-gel grip (this silicone gel is famous for keeping an egg from breaking when dropped from 5 feet), colorful and erasable gel pens that work just as well as pencils, and BeGreen environmentally friendly pens. To find friends and customers, they use Facebook, Flickr, Twitter, and YouTube and they have a discussion forum on the JetPens website.

By keeping a tight cap on operating expenses and using Internet advertising successfully, the young entrepreneurs have been able to do what many others have failed to do—generate a profit within two years, and grow by hundreds of percentage points every year.

Sources: Compiled from Blakely (2007) and jetpens.com (accessed April 2011).

Questions

1. Go to jetpens.com and examine the catalog and features of the site. What impresses you the most?
2. Evaluate the site's ease of use.
3. Do you think that a business like this can succeed as an independent offline-only store? Why or why not?
4. What is the purpose of the site's JetPress RSS Feed?



Source: Used with permission of jetpens.com.

Section 1.7 ■ REVIEW QUESTIONS

1. Describe some EC benefits to organizations, individuals, and society.
2. List the major technological and nontechnological barriers and limitations to EC.
3. Describe some of the benefits of studying EC.
4. How can EC help entrepreneurship?

1.8 OVERVIEW OF THIS BOOK

This book is composed of 15 chapters grouped into five parts, as shown in Exhibit 1.14. Additional content, including 12 tutorials and online supplemental files for each chapter, is also available online at the book's website.

The specific parts and chapters of this textbook are as follows.

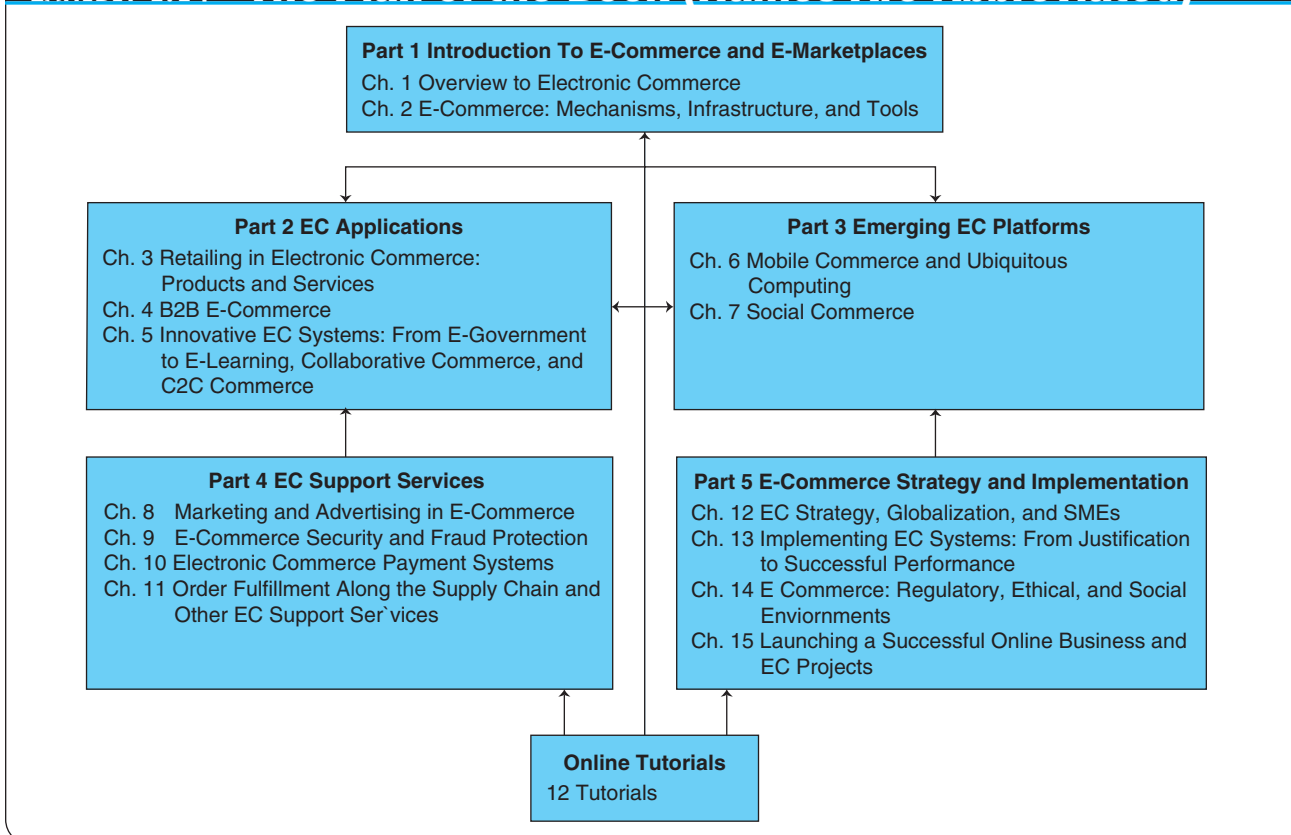
PART 1: INTRODUCTION TO E-COMMERCE AND E-MARKETPLACES

This section of the book includes an overview of EC and its content, benefits, limitations, and drivers, which are presented in Chapter 1. Chapter 2 presents electronic markets and their mechanisms, such as auctions, portals, and search engines. Chapter 2 also includes a presentation of Web 2.0 tools and environments.

PART 2: EC APPLICATIONS

This section includes three chapters. Chapter 3 describes e-tailing (B2C), including some of its most innovative applications for selling products online. It also describes the online delivery of services, such as banking, travel, and insurance. In Chapter 4, we introduce B2B

EXHIBIT 1.14 The Plan of the Book (Names Are Abbreviated)



EC and describe company-centric models (one buyer–many sellers, one seller–many buyers) as well as electronic exchanges (many buyers and many sellers).

E-government, e-learning, C2C, and knowledge management are the major subjects of Chapter 5.

PART 3: EMERGING EC PLATFORMS

This part includes two chapters. Chapter 6 deals with the topic of mobile commerce including location-based commerce. Chapter 7 provides a comprehensive coverage of social commerce.

PART 4: EC SUPPORT SERVICES

This part includes four chapters. Chapter 8 deals with market research, customer services, and online advertisement. Chapter 9 covers security and fraud protection.

Electronic payments are covered in Chapter 10, while order fulfillment and supply chain management are covered in Chapter 11.

PART 5: E-COMMERCE STRATEGY AND IMPLEMENTATION

This part includes four chapters: Chapter 12 deals with EC strategy, globalization, EC in SMEs, and EC impacts. In Chapter 13, we cover implementation issues starting with EC justification, business process management, technology adoption, and change management. Chapter 14 deals with legal, ethical, social, and compliance issues.

ONLINE TUTORIALS

Twelve short online tutorials supplement the text. These tutorials cover topics ranging from RFID to cloud computing. They are available at the book's website (pearsonglobaleditions.com/turban).

ONLINE CHAPTER SUPPLEMENTS

The final chapter, Chapter 15 (available online at the book's website pearsonglobaleditions.com/turban), deals with the process of launching an e-business and the introduction of EC projects and initiatives. A large number of online files organized by chapter number support the content of each chapter.

MANAGERIAL ISSUES

Many managerial issues are related to EC. These issues are discussed throughout the book and also are summarized in a separate section (like this one) near the end of each chapter. Some managerial issues related to this introductory chapter are as follows.

1. **Is EC real?** For those not involved in EC, the first question that comes to mind is, “Is it real?” We believe that the answer is an emphatic “yes.” The Internet is already an integral part of our lives. Banking from home, trading stocks online, and buying goods from Amazon.com are now common practices for many people. The concern is not whether to start EC, but to what extent should it be developed and how to ensure the success of the e-business initiatives. Jack Welch, former CEO of General Electric, has commented, “Any company, old or new, that doesn’t see this technology (EC) literally as important as breathing could be on its last breath” (McGee 2000).
2. **Why is B2B e-commerce so essential and successful?** B2B EC is essential for several reasons. First, some B2B models are easier to implement than B2C models. The volume and value of transactions is larger in B2B than in B2C, and the potential savings are larger and easier to justify in contrast to B2C, which has several major problems, ranging from channel conflict with existing distributors to fraud to a lack of a critical mass of buyers. Many companies can start B2B by simply buying from existing online stores and B2B exchanges or selling electronically by joining existing marketplaces or an auction house. The problem is determining *what* and *where* to buy or sell.

3. Which EC business model should I choose?

Beginning in early 2000, the news was awash with stories about the failure of many dot-coms and EC projects. Industry consolidation often occurs after a “gold rush.” About 100 years ago, hundreds of companies tried to manufacture cars, following Ford’s success in the United States; only three survived. The important thing is to learn from the successes and failures of others, and discover the right business model for each endeavor. For lessons that can be learned from EC successes and failures, see Chapters 3 and 4.

4. How can we exploit social commerce?

There are major possibilities here. Some companies even open their own social networks. Advertising is probably the first thing to consider. Recruiting can be a promising avenue as well. Offering discounted products and services should

also be considered. Providing customer services and conducting market research can be a useful activity as well. Finally, the ultimate goal is associating the social network with commerce so that revenue is created.

5. What are the top challenges of EC today?

The top 10 technical issues for EC (in order of their importance) are security, adequate infrastructure, virtualization, back-end systems integration, more intelligent software, cloud computing, data warehousing and mining, scalability, and content distribution. The top 10 managerial issues for EC are justification, budgets, project deadlines, keeping up with technology, privacy issues, unrealistic management expectations, training, reaching new customers, improving customer ordering services, and finding qualified EC employees. Most of these issues are discussed throughout this book.

SUMMARY

In this chapter, you learned about the following EC issues as they relate to the chapter’s learning objectives.

1. Definition of EC and description of its various categories.

EC involves conducting transactions electronically. Its major categories are pure versus partial EC, Internet versus non-Internet, and electronic markets versus company-based systems.

2. The content and framework of EC.

The applications of EC, and there are many, are based on infrastructures and are supported by people; public policy and technical standards; marketing and advertising; support services, such as logistics, security, and payment services; and business partners—all tied together by management.

3. The major types of EC transactions.

The major types of EC transactions are B2B, B2C, C2C, m-commerce, intrabusiness commerce, B2E, c-commerce, e-government, social commerce, and e-learning.

4. E-commerce 2.0.

This refers to the use of social computing in business, often through the use of Web 2.0 tools (such as blogs, wikis), as well as the emergence of enterprise social networking and commercial activities in virtual worlds. Social and business networks attract huge numbers of visitors. Many of the visitors are young (future EC customers). Therefore, advertisers are willing to spend money on advertising, either to an entire group or to individuals (e.g., using Google’s technology).

5. Describe social commerce and social software.

Companies are beginning to exploit the opportunity of conducting business transactions in social networks and by using social software such as blogs. Major areas are advertising, shopping, customer service, recruiting, and collaboration.

6. The elements of the digital world.

The major elements of the digital world are the digital economy, digital

enterprises, and digital society. They are diversified and expanding rapidly.

7. The drivers of EC.

EC is a major product of the digital and technological revolution, which enables companies to simultaneously increase both growth and profits. This revolution enables digitization of products, services, and information. The business environment is changing rapidly due to technological breakthroughs, globalization, societal changes, deregulation, and more. The changing business environment forces organizations to respond. Many traditional responses may not be sufficient because of the magnitude of the pressures and the pace of the changes involved. Therefore, organizations must frequently innovate and reengineer their operations. In many cases, EC is driven by the needs of organizations to perform well and even survive.

EC provides strategic advantage so organizations can compete better. Also, organizations can go into remote and global markets for both selling and buying at better prices. Organizations can speed time-to-market to gain competitive advantage. They can improve the internal and external supply chain as well as increase collaboration. Finally, they can better comply with government regulations.

8. The major EC business models.

The major EC business models include online direct marketing, electronic tendering systems, name-your-own-price, affiliate marketing, viral marketing, group purchasing, online auctions, mass customization (make-to-order), electronic exchanges, supply chain improvers, finding the best price, value-chain integration, value-chain providers, information brokers, bartering, deep discounting, and membership.

9. **Benefits of EC to organizations, consumers, and society.** EC offers numerous benefits to all participants. Because these benefits are substantial, it looks as though EC is here to stay and cannot be ignored.
10. **Limitations of e-commerce.** The major limitations of EC are the resistance to new technology, fear from

fraud, integration with other IT systems may be difficult, costly order fulfillment, privacy issue, unclear regulatory issues, lack of trust in computers, difficulties to justify EC initiatives, and lack of EC skilled employees.

KEY TERMS

Brick-and-mortar (old economy) organizations	38	Consumer-to-consumer (C2C)	43	Intranet	39
Business model	60	Corporate portal	54	Social commerce	50
Business-to-business (B2B)	42	Digital economy	52	Social computing	48
Business-to-business-to-consumer (B2B2C)	42	Digital enterprise	52	Social network	49
Business-to-consumer (B2C)	42	E-business	38	Social networking	49
Business-to-employees (B2E)	43	E-government	43	Social networking services (SNSs)	49
Click-and-mortar (click-and-brick) organizations	39	Electronic commerce (EC)	38	Tendering (bidding) system	63
Collaborative commerce (c-commerce)	43	Electronic market (e-marketplace)	39	Value proposition	62
Consumer-to-business (C2B)	42	E-tailing	42	Virtual (pure-play) organizations	39
		Ethics	66	Virtual world	50
		Extranet	39	Web 2.0	48
		F-commerce	45		
		Intrabusiness EC	42		

DISCUSSION QUESTIONS

1. Compare brick-and-mortar and click-and-mortar organizations.
2. Why is buying with a smart card from a vending machine considered EC?
3. Explain how EC can reduce cycle time, improve employees' empowerment, and facilitate customer support.
4. Compare and contrast viral marketing with affiliate marketing.
5. Identify the contribution of Web 2.0. What does it add to EC?
6. Discuss the reasons companies embark on social commerce.
7. Distinguish an enterprise social network from a public one such as Facebook.
8. Carefully examine the nontechnological limitations of EC. Which are company-dependent and which are generic?
9. Why are virtual worlds such as Second Life related to EC?
10. Register at ibm.com/ibm/ideasfromibm/us/ceo/20080505 and download IBM's study "The Enterprise of the Future" (IBM 2008). In one page, summarize how the enterprise of the future differs from today's enterprise.

TOPICS FOR CLASS DISCUSSION AND DEBATES

1. How can EC be a business pressure and an organizational response to other business pressure?
2. Debate: Does digital business eliminate the "human touch" in trading? And if "yes," is it really bad?
3. Why do companies frequently change their business models? What are the advantages? The disadvantages?
4. Debate: EC eliminates more jobs than it creates. Should we restrict its use and growth?
5. Debate: Will online fashion hurt fashion retailers?

INTERNET EXERCISES



- Visit bigboxx.com and identify the services the company provides to its customers. What type of EC is this? What business model(s) does bigboXX use?
- Visit amazon.com and locate recent information in the following areas:
 - Find the five top-selling books on EC.
 - Find a review of one of these books.
 - Review the personalized services you can get from Amazon.com and describe the benefits you receive from shopping there.
 - Review the products directory.
- Visit priceline.com and zappos.com and identify the various business models used by both. Discuss their advantages.
- Go to nike.com and design your own shoes. Next, visit office.microsoft.com and create your own business card. Finally, enter jaguar.com and configure the car of your dreams. What are the advantages of each activity? The disadvantages?
- Try to save on your next purchase. Visit letsbuyit.com, kaboodle.com, yub.com, and buyerzone.com. Which site do you prefer? Why?
- Enter espn.go.com, 123greetings.com, facebook.com and identify and list all the revenue sources on each of the companies' sites.
- Enter lala.com and listen to some of the commercial-free digital songs offered (cost 10¢). What other digital products and services do they offer? Write a summary.
- Enter philatino.com, stampauctioncentral.com, and statusint.com. Identify the business model(s) and revenue models they use. What are the benefits to sellers? To buyers?
- Enter lowes.com. View the "design it" online feature and the animated "How Tos." Examine the Project Calculators and Gift Advisor features. Relate these to the business models and other EC features in this chapter.
- Go to zipcar.com. What can this site help you do?
- Enter digitalenterprise.org. Prepare a report regarding the latest EC models and developments.
- Visit some websites that offer employment opportunities in EC (such as execunet.com and monster.com). Compare the EC salaries to salaries offered to accountants. For other information on EC salaries, check *Computerworld's* annual salary survey, unixl.com, and salary.com.
- Visit bluenile.com, diamond.com, and jewelryexchange.com. Compare the sites. Comment on the similarities and the differences.
- Visit ticketmaster.com, ticketonline.com, and other sites that sell event tickets online. Assess the competition in online ticket sales. What services do the different sites provide?
- Enter The Timberland Company (timberland.com) and design a pair of boots. Compare it to building your own sneakers at nike.com. Compare these sites to zappos.com/shoes.
- Examine two or three of the following sites: prosper.com, swapthing.com, swaptree.com, peerflix.com, lala.com, swapvillage.com, bigvine.com, etc. Compare their business and revenue models.

TEAM ASSIGNMENTS AND PROJECTS

1. Assignment for the Opening Case

Read the opening case and answer the following questions.

- Why would you buy (or not buy) from Net-a-Porter?
- Watch the video "The Future of Shopping" (youtube.com/watch?v=jDi0FNcaock). How would you integrate this development with Net-a-Porter?
- What are the advantages and disadvantages of the Net's physical stores?
- It is said that the Net is playing a significant role in transforming how designers reach customers. Explain why.
- Read the benefits of EC to customers (Section 1.7), which ones are most relevant here?

- What EC capabilities are helping the Net and its designers?
 - Analyze the competition in the high-end fashion market.
 - What is the importance of globalization in this case?
 - Imitators are springing up on all sides. Even eBay and Amazon.com are expanding their fashion e-tailing efforts. What strategy do you suggest for the Net? (Hint: Read Brodie 2009 to get some ideas.)
2. Create an online group for studying EC or a particular aspect of EC that interests you. You can do this via Google Groups, a social network of your choice, or Yahoo! Groups. Each member of the group must have an e-mail account. Go to Yahoo! Groups

groups.yahoo.com and log in. At the bottom of the page, there is a section titled “Create your own Group.”

- Step 1:** Click on “Start a Group.”
 - Step 2:** Select a category that best describes your group (use the Search Group Categories, or use the Browse Group Categories tool). You must find a category.
 - Step 3:** Describe the purpose of the group and give it a name.
 - Step 4:** Set up an e-mail address for sending messages to all group members.
 - Step 5:** Each member must join the group (select “profile”); click on “Join this Group.”
 - Step 6:** Go to Word Verification Section; follow the instructions.
 - Step 7:** Finish by clicking “Continue.”
 - Step 8:** Select a group moderator. Conduct a discussion online of at least two topics of the group’s interest.
 - Step 9:** Arrange for messages from the members to reach the moderator at least once a week.
 - Step 10:** Find a similar group (use Yahoo!’s “find a group” and make a connection). Write a report for your instructor.
3. Each team will research two EC success stories. Members of the group should examine companies that operate solely online and some that extensively utilize a click-and-mortar strategy. Each team should identify the critical success factors for their companies and present a report to the other teams.
 4. Each team selects a business-oriented social network such as LinkedIn, Xing, or Viadeo. Each team presents the essential capabilities of the site, the attributes, etc. Each team will try to convince other students why their site is superior.
 5. Watch the video *Part 1-E-Commerce* (8 minutes) at youtube.com/watch?v=OY2tcQ574Ew.
 - a. Update all the data shown in the video.
 - b. What fundamental change is introduced by EC?
 - c. What is the first mover advantage discussed in the video?
 - d. Amazon.com and other companies that lost money during the time the video was made are making lots of money today; find out why.
 - e. Identify all the EC business models discussed in the video.
 - f. How can one conduct an EC business from home?
 - g. EC is considered a disruptor. In what ways?
 6. All class members that are not registered in Second Life need to register and create their avatars. Let each team address one of the following areas:
 - Trading virtual properties
 - Creating buildings, projects, stores
 - Shopping and retail outlets
 - Virtual jobs
 - Learning and training
 - Other topics
 - a. Prepare a description of what is going on in that area.
 - b. Have members’ avatars interact with other avatars. Write a report about your experience.
 - c. What can you learn from this project?

Closing Case

E-COMMERCE AT THE GERMAN SOCCER LEAGUE (BUNDESLIGA)

Soccer is one of the most popular games in the world. The international governing organization for soccer is FIFA (fifa.com) where 265 million people play in over 200 different countries. Most of these countries have their own national leagues where soccer teams compete against each other. One popular league is the Bundesliga, the German soccer league that consists of 18 different soccer clubs, including the European Champion’s League winner FC Bayern München. Germany has 27,000 different soccer clubs that are all united under the Deutsche Fussball Liga (DFL) or German Soccer Association. Not just a popular sport, soccer is a multibillion-dollar industry, and the DFL, as well as individual clubs, are involved in merchandizing,

advertising, and other marketing activities. E-commerce provides new opportunities for these activities.

Providing Information

The DFL website (bundesliga.de/en/index.php) targets several different groups: fans, sponsors, advertising customers, and officials from both big and small clubs who are also members of the DFL. The main objective, however, is to provide fans with general information including soccer-related news features, match and player statistics, as well as links to purchasing tickets online. The website provides historical records and tools for creating match forecasts and “what-if” analyses for

future games on the website. Fans can also subscribe to a soccer newsletter that can be customized, for example, with information about the German Bundesliga and also news about other soccer leagues including the Premier League in the United Kingdom, Ligue 1 in France, Serie A in Italy, and La Liga in Spain. The association assists the sport in general and also represents smaller soccer clubs online. Additionally, the DFL provides internal information for other soccer club officials including details of rule changes and other administrative tools for officials. Information about the association and its partners, sponsors, and board members is also available. In addition, instructions for potential partners are provided to help them understand how they can capitalize on advertising opportunities and how to issue co-branded credit or debit cards.

Videos and Online Games

The website *Bundesliga.de* hosts videos showing the best goals from the most recent games as well as commentary on topical news features. Games and online competitions are also available for fans to enjoy including fantasy leagues where fans can act as soccer managers for their favorite club or dream team—choosing the formation, selecting the team, and making the tactical changes as they play against other virtual managers. The role-playing game uses artificial intelligence by storing information about previous behaviors of the player and then using it to form the basis of future decisions. By adding media-rich content, fans are more likely to visit the site and so traffic to the website increases.

Information, Wireless News, and Social Networks

The DFL supports the broadcast of information to cell phones via SMS and to computers and mobile smartphones via RSS or Twitter. Fans can find out information about other soccer games while they are in a stadium watching a live match. Furthermore, the DFL has a presence on social network sites including Facebook and Twitter where fans can exchange comments and thoughts. The DFL website also serves as a mediation platform that, for example, acts as an agent for

establishing contact between fans who want to drive to an away game.

Fans can receive real-time local news including sport scores texted to their cell phones from several stadiums that are equipped with state-of-the-art wireless systems. Smartphones now allow users to go online and view games that are streamed in real time or view photos of stadiums that are shown on TV. Quick response codes allow smartphone users to receive a sales discount in the stadium by taking a picture of the discount code and then storing the information using an app (Mobile Tagging). The system also enables employees to process ticket sales quickly (Mobile Ticketing).

Online Shop

The DFL has decided not to host an online shop selling merchandise and tickets. Instead, it implemented an affiliate program where customers are referred to club websites or partner ticket distributors, such as Ticketmaster. In return, the DFL receives a small agency fee for the referral. The DFL also operates as a travel agency by selling rail and flight tickets online not only for fans but also for officials, business partners, and the soccer teams themselves who are travelling from game to game.

Sources: Compiled from www.bundesliga.de/en/ (accessed August 2011) and Mayar and Ramsey (2011)

Questions

1. Identify all of the applications and decide if they support B2B, B2C, or B2E.
2. How does playing online games on the DFL's site relate to EC?
3. Compare the DFL information available on Facebook and Twitter.
4. Find additional DFL-related applications not cited in this case.
5. Why does Bundesliga.de not host a web shop?

ONLINE RESOURCES

available at pearsonglobaleditions.com/turban

Online Files

- W1.1 Application Case: Dell—Using E-Commerce for Success
- W1.2 Application Case: Campusfood.com—Student Entrepreneurs
- W1.3 Major Characteristics of Web 2.0

- W1.4 Application Case: Beijing 2008: A Digital Olympics
- W1.5 Response Activities for Organizations
- W1.6 Representative EC Business Models
- W1.7 Basic Resources for E-Commerce



Other Resources

Online Files

Online Files organized by chapter number support the content of each chapter.

Online Tutorials

Twelve tutorials are available at the book's website

Miscellaneous Resources

(pearsonglobaleditions.com/turban).

Comprehensive Educational Websites

ecommerce-journal.com: Source for news, events, etc., about e-commerce.

libraries.rutgers.edu/rul/rr_gateway/research_guides/busi/ecommerce.shtml: Electronic Resource Guide: Electronic Commerce offers resources and links to Internet statistics—see ClickZ Stats, Nielsen/NetRatings, U.S. Census Bureau, and comScore.

socialcomputingjournal.com: *Social Computing Journal* is an open forum with articles on the Internet, social commerce, collective intelligence, and all things Web 2.0.

webopedia.com: Online encyclopedia dedicated to computer technology.

whatis.techtarget.com/definition: Detailed definitions of most e-commerce and other technological topics.

Other resources for the entire book are provided in Online File W1.7.

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E- COMMERCE: MECHANISMS, INFRASTRUCTURE, AND TOOLS

Content

Opening Case: Web 2.0 Tools at Eastern Mountain Sports

- 2.1 Electronic Commerce Mechanisms: An Overview
- 2.2 E-Marketplaces
- 2.3 Customer Shopping Mechanisms: Storefronts, Malls, and Portals
- 2.4 Merchant Solutions: Electronic Catalogs, Search Engines, and Shopping Carts
- 2.5 Auctions, Bartering, and Negotiating Online
- 2.6 Social Software Tools: From Blogs to Wikis to Twitter
- 2.7 Virtual Communities and Social Networks
- 2.8 Virtual Worlds as an Electronic Commerce Mechanism
- 2.9 The Future: Web 3.0 and Web 4.0

Managerial Issues

Closing Case: Business in Second Life

Learning Objectives

Upon completion of this chapter, you will be able to:

- 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.
- 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.

WEB 2.0 TOOLS AT EASTERN MOUNTAIN SPORTS

Eastern Mountain Sports (EMS) (*ems.com*) is a medium-sized specialty retailer (with annual sales of \$29.3 million) that sells goods in more than 64 physical stores in 12 states, through mail-order catalogs and online. Operating in a very competitive environment, the company uses leading-edge information technologies. EMS is now using a complementary set of Web 2.0 tools in order to increase collaboration, information sharing, and communication among stores and their employees, suppliers, and customers. Let's see how this works.

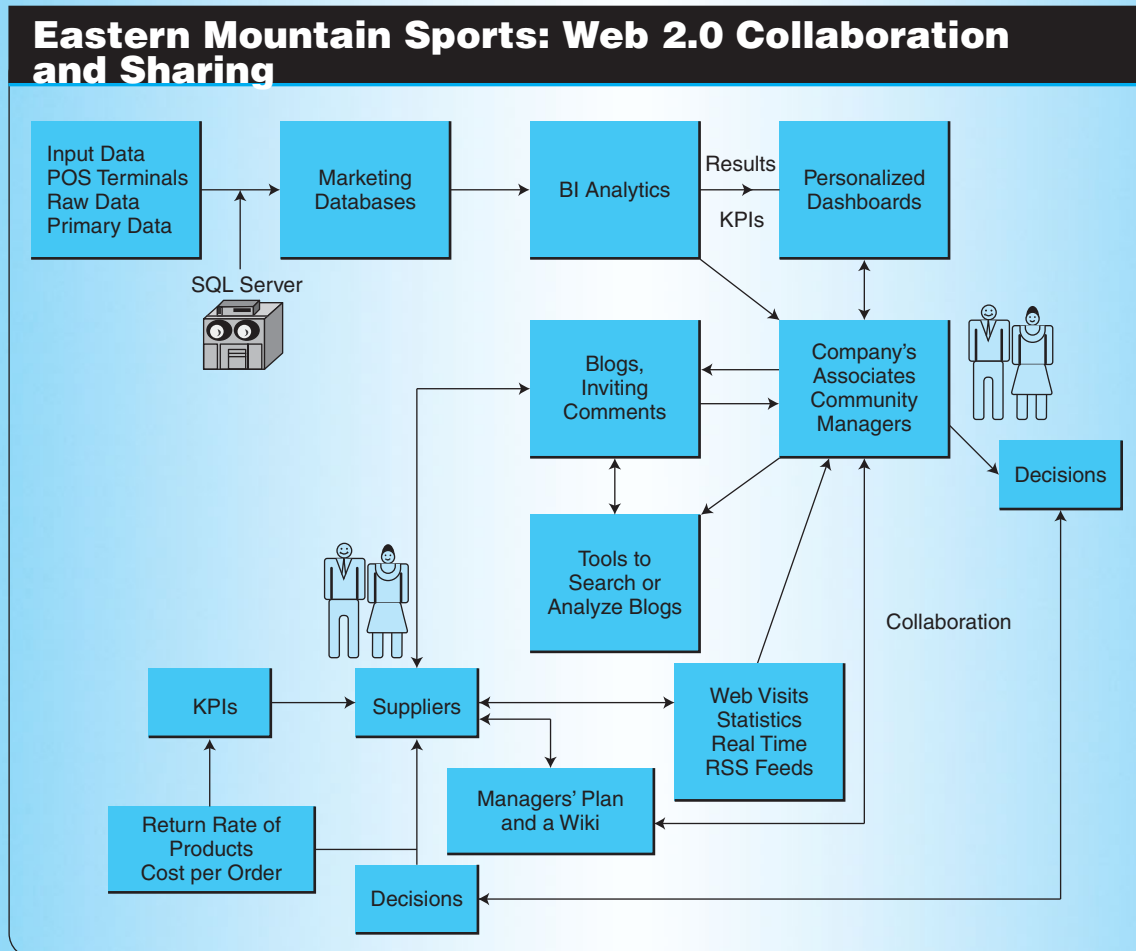
The Business Intelligence Strategy and System

During the past few years, the company has implemented a business intelligence (BI) system (see Online Tutorial T8) that includes business performance management and dashboards. (A *dashboard* is a graphical presentation of performance results). A BI system collects raw data from multiple sources, processes them into a data warehouse (or data mart), and conducts analyses that include comparing performance to



operational metrics in order to assess the health of the business (see details in Turban et al. 2011).

The illustration below shows how the system works. Point-of-sale (POS) information and other relevant data, which are available on an IBM mainframe computer, are loaded into Microsoft's SQL server and into a database (see Online Tutorial T8). The data are then analyzed with Information Builders' WebFOCUS platform. The results are presented via a series of dashboards that users can view by using Web browsers.



The Web 2.0 Collaboration, Sharing, and Communications System

The company created a multifunctional employee workbench called *E-Basecamp*. E-Basecamp contains all information relevant to corporate goals integrated with productivity tools (e.g., Excel) and role-based content customized to each individual user. Then, EMS added a set of Web 2.0 tools. The system facilitates collaboration among internal and external stakeholders. EMS uses 20 operation metrics (e.g., inventory levels and turns). These metrics also cover e-tailing, where e-commerce managers monitor Web traffic and conversion rates on an hourly basis. The dashboard shows deviations from targets by means of a color code. The system uses the Web 2.0 tools that are illustrated in the exhibit.

- **Wikis.** Wikis are used to encourage collaborative interaction throughout the company. Dashboard users are encouraged to post an hypothesis or request for help

and then invite commentary and suggestions, almost like a notepad alongside the dashboard.

- **Blogs.** Blogs were created around specific data or a key metric. The blogs are used to post information and invite comment. Tools are then used to archive, search, and categorize blogs for easy reference. For example, store managers post an inquiry or explanation regarding sale deviations (anomalies). Keeping comments on blogs lets readers observe patterns they might have overlooked using data analysis alone.
- **RSS feeds.** RSS feeds (en.wikipedia.org/wiki/RSS_feeds) are embedded into the dashboards to drive more focused inquiries. These feeds are the base for information sharing and online conversations. For example, by showing which items are selling better than others, users can collectively analyze the transaction characteristics and selling behaviors that produce the high sales. The knowledge acquired then cascades throughout the organization.

Going to Business Partners Externally

Suppliers can monitor the return rate of a product on the dashboard and invite store managers to provide explanations and suggestions using wikis or blogs. The objective is to build a tighter bond with business partners. For instance, by attaching a blog to suppliers' dashboards, the suppliers can view current sales information and post comments to the blogs. Product managers use a wiki to post challenges for the next season (such as a proposed percentage increase in sales) and then ask vendors to suggest innovative ways to achieve these goals. Several of the customers and other business partners subscribe to RSS feeds.

Called *Extreme Deals*, blogs are also embedded into the EMS product life-cycle management (PLM) tool. This allows vendors to have virtual conversations with the product development managers.

The major impact of the Web 2.0 collaboration tools is that instead of having conversations occur in the hallway (where you need to be in the right place at the right time), conversations take place on blogs, wikis, and discussion forums where all interested parties can participate.

Sources: Compiled from Nerille (2007) and from *ems.com* (accessed November 2010).

WHAT WE CAN LEARN . . .

Eastern Mountain Sports was successful in bolstering communication and collaboration both among its own managers and with its suppliers. It did so with Web 2.0 tools: blogs, wikis, and RSS feeds. These tools facilitated the company's business processes and their existing information systems. Web 2.0 tools enhance the activities of e-commerce, business-to-employee (B2E) information sharing, B2B (as in this case), and e-tailing (business-to-consumer). The Web 2.0 tools are the newest mechanisms of EC and are introduced in this chapter (Section 2.4 and Sections 2.6–2.8) together with the more traditional mechanisms that support selling and buying online.

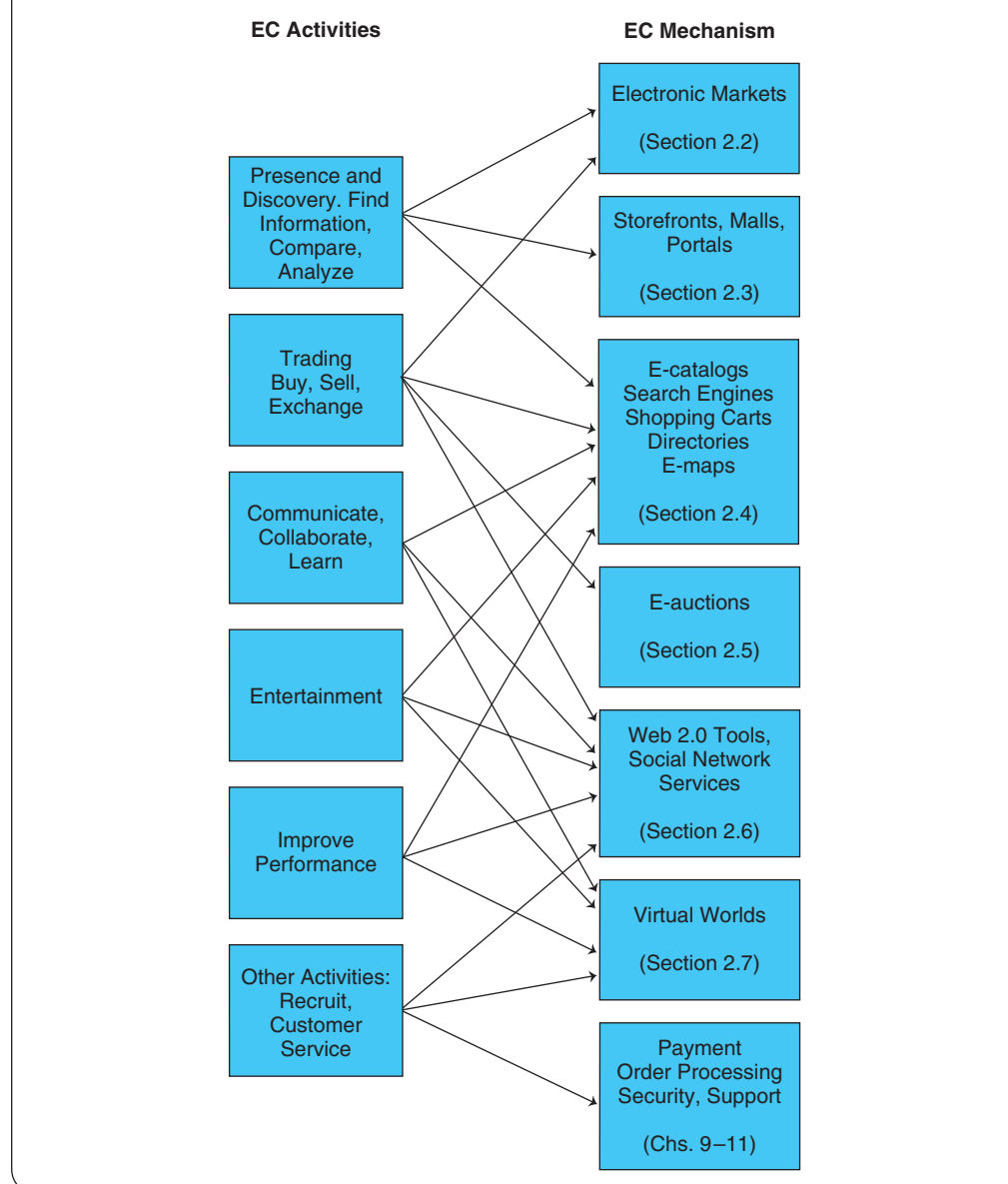
2.1 ELECTRONIC COMMERCE MECHANISMS: AN OVERVIEW

The many EC models and types of transactions presented in Chapter 1 are enabled by different mechanisms. To begin with, most B2C applications are conducted on the Internet. In addition, the generic enablers of any information system including databases, networks, security, software and server software, operating systems, hardware (Web servers), and hosting services need to be established. Then come the special EC enablers that are presented in this chapter such as electronic markets, shopping carts, and e-catalog services such as payment and order fulfillment, which are needed as well as CRM and streaming for rich media. Also, there are different methods for executing EC, such as buying at a fixed price or at an auction, and each method has a different support mechanism. In this chapter, the major EC mechanisms are described so that you will understand what they are when you read about them in the forthcoming chapters.

EC ACTIVITIES AND SUPPORT MECHANISMS

The EC trading activities are divided into six categories, which are listed on the left side of Exhibit 2.1. Each activity is supported by one or more EC mechanisms, which are

EXHIBIT 2.1 The EC Activities–Mechanism Connection



shown on the right side of Exhibit 2.1, along with the section number in this chapter, where they are presented. Additional mechanisms exist for special activities, such as payment (Chapter 10), security (Chapter 9), and order fulfillment (Chapter 11). Also standard IT technologies such as RFID, EDI, and extranets are described in Online Tutorials T3 and T11.

Next, we present one of the major processes in EC, which is online trading.



SELLERS, BUYERS, AND TRANSACTIONS

Typically, a seller (retailer, wholesaler, or a manufacturer) sells to customers. The seller buys from suppliers either raw materials (as a manufacturer) or components for assembly (as an assembler), or finished goods (as a retailer). This process is illustrated in Exhibit 2.2.

The selling company, shown as “Our Company,” appears in the center of the exhibit. Internally, processes and transactions are conducted there in different functional departments and are supported by EC applications. The customers place orders (in B2C or B2B), and Our Company fulfills them. Our Company buys materials, products, services, and so on directly from suppliers, from distributors (B2B), or from the government (G2B) in a process called *e-procurement*. Sometimes intermediaries are involved in this process. Let’s zero in on what happens during a typical purchasing process.

The Purchasing Process

Customers buy goods online in different ways. The most common way is purchasing from catalogs at fixed prices. Sometimes prices may be negotiated or discounted. Another way to determine price is *dynamic pricing*, which refers to nonfixed prices such as those in auctions or stock (commodity) markets. The buyers use the process illustrated in Exhibit 2.3.

The process starts with logging into a seller’s website, registering (if needed), and entering into an online catalog or the buyer’s “My Account.” E-catalogs can be very large, so a search mechanism may be needed. Also, buyers usually like to compare prices. Some sellers (e.g., American Airlines) provide comparisons with competing vendors. Otherwise, the buyer may need to leave the site or do price comparisons *before* entering into the specific seller’s store. If not satisfied, the buyer will abandon the site. If satisfied, the buyer will select an item and place it in a *shopping cart* (or bag). The buyer may return to the catalog to choose more items. Each selected item is placed in the shopping cart. When the shopping is completed, the buyer goes to a checkout page, where a shipment option is selected from a menu. Also, a payment option may be available. For example, newegg.com lets you pay by credit card, with PayPal, by check after billing, in installments, and so on. After checking all details for accuracy, the buyer *submits* the order.

The major mechanisms that support this process are described in Sections 2.3 and 2.4 of this chapter. The place where buying and selling occurs is called an *e-marketplace*, which we introduce next.

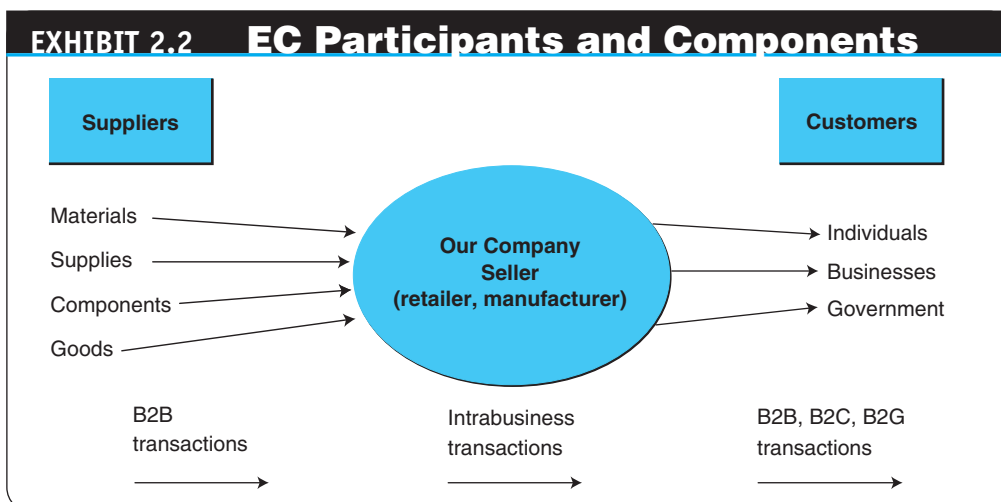
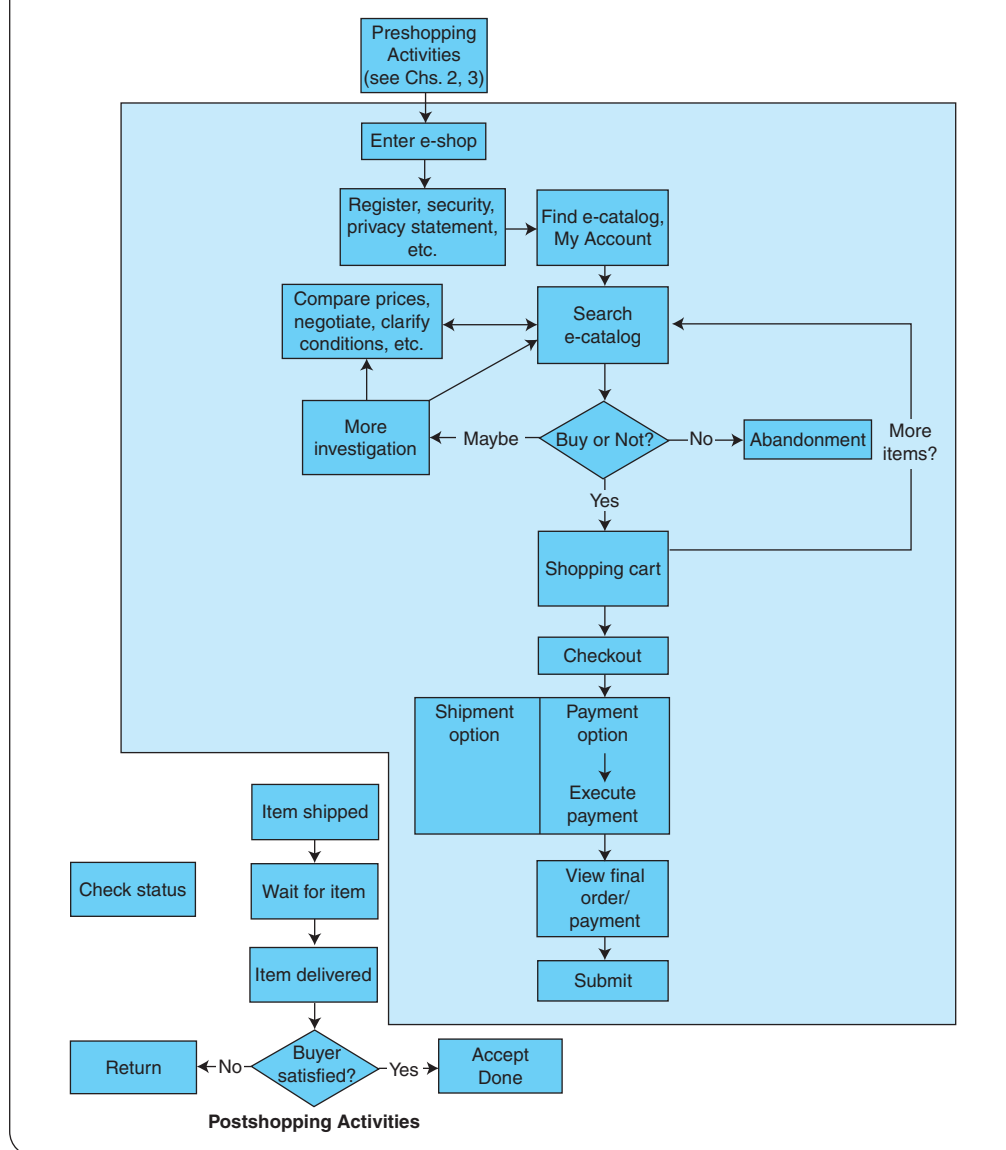


EXHIBIT 2.3 Buying Process in an E-Market**Section 2.1 REVIEW QUESTIONS**

1. List the major EC activities.
2. List the major EC mechanisms.
3. Describe the selling–buying process among a selling company, its suppliers, and customers (consult Exhibit 2.2).
4. Describe the major activities in the buying process (consult Exhibit 2.3).

2.2 E-MARKETPLACES

Electronic markets play a central role in the digital economy, facilitating the exchange of information, goods, services, and payments. In executing the process, e-marketplaces create economic value for buyers, sellers, market intermediaries, and for society at large.

Markets (electronic or otherwise) have three main functions: (1) matching buyers and sellers; (2) facilitating the exchange of information, goods, services, and payments associated with market transactions; and (3) providing an institutional infrastructure, such as a legal and regulatory framework, that enables the efficient functioning of the market (see Exhibit 2.4).

EXHIBIT 2.4 Functions of a Market

Matching of Buyers and Sellers	Facilitation of Transactions	Institutional Infrastructure
• Determination of product offerings Product features offered by sellers Aggregation of different products • Search (of buyers for sellers and of sellers for buyers) Price and product information Organizing bids and bartering Matching seller offerings with buyer preferences • Price discovery Process and outcome in determination of prices Enabling price comparisons • Others Providing sales leads Provide W2.0 tools Arrange auction	• Logistics Delivery of information, goods, or services to buyers • Settlement Transfer of payments to sellers • Escrow services • Trust Credit system, reputations, rating agencies such as <i>Consumer Reports</i> and the BBB, special escrow and online trust agencies • Communication Posting buyers' requests Posting RFQs • Mechanisms: provide catalogs, etc.	• Legal Commercial code, contract law, dispute resolution, intellectual property protection • Regulatory Rules and regulations, compliance, monitoring, enforcement • Discovery Provides market information (e.g., about competition, government regulations)

Sources: Compiled from Bakos (1998), from *E-Market Services* (2006), and from author's experience.

ELECTRONIC MARKETS

The major place for conducting EC transactions is the electronic market. An **e-marketplace** (also called *e-market*, *virtual market*, or *marketspace*) is a virtual market in which sellers and buyers meet and conduct different types of transactions. Customers exchange goods and services for money (or for other goods and services if bartering is used). The functions of an e-market are the same as those of a physical marketplace; however, computerized systems tend to make electronic markets much more efficient by providing more updated information and diverse support services to buyers and sellers such as rapid execution.

EC has increased market efficiencies by expediting and or improving the functions listed in Exhibit 2.4. Furthermore, EC has been able to significantly decrease the cost of executing these functions.

The emergence of *electronic* marketplaces, especially Internet-enabled ones, changed several of the processes used in trading and supply chains. These changes, driven by technology, resulted in many cases of:

- Greater information richness of the transactional and relational environment
- Lower information search time and cost for buyers
- Diminished information asymmetry between sellers and buyers
- Possibly less time between purchase and possession of physical products purchased in the e-marketplace (especially if the product can be digitized)
- Greater temporal proximity between time of purchase and time of possession of digital products purchased in the e-marketplace
- The ability of buyers, sellers, and the virtual market to each be in a different location
- The ability for EC to leverage capabilities with increased effectiveness and lower transaction and distribution costs, leading to more efficient "friction-free" markets

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.

marketplace

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

digital products

Goods that can be transformed to digital format and delivered over the Internet.

**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.

COMPONENTS OF AND THE PARTICIPANTS IN E-MARKETPLACES

A **marketplace** includes electronic transactions that bring about a new distribution of goods and services. The major components and players in a marketplace are customers, sellers, products and services (physical or digital), infrastructure, a front end, a back end, intermediaries and other business partners, and support services. A brief description of each follows:

- ▶ **Customers.** More than 2 billion Internet surfers worldwide who surf the Web are potential buyers of the goods and services offered on the Internet. These consumers are looking for bargains, customized items, collectors' items, entertainment, socialization, and more. They are in the driver's seat. They can search for detailed information, compare, bid, and sometimes negotiate. Organizations are the largest consumers, accounting for more than 85 percent of EC volume and value activities.
- ▶ **Sellers.** Millions of storefronts on the Web are advertising and offering a huge variety of items. These stores are owned by companies, government agencies, or individuals. Every day it is possible to find new offerings of products and services. Sellers can sell directly from their websites or from public e-marketplaces.
- ▶ **Products and services.** One of the major differences between the marketplace and the marketplace is the possible digitization of products and services in a marketplace. Although both types of markets can sell physical products, they can also sell **digital products**, which are goods that can be transformed to digital format. However, marketplaces can instantly deliver the purchased product over the Internet. In addition to digitization of software, music, and airline tickets, it is possible to digitize dozens of other products and services, as shown in Online File W2.1. Digital products have different cost curves than those of physical products. In digitization, most of the costs are fixed, and variable costs are very low. Thus, profits will increase very rapidly as volume increases, once the fixed costs are paid.
- ▶ **Infrastructure.** The marketplace infrastructure includes electronic networks, hardware, software, and more.
- ▶ **Front end.** Customers interact with a marketplace via a **front end**. The major components of the front end can include the seller's portal, electronic catalogs, a shopping cart, a search engine, an auction engine, and a payment gateway.
- ▶ **Back end.** All the activities that are related to order aggregation and fulfillment, inventory management, purchasing from suppliers, accounting and finance, insurance, payment processing, packaging, and delivery are done in what is termed the **back end** of the business.
- ▶ **Intermediaries.** In marketing, an **intermediary** is typically a third party that operates between manufacturers and buyers. Intermediaries of all kinds offer their services on the Web. Some are manual, many are electronic. The role of these electronic intermediaries is frequently different from that of regular intermediaries (such as wholesalers or retailers), as will be seen throughout the text, especially in Chapters 3 and 4. For example, online intermediaries create and manage the online markets. They help match buyers and sellers, provide escrow services, and help customers and/or sellers institute and complete transactions. Physical intermediaries may be eliminated or their job be computerized as shown next.

DISINTERMEDIATION AND REINTERMEDIATION

Intermediaries usually provide two types of services: (1) They provide relevant information about demand, supply, prices, and requirements and, in doing so, help match sellers and buyers; (2) They offer value-added services such as transfer of products, escrow, payment arrangements, consulting, or assistance in finding a business partner. In general, the first type of service can be fully automated and thus it is likely to be assumed by e-marketplaces, infomediaries, and portals that provide free or low-fee services. The second type requires expertise, such as knowledge of the industry, the products, and technological trends, and therefore it can only be partially automated.

Intermediaries that provide only (or mainly) the first type of service may be eliminated; this phenomenon is called **disintermediation**. An example is the airline industry and its push for selling electronic tickets directly by the airlines. As of 2004, most airlines require customers to pay \$5 or more per ticket if they buy a ticket from an agent or by phone, which is equivalent to the agent's commission. This is resulting in the *disintermediation* of travel agents from the purchasing process. In another example, discount stockbrokers that only execute trades manually are disappearing. However, brokers who manage electronic intermediation are not only surviving but may also be prospering (e.g., Priceline and Expedia in travel and Ameritrade Corp. in stock trading). This phenomenon, in which disintermediated entities or newcomers take on new intermediary roles, is called *reintermediation* (see Chapter 3).

Disintermediation is more likely to occur in supply chains involving several intermediaries, as illustrated by Blue Nile in Case 2.1.

disintermediation

Elimination of intermediaries between sellers and buyers.

CASE 2.1

EC Application

HOW BLUE NILE INC. IS CHANGING THE JEWELRY INDUSTRY

Blue Nile Inc. (bluenile.com), a pure-play online e-tailer that specializes in diamonds and jewelry, capitalized on online diamond sales as a dot-com start-up in 1999. The company provides a textbook case of how EC fundamentally undercuts the traditional way of doing business.

The Opportunity

Using the B2C EC model—knocking out expensive stores and intermediaries and then slashing prices (up to 35 percent less than rivals to gain market share)—Blue Nile captured a high market share in a short time, making a sizable profit by inducing more people to buy online.

How did the start-up defy conventional wisdom that diamonds could not be sold online? Basically, Blue Nile offers a huge selection of diamonds and more information on diamonds than a jewelry expert offers in a physical store. In November 2010, Blue Nile offered about 70,000 round diamonds that could be used to build a customized wedding ring. No physical store can offer so many diamonds. It also features educational guides in plain English and provides independent (and trusted) quality ratings for every stone. A customer can look over a rating scale for cut, clarity, color, and so on and then conduct a price comparison with Diamond.com (diamond.com) and other online stores. Most important is the 30-day 100 percent

money-back guarantee (now an online industry standard). This provides customers a comfort level against fraud and gives Blue Nile a competitive edge against stores that take the stones back but charge a fee to do so. The company has a mobile website for iPhone and Android users (m.bluenile.com and bluenile.com). You can compare prices and quality while you search the inventory. The site provides a live chat, financing services, a build-your-own engagement ring, gift ideas, and much more.

The Results

Blue Nile sales reached \$129 million in 2003 (a 79 percent increase over 2002), with a net income of \$27 million. In 2007, sales exceeded \$320 million (40 percent annual growth). The company became the eighth-largest specialty jewelry company in the United States and went public in 2004 (one of the most successful IPOs of 2004). While sales fell during the economic downturn in 2008, in 2009 the company rallied again with a 2.3 percent growth.

To sell \$320 million in jewelry, a traditional retail chain needs 300 stores and close to 3,000 employees. Blue Nile does it with one 10,000-square-foot warehouse and 190 staffers. The company also bypasses the industry's tangled supply chain, in which a diamond may pass through five or more middlemen before reaching a retailer.

(continued)

CASE 2.1 (continued)

Blue Nile deals directly with original suppliers, such as Thaigem.com.

This is one reason why in the United States some 465 small jewelry stores closed in 2003 alone. The survivors specialize in custom-crafted pieces. Large rivals try to fight back, streamlining the supply chain, emphasizing customer service, and even trying to sell some products online as an additional channel.

The future seems to be clear, as summarized by Roger Thompson, a small jeweler in Lambertville, New Jersey, who said, "Anyone with half a brain, who wants a diamond engagement ring will go to the Internet." So, he stopped selling diamonds. In the meantime, grooms make proposals with Blue Nile rings, saving \$3,000 to \$5,000.

Note that the competition in the jewelry business is very strong, not only from jewelry retailers, but also from general e-tailers such as overstock.com, ice.com, and amazon.com.

Sources: Compiled from Rivlin (2007), *BusinessWeek Online* (2006), and bluenile.com (accessed December 2010).

Questions

1. Using the classification of EC (Section 1.2, Chapter 1), what can you say about Blue Nile?
2. In what ways is the company changing its industry?
3. What are the critical success factors of the company?
4. Research Blue Nile's affiliate marketing program via LinkShare. How does this program help Blue Nile?
5. Competition between Blue Nile and Amazon.com will continue to increase. In your opinion, which one will win? (Visit their websites and see how they sell jewelry.)
6. Compare the following three sites: diamond.com, ice.com, and bluenile.com.
7. Follow the performance of Blue Nile's stock since 2003 (symbol: NILE, go to money.cnn.com). Compare it to the performance of the market average. What is your conclusion?
8. Find all the ways you can pay at Blue Nile when you shop.

TYPES OF E-MARKETPLACES

On the Web, the term *marketplace* differs from the physical one. We distinguish two types of e-marketplaces: private and public.

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.

Private E-Marketplaces

Private e-marketplaces are those owned and operated by a single company. Dell, HP, and United Airlines sell from their websites. Private markets are either sell-side or buy-side. In a **sell-side e-marketplace**, a company, (e.g., Net-a-Porter or Cisco) will sell either standard or customized products to individuals (B2C) or to businesses (B2B); this type of selling is considered to be one-to-many. In a **buy-side e-marketplace**, a company purchases from many potential suppliers; this type of purchasing is considered to be *many-to-one*, and it is a B2B activity. For example, Raffles Hotel (Online File W2.2) buys its supplies from approved vendors that come to its e-market. Private marketplaces may be open only to selected members and are not publicly regulated. We will return to the topic of private e-marketplaces in Chapters 3 (B2C) and 4 (B2B).

Public E-Marketplaces

Public e-marketplaces are usually B2B markets. They often are owned by a third party (not a seller or a buyer) or by a group of buying or selling companies (referred to as a consortium), and they serve many sellers and many buyers. These markets also are known as *exchanges* (e.g., a stock exchange). They are open to the public and usually are regulated by the government or the exchange's owners. Public e-marketplaces are presented in detail in Chapter 4.

Section 2.2 ■ REVIEW QUESTIONS

1. Define e-marketplace and describe its attributes.
2. What is the difference between a physical marketplace and an e-marketplace (marketspace)?

3. List the components of a marketplace.
4. Define a digital product and provide five examples.
5. Describe private versus public e-markets.

2.3 CUSTOMER SHOPPING MECHANISMS: STOREFRONTS, MALLS, AND PORTALS

Several kinds of interactions exist among sellers, buyers, and e-marketplaces. The major B2C mechanisms are *storefronts* and *Internet malls*. Let's elaborate on these, as well as on the gateways to e-marketplaces—portals.

ELECTRONIC STOREFRONTS

A **Webstore (storefront)** refers to a single company's website where products and services are sold (see the screen capture below). It is an electronic store that usually has an online shopping cart associated with it. Many Webstores target a specific industry and find their own unique corner of the market. The storefront may belong to a manufacturer (e.g., geappliances.com and dell.com), to a retailer (e.g., zappos.com and wishlist.com.au), to individuals selling from home, or to another type of business. Note that companies that sell services (such as insurance) may refer to their storefronts as *portals*. An example of a service-related portal is an online hotel reservation system, as shown in Online File W2.2.

A Webstore includes several mechanisms that are necessary for conducting online sales. These are known as a *merchant software suite*. The most common mechanisms are an *electronic catalog*; a *search engine* that helps the consumer find products in the catalog; an *electronic cart* for holding items until checkout; *e-auction facilities* where auctions take place; a *payment gateway* where payment arrangements can be made; a *shipment court* where shipping arrangements are made; and *customer services*, which include product and warranty information.

Microsites

Microsite refers to a page or pages that are meant to function as an auxiliary supplement to a primary website. It adds information, usually editorial or commercial, about the primary website.

Webstore (storefront)

A single company's website where products or services are sold and usually has an online shopping cart associated with it. Many Webstores target a specific industry and find their own unique corner of the market.



Source: Courtesy of Seeds of Change. Used with permission.

e-mall (online mall)

An online shopping center where many online stores are located.

ELECTRONIC MALLS

In addition to shopping at individual storefronts, consumers can shop in electronic malls (e-malls). Similar to malls in the physical world, an **e-mall (online mall)** is an online shopping location where many stores are located. For example, Mall of Maine (emallofmaine.com) is an e-mall that aggregates products, services, and providers in the state of Maine. It contains a directory of vacation services and product categories and the vendors in each category. When a consumer indicates the category he or she is interested in, the consumer is transferred to the appropriate independent *storefront*. This kind of mall does not provide any shared services; it is merely a directory. Other malls, such as Choice Mall (choicemall.com), do provide some shared services.

TYPES OF STORES AND MALLS

There are several different types of stores and malls:

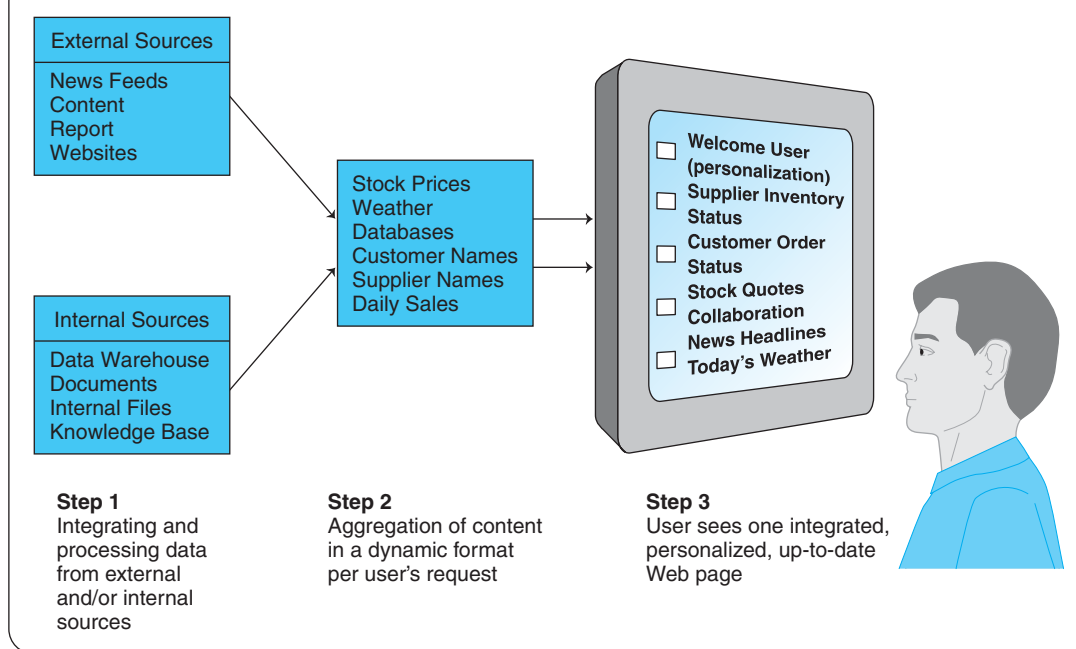
- ▶ **General stores/malls.** These are large marketplaces that sell all kinds of products. Examples are amazon.com, choicemall.com, walmart.com, spree.com, and the major public portals (yahoo.com and msn.com). All major department stores and discount stores also fall into this category.
- ▶ **Specialized stores/malls.** These sell only one or a few kinds of products, such as shoes, books, flowers, wine, cars, electronics, or pet toys. 1800flowers.com sells flowers and related gifts; cars.com sells cars; fashionmall.com/beauty.html specializes in beauty products; and cattoys.com sells cat toys. Visit newegg.com for computer electronics and endless.com or zappos.com for shoes and accessories.
- ▶ **Regional versus global stores.** Some stores, such as e-grocers or sellers of heavy furniture, serve customers that live nearby. For example, parknshop.com serves the Hong Kong community only; it will not deliver outside of Hong Kong. However, some local stores will even sell to customers in other countries if the customer is willing to pay shipping, insurance, and other costs (e.g., see hothothot.com).
- ▶ **Pure-play versus click-and-mortar stores.** Stores may be pure online (i.e., virtual or pure-play) organizations, such as Blue Nile, Amazon.com, Buy.com, Newegg.com, or Cattoys.com. They do not have physical stores. Others are physical stores that also sell online (e.g., Walmart with walmart.com, 1-800-Flowers.com with 1800flowers.com, and Woolworths with woolworths.com.au). This second category is called *click-and-mortar*. Both categories will be described further in Chapter 3.

WEB (INFORMATION) PORTALS**Web portal**

A single point of access, through a Web browser, to critical business information located inside and outside (via Internet) an organization.

A *portal* is an information gateway that is used in e-marketplaces, e-stores, and other types of EC (e.g., in e-collaboration, intrabusiness, and e-learning). A **Web portal** is a single point of access, through a Web browser, to critical business information located inside (via intranet) and outside (via Internet) of an organization. Many Web portals can be personalized for the users. Note that wireless devices are becoming portals for both enterprise and Internet access. A schematic view of a portal is shown in Exhibit 2.5. Information sources (external and internal) are shown on the left side, and integrated and process data are shown as output on the monitor's screen. For more on portals, see en.wikipedia.org/wiki/Web_portal.

Portals present information from diverse sources in a unified way. Apart from the search engine standard, Web portals offer other services such as e-mail, news, stock prices, entertainment, shopping capabilities, and other features. Portals provide a way for enterprises to provide a consistent look and feel with access control and procedures for multiple applications that otherwise would have been different entities altogether.

EXHIBIT 2.5 How a Portal Works**Types of Portals**

Portals can be described in many ways and assume many shapes. One way to distinguish among them is to look at their content, which can vary from narrow to broad, and their community or audience, which also can vary. The major types of portals are as follows:

- Commercial (public) portals.** These portals offer content for diverse communities and are the most popular portals on the Internet. Although they can be customized by the user, they are still intended for broad audiences and offer fairly routine content, some in real time (e.g., a stock ticker and news about a few preselected items). Examples of such sites are yahoo.com, aol.com, and msn.com.
- Corporate portals.** Corporate portals provide organized access to rich content within relatively narrow corporate and partners' communities. They also are known as *enterprise portals* or *enterprise information portals*. Corporate portals appear in different forms and are described in detail in Chapters 4 and 5. Examples of e-commerce portals can be found at sterlingcommerce.com.
- Publishing portals.** These portals are intended for communities with specific interests. These portals involve relatively little customization of content, but provide extensive online search features and some interactive capabilities. Examples of such sites are techweb.com and zdnet.com.
- Personal portals.** These target specific filtered information for individuals. They offer relatively narrow content and are typically very personalized, effectively having an audience of one. Personalized portals, or homepages, pioneered by Netvibes (netvibes.com) are an alternative to a regular Web portal. They are offered by Yahoo!, Google, and many more. Netvibes lets individuals assemble their favorite widgets (a *widget* is an element of user interface that displays an information arrangement changeable by the user, such as a window), websites, blogs, e-mail accounts, social networks, search engines, instant messenger, photos, videos, podcasts, and everything else they enjoy on the Web—all in one place. Today, Netvibes is a multilingual global community of users who are taking control of their digital lives by personalizing their Web experience. Netvibes is also a widget platform that is used by thousands of publishers around the world.

mobile portal

A portal accessible via a mobile device.

voice portal

A portal accessed by telephone or cell phone.

- ▶ **Mobile portals.** **Mobile portals** are portals that are accessible from mobile devices (see Chapter 6 for details). An increasing number of portals are accessible via mobile devices. One example of such a mobile portal is i-mode, which is described in Chapter 6. For additional information see en.wikipedia.org/wiki/On-Device-Portal.
- ▶ **Voice portals.** **Voice portals** are websites, usually portals, with audio interfaces. This means that they can be accessed by a standard telephone or a cell phone. AOLbyPhone is an example of a service that allows users to retrieve e-mail, news, and other content from AOL via telephone. It uses both speech recognition and text-to-speech technologies. Companies such as Tellme (tellme.com) and BeVocal (bevocal.com) offer access to the Internet from telephones, and also tools to build voice portals. Voice portals are especially popular for 1-800 numbers (enterprise 800 numbers) that provide self-service to customers with information available in Internet databases (e.g., finding flight status at delta.com).
- ▶ **Knowledge portals.** Knowledge portals enable access to knowledge by knowledge workers and facilitate collaboration.

THE ROLES AND VALUE OF INTERMEDIARIES IN E-MARKETPLACES

Intermediaries, such as brokers, play an important role in commerce by providing value-added activities and services to buyers and sellers. There are several types of intermediaries. The most well-known intermediaries in the physical world are wholesalers and retailers.

The two major types of *online intermediaries* are brokers and infomediaries.

Brokers

A *broker* in EC is a person or a company that facilitates transactions between buyers and sellers. The following are different types of brokers:

- ▶ **Buy/sell fulfillment.** A corporation that helps consumers place buy and sell orders (e.g., E*TRADE).
- ▶ **Virtual mall.** A company that helps consumers buy from a variety of stores (e.g., Yahoo! Stores).
- ▶ **Metamediary.** A firm that offers customers access to a variety of stores and provides them with transaction services, such as financial services (e.g., Amazon zShops).
- ▶ **Comparison agent.** A company that helps consumers compare prices and service at different stores (e.g., bizrate.com).
- ▶ **Shopping facilitator.** A company that helps consumers use online shops by providing currency conversion, language translation, payment features, delivery solutions, and potentially a user-customized interface (e.g., punto mio.com).
- ▶ **Matching services.** These match jobs to openings, buyers to products, dating candidates, and so forth.

Infomediaries

In cyberspace, some intermediaries provide and/or control information flow. These electronic intermediaries are known as **infomediaries**. The information flows to and from buyers and sellers via infomediaries. Infomediaries are websites that gather and organize large amounts of data and act as intermediaries between those who want the information and those who supply the information (see webopedia.com/TERM/I/infomediary.html). There are two types of infomediaries:

- ▶ The first type offers consumers a place to gather information about specific products and companies before making purchasing decisions (e.g., autobytel.com, cars.com, and bizrate.com).

infomediaries

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

- ▶ The second is not necessarily Web-based. It provides vendors with consumer information that will help the vendor develop and market products. The infomediary collects personal information from the buyers and sells that data to businesses.

Financial Standard performs both types of services, as illustrated in Case 2.2.

CASE 2.2

EC Application

FINANCIAL STANDARD

Financial Standard is a Sydney-based infomediary that provides trade news, investment analysis, and consulting services for a broad cross section of financial stakeholders including individual and corporate investors. These include superannuation trustees, financial planners, researchers, consultants, investment managers, and professional investors. They are also providers of education, employment, and human resources services for career-orientated aspirants of the financial industry. Financial Standard is a member of the Rainmaker Group which was founded in 1992.

The company derives its revenue from the provision of news, information, recruitment, and consulting services. More specifically, this entails the supply of current and developing financial and market news, strategic, tactical, and analytical information, and services for both company recruiters and job seekers. Information is gathered from sources including the government, legal systems, investment organizations, and banks. It also consults on matters ranging from financial strategy to human resource management. This is all available from a single, user-friendly source: the company website, at competitive rates.

Financial Standard operates a subscription-type business model. Subscriptions are charged for the base service, which includes website access and delivery of the *Financial Standard* newspaper. It is also a freemium business model however as customers are given free access to the website and to a limited amount of journal content, but a fee is required for the full or premium service.

Membership offers the following benefits among others:

- ▶ Access to the *Financial Standard* newspaper which offers trade news reviews, sector reviews, performance tables, market expectation surveys, and a black book of industry contacts—delivered fortnightly
- ▶ Access to the Financial Standard E-News Service—delivered daily
- ▶ Online access to news stories
- ▶ Financial Standard Best Practice seminar and workshop discounts
- ▶ Discounts on the Financial Standard Intelligence Reports

In addition to the *Financial Standard* newspaper, individual and corporate clients can subscribe to a number of quarterly journals through the website.

Consumers also can subscribe to the Financial Standard Intelligence Unit's (FSIU) Vantage Point, which is an additional source of balanced insights into investment and economic issues.

The Financial Standard service has the following objectives:

- ▶ **Provide a one-stop information service:** This is largely through the *Financial Standard* newspaper.
- ▶ **Achieve interactive and collaborative engagement with clients and partners:** This involves exploiting the features of Web 2.0 including blogs written by leading financial players, social networking, and videos provided by Rainmaker iTV on a range of topics including industry profiles and market updates.
- ▶ **Advance professional education:** The Financial Standard Continuous Professional Development Program addresses the requirement for development for financial professionals.
- ▶ **Help sustain the viability of the labor market in financial services:** Financial Standard provides global recruiting services for the banking, financial, and accounting sectors. Job seekers and employers can access a customized package of job postings, résumé databases, and brand advertising.

The success of Financial Standard is a result of its competitive differentiation. Its investment analysis is derived from an innovative combination of internal and external expertise and its service is less restrictive than others in giving access to its diverse range of content.

Sources: *financialstandard.com.au* (accessed July 2011) and *rainmaker.com.au* (accessed July 2011).

Questions

1. What are the specific elements that qualify Financial Standard as an infomediary?
2. Describe any significant differences between the terms *intermediary*, *infomediary*, and *portal*.
3. Outline four major categories of customer for Financial Standard, explaining in each case the specific benefits they obtain from the service.
4. As an information provider, what further additions to the services (if any) offered by Financial Standard would you recommend?

The advantage of infomediaries is usually that consumer privacy is protected and some infomediaries offer consumers a percentage of the fees they earn.

Distributors in B2B

A special type of intermediary in e-commerce is the B2B *e-distributor*. These intermediaries connect manufacturers with business buyers (customers), such as retailers (or resellers in the computer industry). **E-distributors** basically aggregate the catalogs or product information from many manufacturers, sometimes thousands of them, in one place—the intermediary's website. An example is W.W. Grainger (see grainger.com).

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.

Changing Roles and Location of Intermediaries

Traditionally intermediaries acted mostly between two parties in a market (e.g., between a company and its suppliers, or a company and financial source). This was done along the supply chain as illustrated in Part A of Exhibit 11.4 (p. 590). In EC, intermediaries can be found frequently at the center of a hub (Part B of the exhibit).

Section 2.3 ► REVIEW QUESTIONS

1. Describe electronic storefronts and e-malls.
2. List the various types of stores and e-malls.
3. What are information portals? List the major types.
4. List the roles of intermediaries in e-markets.
5. Describe e-distributors.
6. Describe the changing position and location of intermediaries in the supply chain.

2.4 MERCHANT SOLUTIONS: ELECTRONIC CATALOGS, SEARCH ENGINES, AND SHOPPING CARTS

To enable selling online, a website usually needs *EC merchant server software*. Merchant software includes many functionalities. One example is osCommerce, which is open-system software (see oscommerce.com and en.wikipedia.org/wiki/OsCommerce). Another example can be seen in the Yahoo! Merchant Solutions, at smallbusiness.yahoo.com/ecommerce. The basic functionality offered by such software includes electronic catalogs, search engines, and shopping carts, all intend to facilitate the electronic ordering process.

ELECTRONIC CATALOGS

Catalogs have been printed on paper for generations. Recently, electronic catalogs on CD-ROM and the Internet have gained popularity. **Electronic catalogs (e-catalogs)** consist of a products database, directory, and a presentation function. They are the backbone of most e-commerce sales sites. For merchants, the objective of electronic catalogs is to advertise and promote products and services. For the customer, the purpose of such catalogs is to locate information on products and services. Electronic catalogs can be searched quickly with the help of search engines, and they can be interactive. For example, *Change My Image* from Infinisys (en.infinisys.co.jp/product/cmimage/index.shtml) allows you to insert your photo and then change the hairstyle and color in the photo, so you see how you would look with a new hairstyle. Electronic catalogs can be very large; for example, the Library of Congress Web catalog (catalog.loc.gov) contains many millions of records as does Amazon.com's catalog.

Most early online catalogs were replications of text and pictures from printed catalogs. However, online catalogs have evolved to become more dynamic, customized, and integrated with selling and buying procedures, shopping carts, order taking, and payment. They may even include video clips. The tools for building them are being integrated with merchant suites and Web hosting (e.g., see smallbusiness.yahoo.com/ecommerce). Examples of a product catalog can be seen at jetpens.com—see Case 1.2 in Chapter 1).

electronic catalogs (e-catalogs)

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

Although used only occasionally in B2C commerce, customized catalogs are used frequently in B2B e-commerce. For a comprehensive discussion of online catalogs, see jcm.max.com/advantages.html.

Online Catalogs Versus Paper Catalogs

Although online catalogs have significant advantages, such as lower cost, ease of updating, the ability to be integrated with the purchasing process, coverage of a wide spectrum of products, interactivity, customization, and strong search capabilities, they also have disadvantages and limitations. To begin, customers need computers and Internet access to view online catalogs. Second, some customers have difficulties finding what they want in many catalogs that are not user-friendly. However, as computer availability, Internet access, and user's competence continue to increase, the disadvantages will be minimized and many paper catalogs will be supplemented by, if not actually replaced by, electronic ones (like the famous Sears catalog). The number of print newspapers and magazines have diminished due to online ones, but the future of print will not disappear entirely. Paper catalogs probably will not disappear altogether either. There seems to be room for both media, at least in the near future. However, in B2B, paper catalogs may disappear more quickly, especially in the case where catalogs can be accessed by smartphones.

Example. RadioShack (radioshack.com) builds and maintains electronic catalogs based on its paper catalogs. The catalogs include search capabilities, the ability to feature large numbers of products, enhanced viewing capabilities, updating, and support. There are no paper catalogs. The same is true of Walmart, Best Buy, and most department stores.

EC SEARCH ACTIVITIES, TYPES, AND ENGINES

Search activities are popular in EC, and many tools for conducting searches are available. Consumers search inside one company's catalog, for example, to find a product or service, or they use Google or Bing to find companies that sell the product they need. Here we describe only the essentials for EC search. For the video "Google Commerce Search," see youtube.com/watch?v=gj7qrotOmVY. For a special Google search for e-commerce, see google.com/commercesearch and a description in Chapter 3. First, though, we look at three major types of searches.

Types of EC Searches

The three major types of EC searches are *Internet/Web search*, *enterprise search*, and *desktop search*.

Internet/Web Search. This is the most popular search that involves any documents on the Web. According to Pew Internet and other statistical sites, finding information is one of the most frequent activities done on the Web.

Enterprise Search. An **enterprise search** is the practice of identifying and enabling specific content across an enterprise, to be indexed, searched, and displayed to authorized users. It describes the application of search technology to information *within* an organization. This is in contrast to the other two main types of search environment: Internet/Web search and desktop search.

Desktop Search. A **desktop search** is conducted by tools that search only the contents of a user's own computer files. The emphasis is on finding all the information that is available on the user's PC, including Web browser histories, e-mail archives, music, chats, photos, and word-processed documents. There are several search approaches to desktop search. For details see en.wikipedia.org/wiki/Desktop-search.

enterprise search

The practice of identifying and enabling specific content across the enterprise to be indexed, searched, and displayed to authorized users.

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.

One main advantage of desktop search programs is that search results come up in a few seconds. A variety of desktop search programs are available, such as Spotlight from Apple Computer, XI Enterprise, and Google's Desktop (see desktop.google.com). Desktop search is very useful: It is an efficient productivity tool that helps to save time.

Each search method discussed here is accomplished by search engines and intelligent agents.

Search Engines

search engine

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

A **search engine** is a computer program that can access databases of Internet or intranet resources, search for specific information or key words, and report the results. For example, customers tend to ask for information (e.g., requests for product information or pricing) in the same general manner. This type of request is repetitive, and answering such requests is costly when done by a human. Search engines deliver answers economically and efficiently by matching questions with frequently asked question (FAQ) templates, which respond with “canned” answers.

Google, AltaVista, Lycos, and Bing are popular search engines. Portals such as AOL, Yahoo!, and MSN have their own search engines. Special search engines organized to answer certain questions or search in specified areas include Ask.com, Northern Light, Mama, and Looksmart. Thousands of different public search engines are available (see searchengineguide.com). Each of these tools excels in one area. These can be very specialized with different capabilities (see Martin 2008). In addition, thousands of companies have their own search engines on their portals or storefronts. For example, Endeca InFront (from endeca.com) is a special search engine for online catalogs.

Software (Intelligent) Agents

Unlike a search engine, a software (intelligent) agent can do more than just “search and match.” It has capabilities that can be used to perform routine tasks that require intelligence. For example, it can monitor movements on a website to check whether a customer seems lost or ventures into areas that may not fit the customer’s needs. If it detects such confusion, the agent can notify the customer and provide assistance. Software agents can be used in e-commerce to support tasks such as conducting complex searches, comparing prices, interpreting information, monitoring activities, and working as an assistant. Users can even chat or collaborate with intelligent agents as is done in Second Life, where the agents are avatars and some even “understand” a natural language interface. For definitions, classes, references, and links see en.wikipedia.org/wiki/Intelligent_agents.

Questions and Answers Online

Intelligent search engines can answer user questions. Some search engines focus on doing just that. A leading engine is Ask.com (a subsidiary of IAC). Ask.com has about 500 million answered questions in its databases. The Q&A service matches the questions to answers. For details see ask.com. A competing engine is Answers.com, answers.com, a question and answer (Q&A) site, which comprises WikiAnswers and ReferenceAnswers platforms to locate answers to users’ questions. WikiAnswers is a community-generated social knowledge Q&A platform available in various languages, such as English, French, Italian, German, and Spanish, where people ask questions and the community answers them. *ReferenceAnswers* offers editorial content on various topics licensed from reference publishers.

Voice-Powered Search

To ease searching, especially when using a smartphone, Google introduced a voice-powered tool that allows you to skip the keyboard altogether. The first product was included as part of the iPhone’s mobile search application. It allows you to talk into your phone, ask any question, and the results of your query are offered on your iPhone. In addition to asking questions by talking into your iPhone, you can also listen to search engine results. For example, the search engine Bing has a lyrics search feature that allows you to listen to more than 5 million full-length songs streaming through Microsoft’s Tune music service.

Visual Shopping Search Engine

Using computer vision and machine learning technology, like.com (a Google company) provides a visual search engine that focuses on shoes, clothes, jewelry, and décor. (For other companies see searchme.com.)

The technology lets users see what terms like “red high-heeled pumps” and “floral patterned sleeveless dress” mean. It also created algorithms that explain to searchers whether those red pumps complement or clash with that dress they are buying. This type of search is a subset known as visual search (see en.wikipedia.org/Visual_search_engine, which is popular in mobile search engines).

SHOPPING CARTS

An **electronic shopping cart** (also known as *shopping bag* or *shopping basket*) is an order-processing technology that allows customers to accumulate items they wish to buy while they continue to shop. In this respect, it is similar to a shopping cart in the physical world. The software program of an electronic shopping cart allows customers to select items, review what has been selected, make changes, and then finalize the list. Clicking on “buy” and paying will trigger the actual purchase.

Shopping carts for B2C are fairly simple (visit amazon.com to see an example), but for B2B a shopping cart may be more complex. Shopping cart software is sold or provided for free as an independent component (e.g., networksolutions.com/e-commerce/index.jsp, zippycart.com, and easycart.com). It also is embedded in merchants’ servers, such as smallbusiness.yahoo.com/ecommerce. Free online shopping carts (trials and demos) are available at volusion.com and 1freecart.com. For more on shopping carts, see en.wikipedia.org/wiki/Shopping_cart_software.

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

Several other mechanisms exist such as the following.

Other Shopping Engines

Many other search engines are available to shoppers.

Example. Info.com (info.com) is a search platform that pulls together the best search tools. From a single search query, Info.com provides results from the leading search engines (e.g., Google, Bing, Yahoo!, Ask) and pay-per-click directories. Info.com is also partnered with other search providers to include comparison shopping and product reviews, a broad selection of news, health, pictures, eBay, jobs, white and yellow pages, tickets, flights, hotels, weather, maps, and directions. For example, Info.com has partnered with Become.com, a comparison shopping service, to make informed purchase decisions. It enables you to read product reviews, compare products, prices, and stores and buy from thousands of online merchants.

- ▶ **Audio.info.com/music.** Audio.com results are provided by *Yahoo! Audio* and *SingingFish*. To use Audio.com links, you need to have software tools installed on your computer.
- ▶ **Flights.info.com and Hotels.info.com.** Info.com offers real-time prices, availability, and other travel information from over 100 other online travel sites in one easy-to-use display, including prices and itineraries from 551 airlines and 91,000 hotels. Info.com’s travel offering is powered by Kayak.com.
- ▶ **Health.info.com.** Health information from over 170,000 health and medical sites representing 130 million pages of content from the Internet including specialist medical reports and research studies. Health.info.com is powered by Healthline.com.
- ▶ **Research.info.com.** Research information covering 3 million topics comprising of clear and authoritative content drawn from over 100 high-quality titles, including “the deep” or “invisible Web” often not available to search engines. On the right hand side of the reference results page users are able to view Info.com’s meta search results from all the leading search engines. Info.com’s research content is powered by Answers.com.
- ▶ **Video.info.com.** View videos from hundreds of providers across the Web, including YouTube, AOL, Reuters, *BusinessWeek*, BBC, CNN, Hollywood.com, and *Rolling Stone*. Info.com users can search millions of videos by relevance, category, provider, or freshness. Video.info.com is powered by Pixsy.com.
- ▶ **Classified.info.com.** Access over 18 million classifieds from over 750,000 sites. In your area you can find exactly what you’re looking for from autos, pets, rentals, houses, or used items. Classified.info.com is powered by Oodle.com.

Merchant software usually includes search engine submission, online tracking and reporting, product self-configuration, fraud screening and protection, and a payment gate. For an example see sunvirtual.com (see the “Merchant” account feature). Also see product configuration, which we will cover next.

Product Configuration

A key characteristic of EC is the ability to self-customize products and services, as done by Dell. Manufacturers need to produce customized products in economical and rapid ways so that the price of the products will be competitive. *Product configuration* systems support the acquisition of customer requirements while automating the order-taking process, and they allow customers to configure their products by specifying their technical requirements.

Section 2.4 ■ REVIEW QUESTIONS

1. List and briefly describe the dimensions by which electronic catalogs can be classified.
2. List the benefits of electronic catalogs.
3. Explain how customized catalogs are created and used.
4. Compare search engines with software intelligent agents.
5. Describe an electronic shopping cart.
6. Describe voice- and vision-related search engines.
7. What is self configuration?
8. Compare and contrast Ask.com and Answers.com.

2.5 AUCTIONS, BARTERING, AND NEGOTIATING ONLINE

One of the most interesting market mechanisms in e-commerce is electronic auctions (Nissanoff 2006). They are used in B2C, B2B, C2C, G2B, and G2C.

DEFINITION AND CHARACTERISTICS

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.

An **auction** is a market mechanism that uses a competitive process by which a seller solicits its consecutive bids from buyers (forward auctions) or a buyer solicits bids from sellers (reverse auctions). Prices are determined dynamically by the bids. Auctions, an established method of commerce for generations, deal with products and services for which conventional marketing channels are ineffective or inefficient, and they ensure prudent execution of sales. For example, auctions can expedite the disposal of items that need to be liquidated or sold quickly. Rare coins, stamps, and other collectibles are frequently sold at auction. Auctions facilitate competition and market efficiency. A wide variety of online markets qualify as auctions using this definition. Auctions are very popular online mechanisms worldwide. For a comprehensive description, see en.wikipedia.org/wiki/Auction.

There are several types of auctions, each with its own specialties and procedures. (For details, see en.wikipedia.org/wiki/Online_auction_business_model.) They can be conducted in *public* auction sites, such as at eBay, or conducted in *private* auctions sites, which are by invitation only.

DYNAMIC PRICING

dynamic pricing

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

One major characteristic of auctions is that they are based on dynamic pricing. **Dynamic pricing** refers to prices that are not fixed but that are allowed to fluctuate as supply and demand in a market change. In contrast, catalog prices are fixed, as are prices in department stores, supermarkets, and most electronic storefronts.

Dynamic pricing appears in several forms. Perhaps the oldest forms are negotiation and bargaining, which have been practiced for many generations in open-air markets.