

Chapter 10

E-commerce: Digital Markets, Digital Goods

LEARNING OBJECTIVES

After reading this chapter, you will be able to answer the following questions:

1. What are the unique features of e-commerce, digital markets, and digital goods?
2. What are the principal e-commerce business and revenue models?
3. How has e-commerce transformed marketing?
4. How has e-commerce affected business-to-business transactions?
5. What is the role of mobile commerce in business and what are the most important m-commerce applications?
6. What issues must be addressed when building an e-commerce Web site?

Interactive Sessions:

Twitter Searches for a Business Model

Facebook: Managing Your Privacy for Their Profit

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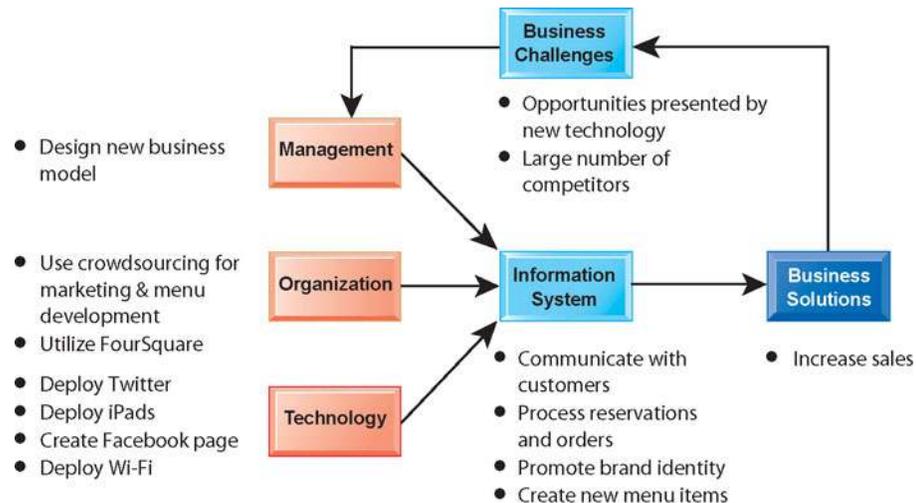
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Hot New Careers in E-commerce

4Food exemplifies the new face of e-commerce. Selling physical goods on the Internet is still important, but much of the excitement and interest now centers around services and social experiences—connecting with friends and family through social networking; sharing photos, video, and music, and ideas; and using social networking to attract customers and design new products and services. 4Food’s business model relies on mobile technology and social networking tools to attract customers, take orders, promote its brand, and use customer feedback to improve its menu offerings.

The chapter-opening diagram calls attention to important points raised by this case and this chapter. The business challenge facing 4Food is that it needs a way to stand out amid 20,000 other restaurants in New York City. E-commerce and social networking technology introduced new opportunities for linking to customers and for distinguishing products and services. 4Food’s management decided to base its business model around social technology, and make social networking part of the dining experience. 4Food uses social networking and mobile technology—including Twitter, Foursquare, and Facebook—to attract customers, to process reservations, to promote its brand image, and to solicit customer feedback for improving its menu offerings. By taking advantage of social networking tools, 4Food is able to differentiate itself from other restaurants and promote the business at a very low cost.



10.1 E-COMMERCE AND THE INTERNET

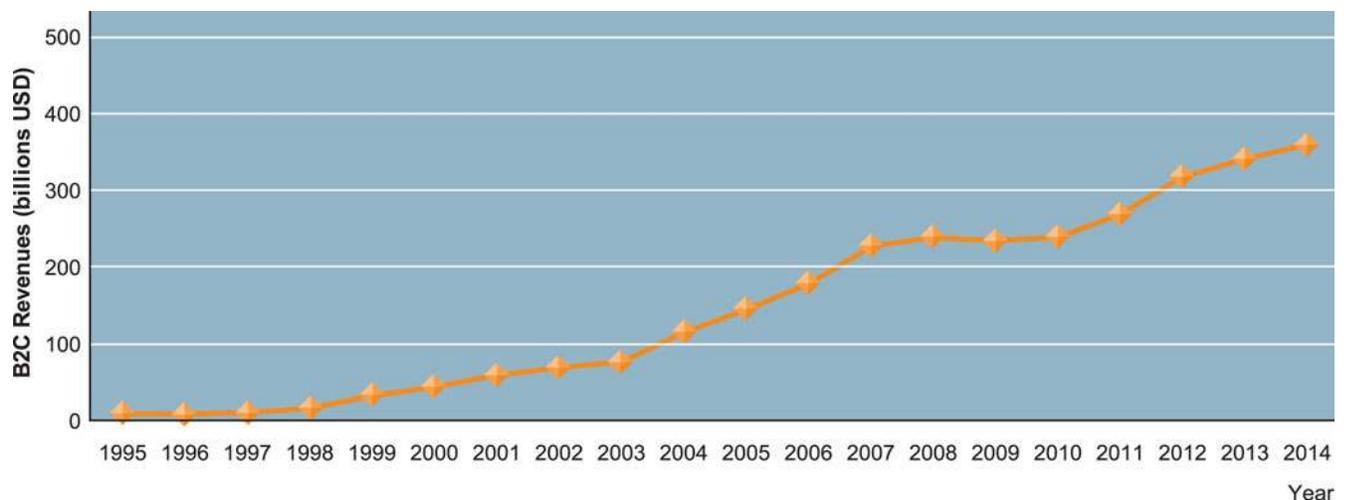
Have you ever purchased music over the Web or streamed a movie? Have you ever used the Web to search for information about your sneakers before you bought them in a retail store? If so, you've participated in e-commerce. In 2010, 133 million adult Americans bought something online, as did millions of others worldwide. And although most purchases still take place through traditional channels, e-commerce continues to grow rapidly and to transform the way many companies do business. In 2010, e-commerce represents about 6 percent of all retail sales in the United States, and is growing at 12 percent annually (eMarketer, 2010a).

E-COMMERCE TODAY

E-commerce refers to the use of the Internet and the Web to transact business. More formally, e-commerce is about digitally enabled commercial transactions between and among organizations and individuals. For the most part, this means transactions that occur over the Internet and the Web. Commercial transactions involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services.

E-commerce began in 1995 when one of the first Internet portals, Netscape.com, accepted the first ads from major corporations and popularized the idea that the Web could be used as a new medium for advertising and sales. No one envisioned at the time what would turn out to be an exponential growth curve for e-commerce retail sales, which doubled and tripled in the early years. E-commerce grew at double-digit rates until the recession of 2008–2009 when growth slowed to a crawl. In 2009, e-commerce revenues were flat (Figure 10-1), not bad considering that traditional retail sales were shrinking by 5 percent annually. In fact, e-commerce during the recession was the only stable segment in retail. Some online retailers forged ahead at a record pace: Amazon's 2009 revenues were up 25 percent over 2008 sales. Despite the recession, in 2010, the

FIGURE 10-1 THE GROWTH OF E-COMMERCE



Retail e-commerce revenues grew 15–25 percent per year until the recession of 2008–2009, when they slowed measurably. In 2010, e-commerce revenues are growing again at an estimated 12 percent annually.

number of online buyers increased by 6 percent to 133 million, and the average annual purchase is up 5 percent to \$1,139. Amazon's sales grew by 28 percent in the year.

Mirroring the history of many technological innovations, such as the telephone, radio, and television, the very rapid growth in e-commerce in the early years created a market bubble in e-commerce stocks. Like all bubbles, the "dot-com" bubble burst (in March 2001). A large number of e-commerce companies failed during this process. Yet for many others, such as Amazon, eBay, Expedia, and Google, the results have been more positive: soaring revenues, fine-tuned business models that produce profits, and rising stock prices. By 2006, e-commerce revenues returned to solid growth, and have continued to be the fastest growing form of retail trade in the United States, Europe, and Asia.

- Online consumer sales grew to an estimated \$225 billion in 2010, an increase of more than 12 percent over 2009 (including travel services and digital downloads), with 133 million people purchasing online and 162 million shopping and gathering information but not necessarily purchasing (eMarketer, 2010a).
- The number of individuals of all ages online in the United States expanded to 221 million in 2010, up from 147 million in 2004. In the world, over 1.9 billion people are now connected to the Internet. Growth in the overall Internet population has spurred growth in e-commerce (eMarketer, 2010b).
- Approximately 80 million households have broadband access to the Internet in 2010, representing about 68 percent of all households.
- About 83 million Americans now access the Internet using a smartphone such as an iPhone, Droid, or BlackBerry. Mobile e-commerce has begun a rapid growth based on apps, ring tones, downloaded entertainment, and location-based services. In a few years, mobile phones will be the most common Internet access device.
- On an average day, an estimated 128 million adult U.S. Internet users go online. About 102 million send e-mail, 81 million use a search engine, and 71 million get news. Around 63 million use a social network, 43 million do online banking, 38 million watch an online video, and 28 million look for information on Wikipedia (Pew Internet & American Life Project, 2010).
- B2B e-commerce-use of the Internet for business-to-business commerce and collaboration among business partners expanded to more than \$3.6 trillion.

The e-commerce revolution is still unfolding. Individuals and businesses will increasingly use the Internet to conduct commerce as more products and services come online and households switch to broadband telecommunications. More industries will be transformed by e-commerce, including travel reservations, music and entertainment, news, software, education, and finance. Table 10-1 highlights these new e-commerce developments.

WHY E-COMMERCE IS DIFFERENT

Why has e-commerce grown so rapidly? The answer lies in the unique nature of the Internet and the Web. Simply put, the Internet and e-commerce technologies are much more rich and powerful than previous technology revolutions like radio, television, and the telephone. Table 10-2 describes the unique features of the Internet and Web as a commercial medium. Let's explore each of these unique features in more detail.

Ubiquity

In traditional commerce, a marketplace is a physical place, such as a retail store, that you visit to transact business. E-commerce is ubiquitous, meaning

TABLE 10-1 THE GROWTH OF E-COMMERCE**BUSINESS TRANSFORMATION**

- E-commerce remains the fastest growing form of commerce when compared to physical retail stores, services, and entertainment.
- The first wave of e-commerce transformed the business world of books, music, and air travel. In the second wave, nine new industries are facing a similar transformation scenario: marketing and advertising, telecommunications, movies, television, jewelry and luxury goods, real estate, online travel, bill payments, and software.
- The breadth of e-commerce offerings grows, especially in the services economy of social networking, travel, information clearinghouses, entertainment, retail apparel, appliances, and home furnishings.
- The online demographics of shoppers broaden to match that of ordinary shoppers.
- Pure e-commerce business models are refined further to achieve higher levels of profitability, whereas traditional retail brands, such as Sears, JCPenney, L.L.Bean, and Walmart, use e-commerce to retain their dominant retail positions.
- Small businesses and entrepreneurs continue to flood the e-commerce marketplace, often riding on the infrastructures created by industry giants, such as Amazon, Apple, and Google, and increasingly taking advantage of cloud-based computing resources.
- Mobile e-commerce begins to take off in the United States with location-based services and entertainment downloads including e-books.

TECHNOLOGY FOUNDATIONS

- Wireless Internet connections (Wi-Fi, WiMax, and 3G/4G smart phones) grow rapidly.
- Powerful handheld mobile devices support music, Web surfing, and entertainment as well as voice communication. Podcasting and streaming take off as mediums for distribution of video, radio, and user-generated content.
- The Internet broadband foundation becomes stronger in households and businesses as transmission prices fall. More than 80 million households had broadband cable or DSL access to the Internet in 2010 ,about 68 percent of all households in the United States (eMarketer, 2010a).
- Social networking software and sites such as Facebook, MySpace, Twitter, LinkedIn, and thousands of others become a major new platform for e-commerce, marketing, and advertising. Facebook hits 500 million users worldwide, and 180 million in the United States (comScore, 2010).
- New Internet-based models of computing, such as cloud computing, software as a service (SaaS), and Web 2.0 software greatly reduce the cost of e-commerce Web sites.

NEW BUSINESS MODELS EMERGE

- More than half the Internet user population have joined an online social network, contribute to social bookmarking sites, create blogs, and share photos. Together these sites create a massive online audience as large as television that is attractive to marketers.
- The traditional advertising business model is severely disrupted as Google and other technology players such as Microsoft and Yahoo! seek to dominate online advertising, and expand into offline ad brokerage for television and newspapers.
- Newspapers and other traditional media adopt online, interactive models but are losing advertising revenues to the online players despite gaining online readers.
- Online entertainment business models offering television, movies, music, sports, and e-books surge, with cooperation among the major copyright owners in Hollywood and New York with the Internet distributors like Google, YouTube, Facebook, and Microsoft.

that is it available just about everywhere, at all times. It makes it possible to shop from your desktop, at home, at work, or even from your car, using mobile commerce. The result is called a **marketspace**—a marketplace extended beyond traditional boundaries and removed from a temporal and geographic location.

TABLE 10-2 EIGHT UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY

E-commerce Technology Dimension	Business Significance
<i>Ubiquity.</i> Internet/Web technology is available everywhere: at work, at home, and elsewhere via mobile devices.	The marketplace is extended beyond traditional boundaries and is removed from a temporal and geographic location. “Marketspace” anytime, is created; shopping can take place anywhere. Customer convenience is enhanced, and shopping costs are reduced.
<i>Global reach.</i> The technology reaches across national boundaries, around the Earth.	Commerce is enabled across cultural and national boundaries seamlessly and without modification. The marketspace includes, potentially, billions of consumers and millions of businesses worldwide.
<i>Universal standards.</i> There is one set of technology standards, namely Internet standards.	With one set of technical standards across the globe, disparate computer systems can easily communicate with each other.
<i>Richness.</i> Video, audio, and text messages are possible.	Video, audio, and text marketing messages are integrated into a single marketing message and consumer experience.
<i>Interactivity.</i> The technology works through interaction with the user.	Consumers are engaged in a dialog that dynamically adjusts the experience to the individual, and makes the consumer a co-participant in the process of delivering goods to the market.
<i>Information Density.</i> The technology reduces information costs and raises quality.	Information processing, storage, and communication costs drop dramatically, whereas currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and more accurate.
<i>Personalization/Customization.</i> The technology allows personalized messages to be delivered to individuals as well as groups.	Personalization of marketing messages and customization of products and services are based on individual characteristics.
<i>Social technology.</i> User content generation and social networking.	New Internet social and business models enable user content creation and distribution, and support social networks.

From a consumer point of view, ubiquity reduces **transaction costs**—the costs of participating in a market. To transact business, it is no longer necessary that you spend time or money traveling to a market, and much less mental effort is required to make a purchase.

Global Reach

E-commerce technology permits commercial transactions to cross cultural and national boundaries far more conveniently and cost effectively than is true in traditional commerce. As a result, the potential market size for e-commerce merchants is roughly equal to the size of the world’s online population (estimated to be more than 1.9 billion, and growing rapidly) (Internetworldstats.com, 2010).

In contrast, most traditional commerce is local or regional—it involves local merchants or national merchants with local outlets. Television and radio stations and newspapers, for instance, are primarily local and regional institutions with limited, but powerful, national networks that can attract a national audience but not easily cross national boundaries to a global audience.

Universal Standards

One strikingly unusual feature of e-commerce technologies is that the technical standards of the Internet and, therefore, the technical standards for conducting e-commerce are universal standards. They are shared by all nations around the world and enable any computer to link with any other computer regardless of the technology platform each is using. In contrast, most traditional commerce technologies differ from one nation to the next. For instance, television and radio standards differ around the world, as does cell telephone technology.

The universal technical standards of the Internet and e-commerce greatly lower **market entry costs**—the cost merchants must pay simply to bring their goods to market. At the same time, for consumers, universal standards reduce **search costs**—the effort required to find suitable products.

Richness

Information **richness** refers to the complexity and content of a message. Traditional markets, national sales forces, and small retail stores have great richness: They are able to provide personal, face-to-face service using aural and visual cues when making a sale. The richness of traditional markets makes them powerful selling or commercial environments. Prior to the development of the Web, there was a trade-off between richness and reach: The larger the audience reached, the less rich the message. The Web makes it possible to deliver rich messages with text, audio, and video simultaneously to large numbers of people.

Interactivity

Unlike any of the commercial technologies of the twentieth century, with the possible exception of the telephone, e-commerce technologies are interactive, meaning they allow for two-way communication between merchant and consumer. Television, for instance, cannot ask viewers any questions or enter into conversations with them, and it cannot request that customer information be entered into a form. In contrast, all of these activities are possible on an e-commerce Web site. Interactivity allows an online merchant to engage a consumer in ways similar to a face-to-face experience but on a massive, global scale.

Information Density

The Internet and the Web vastly increase **information density**—the total amount and quality of information available to all market participants, consumers, and merchants alike. E-commerce technologies reduce information collection, storage, processing, and communication costs while greatly increasing the currency, accuracy, and timeliness of information.

Information density in e-commerce markets make prices and costs more transparent. **Price transparency** refers to the ease with which consumers can find out the variety of prices in a market; **cost transparency** refers to the ability of consumers to discover the actual costs merchants pay for products.

There are advantages for merchants as well. Online merchants can discover much more about consumers than in the past. This allows merchants to segment the market into groups that are willing to pay different prices and permits the merchants to engage in **price discrimination**—selling the same goods, or nearly the same goods, to different targeted groups at different prices. For instance, an online merchant can discover a consumer's avid interest in expensive, exotic vacations and then pitch high-end vacation plans to that consumer at a premium price, knowing this person is willing to pay extra for

such a vacation. At the same time, the online merchant can pitch the same vacation plan at a lower price to a more price-sensitive consumer. Information density also helps merchants differentiate their products in terms of cost, brand, and quality.

Personalization/Customization

E-commerce technologies permit **personalization**: Merchants can target their marketing messages to specific individuals by adjusting the message to a person's name, interests, and past purchases. The technology also permits **customization**—changing the delivered product or service based on a user's preferences or prior behavior. Given the interactive nature of e-commerce technology, much information about the consumer can be gathered in the marketplace at the moment of purchase. With the increase in information density, a great deal of information about the consumer's past purchases and behavior can be stored and used by online merchants.

The result is a level of personalization and customization unthinkable with traditional commerce technologies. For instance, you may be able to shape what you see on television by selecting a channel, but you cannot change the content of the channel you have chosen. In contrast, the *Wall Street Journal* Online allows you to select the type of news stories you want to see first and gives you the opportunity to be alerted when certain events happen.

Social Technology: User Content Generation and Social Networking

In contrast to previous technologies, the Internet and e-commerce technologies have evolved to be much more social by allowing users to create and share with their personal friends (and a larger worldwide community) content in the form of text, videos, music, or photos. Using these forms of communication, users are able to create new social networks and strengthen existing ones.

All previous mass media in modern history, including the printing press, use a broadcast model (one-to-many) where content is created in a central location by experts (professional writers, editors, directors, and producers) and audiences are concentrated in huge numbers to consume a standardized product. The new Internet and e-commerce empower users to create and distribute content on a large scale, and permit users to program their own content consumption. The Internet provides a unique many-to-many model of mass communications.

KEY CONCEPTS IN E-COMMERCE: DIGITAL MARKETS AND DIGITAL GOODS IN A GLOBAL MARKETPLACE

The location, timing, and revenue models of business are based in some part on the cost and distribution of information. The Internet has created a digital marketplace where millions of people all over the world are able to exchange massive amounts of information directly, instantly, and for free. As a result, the Internet has changed the way companies conduct business and increased their global reach.

The Internet reduces information asymmetry. An **information asymmetry** exists when one party in a transaction has more information that is important for the transaction than the other party. That information helps determine their relative bargaining power. In digital markets, consumers and suppliers can “see” the prices being charged for goods, and in that sense digital markets are said to be more “transparent” than traditional markets.

For example, before auto retailing sites appeared on the Web, there was a significant information asymmetry between auto dealers and customers. Only the auto dealers knew the manufacturers' prices, and it was difficult for consumers to shop around for the best price. Auto dealers' profit margins depended on this asymmetry of information. Today's consumers have access to a legion of Web sites providing competitive pricing information, and three-fourths of U.S. auto buyers use the Internet to shop around for the best deal. Thus, the Web has reduced the information asymmetry surrounding an auto purchase. The Internet has also helped businesses seeking to purchase from other businesses reduce information asymmetries and locate better prices and terms.

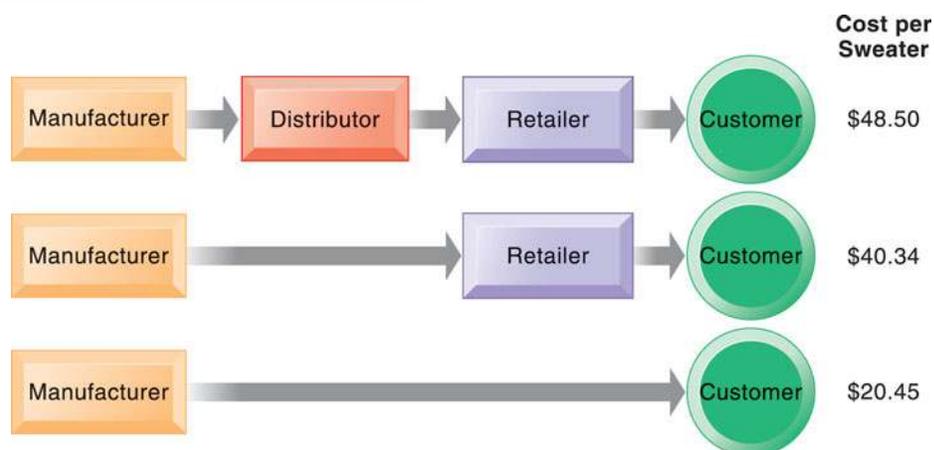
Digital markets are very flexible and efficient because they operate with reduced search and transaction costs, lower **menu costs** (merchants' costs of changing prices), greater price discrimination, and the ability to change prices dynamically based on market conditions. In **dynamic pricing**, the price of a product varies depending on the demand characteristics of the customer or the supply situation of the seller.

These new digital markets may either reduce or increase switching costs, depending on the nature of the product or service being sold, and they may cause some extra delay in gratification. Unlike a physical market, you can't immediately consume a product such as clothing purchased over the Web (although immediate consumption is possible with digital music downloads and other digital products.)

Digital markets provide many opportunities to sell directly to the consumer, bypassing intermediaries, such as distributors or retail outlets. Eliminating intermediaries in the distribution channel can significantly lower purchase transaction costs. To pay for all the steps in a traditional distribution channel, a product may have to be priced as high as 135 percent of its original cost to manufacture.

Figure 10-2 illustrates how much savings result from eliminating each of these layers in the distribution process. By selling directly to consumers or reducing the number of intermediaries, companies are able to raise profits while charging lower prices. The removal of organizations or business process layers responsible for intermediary steps in a value chain is called **disintermediation**.

FIGURE 10-2 THE BENEFITS OF DISINTERMEDIATION TO THE CONSUMER



The typical distribution channel has several intermediary layers, each of which adds to the final cost of a product, such as a sweater. Removing layers lowers the final cost to the consumer.

Disintermediation is affecting the market for services. Airlines and hotels operating their own reservation sites online earn more per ticket because they have eliminated travel agents as intermediaries. Table 10-3 summarizes the differences between digital markets and traditional markets.

Digital Goods

The Internet digital marketplace has greatly expanded sales of digital goods. **Digital goods** are goods that can be delivered over a digital network. Music tracks, video, Hollywood movies, software, newspapers, magazines, and books can all be expressed, stored, delivered, and sold as purely digital products. Currently, most of these products are sold as physical goods, for example, CDs, DVDs, newspapers, and hard-copy books. But the Internet offers the possibility of delivering all these products on demand as digital products.

In general, for digital goods, the marginal cost of producing another unit is about zero (it costs nothing to make a copy of a music file). However, the cost of producing the original first unit is relatively high—in fact, it is nearly the total cost of the product because there are few other costs of inventory and distribution. Costs of delivery over the Internet are very low, marketing costs remain the same, and pricing can be highly variable. (On the Internet, the merchant can change prices as often as desired because of low menu costs.)

The impact of the Internet on the market for these kinds of digital goods is nothing short of revolutionary, and we see the results around us every day. Businesses dependent on physical products for sales—such as bookstores, book publishers, music labels, and film studios—face the possibility of declining sales and even destruction of their businesses. Newspapers and magazines are losing readers to the Internet, and losing advertisers even as online newspaper readership soars. Record label companies are losing sales to music download sites and Internet piracy, and music stores are going out of business. Video rental firms, such as Blockbuster (now in bankruptcy), based on a physical DVD market and physical stores, lost sales to Netflix using an Internet catalog and streaming video model. Hollywood studios as well face the prospect that Internet pirates will distribute their product as a digital stream, bypassing Hollywood's monopoly on DVD rentals and sales, which

TABLE 10-3 DIGITAL MARKETS COMPARED TO TRADITIONAL MARKETS

	DIGITAL MARKETS	TRADITIONAL MARKETS
Information asymmetry	Asymmetry reduced	Asymmetry high
Search costs	Low	High
Transaction costs	Low (sometimes virtually nothing)	High (time, travel)
Delayed gratification	High (or lower in the case of a digital good)	Lower: purchase now
Menu costs	Low	High
Dynamic pricing	Low cost, instant	High cost, delayed
Price discrimination	Low cost, instant	High cost, delayed
Market segmentation	Low cost, moderate precision	High cost, less precision
Switching costs	Higher/lower (depending on product characteristics)	High
Network effects	Strong	Weaker
Disintermediation	More possible/likely	Less possible/unlikely

now accounts for more than half of industry film revenues. To date, pirated movies have not seriously threatened Hollywood revenues in part because the major film studios and Internet distributors like YouTube, Amazon, and Apple are learning how to cooperate. Table 10.4 describes digital goods and how they differ from traditional physical goods.

10.2 E-COMMERCE: BUSINESS AND TECHNOLOGY

E-commerce has grown from a few advertisements on early Web portals in 1995, to over 6 percent of all retail sales in 2010 (an estimated \$255 billion), surpassing the mail order catalog business. E-commerce is a fascinating combination of business models and new information technologies. Let's start with a basic understanding of the types of e-commerce, and then describe e-commerce business and revenue models. We'll also cover new technologies that help companies reach over 221 million online consumers in the United States, and an estimated 800 million more worldwide.

TYPES OF E-COMMERCE

There are many ways to classify electronic commerce transactions. One is by looking at the nature of the participants in the electronic commerce transaction. The three major electronic commerce categories are business-to-consumer (B2C) e-commerce, business-to-business (B2B) e-commerce, and consumer-to-consumer (C2C) e-commerce.

- **Business-to-consumer (B2C)** electronic commerce involves retailing products and services to individual shoppers. BarnesandNoble.com, which sells books, software, and music to individual consumers, is an example of B2C e-commerce.
- **Business-to-business (B2B)** electronic commerce involves sales of goods and services among businesses. ChemConnect's Web site for buying and selling chemicals and plastics is an example of B2B e-commerce.
- **Consumer-to-consumer (C2C)** electronic commerce involves consumers selling directly to consumers. For example, eBay, the giant Web auction site, enables people to sell their goods to other consumers by auctioning their merchandise off to the highest bidder, or for a fixed price. Craigslist is the most widely used platform used by consumers to buy from and sell directly to others.

TABLE 10-4 HOW THE INTERNET CHANGES THE MARKETS FOR DIGITAL GOODS

	DIGITAL GOODS	TRADITIONAL GOODS
Marginal cost/unit	Zero	Greater than zero, high
Cost of production	High (most of the cost)	Variable
Copying cost	Approximately 0	Greater than zero, high
Distributed delivery cost	Low	High
Inventory cost	Low	High
Marketing cost	Variable	Variable
Pricing	More variable (bundling, random pricing games)	Fixed, based on unit costs

Another way of classifying electronic commerce transactions is in terms of the platforms used by participants in a transaction. Until recently, most e-commerce transactions took place using a personal computer connected to the Internet over wired networks. Two wireless mobile alternatives have emerged: smartphones and dedicated e-readers like the Kindle using cellular networks, and smartphones and small tablet computers using Wi-Fi wireless networks. The use of handheld wireless devices for purchasing goods and services from any location is termed **mobile commerce** or **m-commerce**. Both business-to-business and business-to-consumer e-commerce transactions can take place using m-commerce technology, which we discuss in detail in Section 10.3.

E-COMMERCE BUSINESS MODELS

Changes in the economics of information described earlier have created the conditions for entirely new business models to appear, while destroying older business models. Table 10-5 describes some of the most important Internet business models that have emerged. All, in one way or another, use the Internet to add extra value to existing products and services or to provide the foundation for new products and services.

Portal

Portals such as Google, Bing, Yahoo, MSN, and AOL offer powerful Web search tools as well as an integrated package of content and services, such as news, e-mail, instant messaging, maps, calendars, shopping, music downloads, video streaming, and more, all in one place. Initially, portals were primarily “gateways” to the Internet. Today, however, the portal business model provides a destination site where users start their Web searching and linger to read news, find entertainment, and meet other people, and be exposed to advertising. Portals generate revenue primarily by attracting very large audiences, charging advertisers for ad placement, collecting referral fees for steering customers to other sites, and charging for premium services. In 2010, portals generated an estimated \$13.5 billion in revenues. Although there are hundreds of portal/search engine sites, the top five sites (Google, Yahoo, MSN/Bing, AOL, and Ask.com) gather more than 95 percent of the Internet traffic because of their superior brand recognition (eMarketer, 2010e).

E-tailer

Online retail stores, often called **e-tailers**, come in all sizes, from giant Amazon with 2010 revenues of more than \$24 billion, to tiny local stores that have Web sites. An e-tailer is similar to the typical bricks-and-mortar storefront, except that customers only need to connect to the Internet to check their inventory and place an order. Altogether, online retail generated about \$152 billion in revenues for 2010. The value proposition of e-tailers is to provide convenient, low-cost shopping 24/7, offering large selections and consumer choice. Some e-tailers, such as Walmart.com or Staples.com, referred to as “bricks-and-clicks,” are subsidiaries or divisions of existing physical stores and carry the same products. Others, however, operate only in the virtual world, without any ties to physical locations. Amazon, BlueNile.com, and Drugstore.com are examples of this type of e-tailer. Several other variations of e-tailers—such as online versions of direct mail catalogs, online malls, and manufacturer-direct online sales—also exist.

TABLE 10-5 INTERNET BUSINESS MODELS

CATEGORY	DESCRIPTION	EXAMPLES
E-tailer	Sells physical products directly to consumers or to individual businesses.	Amazon RedEnvelope.com
Transaction broker	Saves users money and time by processing online sales transactions and generating a fee each time a transaction occurs.	ETrade.com Expedia
Market creator	Provides a digital environment where buyers and sellers can meet, search for products, display products, and establish prices for those products. Can serve consumers or B2B e-commerce, generating revenue from transaction fees.	eBay Priceline.com ChemConnect.com
Content provider	Creates revenue by providing digital content, such as news, music, photos, or video, over the Web. The customer may pay to access the content, or revenue may be generated by selling advertising space.	WSJ.com GettyImages.com iTunes.com Games.com
Community provider	Provides an online meeting place where people with similar interests can communicate and find useful information.	Facebook MySpace iVillage, Twitter
Portal	Provides initial point of entry to the Web along with specialized content and other services.	Yahoo Bing Google
Service provider	Provides Web 2.0 applications such as photo sharing, video sharing, and user-generated content as services. Provides other services such as online data storage and backup.	Google Apps Photobucket.com Xdrive.com

Content Provider

While e-commerce began as a retail product channel, it has increasingly turned into a global content channel. “Content” is defined broadly to include all forms of intellectual property. **Intellectual property** refers to all forms of human expression that can be put into a tangible medium such as text, CDs, DVDs, or stored on any digital (or other) media, including the Web. Content providers distribute information content, such as digital video, music, photos, text, and artwork, over the Web. The value proposition of online content providers is that consumers can find a wide range of content online, conveniently, and purchase this content inexpensively, to be played, or viewed, on multiple computer devices or smartphones.

Providers do not have to be the creators of the content (although sometimes they are, like Disney.com), and are more likely to be Internet-based distributors of content produced and created by others. For example, Apple sells music tracks at its iTunes Store, but it does not create or commission new music.

The phenomenal popularity of the iTunes Store, and Apple’s Internet-connected devices like the iPhone, iPod, and iPad, have enabled new forms of digital content delivery from podcasting to mobile streaming. **Podcasting** is a method of publishing audio or video broadcasts via the Internet, allowing subscribing users to download audio or video files onto their personal computers or portable music players. **Streaming** is a publishing method for

music and video files that flows a continuous stream of content to a user's device without being stored locally on the device.

Estimates vary, but total download and subscription media revenues for 2010 are somewhere between \$8 billion and \$10 billion annually. They are the fastest growing segment within e-commerce, growing at an estimated 20 percent annual rate (eMarketer, 2010b).

Transaction Broker

Sites that process transactions for consumers normally handled in person, by phone, or by mail are transaction brokers. The largest industries using this model are financial services and travel services. The online transaction broker's primary value propositions are savings of money and time, as well as providing an extraordinary inventory of financial products and travel packages, in a single location. Online stock brokers and travel booking services charge fees that are considerably less than traditional versions of these services.

Market Creator

Market creators build a digital environment in which buyers and sellers can meet, display products, search for products, and establish prices. The value proposition of online market creators is that they provide a platform where sellers can easily display their wares and where purchasers can buy directly from sellers. Online auction markets like eBay and Priceline are good examples of the market creator business model. Another example is Amazon's Merchants platform (and similar programs at eBay) where merchants are allowed to set up stores on Amazon's Web site and sell goods at fixed prices to consumers. This is reminiscent of open air markets where the market creator operates a facility (a town square) where merchants and consumers meet. Online market creators will generate about \$12 billion in revenues for 2010.

Service Provider

While e-tailers sell products online, service providers offer services online. There's been an explosion in online services. Web 2.0 applications, photo sharing, and online sites for data backup and storage all use a service provider business model. Software is no longer a physical product with a CD in a box, but increasingly software as a service (SaaS) that you subscribe to online rather than purchase from a retailer (see Chapter 5). Google has led the way in developing online software service applications such as Google Apps, Gmail, and online data storage services.

Community Provider

Community providers are sites that create a digital online environment where people with similar interests can transact (buy and sell goods); share interests, photos, videos; communicate with like-minded people; receive interest-related information; and even play out fantasies by adopting online personalities called avatars. The social networking sites Facebook, MySpace, LinkedIn, and Twitter; online communities such as iVillage; and hundreds of other smaller, niche sites such as Doostang and Sportsvite all offer users community-building tools and services. Social networking sites have been the fastest growing Web sites in recent years, often doubling their audience size in a year. However, they are struggling to achieve profitability. The Interactive Session on Organizations explores this topic.

INTERACTIVE SESSION: ORGANIZATIONS

TWITTER SEARCHES FOR A BUSINESS MODEL

Twitter, the social networking site based on 140-character text messages, is the buzz social networking phenomenon of the year. Like all social networking sites, such as Facebook, MySpace, YouTube, Flickr, and others, Twitter provides a platform for users to express themselves by creating content and sharing it with their “followers,” who sign up to receive someone’s “tweets.” And like most social networking sites, Twitter faces the problem of how to make money. As of October 2010, Twitter has failed to generate earnings as its management ponders how best to exploit the buzz and user base it has created.

Twitter began as a Web-based version of popular text messaging services provided by cell phone carriers. Executives in a podcasting company called Odeo were searching for a new revenue-producing product or service. In March 2006, they created a stand-alone, private company called Twitter.

The basic idea was to marry short text messaging on cell phones with the Web and its ability to create social groups. You start by establishing a Twitter account online, and identifying the friends that you would like to receive your messages. By sending a text message called a “tweet” to a short code on your cell phone (40404), you can tell your friends what you are doing, your location, and whatever else you might want to say. You are limited to 140 characters, but there is no installation and no charge. This social network messaging service to keep buddies informed is a smash success.

Coming up with solid numbers for Twitter is not easy because the firm is not releasing any “official” figures. By September 2010, Twitter, according to comScore, had around 30 million unique monthly users in the United States, and perhaps 96 million worldwide, displacing MySpace as the number three global social network (behind Facebook and Microsoft’s Live Profile).

The number of individual tweets is also known only by the company. According to the company, by early 2007, Twitter had transmitted 20,000 tweets, which jumped to 60,000 tweets in a few months. During the Iranian rebellion in June 2009, there were reported to be over 200,000 tweets per hour worldwide. In October 2010, Twitter was recording over 1.2 million tweets a month. On the other hand, experts believe that 80 percent of tweets are

generated by only 10 percent of users, and that the median number of tweet readers per tweet is 1 (most tweeters tweet to one follower). Even more disturbing is that Twitter has a 60 percent churn rate: only 40 percent of users remain more than one month. Obviously, many users lose interest in learning about their friends’ breakfast menu, and many feel “too connected” to their “friends,” who in fact may only be distant acquaintances, if that. On the other hand, celebrities such as Britney Spears have hundreds of thousands of “friends” who follow their activities, making Twitter a marvelous, free public relations tool. Twitter unfortunately does not make a cent on these activities.

The answer to these questions about unique users, numbers of tweets, and churn rate are critical to understanding the business value of Twitter as a firm. To date, Twitter has generated losses and has unknown revenues, but in February 2009, it raised \$35 million in a deal that valued the company at \$255 million. The following September, Twitter announced it had raised \$100 million in additional funding, from private equity firms, previous investors, and mutual fund giant T. Rowe Price, based on a company valuation of a staggering \$1 billion!

So how can Twitter make money from its users and their tweets? What’s its business model and how might it evolve over time? To start, consider the company’s assets and customer value proposition. The main asset is user attention and audience size (eyeballs per day). The value proposition is “get it now” or real-time news on just about anything from the mundane to the monumental. An equally important asset is the database of tweets that contains the comments, observations, and opinions of the audience, and the search engine that mines those tweets for patterns. These are real-time and spontaneous observations.

Yet another asset has emerged in the last year: Twitter is a powerful alternative media platform for the distribution of news, videos, and pictures. Once again, no one predicted that Twitter would be the first to report on terrorist attacks in Mumbai, the landing of a passenger jet in the Hudson River, the Iranian rebellion in June 2009, or the political violence in Bangkok and Kenya in May 2010.

How can these assets be monetized? Advertising, what else! In April 2010, Twitter announced its first

foray into the big-time ad marketplace with Promoted Tweets. Think Twitter search engine: in response to a user's query to Twitter's search function for, say netbooks, a Best Buy ad for netbooks will be displayed. The company claims Promoted Tweets are not really ads because they look like all other tweets, just a part of the tweet stream of messages. These so-called "organic tweets" differ therefore from traditional search engine text ads, or social network ads which are far from organic. So far, Best Buy, Bravo, Red Bull, Sony, Starbucks, and Virgin American have signed up. If this actually works, thousands of companies might sign up to blast messages to millions of subscribers in response to related queries.

A second Twitter monetization effort announced in June 2010 is called Promoted Trends. Trends is a section of the Twitter home page that lets users know what's hot, what a lot of people are talking about. The company claims this is "organic," and a true reflection of what people are tweeting about. Promoted Trends are trends that companies would like to initiate. A company can place a Promoted Trends banner on the bottom of the page and when users click on the banner, they are taken to the follower page for that movie or product. Disney bought Promoted Trends for its film *Toy Story 3*, according to Twitter.

In July 2010, Twitter announced its third initiative of the year: @earlybird accounts, which users can follow to receive special offers. Walt Disney Pictures has used the service to promote *The Sorcerer's Apprentice* by offering twofers (buy one ticket, get another one free). The service could work nicely with so-called real-time or "flash" marketing campaigns in entertainment, fashion, luxury goods, technology, and beauty products. So far, Twitter has over 50,000 @earlybird followers and hopes to reach "influentials," people who shape the purchasing decisions of many others.

Another monetizing service is temporal real-time search. If there's one thing Twitter has uniquely among all the social network sites, it's real-time information. In 2010, Twitter entered into agreements with Google, Microsoft, and Yahoo to permit these search engines to index tweets and make them available to the entire Internet. This service will give free real-time content to the search engines as opposed to archival content. It is unclear who's doing who a service here, and the financial arrangements are not public.

Other large players are experimenting. Dell created a Twitter outlet account, @DellOutlet, and is using it to sell open-box and discontinued computers.

Dell also maintains several customer service accounts. Twitter could charge such accounts a commission on sales because Twitter is acting like an e-commerce sales platform similar to Amazon. Other firms have used their Twitter followers' fan base to market discount air tickets (Jet Blue) and greeting cards (Somecards).

Freemium is another possibility: ask users to pay a subscription fee for premium services such as videos and music downloads. However, it may be too late for this idea because users have come to expect the service to be free. Twitter could charge service providers such as doctors, dentists, lawyers, and hair salons for providing their customers with unexpected appointment availabilities. But Twitter's most likely steady revenue source might be its database of hundreds of millions of real-time tweets. Major firms such as Starbucks, Amazon, Intuit (QuickBooks and Mint.com), and Dell have used Twitter to understand how their customers are reacting to products, services, and Web sites, and then making corrections or changes in those services and products. Twitter is a fabulous listening post on the Internet frontier.

The possibilities are endless, and just about any of the above scenarios offers some solution to the company's problem, which is a lack of revenue (forget about profits). The company is coy about announcing its business model, what one pundit described as hiding behind a "Silicon Valley Mona Lisa smile." These Wall Street pundits are thought to be party poopers in the Valley. In a nod to Apple's iTunes and Amazon's merchant services, Twitter has turned over its messaging capabilities and software platform to others, one of which is CoTweet.com, a company that organizes multiple Twitter exchanges for customers so they can be tracked more easily. Google is selling ad units based around a company's last five tweets (ads are displayed to users who have created or viewed tweets about a company). Twitter is not charging for this service. In the meantime, observers wonder if Twitter is twittering away its assets and may not ever show a profit for its \$160 million investment.

Sources: Matthew Shaer, "Twitter Hits 145 Million User Mark, Sees Rise in Mobile Use," *Christian Science Monitor*, September 3, 2010; Jason Lipshutz, "Lady Gaga to Steal Britney Spears' Twitter Crown," *Reuters*, August 19, 2010; Emir Afrati, "Twitter's Early Bird Ad Ploy Takes Flight," *Wall Street Journal*, July 14, 2010; Jessica Guynn, "Twitter Tests New Promoted Trends Feature with 'Toy Story 3' from Disney's Pixar," *Los Angeles Times*, June 16, 2010; Erica Naone, "Will Twitter's Ad Strategy Work," *Technology Review*, April 15, 2010; Jessica Vascellaro and Emily Steel, "Twitter Rolls Out Ads," *Wall Street Journal*, April 14, 2010; Brad Stone, "Twitter's Latest Valuation: \$1 Billion," *New York Times*, September 24, 2009; Jon Fine, "Twitter Makes a Racket. But Revenues?" *Business Week*, April 9, 2009.

CASE STUDY QUESTIONS

1. Based on your reading in this chapter, how would you characterize Twitter's business model?
2. If Twitter is to have a revenue model, which of the revenue models described in this chapter would work?
3. What is the most important asset that Twitter has, and how could it monetize this asset?
4. What impact will a high customer churn rate have on Twitter's potential advertising revenue?

MIS IN ACTION

1. Go to Twitter.com and enter a search on your favorite (or least favorite) car. Can you find the company's official site? What else do you find? Describe the results and characterize the potential risks and rewards for companies that would like to advertise to Twitter's audience.
2. How would you improve Twitter's Web site to make it more friendly for large advertisers?
3. Teenagers are infrequent users of Twitter because they use their cell phones for texting, and most users are adults 18–34 years of age. Find five users of Twitter and ask them how long they have used the service, are they likely to continue using the service, and how would they feel about banner ads appearing on their Twitter Web screen and phone screens. Are loyal users of Twitter less likely (or more likely) to tolerate advertising on Twitter?

E-COMMERCE REVENUE MODELS

A firm's **revenue model** describes how the firm will earn revenue, generate profits, and produce a superior return on investment. Although there are many different e-commerce revenue models that have been developed, most companies rely on one, or some combination, of the following six revenue models: advertising, sales, subscription, free/freemium, transaction fee, and affiliate.

Advertising Revenue Model

In the **advertising revenue model**, a Web site generates revenue by attracting a large audience of visitors who can then be exposed to advertisements. The advertising model is the most widely used revenue model in e-commerce, and arguably, without advertising revenues, the Web would be a vastly different experience from what it is now. Content on the Web—everything from news to videos and opinions—is “free” to visitors because advertisers pay the production and distribution costs in return for the right to expose visitors to ads. Companies will spend an estimated \$240 billion on advertising in 2010, and an estimated \$25 billion of that amount on online advertising (in the form of a paid message on a Web site, paid search listing, video, widget, game, or other online medium, such as instant messaging). In the last five years, advertisers have increased online spending and cut outlays on traditional channels such as radio and newspapers. Television advertising has expanded along with online advertising revenues.

Web sites with the largest viewership or that attract a highly specialized, differentiated viewership and are able to retain user attention (“stickiness”) are able to charge higher advertising rates. Yahoo, for instance, derives nearly all its revenue from display ads (banner ads) and to a lesser extent search engine text ads. Ninety-eight percent of Google's revenue derives from selling keywords to

advertisers in an auction-like market (the AdSense program). The average Facebook user spends over five hours a week on the site, far longer than other portal sites.

Sales Revenue Model

In the **sales revenue model**, companies derive revenue by selling goods, information, or services to customers. Companies such as Amazon (which sells books, music, and other products), LLBean.com, and Gap.com, all have sales revenue models. Content providers make money by charging for downloads of entire files such as music tracks (iTunes Store) or books or for downloading music and/or video streams (Hulu.com TV shows—see Chapter 3). Apple has pioneered and strengthened the acceptance of micropayments. **Micropayment systems** provide content providers with a cost-effective method for processing high volumes of very small monetary transactions (anywhere from \$.25 to \$5.00 per transaction). MyMISlab has a Learning Track with more detail on micropayment and other e-commerce payment systems.

Subscription Revenue Model

In the **subscription revenue model**, a Web site offering content or services charges a subscription fee for access to some or all of its offerings on an ongoing basis. Content providers often use this revenue model. For instance, the online version of *Consumer Reports* provides access to premium content, such as detailed ratings, reviews, and recommendations, only to subscribers, who have a choice of paying a \$5.95 monthly subscription fee or a \$26.00 annual fee. Netflix is one of the most successful subscriber sites with more than 15 million subscribers in September 2010. The Wall Street Journal has the largest online subscription newspaper with more than 1 million online subscribers. To be successful, the subscription model requires that the content be perceived as a having high added value, differentiated, and not readily available elsewhere nor easily replicated. Companies successfully offering content or services online on a subscription basis include Match.com and eHarmony (dating services), Ancestry.com and Genealogy.com (genealogy research), Microsoft's Xboxlive.com (video games), and Rhapsody.com (music).

Free/Freemium Revenue Model

In the **free/freemium revenue model**, firms offer basic services or content for free, while charging a premium for advanced or special features. For example, Google offers free applications, but charges for premium services. Pandora, the subscription radio service, offers a free service with limited play time, and a premium service with unlimited play. The Flickr photo-sharing service offers free basic services for sharing photos with friends and family, and also sells a \$24.95 “premium” package that provides users unlimited storage, high-definition video storage and playback, and freedom from display advertising. The idea is to attract very large audiences with free services, and then to convert some of this audience to pay a subscription for premium services. One problem with this model is converting people from being “free loaders” into paying customers. “Free” can be a powerful model for losing money.

Transaction Fee Revenue Model

In the **transaction fee revenue model**, a company receives a fee for enabling or executing a transaction. For example, eBay provides an online auction marketplace and receives a small transaction fee from a seller if the seller is successful in selling an item. E*Trade, an online stockbroker, receives transac-

tion fees each time it executes a stock transaction on behalf of a customer. The transaction revenue model enjoys wide acceptance in part because the true cost of using the platform is not immediately apparent to the user.

Affiliate Revenue Model

In the **affiliate revenue model**, Web sites (called “affiliate Web sites”) send visitors to other Web sites in return for a referral fee or percentage of the revenue from any resulting sales. For example, MyPoints makes money by connecting companies to potential customers by offering special deals to its members. When members take advantage of an offer and make a purchase, they earn “points” they can redeem for free products and services, and MyPoints receives a referral fee. Community feedback sites such as Epinions and Yelp receive much of their revenue from steering potential customers to Web sites where they make a purchase. Amazon uses affiliates who steer business to the Amazon Web site by placing the Amazon logo on their blogs. Personal blogs may be involved in affiliate marketing. Some bloggers are paid directly by manufacturers, or receive free products, for speaking highly of products and providing links to sales channels.

WEB 2.0: SOCIAL NETWORKING AND THE WISDOM OF CROWDS

One of the fastest growing areas of e-commerce revenues are Web 2.0 online services, which we described in Chapter 7. The most popular Web 2.0 service is social networking, online meeting places where people can meet their friends and their friends’ friends. Every day over 60 million Internet users in the United States visit a social networking site like Facebook, MySpace, LinkedIn, and hundreds of others.

Social networking sites link people through their mutual business or personal connections, enabling them to mine their friends (and their friends’ friends) for sales leads, job-hunting tips, or new friends. MySpace, Facebook, and Friendster appeal to people who are primarily interested in extending their friendships, while LinkedIn focuses on job networking for professionals.

Social networking sites and online communities offer new possibilities for e-commerce. Networking sites like Facebook and MySpace sell banner, video, and text ads; sell user preference information to marketers; and sell products such as music, videos, and e-books. Corporations set up their own Facebook and MySpace profiles to interact with potential customers. For example, Procter & Gamble set up a MySpace profile page for Crest toothpaste soliciting “friends” for a fictional character called “Miss Irresistable.” Business firms can also “listen” to what social networkers are saying about their products, and obtain valuable feedback from consumers. At user-generated content sites like YouTube, high-quality video content is used to display advertising, and Hollywood studios have set up their own channels to market their products. The Interactive Session on Management looks more closely at social networking on Facebook, focusing on its impact on privacy.

At **social shopping** sites like Kaboodle, ThisNext, and Stylehive you can swap shopping ideas with friends. Facebook offers this same service on a voluntary basis. Online communities are also ideal venues to employ viral marketing techniques. Online viral marketing is like traditional word-of-mouth marketing except that the word can spread across an online commu-

INTERACTIVE SESSION: MANAGEMENT

FACEBOOK: MANAGING YOUR PRIVACY FOR THEIR PROFIT

Facebook is the largest social networking site in the world. Founded in 2004 by Mark Zuckerberg, the site had over 500 million worldwide users as of October 2010, and has long since surpassed all of its social networking peers. Facebook allows users to create a profile and join various types of self-contained networks, including college-wide, workplace, and regional networks. The site includes a wide array of tools that allow users to connect and interact with other users, including messaging, groups, photo-sharing, and user-created applications.

Although the site is the leader in social networking, it has waged a constant struggle to develop viable methods of generating revenue. Though many investors are still optimistic regarding Facebook's future profitability, it still needs to adjust its business model to monetize the site traffic and personal information it has accumulated.

Like many businesses of its kind, Facebook makes its money through advertising. Facebook represents a unique opportunity for advertisers to reach highly targeted audiences based on their demographic information, hobbies and personal preferences, geographical regions, and other narrowly specified criteria in a comfortable and engaging environment. Businesses both large and small can place advertisements that are fully integrated into primary features of the site or create Facebook pages where users can learn more about and interact with them.

However, many individuals on Facebook aren't interested in sharing their personal information with anyone other than a select group of their friends on the site. This is a difficult issue for Facebook. The company needs to provide a level of privacy that makes their users comfortable, but it's that very privacy that prevents it from gathering as much information as it would like, and the more information Facebook has, the more money it earns. Facebook's goal is to persuade its users to be comfortable sharing information willingly by providing an environment that becomes richer and more entertaining as the amount of information shared increases. In trying to achieve this goal, the site has made a number of missteps, but is improving its handling of users' privacy rights.

The launch of Facebook's Beacon advertising service in 2007 was a lightning rod for criticism of Facebook's handling of its private information.

Beacon was intended to inform users about what their friends were purchasing and what sites they were visiting away from Facebook. Users were angry that Beacon continued to communicate private information even after a user opted out of the service. After significant public backlash and the threat of a class-action lawsuit, Facebook shut down Beacon in September 2009.

Facebook has also drawn criticism for preserving the personal information of people who attempted to remove their profiles from the site. In early 2009, it adjusted its terms of service to assign it ownership rights over the information contained in deleted profiles. In many countries, this practice is illegal, and the user backlash against the move was swift.

In response, Facebook's chief privacy officer, Chris Kelly, presided over a total overhaul of Facebook's privacy policy, which took the form of an open collaboration with some of the most vocal critics of the old policies, including the previously mentioned protest group's founders. In February, Facebook went forward with the new terms after holding a vote open to all Facebook users, 75 percent of whom approved. The site now allows users either to deactivate or to delete their account entirely, and only saves information after deactivation.

In late 2009, tensions between Facebook and its users came to a head when the site rolled out new privacy controls for users, but had adjusted those settings to be public by default. Even users that had previously set their privacy to be "friends-only" for photos and profile information had their content exposed, including the profile of Zuckerberg himself. When asked about the change, Zuckerberg explained that the moves were in response to a shift in social norms towards openness and away from privacy, saying "we decided that these would be the social norms now and we just went for it."

The fallout from the change and is still ongoing, and more privacy problems keep cropping up. In October 2010, Facebook unveiled new features giving users more control over how they share personal information on the site with other users and third-party applications. These include a groups feature allowing users to distinguish specific circles of "friends" and choose what information they want to share with each group and whether the groups are public or private.

Shortly thereafter, a Wall Street Journal investigation found that some of the most popular Facebook applications (apps) had been transmitting user IDs—identifying information which could provide access to people's names and, in some cases, their friends' names—to dozens of advertising and Internet tracking companies. Sharing user IDs is in violation of Facebook's privacy policies.

All these privacy flaps have not diminished advertiser interest. Facebook serves ads on each user's home page and on the sidebars of user profiles. In addition to an image and headline from the advertiser, Facebook ads include the names of any user's friends who have clicked on a button indicating they like the brand or ad. A Nielsen Co. study found that including information about individuals a person knows in an ad boosted recall of the ad by 68 percent and doubled awareness of a brand's message. To determine what ads to serve to particular people, Facebook abstracts profile information into keywords, and advertisers match ads to those keywords. No individual data is shared with any advertiser.

However, it's still unclear how much money is there to be made from advertising on Facebook. The site insists that it doesn't plan to charge its users any kind of fee for site access. Facebook's 2010 revenue was expected to approach \$1 billion, which is a far cry from a \$33 billion private market valuation. But the site has already become a critical component of the Web's social fabric, and Facebook management insists that it's unworried about profitability in 2010 or the immediate future.

Sources: Emily Steel and Geoffrey A. Fowler, "Facebook in Privacy Breach," *The Wall Street Journal*, October 18, 2010; Jessica E. Vascellaro, "Facebook Makes Gains in Web Ads," *The Wall Street Journal*, May 12, 2010 and "Facebook Grapples with Privacy Issues," *The Wall Street Journal*, May 19, 2010; Geoffrey A. Fowler, "Facebook Fights Privacy Concerns," *The Wall Street Journal*, August 21, 2010 and "Facebook Tweaks Allow Friends to Sort Who They Really 'Like,'" *The Wall Street Journal*, October 5, 2010; Emily Steel and Geoffrey A. Fowler, "Facebook Touts Selling Power of Friendship," *The Wall Street Journal*, July 7, 2010; Brad Stone, "Is Facebook Growing Up Too Fast?" *The New York Times*, March 29, 2009; and CG Lynch, "Facebook's Chief Privacy Officer: Balancing Needs of Users with the Business of Social Networks", *CIO.com*, April 1 2009.

CASE STUDY QUESTIONS

1. What concepts in the chapter are illustrated in this case?
2. Describe the weaknesses of Facebook's privacy policies and features. What management, organization, and technology factors have contributed to those weaknesses?
3. List and describe some of the options that Facebook managers have in balancing privacy and profitability. How can Facebook better safeguard user privacy? What would be the impact on its profitability and business model?
4. Do you anticipate that Facebook will be successful in developing a business model that monetizes their site traffic? Why or why not?

MIS IN ACTION

Visit Facebook's Web site and review the site's privacy policy. Then answer the following questions:

1. To what user information does Facebook retain the rights?
2. What is Facebook's stance regarding information shared via third-party applications developed for the Facebook platform?
3. Did you find the privacy policy to be clear and reasonable? What would you change, if anything?

nity at the speed of light, and go much further geographically than a small network of friends.

The Wisdom of Crowds

Creating sites where thousands, even millions, of people can interact offers business firms new ways to market and advertise, to discover who likes (or hates) their products. In a phenomenon called "**the wisdom of crowds**," some

argue that large numbers of people can make better decisions about a wide range of topics or products than a single person or even a small committee of experts (Surowiecki, 2004).

Obviously this is not always the case, but it can happen in interesting ways. In marketing, the wisdom of crowds concept suggests that firms should consult with thousands of their customers first as a way of establishing a relationship with them, and second, to better understand how their products and services are used and appreciated (or rejected). Actively soliciting the comments of your customers builds trust and sends the message to your customers that you care what they are thinking, and that you need their advice.

Beyond merely soliciting advice, firms can be actively helped in solving some business problems using what is called **crowdsourcing**. For instance, in 2006, Netflix announced a contest in which it offered to pay \$1 million to the person or team who comes up with a method for improving by 10 percent Netflix's prediction of what movies customers would like as measured against their actual choices. By 2009, Netflix received 44,014 entries from 5,169 teams in 186 countries. The winning team improved a key part of Netflix's business: a recommender system that recommends to its customers what new movies to order based on their personal past movie choices and the choices of millions of other customers who are like them (Howe, 2008; Resnick and Varian, 1997).

Firms can also use the wisdom of crowds in the form of prediction markets. **Prediction markets** are established as peer-to-peer betting markets where participants make bets on specific outcomes of, say, quarterly sales of a new product, designs for new products, or political elections. The world's largest commercial prediction market is Betfair, founded in 2000, where you bet for or against specific outcomes on football games, horse races, and whether or not the Dow Jones will go up or down in a single day. Iowa Electronic Markets (IEM) is an academic market focused on elections. You can place bets on the outcome of local and national elections.

E-COMMERCE MARKETING

While e-commerce and the Internet have changed entire industries and enable new business models, no industry has been more affected than marketing and marketing communications. The Internet provides marketers with new ways of identifying and communicating with millions of potential customers at costs far lower than traditional media, including search engine marketing, data mining, recommender systems, and targeted e-mail. The Internet enables **long tail marketing**. Before the Internet, reaching a large audience was very expensive, and marketers had to focus on attracting the largest number of consumers with popular hit products, whether music, Hollywood movies, books, or cars. In contrast, the Internet allows marketers to inexpensively find potential customers for which demand is very low, people on the far ends of the bell (normal) curve. For instance, the Internet makes it possible to sell independent music profitably to very small audiences. There's always some demand for almost any product. Put a string of such long tail sales together and you have a profitable business.

The Internet also provides new ways—often instantaneous and spontaneous—to gather information from customers, adjust product offerings, and increase customer value. Table 10-6 describes the leading marketing and advertising formats used in e-commerce.

Many e-commerce marketing firms use behavioral targeting techniques to increase the effectiveness of banner, rich media, and video ads. **Behavioral**

TABLE 10-6 ONLINE MARKETING AND ADVERTISING FORMATS (BILLIONS)

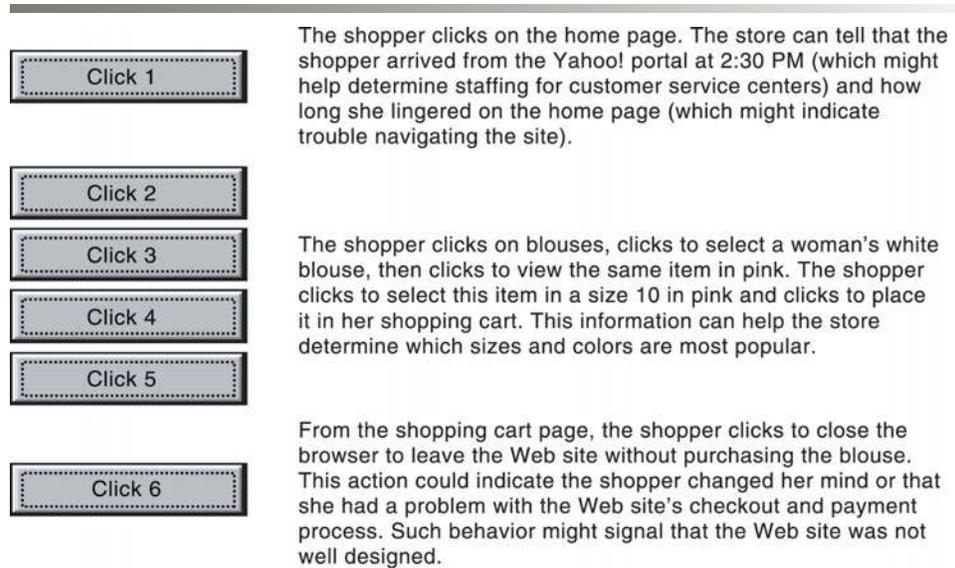
MARKETING FORMAT	2010 REVENUE	DESCRIPTION
Search engine	\$12.3	Text ads targeted at precisely what the customer is looking for at the moment of shopping and purchasing. Sales oriented.
Display ads	\$5.8	Banner ads (pop-ups and leave-behinds) with interactive features; increasingly behaviorally targeted to individual Web activity. Brand development and sales.
Classified	\$1.9	Job, real estate, and services ads; interactive, rich media, and personalized to user searches. Sales and branding.
Rich media	\$1.57	Animations, games, and puzzles. Interactive, targeted, and entertaining. Branding orientation.
Affiliate and blog marketing	\$1.5	Blog and Web site marketing steers customers to parent sites; interactive, personal, and often with video. Sales orientation.
Video	\$1.5	Fastest growing format, engaging and entertaining; behaviorally targeted, interactive. Branding and sales.
Sponsorships	\$.4	Online games, puzzle, contests, and coupon sites sponsored by firms to promote products. Sales orientation.
E-mail	\$.27	Effective, targeted marketing tool with interactive and rich media potential. Sales oriented.

targeting refers to tracking the click-streams (history of clicking behavior) of individuals on thousands of Web sites for the purpose of understanding their interests and intentions, and exposing them to advertisements that are uniquely suited to their behavior. Proponents believe this more precise understanding of the customer leads to more efficient marketing (the firm pays for ads only to those shoppers who are most interested in their products) and larger sales and revenues. Unfortunately, behavioral targeting of millions of Web users also leads to the invasion of personal privacy without user consent (see our discussion in Chapter 4). When consumers lose trust in their Web experience, they tend not to purchase anything.

Behavioral targeting takes place at two levels: at individual Web sites and on various advertising networks that track users across thousands of Web sites. All Web sites collect data on visitor browser activity and store it in a database. They have tools to record the site that users visited prior to coming to the Web site, where these users go when they leave that site, the type of operating system they use, browser information, and even some location data. They also record the specific pages visited on the particular site, the time spent on each page of the site, the types of pages visited, and what the visitors purchased (see Figure 10-3). Firms analyze this information about customer interests and behavior to develop precise profiles of existing and potential customers.

This information enables firms to understand how well their Web site is working, create unique personalized Web pages that display content or ads for products or services of special interest to each user, improve the customer's experience, and create additional value through a better understanding of the shopper (see Figure 10-4). By using personalization technology to modify the Web pages presented to each customer, marketers achieve some of the benefits of using individual salespeople at dramatically lower costs. For instance,

FIGURE 10-3 WEB SITE VISITOR TRACKING



E-commerce Web sites have tools to track a shopper's every step through an online store. Close examination of customer behavior at a Web site selling women's clothing shows what the store might learn at each step and what actions it could take to increase sales.

General Motors will show a Chevrolet banner ad to women emphasizing safety and utility, while men will receive different ads emphasizing power and ruggedness.

FIGURE 10-4 WEB SITE PERSONALIZATION



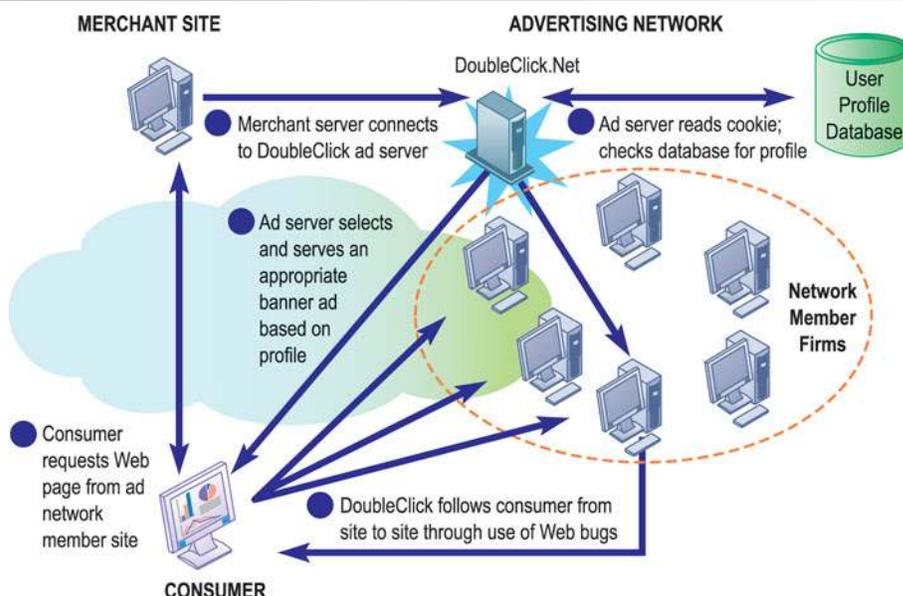
Firms can create unique personalized Web pages that display content or ads for products or services of special interest to individual users, improving the customer experience and creating additional value.

What if you are a large national advertising company with many different clients trying to reach millions of consumers? What if you were a large global manufacturer trying to reach potential consumers for your products? With millions of Web sites, working with each one would be impractical. Advertising networks solve this problem by creating a network of several thousand of the most popular Web sites visited by millions of people, tracking the behavior of these users across the entire network, building profiles of each user, and then selling these profiles to advertisers. Popular Web sites download dozens of Web tracking cookies, bugs, and beacons, which report user online behavior to remote servers without the users' knowledge. Looking for young, single consumers, with college degrees, living in the Northeast, in the 18–34 age range who are interested purchasing a European car? Not a problem. Advertising networks can identify and deliver hundreds of thousands of people who fit this profile and expose them to ads for European cars as they move from one Web site to another. Estimates vary, but behaviorally targeted ads are 10 times more likely to produce a consumer response than a randomly chosen banner or video ad (see Figure 10-5). So-called advertising exchanges use this same technology to auction access to people with very specific profiles to advertisers in a few milliseconds.

B2B E-COMMERCE: NEW EFFICIENCIES AND RELATIONSHIPS

The trade between business firms (business-to-business commerce or B2B) represents a huge marketplace. The total amount of B2B trade in the United States in 2009 was about \$12.2 trillion, with B2B e-commerce (online B2B) contributing about \$3.6 trillion of that amount (U.S. Census Bureau, 2010; authors' estimates). By 2014, B2B e-commerce should grow to about \$5.1 trillion in the United States, assuming an average growth rate of about 7 percent. The process of conducting trade among business firms is complex and requires significant human interven-

FIGURE 10-5 HOW AN ADVERTISING NETWORK SUCH AS DOUBLECLICK WORKS



Advertising networks have become controversial among privacy advocates because of their ability to track individual consumers across the Internet. We discuss privacy issues further in Chapter 4.

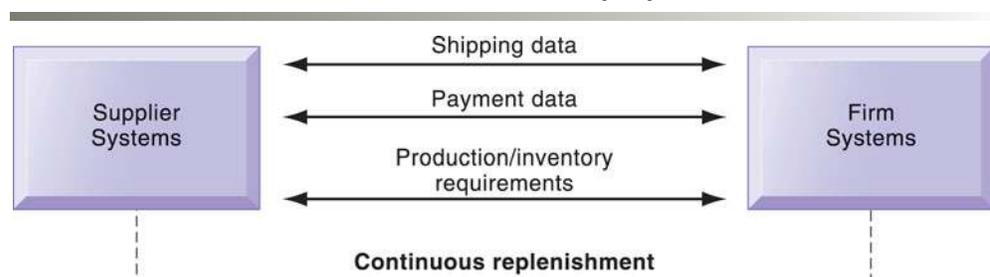
tion, and therefore, it consumes significant resources. Some firms estimate that each corporate purchase order for support products costs them, on average, at least \$100 in administrative overhead. Administrative overhead includes processing paper, approving purchase decisions, spending time using the telephone and fax machines to search for products and arrange for purchases, arranging for shipping, and receiving the goods. Across the economy, this adds up to trillions of dollars annually being spent for procurement processes that could potentially be automated. If even just a portion of inter-firm trade were automated, and parts of the entire procurement process assisted by the Internet, literally trillions of dollars might be released for more productive uses, consumer prices potentially would fall, productivity would increase, and the economic wealth of the nation would expand. This is the promise of B2B e-commerce. The challenge of B2B e-commerce is changing existing patterns and systems of procurement, and designing and implementing new Internet-based B2B solutions.

Business-to-business e-commerce refers to the commercial transactions that occur among business firms. Increasingly, these transactions are flowing through a variety of different Internet-enabled mechanisms. About 80 percent of online B2B e-commerce is still based on proprietary systems for **electronic data interchange (EDI)**. Electronic data interchange enables the computer-to-computer exchange between two organizations of standard transactions such as invoices, bills of lading, shipment schedules, or purchase orders. Transactions are automatically transmitted from one information system to another through a network, eliminating the printing and handling of paper at one end and the inputting of data at the other. Each major industry in the United States and much of the rest of the world has EDI standards that define the structure and information fields of electronic documents for that industry.

EDI originally automated the exchange of documents such as purchase orders, invoices, and shipping notices. Although some companies still use EDI for document automation, firms engaged in just-in-time inventory replenishment and continuous production use EDI as a system for continuous replenishment. Suppliers have online access to selected parts of the purchasing firm's production and delivery schedules and automatically ship materials and goods to meet prespecified targets without intervention by firm purchasing agents (see Figure 10-6).

Although many organizations still use private networks for EDI, they are increasingly Web-enabled because Internet technology provides a much more flexible and low-cost platform for linking to other firms. Businesses are able to extend digital technology to a wider range of activities and broaden their circle of trading partners.

FIGURE 10-6 ELECTRONIC DATA INTERCHANGE (EDI)



Companies use EDI to automate transactions for B2B e-commerce and continuous inventory replenishment. Suppliers can automatically send data about shipments to purchasing firms. The purchasing firms can use EDI to provide production and inventory requirements and payment data to suppliers.

Take procurement, for example. Procurement involves not only purchasing goods and materials but also sourcing, negotiating with suppliers, paying for goods, and making delivery arrangements. Businesses can now use the Internet to locate the lowest-cost supplier, search online catalogs of supplier products, negotiate with suppliers, place orders, make payments, and arrange transportation. They are not limited to partners linked by traditional EDI networks.

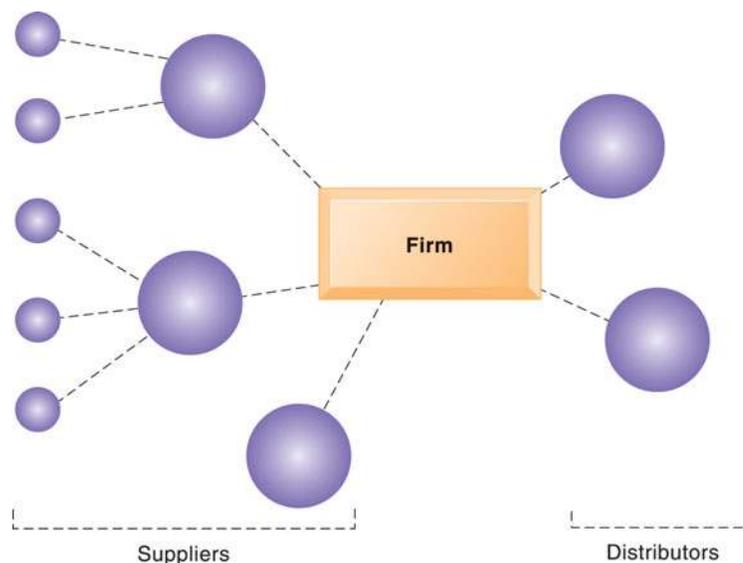
The Internet and Web technology enable businesses to create new electronic storefronts for selling to other businesses with multimedia graphic displays and interactive features similar to those for B2C commerce. Alternatively, businesses can use Internet technology to create extranets or electronic marketplaces for linking to other businesses for purchase and sale transactions.

Private industrial networks typically consist of a large firm using an extranet to link to its suppliers and other key business partners (see Figure 10-7). The network is owned by the buyer, and it permits the firm and designated suppliers, distributors, and other business partners to share product design and development, marketing, production scheduling, inventory management, and unstructured communication, including graphics and e-mail. Another term for a private industrial network is a **private exchange**.

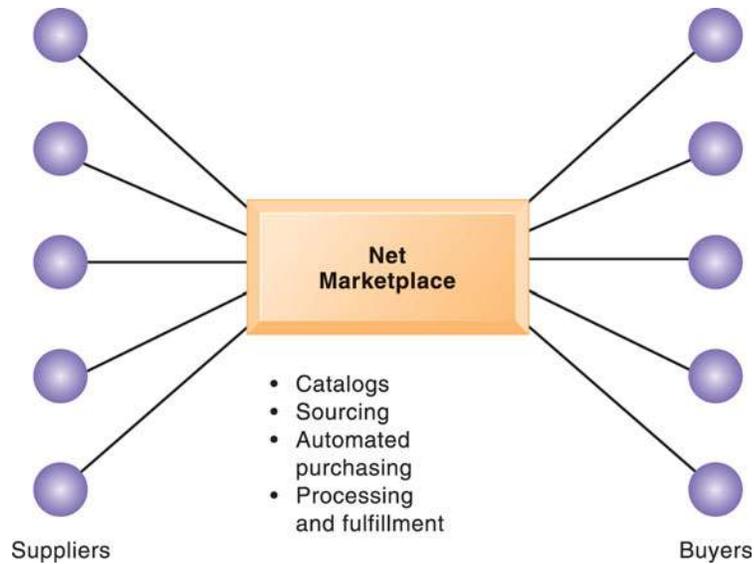
An example is VW Group Supply, which links the Volkswagen Group and its suppliers. VW Group Supply handles 90 percent of all global purchasing for Volkswagen, including all automotive and parts components.

Net marketplaces, which are sometimes called e-hubs, provide a single, digital marketplace based on Internet technology for many different buyers and sellers (see Figure 10-8). They are industry owned or operate as independent intermediaries between buyers and sellers. Net marketplaces generate revenue from purchase and sale transactions and other services provided to clients. Participants in Net marketplaces can establish prices through online negotiations, auctions, or requests for quotations, or they can use fixed prices.

FIGURE 10-7 A PRIVATE INDUSTRIAL NETWORK



A private industrial network, also known as a private exchange, links a firm to its suppliers, distributors, and other key business partners for efficient supply chain management and other collaborative commerce activities.

FIGURE 10-8 A NET MARKETPLACE

Net marketplaces are online marketplaces where multiple buyers can purchase from multiple sellers.

There are many different types of Net marketplaces and ways of classifying them. Some Net marketplaces sell direct goods and some sell indirect goods. *Direct goods* are goods used in a production process, such as sheet steel for auto body production. *Indirect goods* are all other goods not directly involved in the production process, such as office supplies or products for maintenance and repair. Some Net marketplaces support contractual purchasing based on long-term relationships with designated suppliers, and others support short-term spot purchasing, where goods are purchased based on immediate needs, often from many different suppliers.

Some Net marketplaces serve vertical markets for specific industries, such as automobiles, telecommunications, or machine tools, whereas others serve horizontal markets for goods and services that can be found in many different industries, such as office equipment or transportation.

Exostar is an example of an industry-owned Net marketplace, focusing on long-term contract purchasing relationships and on providing common networks and computing platforms for reducing supply chain inefficiencies. This aerospace and defense industry-sponsored Net marketplace was founded jointly by BAE Systems, Boeing, Lockheed Martin, Raytheon, and Rolls-Royce plc to connect these companies to their suppliers and facilitate collaboration. More than 16,000 trading partners in the commercial, military, and government sectors use Exostar's sourcing, e-procurement, and collaboration tools for both direct and indirect goods. Elemica is another example of a Net marketplace serving the chemical industry.

Exchanges are independently owned third-party Net marketplaces that connect thousands of suppliers and buyers for spot purchasing. Many exchanges provide vertical markets for a single industry, such as food, electronics, or industrial equipment, and they primarily deal with direct inputs. For example, Go2paper enables a spot market for paper, board, and kraft among buyers and sellers in the paper industries from over 75 countries.

Exchanges proliferated during the early years of e-commerce but many have failed. Suppliers were reluctant to participate because the exchanges encour-

aged competitive bidding that drove prices down and did not offer any long-term relationships with buyers or services to make lowering prices worthwhile. Many essential direct purchases are not conducted on a spot basis because they require contracts and consideration of issues such as delivery timing, customization, and quality of products.

10.3 THE MOBILE DIGITAL PLATFORM AND MOBILE E-COMMERCE

Walk down the street in any major metropolitan area and count how many people are pecking away at their iPhones or BlackBerrys. Ride the trains, fly the planes, and you'll see your fellow travelers reading an online newspaper, watching a video on their phone, or reading a novel on their Kindle. In five years, the majority of Internet users in the United States will rely on mobile devices as their primary device for accessing the Internet. M-commerce has taken off.

In 2010, m-commerce represented less than 10 percent of all e-commerce, with about \$5 billion in annual revenues generated by selling music, videos, ring tones, applications, movies, television, and location-based services like local restaurant locators and traffic updates. However, m-commerce is the fastest growing form of e-commerce, with some areas expanding at a rate of 50 percent or more per year, and is estimated to grow to \$19 billion in 2014 (see Figure 10-9). In 2010, there were an estimated 5 billion cell phone subscribers worldwide, with over 855 million in China and 300 million in the United States (eMarketer, 2010d).

M-COMMERCE SERVICES AND APPLICATIONS

The main areas of growth in mobile e-commerce are location-based services, about \$215 million in revenue in 2010; software application sales at stores such as iTunes (about \$1.8 billion); entertainment downloads of ring tones, music, video, and TV shows (about \$1 billion); mobile display advertising (\$784 million); direct shopping services such as Slifter (\$200 million); and e-book sales (\$338 million).

FIGURE 10-9 CONSOLIDATED MOBILE COMMERCE REVENUES



Mobile e-commerce is the fastest growing type of B2C e-commerce although it represents only a small part of all e-commerce in 2010.

M-commerce applications have taken off for services that are time-critical, that appeal to people on the move, or that accomplish a task more efficiently than other methods. They are especially popular in Europe, Japan, South Korea, and other countries with strong wireless broadband infrastructures. The following sections describe some examples.

Location-Based Services

Wikitude.me provides a special kind of browser for smart phones equipped with a built-in global positioning system (GPS) and compass that can identify your precise location and where the phone is pointed. Using information from over 800,000 points of interest available on Wikipedia, plus thousands of other local sites, the browser overlays information about points of interest you are viewing, and displays that information on your smartphone screen, superimposed on a map or photograph that you just snapped. For example, users can point their smart phone cameras towards mountains from a tour bus and see the names and heights of the mountains displayed on the screen. Lost in a European medieval city, or downtown Los Angeles? Open up the Wikitude browser, point your camera at a building, and then find the address and other interesting details. Wikitude.me also allows users to geo-tag the world around them, and then submit the tags to Wikitude in order to share content with other users. In 2010, both Facebook and Twitter launched a Places feature that allows users to let their friends know where they are. These services compete with Foursquare and Gowalla, which allow users to check in at places and broadcast their location to friends.

Loopt is a free social networking application that allows you to share your status and track the location of friends via smartphones such as the iPhone, BlackBerry, and over 100 other mobile devices. Users also have the ability to integrate Loopt with other social networks, including Facebook and Twitter. Loopt has 4 million users. The service doesn't sell information to advertisers, but does post ads based on user location. Loopt's target is to deal with advertisers at the walking level (within 200 to 250 meters).

Foursquare provides a similar service to 4 million registered users, who are able to connect with friends and update their location. Points are awarded for "checking in" at designated venues. Users choose to have their check-ins posted on their accounts on Twitter, Facebook, or both. Users also earn badges by checking in at locations with certain tags, for check-in frequency, or for the time of check-in. More than 3,000 restaurants, bars, and other businesses (including 4Food, described in the chapter-opening case) use Foursquare to attract customers with promotions.

Banking and Financial Services

Banks and credit card companies are rolling out services that let customers manage their accounts from their mobile devices. JPMorgan Chase and Bank of America customers can use their cell phones to check account balances, transfer funds, and pay bills.

Wireless Advertising and Retailing

Although the mobile advertising market is currently small (\$784 million), it is rapidly growing (up 17 percent from last year and expected to grow to over \$6.2 billion by 2014), as more and more companies seek ways to exploit new databases of location-specific information. Alcatel-Lucent offers a new service to be managed by 1020 Placecast that will identify cell phone users within a specified distance of an advertiser's nearest outlet and notify them about the

outlet's address and phone number, perhaps including a link to a coupon or other promotion. 1020 Placecast's clients include Hyatt, FedEx, and Avis Rent A Car.

Yahoo displays ads on its mobile home page for companies such as Pepsi, Procter & Gamble, Hilton, Nissan, and Intel. Google is displaying ads linked to cell phone searches by users of the mobile version of its search engine, while Microsoft offers banner and text advertising on its MSN Mobile portal in the United States. Ads are embedded in games, videos, and other mobile applications.

Shopkick is a mobile application that enables retailers such as Best Buy, Sports Authority, and Macy's to offer coupons to people when they walk into their stores. The shopkick app automatically recognizes when the user has entered a partner retail store, and offers a new virtual currency called "kickbucks," which can be redeemed for Facebook credits, iTunes Gift Cards, travel vouchers, DVD's, or immediate cash-back rewards at any of the partner stores.

In 2010, shoppers ordered about \$2.2 billion in physical goods from Web sites via smartphones (over 1 billion of that at Amazon alone). Thirty percent of retailers have m-commerce Web sites—simplified versions of their Web sites that make it possible for shoppers to use cell phones to place orders. Clothing retailers Lilly Pulitzer and Armani Exchange, Home Depot, and 1-800 Flowers are among those companies with specialized apps for m-commerce sales.

Games and Entertainment

Cell phones have developed into portable entertainment platforms. Smartphones like the iPhone and Droid offer downloadable and streaming digital games, movies, TV shows, music, and ringtones.

Users of broadband services from the major wireless vendors can stream on-demand video clips, news clips, and weather reports. MobiTV, offered by Sprint and AT&T Wireless, features live TV programs, including MSNBC and Fox Sports. Film companies are starting to produce short films explicitly designed to play on mobile phones. User-generated content is also appearing in mobile form. Facebook, MySpace, YouTube, and other social networking sites have versions for mobile devices. In 2010, the top 10 most popular apps on Facebook are games, led by Farmville with over 16 million daily users.

10.4 BUILDING AN E-COMMERCE WEB SITE

Building a successful e-commerce site requires a keen understanding of business, technology, and social issues, as well as a systematic approach. A complete treatment of the topic is beyond the scope of this text, and students should consult books devoted to just this topic (Laudon and Traver, 2011). The two most important management challenges in building a successful e-commerce site are (1) developing a clear understanding of your business objectives and (2) knowing how to choose the right technology to achieve those objectives.

PIECES OF THE SITE-BUILDING PUZZLE

Let's assume you are a manager for a medium-sized, industrial parts firm of around 10,000 employees worldwide, operating in eight countries in Europe, Asia, and North America. Senior management has given you a budget of \$1

million to build an e-commerce site within one year. The purpose of this site will be to sell and service the firm's 20,000 customers, who are mostly small machine and metal fabricating shops around the world. Where do you start?

First, you must be aware of the main areas where you will need to make decisions. On the organizational and human resources fronts, you will have to bring together a team of individuals who possess the skill sets needed to build and manage a successful e-commerce site. This team will make the key decisions about technology, site design, and social and information policies that will be applied at your site. The entire site development effort must be closely managed if you hope to avoid the disasters that have occurred at some firms.

You will also need to make decisions about your site's hardware, software, and telecommunications infrastructure. The demands of your customers should drive your choices of technology. Your customers will want technology that enables them to find what they want easily, view the product, purchase the product, and then receive the product from your warehouses quickly. You will also have to carefully consider your site's design. Once you have identified the key decision areas, you will need to think about a plan for the project.

BUSINESS OBJECTIVES, SYSTEM FUNCTIONALITY, AND INFORMATION REQUIREMENTS

In planning your Web site you need to answer the question, "What do we want the e-commerce site to do for our business?" The key lesson to be learned here is to let the business decisions drive the technology, not the reverse. This will ensure that your technology platform is aligned with your business. We will assume here that you have identified a business strategy and chosen a business model to achieve your strategic objectives. (Review Chapter 3.) But how do you translate your strategies, business models, and ideas into a working e-commerce site?

Your planning should identify the specific business objectives for your site, and then develop a list of system functionalities and information requirements. Business objectives are simply capabilities you want your site to have. System functionalities are types of information systems capabilities you will need to achieve your business objectives. The information requirements for a system are the information elements that the system must produce in order to achieve the business objectives.

Table 10-7 describes some basic business objectives, system functionalities, and information requirements for a typical e-commerce site. The objectives must be translated into a description of system functionalities and ultimately into a set of precise information requirements. The specific information requirements for a system typically are defined in much greater detail than Table 10-7 indicates (see Chapter 13). The business objectives of an e-commerce site are similar to those of a physical retail store, but they must be provided entirely in digital form, 24 hours a day, 7 days a week.

BUILDING THE WEB SITE: IN-HOUSE VERSUS OUTSOURCING

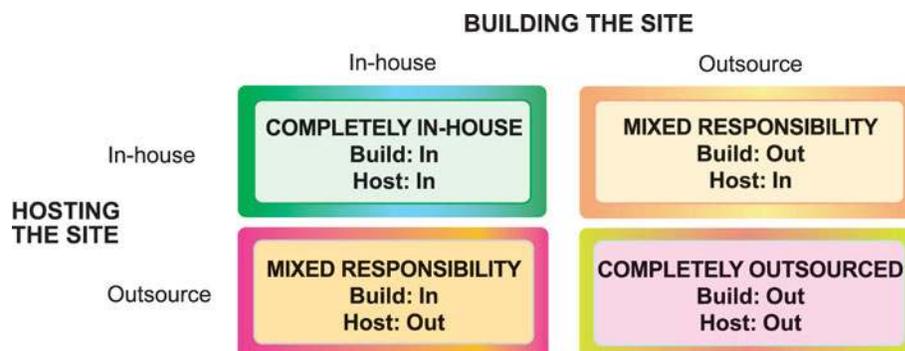
There are many choices for building and maintaining Web sites. Much depends on how much money you are willing to spend. Choices range from outsourcing the entire Web site development to an external vendor to building everything yourself (in-house). You also have a second decision to make: will you host

TABLE 10-7 SYSTEM ANALYSIS: BUSINESS OBJECTIVES, SYSTEM FUNCTIONALITY, AND INFORMATION REQUIREMENTS FOR A TYPICAL E-COMMERCE SITE

BUSINESS OBJECTIVE	SYSTEM FUNCTIONALITY	INFORMATION REQUIREMENTS
Display goods	Digital catalog	Dynamic text and graphics catalog
Provide product information (content)	Product database	Product description, stocking numbers, inventory levels
Personalize/customize product	Customer on-site tracking	Site log for every customer visit; data mining capability to identify common customer paths and appropriate responses
Execute a transaction payment	Shopping cart/payment system	Secure credit card clearing; multiple options
Accumulate customer information	Customer database	Name, address, phone, and e-mail for all customers; online customer registration
Provide after-sale customer support	Sales database and customer relationship management system (CRM)	Customer ID, product, date, payment, shipment date
Coordinate marketing/advertising	Ad server, e-mail server, e-mail, campaign manager, ad banner manager	Site behavior log of prospects and customers linked to e-mail and banner ad campaigns
Understand marketing effectiveness	Site tracking and reporting system	Number of unique visitors, pages visited, products purchased, identified by marketing campaign
Provide production and supplier links	Inventory management system	Product and inventory levels, supplier ID and contact, order quantity data by product

(operate) the site on your firm’s own servers or will you outsource the hosting to a Web host provider? There are some vendors who will design, build, and host your site, while others will either build or host (but not both). Figure 10-10 illustrates the alternatives.

FIGURE 10-10 CHOICES IN BUILDING AND HOSTING WEB SITES



You have a number of alternatives to consider when building and hosting an e-commerce site.

The Building Decision

If you elect to build your own site, there are a range of options. Unless you are fairly skilled, you should use a pre-built template to create the Web site. For example, Yahoo Merchant Solutions, Amazon Stores, and eBay all provide templates that merely require you to input text, graphics, and other data, as well as the infrastructure to run the Web site once it has been created. This is the least costly and simplest solution, but you will be limited to the “look and feel” and functionality provided by the template and infrastructure.

If you have some experience with computers, you might decide to build the site yourself. There is a broad variety of tools, ranging from those that help you build everything truly “from scratch,” such as Adobe Dreamweaver, Adobe InDesign, and Microsoft Expression, to top-of-the-line prepackaged site-building tools that can create sophisticated sites customized to your needs.

The decision to build a Web site on your own has a number of risks. Given the complexity of features such as shopping carts, credit card authentication and processing, inventory management, and order processing, development costs are high, as are the risks of doing a poor job. You will be reinventing what other specialized firms have already built, and your staff may face a long, difficult learning curve, delaying your entry to market. Your efforts could fail. On the positive side, you may be able to build a site that does exactly what you want, and develop the in-house knowledge to revise the site rapidly if necessitated by a changing business environment.

If you choose more expensive site-building packages, you will be purchasing state-of-the-art software that is well tested. You could get to market sooner. However, to make a sound decision, you will have to evaluate many different software packages and this can take a long time. You may have to modify the packages to fit your business needs and perhaps hire additional outside consultants to do the modifications. Costs rise rapidly as modifications mount. (We discuss this problem in greater detail in Chapter 13.) A \$4,000 package can easily become a \$40,000 to \$60,000 development project.

In the past, bricks-and-mortar retailers typically designed their e-commerce sites themselves (because they already had the skilled staff and IT infrastructure in place to do this). Today, however, larger retailers rely heavily on external vendors to provide sophisticated Web site capabilities, while also maintaining a substantial internal staff. Medium-size start-ups will often purchase a sophisticated package and then modify it to suit their needs. Very small mom-and-pop firms seeking simple storefronts will use templates.

The Hosting Decision

Now let's look at the hosting decision. Most businesses choose to outsource hosting and pay a company to host their Web site, which means that the hosting company is responsible for ensuring the site is “live” or accessible, 24 hours a day. By agreeing to a monthly fee, the business need not concern itself with technical aspects of setting up and maintaining a Web server, telecommunications links, or specialized staffing.

With a **co-location** agreement, your firm purchases or leases a Web server (and has total control over its operation) but locates the server in a vendor's physical facility. The vendor maintains the facility, communications lines, and the machinery. In the age of cloud computing, it is much less expensive to host your Web site in virtualized computing facilities. In this case, you do not purchase the server, but rent the capabilities of a cloud computing center. There is an extraordinary range of prices for cloud hosting, ranging from \$4.95 a month, to several hundred thousands of dollars per month depending on the

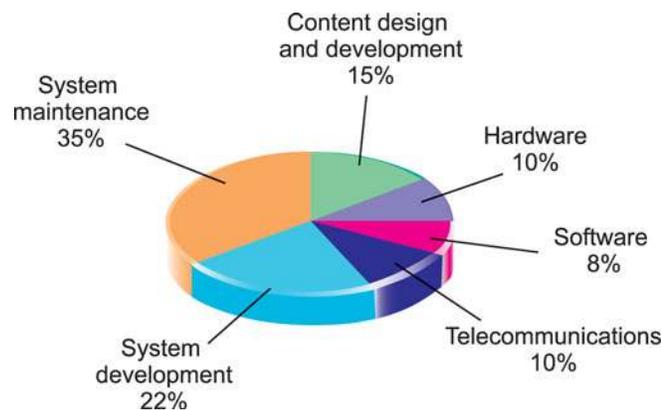
size of the Web site, bandwidth, storage, and support requirements. Very large providers (such as IBM, HP, and Oracle) achieve large economies of scale by establishing huge “server farms” located strategically around the country and the globe. What this means is that the cost of pure hosting has fallen as fast as the fall in server prices, dropping about 50 percent every year.

Web Site Budgets

Simple Web sites can be built and hosted with a first-year cost of \$5,000 or less. The Web sites of large firms with high levels of interactivity and linkage to corporate systems cost several million dollars a year to create and operate. For instance, in September 2006, Bluefly, which sells discounted women’s and men’s designer clothes online, embarked on the process of developing an improved version of its Web site based on software from Art Technology Group (ATG). It launched the new site in August 2008. To date, it has invested over \$5.3 million in connection with the redevelopment of the Web site. In 2010, Bluefly had online sales of \$81 million, and is growing at 7.5 percent a year. Its e-commerce technology budget is over \$8 million a year, roughly 10 percent of its total revenues (Bluefly, Inc., 2010).

Figure 10-11 provides some idea of the relative size of various Web site cost components. In general, the cost of hardware, software, and telecommunications for building and operating a Web site has fallen dramatically (by over 50 percent) since 2000, making it possible for very small entrepreneurs to create fairly sophisticated sites. At the same time, the costs of system maintenance and content creation have risen to make up more than half of typical Web site budgets. Providing content and smooth 24/7 operations are both very labor-intensive.

FIGURE 10-11 COMPONENTS OF A WEB SITE BUDGET



10.5 HANDS-ON MIS PROJECTS

The projects in this section give you hands-on experience developing e-commerce strategies for businesses, using spreadsheet software to research the profitability of an e-commerce company, and using Web tools to research and evaluate e-commerce hosting services.

Management Decision Problems

1. Columbiana is a small, independent island in the Caribbean. It wants to develop its tourist industry and attract more visitors. The island has many

historical buildings, forts, and other sites, along with rain forests and striking mountains. A few first-class hotels and several dozen less-expensive accommodations can be found along its beautiful white sand beaches. The major airlines have regular flights to Columbiana, as do several small airlines. Columbiana's government wants to increase tourism and develop new markets for the country's tropical agricultural products. How can a Web presence help? What Internet business model would be appropriate? What functions should the Web site perform?

2. Explore the Web sites of the following companies: Blue Nile, J.Crew, Circuit City, Black&Decker, Peet's Coffee & Tea, and Priceline. Determine which of these Web sites would benefit most from adding a company-sponsored blog to the Web site. List the business benefits of the blog. Specify the intended audience for the blog. Decide who in the company should author the blog, and select some topics for the blog.

Improving Decision Making: Using Spreadsheet Software to Analyze a Dot-Com Business

Software skills: Spreadsheet downloading, formatting, and formulas

Business skills: Financial statement analysis

Publicly traded companies, including those specializing in e-commerce, are required to file financial data with the U.S. Securities and Exchange Commission. By analyzing this information, you can determine the profitability of an e-commerce company and the viability of its business model.

Pick one e-commerce company on the Internet, for example, Ashford, Buy.com, Yahoo, or Priceline. Study the Web pages that describe the company and explain its purpose and structure. Use the Web to find articles that comment on the company. Then visit the Securities and Exchange Commission's Web site at www.sec.gov and select Filings & Forms to access the company's 10-K (annual report) form showing income statements and balance sheets. Select only the sections of the 10-K form containing the desired portions of financial statements that you need to examine, and download them into your spreadsheet. (MyMISLab provides more detailed instructions on how to download this 10-K data into a spreadsheet.) Create simplified spreadsheets of the company's balance sheets and income statements for the past three years.

- Is the company a dot-com success, borderline business, or failure? What information dictates the basis of your decision? Why? When answering these questions, pay special attention to the company's three-year trends in revenues, costs of sales, gross margins, operating expenses, and net margins.
- Prepare an overhead presentation (with a minimum of five slides), including appropriate spreadsheets or charts, and present your work to your professor and classmates.

Achieving Operational Excellence: Evaluating E-Commerce Hosting Services

Software skills: Web browser software

Business skills: Evaluating e-commerce hosting services

This project will help develop your Internet skills in commercial services for hosting an e-commerce site for a small start-up company.

You would like to set up a Web site to sell towels, linens, pottery, and tableware from Portugal and are examining services for hosting small business

Internet storefronts. Your Web site should be able to take secure credit card payments and to calculate shipping costs and taxes. Initially, you would like to display photos and descriptions of 40 different products. Visit Yahoo! Small Business, GoDaddy, and Volusion and compare the range of e-commerce hosting services they offer to small businesses, their capabilities, and costs. Also examine the tools they provide for creating an e-commerce site. Compare these services and decide which you would use if you were actually establishing a Web store. Write a brief report indicating your choice and explaining the strengths and weaknesses of each.

LEARNING TRACK MODULES

The following Learning Tracks provide content relevant to topics covered in this chapter:

1. Building a Web Page
2. E-commerce Challenges: The Story of Online Groceries
3. Build an E-commerce Business Plan
4. Hot New Careers in E-commerce

Review Summary

1. *What are the unique features of e-commerce, digital markets, and digital goods?*

E-commerce involves digitally enabled commercial transactions between and among organizations and individuals. Unique features of e-commerce technology include ubiquity, global reach, universal technology standards, richness, interactivity, information density, capabilities for personalization and customization, and social technology.

Digital markets are said to be more “transparent” than traditional markets, with reduced information asymmetry, search costs, transaction costs, and menu costs, along with the ability to change prices dynamically based on market conditions. Digital goods, such as music, video, software, and books, can be delivered over a digital network. Once a digital product has been produced, the cost of delivering that product digitally is extremely low.

2. *What are the principal e-commerce business and revenue models?*

E-commerce business models are e-tailers, transaction brokers, market creators, content providers, community providers, service providers, and portals. The principal e-commerce revenue models are advertising, sales, subscription, free/freemium, transaction fee, and affiliate.

3. *How has e-commerce transformed marketing?*

The Internet provides marketers with new ways of identifying and communicating with millions of potential customers at costs far lower than traditional media. Crowdsourcing utilizing the “wisdom of crowds” helps companies learn from customers in order to improve product offerings and increase customer value. Behavioral targeting techniques increase the effectiveness of banner, rich media, and video ads.

4. *How has e-commerce affected business-to-business transactions?*

B2B e-commerce generates efficiencies by enabling companies to locate suppliers, solicit bids, place orders, and track shipments in transit electronically. Net marketplaces provide a single, digital marketplace for many buyers and sellers. Private industrial networks link a firm with its suppliers and other strategic business partners to develop highly efficient and responsive supply chains.

5. *What is the role of m-commerce in business, and what are the most important m-commerce applications?*

M-commerce is especially well-suited for location-based applications, such as finding local hotels and restaurants, monitoring local traffic and weather, and providing personalized location-based marketing. Mobile phones and handhelds are being used for mobile bill payment, banking, securities trading, transportation schedule updates, and downloads of digital content, such as music, games, and video clips. M-commerce requires wireless portals and special digital payment systems that can handle micropayments.

6. *What issues must be addressed when building an e-commerce Web site?*

Building a successful e-commerce site requires a clear understanding of the business objectives to be achieved by the site and selection of the right technology to achieve those objectives. E-commerce sites can be built and hosted in-house or partially or fully outsourced to external service providers.

Key Terms

Advertising revenue model, 387

Affiliate revenue model, 389

Behavioral marketing, 392

Business-to-business (B2B) electronic commerce, 381

Business-to-consumer (B2C) electronic commerce, 381

Co-location, 404

Community providers, 384

Consumer-to-consumer (C2C) electronic commerce, 381

Cost Transparency, 377

Crowdsourcing, 392

Customization, 378

Digital goods, 380

Disintermediation, 379

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Electronic data interchange (EDI), 396

E-tailer, 382

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Free/freemium revenue model, 388

Information asymmetry, 378

Information density, 377

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Market entry costs, 377

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Micropayment systems, 388

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Private industrial networks, 397

Revenue model, 387

Richness, 377

Sales revenue model, 388

Search costs, 377

Social shopping, 389

Streaming, 383

Subscription revenue model, 388

Transaction costs, 376

Transaction fee revenue model, 388

Wisdom of crowds, 391

Review Questions

- What are the unique features of e-commerce, digital markets, and digital goods?
 - Name and describe four business trends and three technology trends shaping e-commerce today.
 - List and describe the eight unique features of e-commerce.
 - Define a digital market and digital goods and describe their distinguishing features.
- What are the principal e-commerce business and revenue models?
 - Name and describe the principal e-commerce business models.
 - Name and describe the e-commerce revenue models.
- How has e-commerce transformed marketing?
 - Explain how social networking and the “wisdom of crowds” help companies improve their marketing.
 - Define behavioral targeting and explain how it works at individual Web sites and on advertising networks.
- How has e-commerce affected business-to-business transactions?
 - Explain how Internet technology supports business-to-business electronic commerce.

- Define and describe Net marketplaces and explain how they differ from private industrial networks (private exchanges).
5. What is the role of m-commerce in business, and what are the most important m-commerce applications?
 - List and describe important types of m-commerce services and applications.
 - Describe some of the barriers to m-commerce.
 6. What issues must be addressed when building an e-commerce Web site?
 - List and describe each of the factors that go into the building of an e-commerce Web site.
 - List and describe four business objectives, four system functionalities, and four information requirements of a typical e-commerce Web site.
 - List and describe each of the options for building and hosting e-commerce Web sites.

Discussion Questions

1. How does the Internet change consumer and supplier relationships?
2. The Internet may not make corporations obsolete, but the corporations will have to change their business models. Do you agree? Why or why not?
3. How have social technologies changed e-commerce?

Video Cases

Video Cases and Instructional Videos illustrating some of the concepts in this chapter are available. Contact your instructor to access these videos.

Collaboration and Teamwork: Performing a Competitive Analysis of E-commerce Sites

Form a group with three or four of your classmates. Select two businesses that are competitors in the same industry and that use their Web sites for electronic commerce. Visit these Web sites. You might compare, for example, the Web sites for iTunes and Napster, Amazon and BarnesandNoble.com, or E*Trade and Scottrade. Prepare an evaluation of each business's Web site in terms of its functions, user friendliness, and ability to support the company's

business strategy. Which Web site does a better job? Why? Can you make some recommendations to improve these Web sites? If possible, use Google Sites to post links to Web pages, team communication announcements, and work assignments; to brainstorm; and to work collaboratively on project documents. Try to use Google Docs to develop a presentation of your findings for the class.

Amazon vs. Walmart: Which Giant Will Dominate E-commerce?

CASE STUDY

Since arriving on the dot-com scene in 1995, Amazon.com has grown from a small online bookseller to one of the largest retailing companies in the world, and easily the largest e-commerce retailer. The company has come a long way from its roots as a small Internet start-up selling books online. In addition to books, Amazon now sells millions of new, used, and collectible items in categories such as apparel and accessories, electronics, computers, kitchen and housewares, music, DVDs, videos, cameras, office products, toys and baby items, computers, software, travel services, sporting goods, jewelry, and watches. In 2010, sales of electronics and general merchandise comprised the majority of Amazon's sales for the first time.

Amazon.com would like to be "The Walmart of the Web," and it is indeed the Internet's top retailer. But in 2010, another firm emerged as a serious challenger for the title of 'Walmart of the Web': Walmart. Though Walmart is a latecomer to the world of e-commerce, the world's largest retailer appears to have its sights set on Amazon and is ready to battle it out for online e-tailing supremacy.

In contrast with Amazon, Walmart was founded as a traditional, off-line, physical store in 1962, and has grown from a single general store managed by founder Sam Walton to the largest retailer in the world with nearly 8,000 stores worldwide.

Based in Bentonville, Arkansas, Walmart made \$405 billion in sales last year, which is about 20 times as much as Amazon. In fact, based on current size alone, the battle between Walmart and Amazon is far from a clash of two similarly powerful titans. Walmart is clearly the bigger and stronger of the two, and for the time being, Amazon is not a big threat to Walmart as a whole.

Amazon, however, is not an easy target. The company has created a recognizable and highly successful brand in online retailing as a mass-market, low-price, high-volume online superstore. It has developed extensive warehousing facilities and an extremely efficient distribution network specifically designed for Web shopping. Its premium shipping service, Amazon Prime, provides "free" two-day shipping at an affordable price (currently only \$79 per year), often considered to be a weak point for online retailers. Even without Amazon Prime, designated

Super Saver items totaling at least \$25.00 ship for free.

Amazon's technology platform is massive and powerful enough to support not only sales of its own items but also those of third-party small and large businesses, which integrate their products into Amazon's Web site and use its order entry and payment systems to process their own sales. (Amazon does not own these products, and shipping is handled by the third party, with Amazon collecting 10-20 percent on the sale). This enables Amazon to offer an even wider array of products than it could carry on its own while keeping inventory costs low and increasing revenue. Amazon has further expanded its product selection via acquisitions such as the 2009 purchase of online shoe shopping site Zappos.com, which earned \$1 billion in retail sales in 2008 and gave the company an edge in footwear.

In the third quarter of 2009, when retail sales dipped 4 percent across the board, Amazon's sales increased by 24 percent. Its sales of electronics and general merchandise, which is the most prominent area of competition between Amazon and Walmart, were up 44 percent. And e-commerce is expected to become an increasingly large portion of total retail sales. Some estimates indicate that e-commerce could account for 15 to 20 percent of total retail in the United States within the next decade, as more and more shoppers opt to avoid the hassle of shopping at a physical location in favor of shopping online. If this happens, Amazon is in the best position to benefit. In the meantime, e-commerce has not suffered as much from the recession and is recovering more quickly than traditional retail, giving Walmart more reason for concern.

However, Walmart also brings a strong hand to the table. It is an even larger and more recognizable brand than Amazon. Consumers associate Walmart with the lowest price, which Walmart has the flexibility to offer on any given item because of its size and ability to keep overhead costs to a minimum. Walmart can lose money selling a hot product at extremely low margins and expect to make money on the strength of the large quantities of other items it sells. It also has a legendary continuous inventory replenishment system that

starts restocking merchandise as soon as an item reaches the checkout counter. Walmart's efficiency, flexibility, and ability to fine-tune its inventory to carry exactly what customers want have been enduring sources of competitive advantage. Walmart also has a significant physical presence, with stores all across the United States and in many other countries, and its stores provide the instant gratification of shopping, buying an item, and taking it home immediately, as opposed to waiting when ordering from Amazon.

Walmart believes Amazon's Achilles' heel is the costs and delays of shipping online purchases to buyers. Customers who buy some of the more than 1.5 million products on Walmart.com can have them shipped free to a local Walmart, and pick up their purchases at these stores. Internet shoppers may be tempted to pick up other items once they are inside the store. New service desks at the front of some stores make it even easier for shoppers to retrieve their purchases. A Walmart on the outskirts of Chicago is testing a drive-through window, similar to those found at pharmacies and fast-food restaurants, where shoppers can pick up their Internet orders.

In late 2009, Walmart.com began aggressively lowering prices on a wide variety of popular items, making sure in each instance to undercut Amazon's price. The types of items Walmart discounted included books, DVDs, other electronics, and toys. The message was clear: Walmart is not going down without a fight in e-commerce. And Walmart.com executive Raul Vazquez echoed the same thought, saying that Walmart will adjust its prices "as low as we need to" to be the "low-cost leader" on the Web. In other words, the two companies are now locked in a price war, and both sites are determined to win.

The most high profile area where the two companies have done battle is in online book sales. Amazon's Kindle e-book reader may have started the conflict by offering the most popular books in e-book format for just \$9.99. Though many publishers have since balked at allowing their books to be sold in the e-book format for that price, the battle has raged on in traditional formats. Several high-profile book releases, such as Stephen King's newest novel, *Under the Dome*, illustrated just how low both companies are willing to go. Walmart lowered its price for the novel to just \$10, claiming that it wasn't in response to the \$9.99 e-book price. Amazon matched that price shortly thereafter. In response, Walmart dropped the price to \$9.00 a few days later. The book's retail cover price is \$35 dollars, and its wholesale price is about \$17. This means that

both retailers are losing at least \$7 on every copy of *Under the Dome* that they sell at that price.

Walmart sees its massive price cuts as a way to gain market share quickly as they enter the online bookselling marketplace at a time when e-book readers and Apple iPhones and iPads make the e-book format popular. Amazon has demonstrated that in the short term it is more than capable of competing with Walmart on price. As of this case's writing, Amazon had raised its price on the *Under the Dome* back up to \$17. Walmart's price, of course, was \$16.99. The two sites have had similar clashes over many high-profile books, like J.K. Rowling's *Harry Potter and the Half-Blood Prince* and James Patterson's *I, Alex Cross*, the latter selling for \$13.00 on Amazon and \$12.99 on Walmart.com as of this writing.

The feud between the two sites has spilled over into other types of merchandise. Amazon and Walmart.com have competed over Xbox 360 consoles, popular DVD releases, and other big-ticket electronics. Even popular toys like the perennial top seller Easy-Bake Oven have been caught up in the fray. With the 2009 holiday shopping season in full swing, Walmart dropped its price for the toy from \$28 to just \$17. Amazon slashed its price to \$18 on the very same day.

Amazon claims it doesn't see shipping as a weakness. According to Amazon spokesperson Craig Berman, "Shopping on Amazon means you don't have to fight the crowds. We bring the items to your doorstep. You don't have to fight through traffic or find a parking space." Moreover, Amazon has taken steps recently to speed delivery times. In October, it began offering same-day delivery in seven U.S. cities, at an extra cost to shoppers. By working with carriers and improving its own internal systems, Amazon also started offering second-day deliveries on Saturdays, shaving two days off some orders. And Amazon continues to expand its selection of goods to be as exhaustive as Walmart's. In November 2010, Walmart introduced free shipping for all online orders.

Amazon founder and CEO Jeff Bezos is fond of describing the U.S. retail market as having "room for many winners." Will this hold true for Walmart and Amazon going forward? Walmart remains unchallenged among traditional physical retailers, but will it topple Amazon on the Web? Or will Amazon continue to be the "Walmart" of online retailers? Alternatively, will Walmart end up enlarging the online retail market space, helping Amazon grow in the process?

Sources: Kelly Evans, "How America Now Shops: Online Stores, Dollar Retailers (Watch Out Walmart)," *The Wall Street Journal*, March 23, 2010; Brad Stone, "The Fight Over Who Sets Prices at the Online Mall," *The New York Times*, February 8, 2010; Paul Sharma, "The Music Battle, Replayed with Books," *The Wall Street Journal*, November 24, 2009; Martin Peers, "Rivals Explore Amazon's Territory," *The Wall Street Journal*, January 7, 2010; "Is Wal-Mart Gaining on Amazon.com?" *The Wall Street Journal*, reprinted on MSN Money, December 18, 2009; "Amazon Steps Into Zappos' Shoes," *eMarketer*, July 24, 2009; Brad Stone, "Can Amazon Be the Wal-Mart of the Web?" *The New York Times*, September 20, 2009; and Brad Stone and Stephanie Rosenbloom, "Price War Brews Between Amazon and Wal-Mart," *The New York Times*, November 24, 2009.

CASE STUDY QUESTIONS

1. What concepts in the chapter are illustrated in this case?
2. Analyze Amazon and Walmart.com using the value chain and competitive forces models.
3. What are the management, organization, and technology factors that have contributed to the success of both Wal-Mart and Amazon?
4. Compare Wal-Mart's and Amazon's e-commerce business models. Which is stronger? Explain your answer.
5. Where would you prefer to make your Internet purchases? Amazon or Walmart.com? Why?

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