PART 1

INTRODUCTION

CHAPTER 1

INTRODUCTION TO ELECTRONIC COMMERCE

LEARNING OBJECTIVES

In this chapter, you will learn about:

- What electronic commerce is and how it is experiencing a second wave of growth with a new focus on profitability
- Why companies now concentrate on revenue models and the analysis of business processes instead of business models when they undertake electronic commerce initiatives
- How economic forces have created a business environment that is fostering the second wave of electronic commerce
- How businesses use value chains and SWOT analysis to identify electronic commerce opportunities
- The international nature of electronic commerce and the challenges that arise in engaging in electronic commerce on a global scale

INTRODUCTION

Very few people in the United States truly enjoy their hunt for a new or used car. Although many auto dealers have worked to improve their customers' experiences by introducing fixed pricing and "no-haggle" policies, a number of auto dealers continue to use aggressive sales approaches that can leave buyers exhausted, confused, and even worried that they might have been cheated in the transaction. In 1995, **Autobytel** (Note: This typeface indicates a corresponding link to a related Web page in the book's Online Companion; Autobytel's URL is http://www.autobytel.com) launched an online car-buying service that promised purchasers a haggle-free experience and offered car dealers a way to increase new vehicle sales volumes and reduce selling costs. Autobytel also acquired the operations of several competitors

and continues to operate their Web sites, including **Autoweb.com**, **AutoSite.com**, **Autoahorros.com**, **Car.com**, **CarTV.com**, and **CarSmart**, as part of its business.

Buying a car with the assistance of Autobytel requires that the buyer register with an Autobytel Web site and specify the desired auto in detail, usually after researching the vehicle's options and features on the Internet or by visiting local dealers. More than 90 percent of car buyers today do research on the Internet before buying their cars. Autobytel provides the buyer with a firm price quote for the selected car, then forwards the buyer's contact information to a local participating dealer. Dealers pay Autobytel a subscription fee to receive exclusive rights to referrals from a particular geographic area for the brands of vehicles that they sell. The dealer contacts the buyer, who then completes the purchase transaction at the dealer's location.

The buyer benefits from a speedy, straightforward, and predictable buying process. The dealer benefits by selling more automobiles and not paying a commission to a salesperson. Autobytel receives the monthly subscription fee from each dealer that it has under contract and sells advertising to insurance and finance companies on its Web site. Autobytel currently has contracts with more than 23,000 auto dealers. Autobytel's revenue from fees paid by auto dealers on these transactions is more than $70 million per year. Internet sales referrals to dealers from Autobytel and companies like it accounted for 22 percent of all U.S. new vehicle sales in 2005.

Autobytel established a business by replacing the salesperson in consumer car-buying transactions. Although auto manufacturers are moving to build effective online selling opportunities on their Web sites, Autobytel believes it can continue to offer value to both buyers and dealers that the manufacturers' sites cannot. Several research studies have concluded that the average Internet car buyer pays between 2 and 4 percent less for a car than other buyers. These studies attribute the savings

to a combination of negotiating power and transaction efficiency, which means that the dealer can make more profit, despite giving the buyer a better price and paying a subscription fee to Autobytel. Auto dealers spend an average of $480 in marketing each new vehicle they sell. If they use Autobytel, those costs are reduced to about $140 per car, including Autobytel's referral fee.

Autobytel experienced rapid growth in sales from its inception in 1995 through 2002, when sales growth flattened. Like many other companies launched during the early boom years of electronic commerce, Autobytel had to change its focus. Instead of pursuing a strategy of revenue growth at all costs, it began to examine its costs carefully. The company also took steps to improve the quality of its service by ending relationships with a number of dealers who were generating significant numbers of customer complaints. In 2004, Autobytel expanded by buying other companies and offering sales management services and software to auto dealers.

After a year of cost cutting and finding other ways to generate sales growth, Autobytel began growing again. Autobytel has been earning a profit since 2003. Thus, Autobytel emerged from the difficult years of 2001 through 2003 as a growing and profitable participant in the second wave of electronic commerce that you will learn about in this chapter.

ELECTRONIC COMMERCE: THE SECOND WAVE

The business phenomenon that we now call electronic commerce has had an interesting history. From humble beginnings in the mid-1990s, electronic commerce grew rapidly until 2000, when a major downturn occurred. Many people have seen news stories about the "dot-com boom" followed by the "dot-com bust" or the "dot-bomb." In the period from 2000 to 2003, many industry observers were writing obituaries for electronic commerce. Just as the unreasonable expectations for immediate success fueled the high expectations during the boom years, overly gloomy news reports colored perceptions during this time. Beginning in 2003, with the general economy still in the doldrums, electronic commerce began to show signs of new life. Companies that had survived the downturn were not only seeing growth in sales again, but many of them were showing profits. Although the rapid expansion and high levels of investment of the boom years are not likely to be repeated, the second wave of electronic commerce is well under way. This section defines electronic commerce and describes how it is growing once again in its second wave.

Electronic Commerce and Electronic Business

To many people, the term "electronic commerce" means shopping on the part of the Internet called the World Wide Web (the Web). However, **electronic commerce** (or **e-commerce**) also includes many other activities, such as businesses trading with other businesses and internal processes that companies use to support their buying, selling, hiring, planning, and other activities. Some people use the term **electronic business** (or **e-business**) when they are talking about electronic commerce in this broader sense. For example, IBM defines electronic business as "the transformation of key business processes through the use of Internet technologies." Most people use the terms "electronic commerce" and "electronic business" interchangeably. In this book, the term electronic commerce (or e-commerce) is used in its broadest sense and includes all business activities that use Internet technologies. Internet technologies include the Internet, the World Wide Web, and other technologies such as wireless transmissions on mobile telephones or a personal digital assistant (PDA).

Categories of Electronic Commerce

Some people find it useful to categorize electronic commerce by the types of entities participating in the transactions or business processes. The five general electronic commerce categories are business-to-consumer, business-to-business, business processes, consumer-to-consumer, and business-to-government. The three categories that are most commonly used are:

- Consumer shopping on the Web, often called **business-to-consumer** (or **B2C**)
- Transactions conducted between businesses on the Web, often called **business-to-business** (or **B2B**)
- Transactions and business processes in which companies, governments, and other organizations use Internet technologies to support selling and purchasing activities

To understand these categories better, consider a company that manufactures stereo speakers. The company might sell its finished product to consumers on the Web, which would be B2C electronic commerce. It might also purchase the materials it uses to make the speakers from other companies on the Web, which would be B2B electronic commerce. Businesses often have entire departments devoted to negotiating purchase transactions with their suppliers. These departments are usually named **supply management** or **procurement**. Thus, B2B electronic commerce is sometimes called **e-procurement**.

In addition to buying materials and selling speakers, the company must also undertake many other activities to convert the purchased materials into speakers. These activities might include hiring and managing the people who make the speakers, renting or buying the facilities in which the speakers are made and stored, shipping the speakers, maintaining accounting records, purchasing insurance, developing advertising campaigns, and designing new versions of the speakers. An increasing number of these transactions and business processes can be done on the Web. Manufacturing processes (such as the fabrication of the speakers) can be controlled using Internet technologies within the business. All of these communication, control, and transaction-related activities have become an important part of electronic commerce. Some people include these activities in the B2B category; others refer to them as underlying or supporting business processes.

Figure 1-1 shows the three main elements of electronic commerce. The figure presents a rough approximation of the relative sizes of these elements. In terms of dollar volume and number of transactions, B2B electronic commerce is much greater than B2C electronic commerce. However, the number of supporting business processes is greater than the number of all B2C and B2B transactions combined.

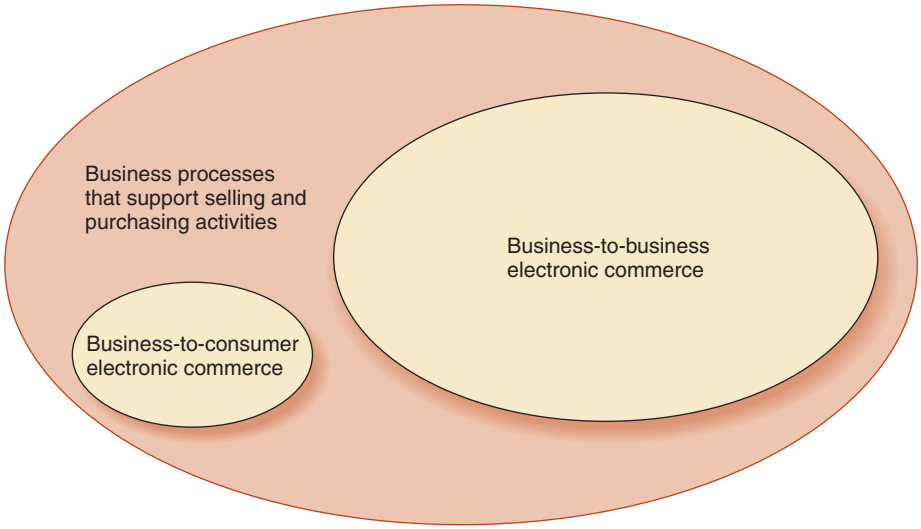

FIGURE 1-1 Elements of electronic commerce

The large oval in Figure 1-1 that represents the business processes that support selling and purchasing activities is the largest element of electronic commerce. This section provides some background and explains how business processes are built from their component parts, activities, and transactions.

For more than 70 years, business researchers have been studying the ways people behave in businesses. This research has helped managers better understand how workers do their jobs. The research results have also helped managers, and, increasingly, the workers themselves, improve job performance. By changing the nature of jobs, managers and workers can, as the saying goes, "work smarter, not harder." An important part of doing these job studies is to learn what activities each worker performs. In this setting, an **activity** is a task performed by a worker in the course of doing his or her job.

For a much longer time—centuries, in fact—business owners have kept records of how well their businesses are performing. The formal practice of accounting, or recording transactions, dates back to the 1400s. A **transaction** is an exchange of value, such as a purchase, a sale, or the conversion of raw materials into a finished product. By recording transactions, accountants help business owners keep score and measure how well they are doing. All transactions involve at least one activity, and some transactions involve many activities. Not all activities result in measurable (and therefore recordable) transactions. Thus, a transaction always has one or more activities associated with it, but an activity might not be related to a transaction.

The group of logical, related, and sequential activities and transactions in which businesses engage are often collectively referred to as **business processes**. Transferring funds, placing orders, sending invoices, and shipping goods to customers are all types of activities or transactions. For example, the business process of shipping goods to customers might include a number of activities (or tasks, or transactions), such as inspecting the goods, packing the goods, negotiating with a freight company to deliver the goods, creating and printing the shipping documents, loading the goods onto the truck, and sending a check to the freight company. One important way that the Web is helping people work more effectively is by enabling employees of many different kinds of companies to work at home. In this arrangement, called **telecommuting** or **telework**, the employee logs in to the company computer through the Internet instead of traveling to an office.

Some researchers define a fourth category of electronic commerce, called **consumer-to-consumer** (or **C2C**), which includes individuals who buy and sell items among themselves. For example, C2C electronic commerce occurs when a person sells an item through a Web auction site to another person. In this book, C2C sales are included in the B2C category because the person selling the item acts much as a business would for purposes of the transaction.

Finally, some researchers also define a category of electronic commerce called **business-to-government** (or **B2G**); this category includes business transactions with government agencies, such as paying taxes and filing required reports. An increasing number of states have Web sites that help companies do business with state government agencies. For example, the **CAL-Buy** site makes it easy for businesses to conduct online transactions with the state of California. In this book, B2G transactions are included in our discussions of B2B electronic commerce. Figure 1-2 summarizes these five categories of electronic commerce.

Category	Description	Example
Business-to-consumer (B2C)	Businesses sell products or services to individual consumers.	Walmart.com sells merchandise to consumers through its Web site.
Business-to-business (B2B)	Businesses sell products or services to other businesses.	Grainger.com sells industrial supplies to large and small businesses through its Web site.
Business processes that support buying and selling activities	Businesses and other organizations maintain and use information to identify and evaluate customers, suppliers, and employees. Increasingly, businesses share this information in carefully managed ways with their customers, suppliers, employees, and business partners.	Dell Computer uses secure Internet connections to share current sales and sales forecast information with suppliers. The suppliers can use this information to plan their own production and deliver component parts to Dell in the right quantities at the right time.

FIGURE 1-2 Electronic commerce categories

Category	Description	Example
Consumer-to-consumer (C2C)	Participants in an online marketplace can buy and sell goods to each other. Because one party is selling, and thus acting as a business, this book treats C2C transactions as part of B2C electronic commerce.	Consumers and businesses trade with each other in the eBay.com online marketplace.
Business-to-government (B2G)	Businesses sell goods or services to governments and government agencies. This book treats B2G transactions as part of B2C electronic commerce.	CAL-Buy portal allows businesses to sell online to the state of California.

FIGURE 1-2 Continued Electronic commerce categories

The Development and Growth of Electronic Commerce

Over the thousands of years that people have engaged in commerce with one another, they have adopted the tools and technologies that became available. For example, the advent of sailing ships in ancient times opened new avenues of trade to buyers and sellers. Later innovations, such as the printing press, steam engine, and telephone, have changed the way in which people conduct commerce activities. The Internet has changed the way people buy, sell, hire, and organize business activities in more ways and more rapidly than any other technology in the history of business.

Electronic Funds Transfers (EFTs)

Although the Web has made online shopping possible for many businesses and individuals, in a broader sense, electronic commerce has existed for many years. For more than 30 years, banks have been using **electronic funds transfers** (**EFTs**, also called **wire transfers**), which are electronic transmissions of account exchange information over private communications networks.

Electronic Data Interchange (EDI)

Businesses also have been engaging in a type of electronic commerce, known as electronic data interchange, for many years. **Electronic data interchange** (**EDI**) occurs when one business transmits computer-readable data in a standard format to another business. In the 1960s, businesses realized that many of the documents they exchanged were related to the shipping of goods, for example, invoices, purchase orders, and bills of lading. These documents included the same set of information for almost every transaction. Businesses also realized that they were spending a good deal of time and money entering this data into their computers, printing paper forms, and then reentering the data on the other side of the transaction. Although the purchase order, invoice, and bill of lading for each transaction contained much of the same information—such as item numbers, descriptions, prices, and quantities—each paper form

usually had its own unique format for presenting that information. By creating a set of standard formats for transmitting that information electronically, businesses were able to reduce errors, avoid printing and mailing costs, and eliminate the need to reenter the data.

Businesses that engage in EDI with each other are called **trading partners**. The standard formats used in EDI contain the same information that businesses have always included in their standard paper invoices, purchase orders, and shipping documents. Firms such as General Electric, Sears, and Wal-Mart have been pioneers in using EDI to improve their purchasing processes and their relationships with suppliers.

The U.S. government, which is one of the largest EDI trading partners in the world, also was instrumental in bringing businesses into EDI. For nine years, ending in 2001, the Defense Logistics Agency operated a number of Electronic Commerce Resource Centers (ECRCs) throughout the country. The ECRCs provided free assistance to many businesses, especially smaller businesses, so they could do EDI with the U.S. Defense Department and other federal agencies. The Georgia Institute of Technology continues to operate one of these centers as the **Georgia Tech Electronic Commerce Resource Center**, which serves businesses in Alabama, Georgia, and Tennessee.

One serious problem that potential adopters of EDI faced was the high cost of implementation. Until the late 1990s, doing EDI meant buying expensive computer hardware and software and then either establishing direct network connections (using leased telephone lines) to all trading partners or subscribing to a value-added network. A **value-added network** (**VAN**) is an independent firm that offers connection and transaction-forwarding services to buyers and sellers engaged in EDI. Before the Internet came into existence as we know it today, VANs provided the connections between most trading partners and were responsible for ensuring the security of the data transmitted. VANs usually charged a fixed monthly fee plus a per-transaction charge, adding to the already significant expense of implementing EDI. Many smaller firms were unable to afford to participate in EDI and lost important customers, who went elsewhere to buy. The companies that operated VANs have gradually moved EDI traffic to the Internet, but many other companies have developed other ways to do EDI types of transactions on the Internet. You will learn more about EDI, VANs, and new B2B transaction technologies in Chapter 5.

The Dot-Com Boom, Bust, and Rebirth

Between 1997 and 2000, more than 12,000 Internet-related businesses were started with more than $100 billion of investors' money. In an extended burst of optimism and what many came to describe as irrational exuberance, investors feared that they might miss the money-making opportunity of a lifetime. As more investors competed for a fixed number of good ideas, the price of those ideas increased. Worse, a number of bad ideas were proposed and funded. More than 5000 of these companies went out of business or were acquired in the downturn that began in 2000. The media coverage of the "dot-com bust" was extensive. However, between 2000 and 2003, more than $200 billion was invested in purchasing electronic commerce businesses that were in trouble and starting new online ventures, according to industry research firm WebMergers. This second wave of financial investment has not been reported extensively in either the general or business media, but it is fueling a rebirth of growth in online business activity.

After seeing so many news stories during the period from 2000 through 2002 proclaiming the death of electronic commerce, many people are surprised to learn that the growth

in online B2C sales had continued through that period, although at a slower pace than during the boom years of the late 1990s. Thus, the "bust" that was so widely reported in the media was really more of a slowdown than a true collapse. After four years of doubling or tripling every year, growth in online sales slowed to an annual rate of 20 to 30 percent starting in 2001. Most experts expect this growth rate to continue through 2010.

One force driving the growth in online sales to consumers is the ever increasing number of people who have access to the Internet. The **Pew Internet & American Life Project** (funded by the Pew Charitable Trusts) began conducting several long-term research projects in 2000 to study the growth of the Internet and its effects on society. You can consult its Web site for the latest reports on these and other projects that examine Internet use. In 2004, a Pew research project found that two-thirds of Internet users have purchased at least one item online. A 2005 Pew project found that 25 percent of U.S. adults used online banking services.

In addition to the renewed growth in the B2C sector, B2B sales online have been increasing steadily. B2B online sales have been more impressive than B2C sales because EDI was already well established in 1995, with more than $400 billion per year in transactions, so B2B has been growing from a larger base. In this book, we include business processes in the B2B category, so companies' transactions with other businesses, with their employees, and with governmental agencies (for example, when they pay their taxes) are all candidates for the application of Internet technologies. The dollar amount of these transactions, even for individual businesses, is substantial. Intel is a good example of a company that sells its products to other businesses rather than to consumers. Intel accepts more than 95 percent of its orders (more than $30 billion per year) through the Internet. Intel also purchases billions of dollars' worth of supplies and raw materials on the Web each year. The total volume of all worldwide business activities on the Web is expected to exceed $6 trillion by 2007. Figure 1-3 summarizes the growth of actual and estimated online sales for the B2C and B2B categories.

Year	B2C Sales: Actual and Estimated $ Billions	B2B Sales (including EDI): Actual and Estimated $ Billions
2007	240	6800
2006	190	5300
2005	150	4100
2004	130	2800
2003	100	1600
2002	80	900
2001	70	730
2000	50	600
1999	25	550
1998	10	520
1997	5	490
1996	Less than 1	460

Adapted from reports by ClickZ Network (http://www.clickz.com/stats/stats_toolbox/); eMarketer (http://www.emarketer.com/); Forrester Research (http://www.forrester.com); and the *Statistical Abstract of the United States*, 2004–2005, Washington: U.S. Census Bureau.

FIGURE 1-3 Actual and estimated online sales in B2C and B2B categories

The Second Wave of Electronic Commerce

Economists Chris Freeman and Francisco Louçã describe four waves that occurred in the Industrial Revolution in their book *As Time Goes By* (see the For Further Study and Research section at the end of this chapter). Many researchers predict that electronic commerce and the information revolution brought about by the Internet will go through similar waves. Those researchers agree that the second wave of electronic commerce has begun. This section outlines the defining characteristics of the first wave of electronic commerce and describes how the second wave is different.

The first wave of electronic commerce was predominantly a U.S. phenomenon. Web pages were primarily in English, particularly on commerce sites. The second wave is characterized by its international scope, with sellers doing business in many countries and in many languages. The problems of language translation and handling currency conversion will need to be solved to allow efficient conduct of business in the second wave. You will learn more about the issues that arise in global electronic commerce later in this chapter, in Chapter 7, and in Chapter 11, which concerns online payment systems.

In the first wave, easy access to start-up capital led to an overemphasis on creating new large enterprises to exploit electronic commerce opportunities. Investors were excited about electronic commerce and wanted to participate, no matter how much it cost or how bad the underlying ideas were. In the second wave, established companies are using their own internal funds to finance gradual expansion of electronic commerce opportunities. These measured and carefully considered investments are helping electronic commerce grow more steadily, though more slowly.

The Internet technologies used in the first wave, especially in B2C commerce, were slow and inexpensive. Most consumers connected to the Internet using dial-up modems. The increase in broadband connections in homes is a key element in the B2C component of the second wave. In 2004, the number of U.S. homes with broadband connections began to increase rapidly. Most industry estimates showed that about 12 percent of U.S. homes had broadband connections in early 2004. By late 2005, those estimates were ranging between 25 and 30 percent. Many experts believe that increased use of home Internet connections to transfer large audio and video files prompted the surge in broadband connections. Although these connections are more expensive, they are more than 10 times faster than dial-up. This increased speed not only makes Internet use more efficient, it can alter the way people use the Web. You will learn more about types of connections in Chapter 2 and how connection speed can affect consumers' online shopping experiences in Chapters 3 and 4.

In the first wave, Internet technologies were integrated into B2B transactions and internal business processes by using bar codes and scanners to track parts, assemblies, inventories, and production status. These tracking technologies were not well integrated. Also, companies sent transaction information to each other using a patchwork of communication methods, including fax, e-mail, and EDI. In the second wave, radio-frequency identification (RFID) devices and smart cards are being combined with biometric technologies, such as fingerprint readers and retina scanners, to control more items and people in a wider variety of situations. These technologies are increasingly integrated with each other and with communication systems that allow companies to communicate with each other and share transaction, inventory level, and customer demand information effectively. You

will learn more about how these technologies are integrated with B2B electronic commerce in Chapter 5.

The use of electronic mail (or e-mail) in the first wave was as a tool for relatively unstructured communication. In the second wave, sellers are using e-mail as an integral part of their marketing and customer contact strategies. You will learn about e-mail technologies in Chapter 2 and e-mail marketing in Chapter 4.

Online advertising was the main revenue source of many failed dot-com businesses in the first wave. After a two-year dip in online advertising activity and revenues, companies are beginning the second wave with a renewed interest in making the Internet work as an effective advertising medium. Some categories of online advertising, such as employment services (job wanted ads) are growing rapidly and are replacing traditional advertising outlets. You will learn about second wave advertising strategies in Chapter 4.

The sale of digital products was fraught with difficulties during the first wave of electronic commerce. The music recording industry was unable (or, some would say, unwilling) to devise a way to distribute digital music on the Web. This created an environment in which digital piracy—the theft of musical artists' intellectual property—became rampant. The promise of electronic books was also unfulfilled. The second wave offers the promise of legal distribution of music, video, and other digital products on the Web. Apple Computer's **iTunes** site was one of the first second wave attempts at digital product distribution. You will learn more about digital product distribution strategies in Chapter 3 and about the related legal issues in Chapter 7.

In the first wave of electronic commerce, many companies and investors believed that being the first Web site to offer a particular type of product or service would give them an opportunity to be successful. This strategy is called the **first-mover advantage**. As business researchers studied companies who had tried to gain a first-mover advantage (see the Suarez and Lanzolla article reference in the For Further Study and Research section at the end of this chapter), they learned that being first did not always lead to success. First movers that were successful tended to be large companies that had an established reputation (or brand) and that also had marketing, distribution, and production expertise. First movers that were smaller or that lacked the expertise in these areas tended to be unsuccessful. Also, first movers that entered highly volatile markets or in industries with high rates of technological change often did not do well. In the second wave, fewer business rely on a first-mover advantage when they take their businesses online.

Figure 1-4 shows a summary of some key characteristics of the first wave and the second wave of electronic commerce. This list is not complete because every day brings new technologies and combinations of existing technologies that make additional second wave opportunities possible.

Electronic Commerce Characteristic	First Wave	Second Wave
International character of electronic commerce	Dominated by U.S. companies	Global enterprises in many countries participating in electronic commerce
Languages	Most electronic commerce Web sites in English	Many electronic commerce Web sites available in multiple languages
Funding	Many new companies started with outside investor money	Established companies funding electronic commerce initiatives with their own capital
Connection technologies	Many electronic commerce participants used slow Internet connections	Rapidly increasing use of broadband technologies for Internet connections
B2B technologies	B2B electronic commerce relied on a patchwork of disparate communication and inventory management technologies	B2B electronic commerce increasingly are integrated with radio-frequency identification and biometric devices to manage information and product flows effectively
E-mail contact with customers	Unstructured e-mail communication with customers	Customized e-mail strategies now integral to customer contact
Advertising and electronic commerce integration	Over-reliance on simple forms of online advertising as main revenue source	Use of multiple sophisticated advertising approaches and better integration of electronic commerce with existing business processes and strategies
Distribution of digital products	Widespread piracy due to ineffective distribution of digital products	New approaches to the sale and distribution of digital products
First-mover advantage	Rely on first-mover advantage to ensure success in all types of markets and industries	Realize that first-mover advantage leads to success only for some companies in certain specific markets and industries

FIGURE 1-4 Key characteristics of the first two waves of electronic commerce

Large businesses, both existing businesses and new businesses that had obtained large amounts of capital early on, dominated the first wave. As the second wave gains momentum, more than 60 percent of small U.S. businesses (those with fewer than 200 employees) do not have Web sites. The second wave of electronic commerce will include a larger proportion of these smaller businesses. Providing services that help smaller companies use electronic commerce will also be a substantial area of online business.

Not all of the future of electronic commerce is based in its second wave. Some of the first wave companies were successful, such as Amazon.com, eBay, and Yahoo!. The second wave of electronic commerce will provide new opportunities for these businesses, too.

BUSINESS MODELS, REVENUE MODELS, AND BUSINESS PROCESSES

A **business model** is a set of processes that combine to yield a profit. In the first wave of electronic commerce, many investors sought out start-up companies with appealing business models. A good business model was expected to lead to rapid sales growth and market dominance. The idea that the key to success was simply to copy the business model of a successful dot-com business led the way to many business failures, some of them quite dramatic.

In the wake of the dot-com debacle that ended the first wave of electronic commerce, many business researchers analyzed the efficacy of the business model approach and began to question the advisability of focusing great attention on a company's business model. One of the main critics, Harvard Business School professor Michael Porter, argued that business models not only did not matter, they probably did not exist. (You can read more about Porter's criticisms of the business model approach in the articles cited in the For Further Study and Research section at the end of this chapter.)

It has become clear to many companies that copying or adapting someone else's business model is neither an easy nor wise road map to success. Instead, companies should examine the elements of their business; that is, they should identify business processes that they can streamline, enhance, or replace with processes driven by Internet technologies.

Companies and investors do still use the idea of a **revenue model**, which is a specific collection of business processes used to identify customers, market to those customers, and generate sales to those customers. The revenue model idea is helpful for classifying revenue-generating activities for communication and analysis purposes. The details of revenue models that are used on the Web are presented in Chapter 3.

Focus on Specific Business Processes

In addition to the revenue model grouping of business processes, companies think of the rest of their operations as specific business processes. Those processes include purchasing raw materials or goods for resale, converting materials and labor into finished goods, managing transportation and logistics, hiring and training employees, managing the finances of the business, and many other activities.

An important function of this book is to help you learn how to identify those business processes that firms can accomplish more effectively by using electronic commerce technologies. In some cases, business processes use traditional commerce activities very effectively, and technology cannot improve them. Products that buyers prefer to touch, smell, or examine closely can be difficult to sell using electronic commerce. For example, customers might be reluctant to buy items such as high-fashion clothing or antique jewelry if they cannot closely examine the products before agreeing to purchase them.

This book will help you learn how to use Internet technologies to improve existing business processes and identify new business opportunities. An important aspect of electronic commerce is that firms can use it to help them adapt to change. The business world is changing more rapidly than ever before. Although much of this book is devoted to explaining technologies, the book's focus is on the business of electronic commerce; the technologies only enable the business processes.

Role of Merchandising

Retail merchants have years of traditional commerce experience in creating store environments that help convince customers to buy. This combination of store design, layout, and product display knowledge is called **merchandising**. In addition, many salespeople have developed skills that allow them to identify customer needs and find products or services that meet those needs.

The skills of merchandising and personal selling can be difficult to practice remotely. However, companies must be able to transfer their merchandising skills to the Web for their Web sites to be successful. Some products are easier to sell on the Internet than others because the merchandising skills related to those products are easier to transfer to the Web.

Product/Process Suitability to Electronic Commerce

Some products, such as books or CDs, are good candidates for electronic commerce because customers do not need to experience the physical characteristics of the particular item before they buy it. Because one copy of a new book is identical to other copies, and because the customer is not concerned about fit, freshness, or other such qualities, customers are usually willing to order a title without examining the specific copy they will receive. The advantages of electronic commerce, including the ability of one site to offer a wider selection of titles than even the largest physical bookstore, can outweigh the advantages of a traditional bookstore—for example, the customer's ability to browse the pages of the books. In later chapters, you will learn how to evaluate the advantages and disadvantages of using electronic commerce for specific business processes. Figure 1-5 lists examples of business processes categorized as to how well suited they are to electronic commerce and traditional commerce.

Well Suited to Electronic Commerce	Suited to a Combination of Electronic and Traditional Commerce Strategies	Well Suited to Traditional Commerce
Sale/purchase of books and CDs	Sale/purchase of automobiles	Sale/purchase of impulse items for immediate use
Online delivery of software	Online banking	Low-value transactions (total sale/purchase under $10)
Sale/purchase of travel services	Roommate-matching services	
Online shipment tracking	Sale/purchase of residential real estate	
Sale/purchase of investment and insurance products	Sale/purchase of high-value jewelry and antiques	

FIGURE 1-5 Business process suitability to type of commerce

The classifications shown in the figure depend on the current state of available technologies, and thus will change as new tools emerge for implementing electronic commerce. For example, low-denomination transactions are not well suited to electronic commerce because no standard method for transferring small amounts of money on the Web has

become generally accepted (although such standards are taking shape; Chapter 11 contains a more detailed discussion of this issue). If a company or group of companies could create a standard that gains general acceptance among buyers and sellers, low-denomination transactions could move from the traditional commerce column to the electronic commerce column.

One business process that is especially well suited to electronic commerce is the selling of commodity items. A **commodity item** is a product or service that is hard to distinguish from the same products or services provided by other sellers; its features have become standardized and well known. Gasoline, office supplies, soap, computers, and airline transportation are all examples of commodity products or services, as are the books and CDs sold by Amazon.com.

Another key factor that can make an item well suited to electronic commerce is the product's shipping profile. A product's **shipping profile** is the collection of attributes that affect how easily that product can be packaged and delivered. A high value-to-weight ratio can help by making the overall shipping cost a small fraction of the selling price. An airline ticket is an excellent example of an item that has a high value-to-weight ratio. Products that are consistent in size, shape, and weight can make warehousing and shipping much simpler and less costly. The shipping profile is only one factor, however. Expensive jewelry has a high value-to-weight ratio, but many people are reluctant to buy it without examining it in person unless the jewelry is sold under a well-known brand name and with a generous return policy.

A product that has a strong brand identity—such as a Kodak camera—is easier to sell on the Web than an unbranded item, because the brand's reputation reduces the buyer's concerns about quality when buying that item sight unseen. Other items that are well suited to electronic commerce are those that appeal to small, but geographically dispersed, groups of customers. Collectible comic books are an example of this type of product.

When personal selling skills are a factor, as in commercial real estate sales, or when the condition of the products is difficult to determine without making a personal inspection, as in purchases of high-fashion clothing, antiques, or perishable food products, traditional commerce or a combination of traditional commerce (for the inspection) and electronic commerce can be a better way to sell the items or services.

A combination of electronic and traditional commerce strategies works best when the business process includes both commodity and personal inspection elements. For example, many people are finding information on the Web about new and used automobiles. As you learned in the beginning of this chapter, Autobytel has had much success handling new car transactions. Most consumers who use the Autobytel service have already visited auto dealers and test-driven the cars in which they are interested. They are willing to take delivery of a particular make and model of a new vehicle even if they did not test-drive the specific car they are purchasing through Autobytel. In contrast, fewer people are willing to buy a used car without driving that specific car and personally inspecting it. In the case of used cars, electronic commerce provides a good way for buyers to obtain information about available models, features, reliability, prices, and dealerships; but the variability in the condition of used cars makes the traditional commerce component of personal inspection a key part of the transaction negotiation. The next two sections summarize some advantages and disadvantages of electronic commerce.

Advantages of Electronic Commerce

Firms are interested in electronic commerce because, quite simply, it can help increase profits. All the advantages of electronic commerce for businesses can be summarized in one statement: Electronic commerce can increase sales and decrease costs. Advertising done well on the Web can get even a small firm's promotional message out to potential customers in every country in the world. A firm can use electronic commerce to reach small groups of customers that are geographically scattered. The Web is particularly useful in creating virtual communities that become ideal target markets for specific types of products or services. A **virtual community** is a gathering of people who share a common interest, but instead of this gathering occurring in the physical world, it takes place on the Internet. You will learn more about virtual communities and the business opportunities they present in Chapter 6.

Just as electronic commerce increases sales opportunities for the seller, it increases purchasing opportunities for the buyer. Businesses can use electronic commerce to identify new suppliers and business partners. Negotiating price and delivery terms is easier in electronic commerce because the Internet can help companies efficiently obtain competitive bid information. Electronic commerce increases the speed and accuracy with which businesses can exchange information, which reduces costs on both sides of transactions. Many companies are reducing their costs of handling sales inquiries, providing price quotes, and determining product availability by using electronic commerce in their sales support and order-taking processes.

Cisco Systems, a leading manufacturer of computer networking equipment, currently sells almost all its products online. Because no customer service representatives are involved in making these sales, Cisco operates very efficiently. In 1998, the first year in which its online sales initiative was operational, Cisco made 72 percent of its sales on the Web. Cisco avoided handling 500,000 calls per month and saved $500 million in that first year. Today, Cisco conducts more than 99 percent of its purchase and sales transactions online.

Electronic commerce provides buyers with a wider range of choices than traditional commerce because buyers can consider many different products and services from a wider variety of sellers. This wide variety is available for consumers to evaluate 24 hours a day, every day. Some buyers prefer a great deal of information in deciding on a purchase; others prefer less. Electronic commerce provides buyers with an easy way to customize the level of detail in the information they obtain about a prospective purchase. Instead of waiting days for the mail to bring a catalog or product specification sheet, or even minutes for a fax transmission, buyers can have instant access to detailed information on the Web.

Some digital products, such as software, music and video files, or images, can even be delivered through the Internet, which reduces the time buyers must wait to begin enjoying their purchases. The ability to deliver digital products online is not just a cost-reduction opportunity. It can increase sales, too. Intuit sells its TurboTax income tax preparation software online and lets customers download the software immediately if they wish. Intuit sells a considerable amount of TurboTax software late in the evening on April 14 each year. (April 15 is the deadline for filing personal income tax returns in the United States.)

The benefits of electronic commerce extend to the general welfare of society. Electronic payments of tax refunds, public retirement, and welfare support cost less to issue and arrive securely and quickly when transmitted over the Internet. Furthermore, electronic payments can be easier to audit and monitor than payments made by check, providing protection against fraud and theft losses. To the extent that electronic commerce enables

people to telecommute, everyone benefits from the reduction in commuter-caused traffic and pollution. Electronic commerce can also make products and services available in remote areas. For example, distance education is making it possible for people to learn skills and earn degrees no matter where they live or which hours they have available for study.

Disadvantages of Electronic Commerce

Some business processes may never lend themselves to electronic commerce. For example, perishable foods and high-cost, unique items such as custom-designed jewelry might be impossible to inspect adequately from a remote location, regardless of any technologies that might be devised in the future. Most of the disadvantages of electronic commerce today, however, stem from the newness and rapidly developing pace of the underlying technologies. These disadvantages will disappear as electronic commerce matures and becomes more available to and accepted by the general population.

Many products and services require that a critical mass of potential buyers be equipped and willing to buy through the Internet. For example, online grocers such as **Peapod** initially offered their delivery services only in a few cities. As more of Peapod's potential customers became connected to the Internet and felt comfortable with purchasing online, the company was able to expand slowly and carefully into more geographic areas. After more than 10 years of operation, Peapod has expanded only to 13 U.S. metropolitan areas. But even the expansion of online grocery shopping is subject to limits; most online grocers focus their sales efforts on packaged goods and branded items. Perishable grocery products, such as fruit and vegetables, are much harder to sell online because customers want to examine and select specific items that are still fresh and appealing.

Peapod is a good example of how challenging it can be to build a business in an industry that requires this kind of critical mass. Although it was one of the first online grocery stores, Peapod has had a difficult time staying in business, and was even offline for a few weeks in mid-2000. Peapod was then acquired by Royal Ahold, a European firm that was willing to invest additional cash to keep it in operation. Two of Peapod's major competitors, WebVan and HomeGrocer, were unable to stay in business long enough to attract a sufficient customer base. Three of the most successful online grocery efforts in the world are **Grocery Gateway** in Toronto, **Disco Virtual** in Buenos Aires, and **Tesco** in the United Kingdom. Grocery Gateway and Disco Virtual operate in densely populated urban environments that offer sufficiently large numbers of customers within relatively small geographic areas, which make their delivery routes profitable. Tesco started its operations in London, which offers a similar densely populated urban area. However, Tesco has also expanded its operations to selected rural areas that are near a Tesco supermarket.

Established traditional grocery chains in the United States such as **Albertsons** and **Safeway** also now offer online ordering and delivery services in a second wave of using Internet technologies in the grocery business. By using their existing infrastructure (including warehouses, purchasing systems, and physical stores in multiple locations), they are able to avoid having to make the large capital investment in facilities that led to the demise of first wave dot-com grocers such as WebVan and HomeGrocer.

One online grocer that has successfully implemented an updated version of the WebVan and HomeGrocer operational approach is **FreshDirect**. By limiting its service area to the densely populated region in and around New York City, FreshDirect has found the right

combination of operating scale and market. The company started in 2002 and achieved profitability in 2004 on sales of $90 million. This is a much smaller sales volume than either WebVan or HomeGrocer would have needed to be profitable.

Businesses often calculate return-on-investment numbers before committing to any new technology. This has been difficult to do for investments in electronic commerce because the costs and benefits have been hard to quantify. Costs, which are a function of technology, can change dramatically even during short-lived electronic commerce implementation projects because the underlying technologies are changing so rapidly. Many firms have had trouble recruiting and retaining employees with the technological, design, and business process skills needed to create an effective electronic commerce presence. You will learn more about return-on-investment calculations and employee recruitment and retention issues in Chapter 12.

Another problem facing firms that want to do business on the Internet is the difficulty of integrating existing databases and transaction-processing software designed for traditional commerce into the software that enables electronic commerce. Although a number of companies offer software design and consulting services that promise to tie existing systems into new online business systems, these services can be expensive. You will learn more about how companies deal with these software issues in Chapter 9.

In addition to technology and software issues, many businesses face cultural and legal obstacles to conducting electronic commerce. Some consumers are still fearful of sending their credit card numbers over the Internet and having online merchants—merchants they have never met—know so much about them. You will learn more about electronic commerce security, privacy issues, and payment systems later in this book. Other consumers are simply resistant to change and are uncomfortable viewing merchandise on a computer screen rather than in person. The legal environment in which electronic commerce is conducted is full of unclear and conflicting laws. In many cases, government regulators have not kept up with technologies. As you will learn in Chapter 7, laws that govern commerce were written when signed documents were a reasonable expectation in any business transaction. However, as more businesses and individuals find the benefits of electronic commerce to be compelling, many of these technology and culture-related disadvantages will be resolved or seem less problematic.

LEARNING FROM FAILURES

PETS.COM

In February 1999, Pets.com launched its Web site with the hopes of making substantial sales to the 60 percent of U.S. households that own pets and spend more than $20 billion each year feeding, entertaining, and caring for them. More than 10,000 stores sold pet supplies. These stores included small retail outlets, grocery stores, discount retailers (such as Wal-Mart and Costco), and a new generation of pet superstores. Pets.com had acquired an excellent domain name and intended to exploit the opportunities presented by high levels of investor interest in funding electronic commerce companies. The plan for Pets.com was to spend heavily to develop a brand and a Web presence that would rapidly make the company the premier online source for pet-related products.

continued

After launching the site, Pets.com raised $110 million from private investors in 1999, and another $80 million in a public sale of stock in early 2000. Pets.com spent more than $100 million of the money on advertising during its short life. It also spent significant sums to create a Web store that offered more than 12,000 different products. In November 2000—less than two years after launching its Web site—Pets.com went out of business.

Pets.com had created an electronic commerce initiative in an industry in which online business offered few advantages over traditional commerce. The products had a very low value-to-weight ratio. The shipping costs for pet food, one of the company's best-selling product categories, caused it to lose money on every sale. Pet products come in all shapes, sizes, and weights, and are, therefore, difficult to pack and ship efficiently. Pets.com was also spending money rapidly at a time when investors were beginning to question the long-run viability of all electronic commerce businesses. The lesson here is that Pets.com could not develop any sustainable advantage over traditional pet stores. Without such an advantage, the business was doomed.

In the years following the Pets.com failure, a number of companies began selling pet food and related items online. These companies were more careful than Pets.com was about what they offered for sale. By selling only items that had an appropriate shipping profile, many of these companies have now become successful. For example, veterinarians who formulate foods that meet the needs of specific pet diets are finding they can charge enough for those products to make online sales profitable.

ECONOMIC FORCES AND ELECTRONIC COMMERCE

Economics is the study of how people allocate scarce resources. One important way that people allocate resources is through commerce (the other major way is through government actions, such as taxes or subsidies). Many economists are interested in how people organize their commerce activities. One way people do this is to participate in markets. Economists use a formal definition of **market** that includes two conditions: first, that the potential sellers of a good come into contact with potential buyers, and second, that a medium of exchange is available. This medium of exchange can be currency or barter. Most economists agree that markets are strong and effective mechanisms for allocating scarce resources. Thus, one would expect most business transactions to occur within markets. However, much business activity today occurs within large **hierarchical business organizations**, which economists generally refer to as **firms**, or **companies**.

Most hierarchical organizations are headed by a top-level president or chief operating officer. Reporting to the president are a number of executives who, in turn, have a larger number of middle managers who report to them, and so on. An organization can have a relatively flat hierarchy, in which there are only a few levels of management, or it can have many reporting levels. In either case, the bottom level includes the largest number of employees and is usually made up of production workers or service providers. Thus, the hierarchical organization always has a pyramid-shaped structure.

These large firms often conduct many different business activities entirely within the organizational structure of the firm and participate in markets only for purchasing raw materials and selling finished products. If markets are indeed highly effective mechanisms for allocating scarce resources, these large corporations should participate in markets at every stage of their production and value-generation processes. Nobel laureate Ronald Coase wrote an essay in 1937 in which he questioned why individuals who engaged in commerce often created firms to organize their activities. He was particularly interested in the hierarchical structure of these business organizations. Coase concluded that transaction costs were the main motivation for moving economic activity from markets to hierarchically structured firms.

Transaction Costs

Transaction costs are the total of all costs that a buyer and seller incur as they gather information and negotiate a purchase-sale transaction. Although brokerage fees and sales commissions can be a part of transaction costs, the cost of information search and acquisition is often far larger. Another significant component of transaction costs can be the investment a seller makes in equipment or in the hiring of skilled employees to supply the product or service to the buyer.

To understand better how transaction costs occur in markets, consider the following example: A sweater dealer could obtain sweaters by engaging in market transactions with a number of independent sweater knitters. Transaction costs incurred by the dealer would include the costs of identifying the independent knitters, visiting them to negotiate the purchase price, arranging for delivery of the sweaters, and inspecting the sweaters on arrival. The knitters would also incur costs, such as the purchase of knitting tools and yarn. Since individual knitters could not know whether any sweater dealer would ever buy sweaters from them, the investments they would need to make to enter the sweater-knitting business would have an uncertain yield. This risk is a significant transaction cost for the knitters.

After purchasing the sweaters, the dealer takes them to a different market in which sweater dealers meet and do business with the retail shops that sell sweaters to the consumer. The dealers can use these market negotiations to find out which sweater colors and patterns are in demand and can then use that information to negotiate price and other terms in the knitters' market. A diagram of this set of markets appears in Figure 1-6.

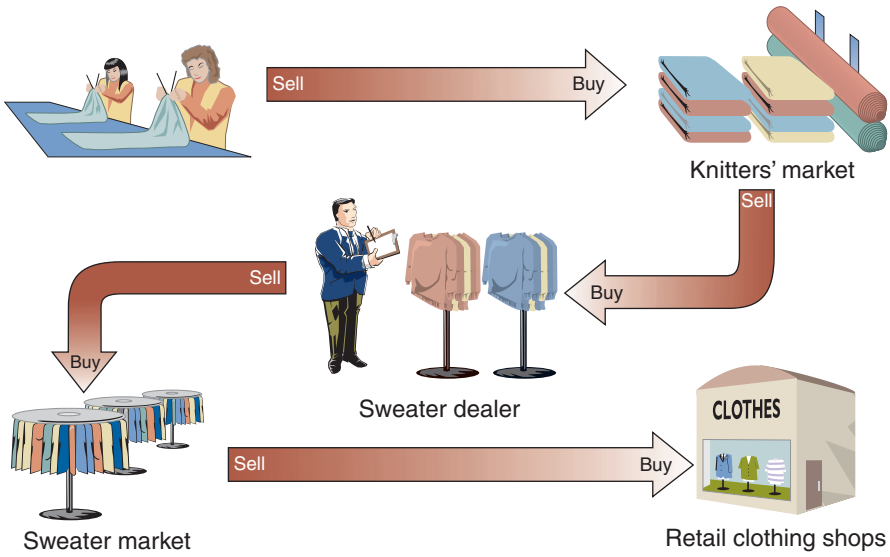

FIGURE 1-6 Market form of economic organization

Markets and Hierarchies

Coase reasoned that when transaction costs were high, businesspeople would form organizations to replace market-negotiated transactions. These organizations would be hierarchical and would include strong supervision and worker-monitoring elements. Instead of negotiating with individuals to purchase sweaters they had knit, a hierarchical organization would hire knitters, and then supervise and monitor their work activities. This supervision and monitoring system would include flows of monitoring information from the lower levels to the higher levels of the organization. It would also have control of information flowing from the upper levels of the organization to the lower levels. Although the costs of creating and maintaining a supervision and monitoring system are high, they can be lower than transaction costs in many instances.

In the sweater example, the sweater dealer would hire knitters, supply them with yarn and knitting tools, and supervise their knitting activities. This supervision could be done mainly by first-line supervisors, who might be drawn from the ranks of the more skilled knitters. The practice of an existing firm replacing one or more of its supplier markets with its own hierarchical structure for creating the supplied product is called **vertical integration**. Figure 1-7 shows how the wool sweater example would look after the knitters were vertically integrated into the hierarchical structure of the sweater dealer's organization.

Oliver Williamson, an economist who extended Coase's analysis, noted that industries with complex manufacturing and assembly operations tended to include many firms that used hierarchical structures and that were substantially vertically integrated. Many of the manufacturing and administrative innovations that occurred in businesses during the 20th century increased the efficiency and effectiveness of hierarchical monitoring

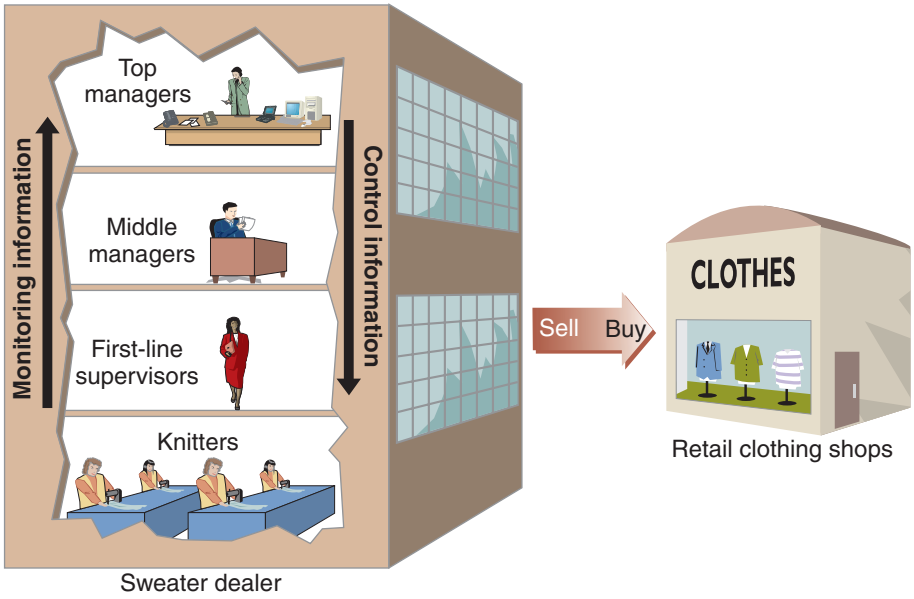

FIGURE 1-7 Hierarchical form of economic organization

activities. Assembly lines and other mass production technologies allowed work to be broken down into small, easily supervised procedures. The advent of computers brought tremendous increases in the ability of upper-level managers to monitor and control the detailed activities of their subordinates. Some of these direct measurement techniques are even more effective than the first-line supervisors on the shop floor.

During the years from the Industrial Revolution through the present, as improvements in monitoring became commonplace, the size and level of vertical integration of firms have increased. In some very large organizations, however, monitoring systems have not kept pace with the organization's increase in size. This has created problems because the economic viability of a firm depends on its ability to track operational activities effectively at the lowest levels of the firm. These firms have instituted decentralization programs that allow business units to function as separate organizations, negotiating transactions with other business units as if they were operating in a market rather than as part of the same firm. A **strategic business unit**, or simply **business unit**, is one particular combination of product, distribution channel, and customer type. These decentralization approaches are simply a return to the highly effective market mechanisms that worked so well before the firm vertically integrated itself.

Exceptions to the general trend toward hierarchies do exist. Many commodities, such as wheat, sugar, and crude oil, are still traded in markets. The commodity nature of the products traded in these markets significantly reduces transaction costs. There are a large number of potential buyers for an agricultural commodity such as wheat, and the farmer does not make any special investment in customizing or modifying the product for a particular customer. Thus, neither buyers nor sellers in commodity markets experience significant transaction costs.

Using Electronic Commerce to Reduce Transaction Costs

Businesses and individuals can use electronic commerce to reduce transaction costs by improving the flow of information and increasing the coordination of actions. By reducing the cost of searching for potential buyers and sellers and increasing the number of potential market participants, electronic commerce can change the attractiveness of vertical integration for many firms. It is not clear yet whether widespread adoption of electronic commerce will cause hierarchical organization structures to revert to their former market-based structures, but it certainly is a distinct possibility.

To see how electronic commerce can change the level and nature of transaction costs, consider an employment transaction. The agreement to employ a person has high transaction costs for the seller—the employee who sells his or her services. These transaction costs include a commitment to forego other employment and career development opportunities. Individuals make a high investment in learning and adapting to the culture of their employers. If accepting the job involves a move, the employee can incur very high costs, including actual costs of the move and related costs, such as the loss of a spouse's job. Much of the employee's investment is specific to a particular job and location; the employee cannot transfer the investment to a new job.

If a sufficient number of employees throughout the world can telecommute, then many of these transaction costs could be reduced or eliminated. Instead of uprooting a spouse and family to move, a worker could accept a new job by simply logging on to a different company server!

Network Economic Structures

Some researchers argue that many companies and strategic business units operate today in an economic structure that is neither a market nor a hierarchy. In this **network economic structure**, companies coordinate their strategies, resources, and skill sets by forming long-term, stable relationships with other companies and individuals based on shared purposes. These relationships are often called **strategic alliances** or **strategic partnerships**, and when they occur between or among companies operating on the Internet, these relationships are also called **virtual companies**.

In some cases, these entities, called **strategic partners**, come together as a team for a specific project or activity. The team dissolves when the project is complete; however, the partners maintain contact with each other through the ensuing period of inactivity. When the need for a similar project or activity arises, the same organizations and individuals build teams from their combined resources. In other cases, the strategic partners form many intercompany teams to undertake a variety of ongoing activities. Later in this book, you will see many examples of strategic partners creating alliances of this sort on the Web. In a hierarchically structured business environment, these types of strategic alliances would not last very long because the larger strategic partners would buy out the smaller partners and form a larger single company.

Network organizations are particularly well suited to technology industries that are information intensive. In our sweater example, the knitters might organize into networks of smaller organizations that specialize in certain styles or designs. Some of the particularly skilled knitters might leave the sweater dealer to form their own company to produce custom-knit sweaters. Some of the sweater dealer's marketing employees might form

an independent firm that conducts market research on what the retail shops plan to buy in the upcoming months. This firm could sell its research reports to both the sweater dealer and the custom-knitting firm. As market conditions change, these smaller and more nimble organizations could continually reinvent themselves and take advantage of new opportunities that arise in the sweater markets. An illustration of such a network organization appears in Figure 1-8.

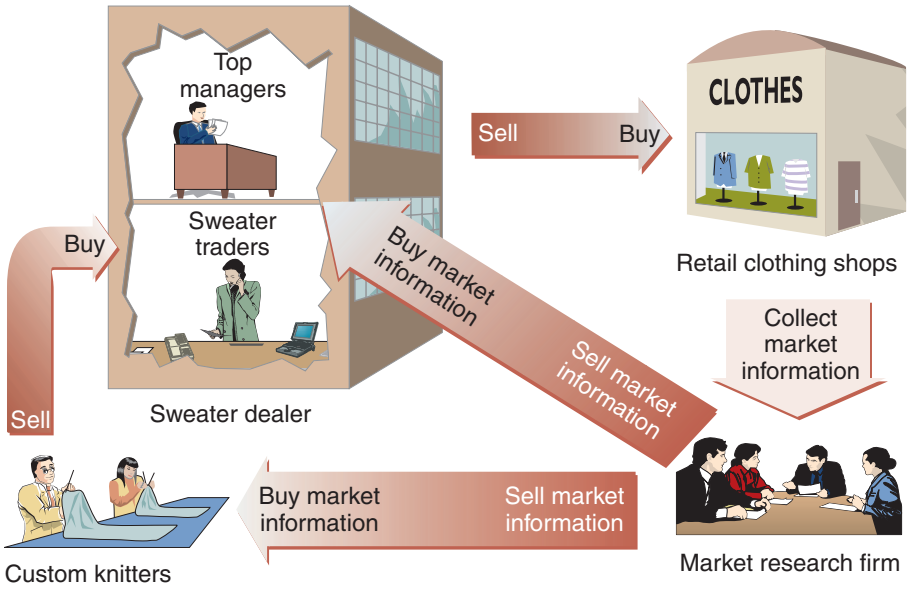

FIGURE 1-8 Network form of economic organization

Electronic commerce can make such networks, which rely extensively on information sharing, much easier to construct and maintain. Some researchers believe that these network forms of organizing commerce will become predominant in the near future. One of these researchers, Manuel Castells, even predicts that economic networks will become the organizing structure for all social interactions among people. Thomas Petzinger, a columnist for *The Wall Street Journal*, has written extensively about these new patterns of work and commerce in his newspaper columns and in his book, *The New Pioneers*.

Network Effects

Economists have found that most activities yield less value as the amount of consumption increases. For example, a person who consumes one hamburger obtains a certain amount of value from that consumption. As the person consumes more hamburgers, the value provided by each hamburger decreases. Few people find the fifth hamburger as enjoyable as the first. This characteristic of economic activity is called the **law of diminishing returns**. In networks, an interesting exception to the law of diminishing returns occurs. As more people or organizations participate in a network, the value of the network to each participant increases. This increase in value is called a **network effect**.

To understand how network effects work, consider an early user of a fax machine. When fax machines were first introduced, few companies had fax machines. The value of each fax machine increased as more companies purchased fax machines. As the network of fax machines grew, the capability of each individual fax machine increased because it could be used to communicate with more companies. The increase in the value of each fax machine is the result of a network effect.

Using Electronic Commerce to Create Network Effects

Your e-mail account, which gives you access to a network of other people with e-mail accounts, is another example of a network effect. If your e-mail account were part of a small network, it would be less valuable than it is. Most people today have e-mail accounts that are part of the Internet (a global network of computers, about which you will learn more in Chapter 2). In the early days of e-mail, most e-mail accounts only connected people in the same company or organization to each other. Internet e-mail accounts are far more valuable than single-organization e-mail accounts because of the network effect.

Regardless of how businesses in a particular industry organize themselves—as markets, hierarchies, or networks—you will need a way to identify business processes and evaluate whether electronic commerce is suitable for each process. The next section presents one useful structure for examining business processes.

IDENTIFYING ELECTRONIC COMMERCE OPPORTUNITIES

Internet technologies can be used to improve so many business processes that it can be difficult for managers to decide where and how to use them. One way to focus on specific business processes as candidates for electronic commerce is to break the business down into a series of value-adding activities that combine to generate profits and meet other goals of the firm. In this section, you will learn one popular way to analyze business activities as a sequence of activities that create value for the firm.

Commerce is conducted by firms of all sizes. Smaller firms can focus on one product, distribution channel, or type of customer. Larger firms often sell many different products and services through a variety of distribution channels to several types of customers. In these larger firms, managers organize their work around the activities of strategic business units. Multiple business units owned by a common set of shareholders make up a firm, or company, and multiple firms that sell similar products to similar customers make up an **industry**.

Strategic Business Unit Value Chains

In his 1985 book, *Competitive Advantage*, Michael Porter introduced the idea of value chains. A **value chain** is a way of organizing the activities that each strategic business unit undertakes to design, produce, promote, market, deliver, and support the products or services it sells. In addition to these **primary activities**, Porter also includes **supporting activities**, such as human resource management and purchasing, in the value chain model. Figure 1-9 shows a value chain for a strategic business unit engaged in manufacturing a product, including both primary and supporting activities.

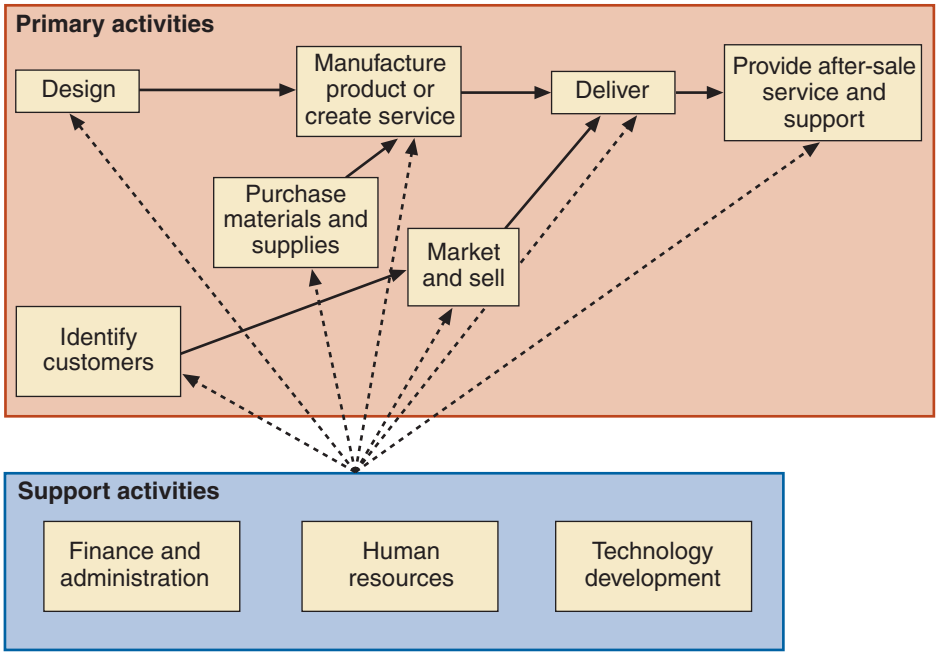

FIGURE 1-9 Value chain for a strategic business unit

The left-to-right flow in Figure 1-9 does not imply a strict time sequence for these processes. For example, a business unit may engage in marketing activities before purchasing materials and supplies. For each business unit, the primary activities are as follows:

- *Identify customers*: activities that help the firm find new customers and new ways to serve existing customers, including market research and customer satisfaction surveys
- *Design*: activities that take a product from concept to manufacturing, including concept research, engineering, and test marketing
- *Purchase materials and supplies*: procurement activities, including vendor selection, vendor qualification, negotiating long-term supply contracts, and monitoring quality and timeliness of delivery
- *Manufacture product or create service*: activities that transform materials and labor into finished products, including fabricating, assembling, finishing, testing, and packaging
- *Market and sell*: activities that give buyers a way to purchase and that provide inducements for them to do so, including advertising, promoting, managing salespeople, pricing, and identifying and monitoring sales and distribution channels
- *Deliver*: activities that store, distribute, and ship the final product, including warehousing, handling materials, consolidating freight, selecting shippers, and monitoring timeliness of delivery

- *Provide after-sale service and support*: activities that promote a continuing relationship with the customer, including installing, testing, maintaining, repairing, fulfilling warranties, and replacing parts

The importance of each primary activity depends on the product or service the business unit provides and to which customers it sells. If a strategic business unit provides a service, its value chain would include a Provide service activity instead of the Manufacture activity shown in Figure 1-9. The other activities in its value chain would be similar to those for a product manufacturing business unit. Each business unit must also undertake support activities that provide the infrastructure for the unit's primary activities. These support activities appear in Figure 1-9 and are as follows:

- *Finance and administration*: activities that provide the firm's basic infrastructure, including accounting, paying bills, borrowing funds, reporting to government regulators, and ensuring compliance with relevant laws
- *Human resources*: activities that coordinate the management of employees, including recruiting, hiring, training, compensation, and providing benefits
- *Technology development*: activities that help improve the product or service that the firm is selling and that help improve the business processes in every primary activity, including basic research, applied research and development, process improvement studies, and field tests of maintenance procedures

Industry Value Chains

Porter's book also identifies the importance of examining where the strategic business unit fits within its industry. Porter uses the term **value system** to describe the larger stream of activities into which a particular business unit's value chain is embedded. However, many subsequent researchers and business consultants have used the term **industry value chain** when referring to value systems. When a business unit delivers a product to its customer, that customer may, for example, use the product as purchased materials in its value chain. By becoming aware of how other business units in the industry value chain conduct their activities, managers can identify new opportunities for cost reduction, product improvement, or channel reconfiguration. An example of an industry value chain appears in Figure 1-10. This value chain is for a wooden chair and traces the life of the product from trees in a forest to its grave in a landfill or at a sawdust recycler.

Each business unit (logger, sawmill, lumberyard, chair factory, retailer, consumer, and recycler) shown in Figure 1-10 has its own value chain. For example, the sawmill purchases logs from the tree harvester and combines them in its manufacturing process with inputs, such as labor and saw blades, from other sources. Among the sawmill customers are the chair factory, shown in Figure 1-10, and other users of cut lumber. Examining this industry value chain could be useful for the sawmill that is considering entering the tree-harvesting business or the furniture retailer who is thinking about partnering with a trucking line. The industry value chain identifies opportunities up and down the product's life cycle for increasing the efficiency or quality of the product.

As they examine their industry value chains, many managers are finding that they can use electronic commerce and Internet technologies to reduce costs, improve product quality, reach new customers or suppliers, and create new ways of selling existing products.

FIGURE 1-10 Industry value chain for a wooden chair

For example, a software developer who releases annual updates to programs might consider removing the software retailer from the distribution channel for software updates by offering to send the updates through the Internet directly to the consumer. This change would modify the software developer's industry value chain and would provide an opportunity for increasing sales revenue (the software developer could retain the margin a retailer would have added to the price of the update), but it would not appear as part of the software developer business unit value chain. By examining elements of the value chain outside the individual business unit, managers can identify many business opportunities, including those that can be exploited using electronic commerce.

The value chain concept is a useful way to think about business strategy in general. When firms are considering electronic commerce, the value chain can be an excellent way to organize the examination of business processes within their business units and in other parts of the product's life cycle. Using the value chain reinforces the idea that electronic commerce should be a business solution, not a technology implemented for its own sake.

SWOT Analysis: Evaluating Business Unit Opportunities

Now that you have learned how to identify industry value chains and break each value chain down into strategic business units, you can learn one popular technique for analyzing and evaluating business opportunities. Most electronic commerce initiatives add value by either reducing transaction costs, creating some type of network effect, or a combination of both. In **SWOT analysis** (the acronym is short for strengths, weaknesses, opportunities, and threats), the analyst first looks into the business unit to identify its strengths and weaknesses. The analyst then reviews the environment in which the business unit operates and identifies opportunities presented by that environment and the threats posed by that environment. Figure 1-11 shows questions that an analyst would ask in conducting a SWOT analysis.

FIGURE 1-11 SWOT analysis questions

By considering all of the issues that it faces in a systematic way, a business unit can formulate strategies to take advantage of its opportunities by building on its strengths, avoiding any threats, and compensating for its weaknesses. In the mid-1990s, **Dell Computer** used a SWOT analysis to create a business strategy that has helped it become a very strong competitor in its industry value chain. Dell identified its strengths in selling directly to

customers and in designing its computers and other products to reduce manufacturing costs. It acknowledged the weakness of having no relationships with local computer dealers. Dell faced threats from competitors such as Compaq (now a part of Hewlett-Packard) and IBM, both of which had much stronger brand names and reputations for quality at that time. Dell identified an opportunity by noting that its customers were becoming more knowledgeable about computers and could specify exactly what they wanted without having Dell salespeople answer questions or develop configurations for them. It also saw the Internet as a potential marketing tool. The results of Dell's SWOT analysis appear in Figure 1-12.

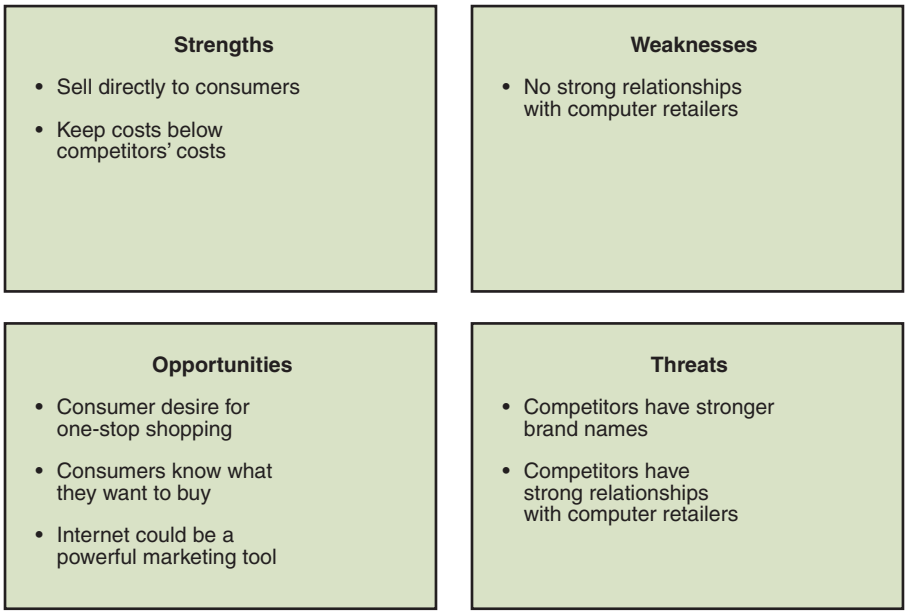

FIGURE 1-12 Results of Dell's SWOT analysis

The strategy that Dell followed after doing the analysis took all four of the SWOT elements into consideration. Dell decided to offer customized computers built to order and sold over the phone, and eventually, over the Internet. Dell's strategy capitalized on its strengths and avoided relying on a dealer network. The brand and quality threats posed by Compaq and IBM were lessened by Dell's ability to deliver higher perceived quality because each computer was custom made for each buyer.

INTERNATIONAL NATURE OF ELECTRONIC COMMERCE

Because the Internet connects computers all over the world, any business that engages in electronic commerce instantly becomes an international business. When companies use the Web to improve a business process, they are automatically operating in a global environment. The key issues that any company faces when it conducts international

commerce include trust and culture, language, and infrastructure. These topics are covered in the following sections. The related issues of international law and currency are covered in Chapter 7.

Trust Issues on the Web

It is important for all businesses to establish trusting relationships with their customers. Companies with established reputations in the physical world often create trust by ensuring that customers know who they are. These businesses can rely on their established brand names to create trust on the Web. New companies that want to establish online businesses face a more difficult challenge because a kind of anonymity exists for companies trying to establish a Web presence. A now-famous cartoon that appeared in *The New Yorker* magazine is shown in Figure 1-13. The figure illustrates the inherent anonymity of the Web in a humorous way.

"On the Internet, nobody knows you're a dog."

FIGURE 1-13 This classic cartoon from *The New Yorker* illustrates anonymity on the Web

For example, a U.S. bank can establish a Web site that offers services throughout the world. No potential customer visiting the site can determine just how large or well established the bank is simply by browsing through the site's pages. Because Web site visitors will not become customers unless they trust the company behind the site, a plan for establishing credibility is essential. Sellers on the Web cannot assume that visitors will know that the site is operated by a trustworthy business.

Customers' inherent lack of trust in "strangers" on the Web is logical and to be expected; after all, people have been doing business with their neighbors—not strangers—for thousands of years. When businesses grew to become large corporations with multinational operations, their reputations grew commensurately. Before a company could do business in dozens of countries, it had to prove its trustworthiness by satisfying customers for many years as it grew. Businesses on the Web must find ways to overcome this well-founded tradition of distrusting strangers, because today a company can incorporate one day and, through the Web, be doing business the next day with people in almost every country in the world. For businesses to succeed on the Web, they must find ways to generate quickly the trust that traditional businesses took years to develop.

Language Issues

Most companies realize that the only way to do business effectively in other cultures is to adapt to those cultures. The phrase "think globally, act locally" is often used to describe this approach. The first step that a Web business usually takes to reach potential customers in other countries, and thus in other cultures, is to provide local language versions of its Web site. This may mean translating the Web site into another language or regional dialect. Researchers have found that customers are far more likely to buy products and services from Web sites in their own language, even if they can read English well. Only 370 million of the world's 6 billion people learned English as their native language.

Researchers estimate that about 60 percent of the content available on the Internet today is in English, but more than 50 percent of current Internet users do not read English. International Data Corporation predicts that by 2007, more than 75 percent of Internet users will be outside the United States, and 60 percent of electronic commerce transactions will involve at least one party located outside the United States.

The non-English languages used most frequently by U.S. companies on their Web sites are Spanish, German, Japanese, and Chinese. Following closely behind is a second tier of languages that includes Italian, French, Korean, Portuguese, Dutch, Russian, and Swedish. In general, non-English languages used on the Internet have approximately the same levels of popularity. Some minor differences do exist, because "Internet use" includes activities other than electronic commerce and because some non-English speaking people do not conduct business with U.S. companies. The Web site of **Global Reach**, a consulting firm that offers Web site globalization services, maintains information about language use on the Web.

Some languages require multiple translations for separate dialects. For example, the Spanish spoken in Spain is different from that spoken in Mexico, which is different from that spoken elsewhere in Latin America. People in parts of Argentina and Uruguay use yet a fourth dialect of Spanish. Many of these dialect differences are spoken inflections, which are not important for Web site designers (unless, of course, their sites include audio or video elements); however, a significant number of differences occur in word meanings and

spellings. You might be familiar with these types of differences, since they occur in the U.S. and British dialects of English. The U.S. spelling of *gray* becomes *grey* in Great Britain, and the meaning of *bonnet* changes from a type of hat in the United States to an automobile hood in Great Britain. Chinese has two main systems of writing: one used in mainland China, and another used in Hong Kong and Taiwan.

Most companies that translate their Web sites translate all of their pages. However, as Web sites grow larger, companies are becoming more selective in their translation efforts. Some sites have thousands of pages with much targeted content; the businesses operating those sites can find the cost of translating all pages to be prohibitive.

The decision whether to translate a particular page should be made by the corporate department responsible for each page's content. The home page should have versions in all supported languages, as should all first-level links to the home page. Beyond that, pages that are devoted to marketing, product information, and establishing brand should be given a high translation priority. Some pages, especially those devoted to local interests, might be maintained only in the relevant language. For example, a weekly update on local news and employment opportunities at a company's plant in Frankfurt probably needs to be maintained only in German.

Firms that provide Web page translation services and translation software for companies include **Alis Technologies**, **Berlitz**, **Rubric, Ltd.**, **ScanSoft**, **Transparent Language**, and **Worldpoint Interactive**. These firms translate Web pages and maintain them for a fee that is usually between 25 and 90 cents per word for translations done by skilled human translators. Languages that are complex or that are spoken by relatively few people are generally more expensive to translate than other languages.

Different approaches can be appropriate for translating the different types of text that appear on an electronic commerce site. For key marketing messages, the touch of a human translator can be essential to capture subtle meanings. For more routine transaction-processing functions, automated software translation may be an acceptable alternative. Software translation, also called **machine translation**, can reach speeds of 400,000 words per hour, so even if the translation is not perfect, businesses might find it preferable to a human who can translate about 500 words per hour. Many of the companies in this field are working to develop software and databases of previously translated material that can help human translators work more efficiently and accurately.

The translation services and software manufacturers that work with electronic commerce sites do not generally use the term "translation" to describe what they do. They prefer the term **localization**, which means a translation that considers multiple elements of the local environment, such as business and cultural practices, in addition to local dialect variations in the language. The cultural element is very important because it can affect—and sometimes completely change—the user's interpretation of text.

Culture Issues

An important element of business trust is anticipating how the other party to a transaction will act in specific circumstances. That is one reason why companies with established brands can build online businesses more quickly and easily than a new company without a reputation. The brand conveys some expectations about how the company will behave. For example, a potential buyer might like to know how the seller would react to a claim by

the buyer that the seller misrepresented the quality of the goods sold. Part of this knowledge derives from the buyer and seller sharing a common language and common customs. Business partners ideally have a common legal structure for resolving disputes. The combination of language and customs is often called **culture**. Most researchers agree that culture varies across national boundaries and, in many cases, varies across regions within nations. For example, the concept of private property is an important cultural value and underlies laws in many European and North American countries. Asian cultures do not value private property in the same way, so laws and business practices in those countries can be quite different. All companies must be aware of the differences in language and customs that make up the culture of any region in which they intend to do business. Under the heading **Global Trust and Culture**, this book's Online Companion includes links to Web sites that provide detailed information on culture issues for specific countries.

Managers at Virtual Vineyards (now a part of **Wine.com**), a company that sells wine and specialty food items on the Web, were perplexed. The company was getting an unusually high number of complaints from customers in Japan about short shipments. Virtual Vineyards sold most of its wine in case (12 bottles) or half-case quantities. Thus, to save on operating costs, it stocked shipping materials only in case, half-case, and two-bottle sizes. After investigation, the company determined that many of its Japanese customers ordered only one bottle of wine, which was shipped in a two-bottle container. To these Japanese customers, who consider packaging to be an important element of a high-quality product such as wine, it was inconceivable that anyone would ship one bottle of wine in a two-bottle container. They were e-mailing to ask where the other bottle was, notwithstanding the fact that they had ordered only one bottle.

Some errors stemming from subtle language and cultural standards have become classic examples that are regularly cited in international business courses and training sessions. For example, General Motors' choice of name for its Chevrolet Nova automobile amused people in Latin America—*no va* means "it will not go" in Spanish. Pepsi's "Come Alive" advertising campaign fizzled in China because its message came across as "Pepsi brings your ancestors back from their graves."

Another story that is widely used in international business training sessions is about a company that sold baby food in jars adorned with the picture of a very cute baby. The jars sold well everywhere they had been introduced except in parts of Africa. The mystery was solved when the manufacturer learned that food containers in those parts of Africa always carry a picture of their contents. This story is particularly interesting because it never happened. However, it illustrates a potential cultural issue so dramatically that it continues to appear in marketing textbooks and international business training materials.

Designers of Web sites for international commerce must be very careful when they choose icons to represent common actions. For example, in the United States, a shopping cart is a good symbol to use when building an electronic commerce site. However, many Europeans use shopping *baskets* when they go to a store and may never have seen a shopping *cart*. In Australia, people would recognize a shopping cart image but would be confused by the text "shopping cart" if it were used with the image. Australians call them shopping *trolleys*. In the United States, people often form a hand signal (the index finger touching the thumb to create a circle) that indicates "OK" or "everything is just fine." A Web designer might be tempted to use this hand signal as an icon to indicate that the

transaction is completed or the credit card is approved, unaware that in countries such as Brazil, this hand signal is an obscene gesture.

The cultural overtones of simple design decisions can be dramatic. In India, for example, it is inappropriate to use the image of a cow in a cartoon or other comical setting. Potential customers in Muslim countries can be offended by an image that shows human arms or legs uncovered. Even colors or Web page design elements can be troublesome. For example, white, which denotes purity in Europe and the Americas, is associated with death and mourning in China and many other Asian countries. A Web page that is divided into four segments can be offensive to a Japanese visitor because the number four is a symbol of death in that culture.

Bol.com is a company that resulted from the mergers of a number of online bookstores from 12 countries around the world, including China, Germany, Italy, the Netherlands, Switzerland, and the United Kingdom. If you explore the Bol.com site, you can see various design approaches used in the home pages for each of the different countries.

Japanese shoppers have resisted the U.S. version of electronic commerce because they generally prefer to pay in cash or by cash transfer instead of by credit card, and they have a high level of apprehension about doing business online. **Softbank**, a major Japanese firm that invests in Internet companies, devised a way to introduce electronic commerce to a reluctant Japanese population. Softbank created a joint venture with 7-Eleven, Yahoo! Japan, and Tohan (a major Japanese book distributor) to sell books and CDs on the Web. This venture, called eS-Books, allows customers to order items on the Internet, and then pick them up and pay for them in cash at the local 7-Eleven convenience store. By adding an intermediary that satisfies the needs of the Japanese customer, Softbank has been highly successful in bringing business-to-consumer electronic commerce to Japan.

Nike, a major U.S.-based maker of sports products, realized that it had to create special Web pages to attract the millions of its customers who live outside the United States. One such effort is the **Nike Football** site.

The soccer imagery that appears on this site is not what most U.S. visitors would expect to see when visiting a "football" site! Since Nike already had a site that was designed for its U.S. audience (and that includes coverage of the U.S. game of "football"), it uses the Nike Football site to appeal to soccer fans throughout the world. The site allows the user to select from more than 15 languages.

Culture and Government

Some parts of the world have cultural environments that are extremely inhospitable to the type of online discussion that occurs on the Internet. These cultural conditions, in some cases, lead to government controls that can limit electronic commerce development. The Internet is a very open form of communication. This type of unfettered communication is not desired or even considered acceptable in some cultures. For example, a **Human Rights Watch** report stated that many countries in the Middle East and North Africa do not allow their citizens unrestricted access to the Internet. The report notes that many governments in this part of the world regularly prevent free expression by their citizens and have taken specific steps to prevent the exchange of information outside of state controls. For instance, Saudi Arabia, Yemen, and the United Arab Emirates all filter the Web content that is available in their countries. An organization devoted to the international promotion of

democracy and civil liberties, **Freedom House**, offers a number of downloadable publications on its site, including in-depth reports on Internet censorship activities of governments throughout the world.

In most North African and Middle Eastern countries, officials have publicly denounced the Internet for carrying materials that are sexually explicit, anti-Islam, or that cast doubts on the traditional role of women in their societies. In many of these countries, uncontrolled use of Internet technologies is so at odds with existing traditions, cultures, and laws that electronic commerce is unlikely to exist in these countries at any significant level in the near future. In contrast, other Islamic countries in that part of the world, including Algeria, Morocco, and the Palestinian Authority, do not limit online access or content.

The censorship of Internet content and communications restricts electronic commerce because it prevents certain types of products and services from being sold or advertised. Further, it reduces the interest level of many potential participants in online activities. If large numbers of people in a country are not interested in being online, businesses that use the Internet as an information and product delivery channel will not develop in those countries.

Other countries, such as the People's Republic of China and Singapore, are wrestling with the issues presented by the growth of the Internet as a vehicle for doing business. These countries have a tradition of controlling their citizens' access to information from outside the country, but they want their economies to reap the benefits of electronic commerce. China created a complex set of registration requirements and regulations that govern any business that engages in electronic commerce. These regulations are enforced by the Public Security Bureau, which is a branch of the state police, not an independent administrative agency. For example, companies in China that sell Internet services must register all of their customers with the Public Security Bureau and must retain copies of all e-mail messages and chat room conversations for 60 days. Chinese citizens entering a chat room at **Sohu.com**, one of China's leading portal sites ("sohu" means "search fox" in Chinese), are greeted with a Web page containing the following text (translated here from the original Chinese):

> Warning! Please take note that the following issues are prohibited according to Chinese law: 1) Criticism of the People's Republic of China Constitution. 2) Revealing State secrets, and discussion about overthrowing the Communist government. 3) Topics which damage the reputation of the State.

The Chinese government regularly conducts reviews of ISPs and their records. Every year, the Chinese Public Security Bureau shuts down thousands of Internet cafes for failing to keep adequate records and requires many others to suspend operations while they implement required electronic record-keeping procedures. Operators of Web sites in China are required to monitor all content that appears on their sites. Blogbus was a Chinese site that allowed visitors to post essays and articles. The Chinese government shut down the site in March 2004 because one posting (out of 15,000) contained an essay that included what the government deemed to be "forbidden content." More than 50 people have been jailed in China for posting "subversive" content on Web pages. Singapore has also adopted a number of restrictive rules and policies. These countries will continue to face difficult policy choices as they maintain their attempts to control individuals' use of the

Internet while at the same time trying to encourage increases in online business transaction activity.

Some countries, although they do not ban electronic commerce entirely, have strong cultural requirements that have found their way into the legal codes that govern business conduct. In France, an advertisement for a product or service must be in French. Thus, a business in the United States that advertises its products on the Web and is willing to ship goods to France must provide a French version of its pages if it intends to comply with French law. Many U.S. electronic commerce sites include in their Web pages a list of the countries from which they will accept orders through their Web sites.

The official language of the Canadian province of Quebec is French. Quebec provincial law requires street signs, billboards, directories, and advertising created by Quebec businesses to be in French. In 1999, the government of Quebec fined Quebec photographer Michael Calomiris and ordered him either to remove his English-language Web site or add a French translation of the pages to the site. Calomiris had been advertising his photographs for sale on his Quebec-based Web site and had targeted his ads to the U.S. market. He paid the fine and appealed the government's decision. He has had his Web site at **Michaels Photography Studio** in English during the six years his appeal has been pending.

Infrastructure Issues

Businesses that successfully meet the challenges posed by trust, language, and culture issues still face the challenges posed by variations and inadequacies in the infrastructure that supports the Internet throughout the world. Internet infrastructure includes the computers and software connected to the Internet and the communications networks over which the message packets travel. In many countries other than the United States, the telecommunications industry is either government owned or heavily regulated by the government. In many cases, regulations in these countries have inhibited the development of the telecommunications infrastructure or limited the expansion of that infrastructure to a size that cannot reliably support Internet data packet traffic.

Local connection costs through the existing telephone networks in many developing countries are very high compared to U.S. costs for similar access. This can have a profound effect on the behavior of electronic commerce participants. For example, in countries where Internet connection costs are high, few businesspeople would spend time surfing the Web to shop for a product. They would use a Web browser only to navigate to a specific site that they know offers the product they want to buy. Thus, to be successful in selling to businesses in such countries, a company would need to advertise its Web presence in traditional media instead of relying on Web search engines to deliver customers to their Web sites.

The Organization for Economic Cooperation and Development's (OECD) Directorate of Science, Technology, and Industry issued a number of **OECD Statements on Information and Communications Policy** that deal with telecommunications infrastructure development issues throughout the world. These OECD statements provide guidance for businesses and governments as they build the technological capabilities that will support international electronic commerce in the future.

Business and government leaders in an increasing number of European countries have been demanding that their countries' telecommunications providers offer flat-rate telephone line Internet access. Until recently, most Europeans paid for the amount of time they used the telephone line, including time for local calls. In a **flat-rate access** system, the consumer or business pays one monthly fee for unlimited telephone line usage. Activists in these countries argued that flat-rate access was a key to the success of electronic commerce in the United States. Although many factors contributed to the rapid rise of U.S. electronic commerce, many industry analysts agree that flat-rate access was one of the most important factors. As more European telecommunications providers have begun to offer flat-rate access, electronic commerce in those countries has increased dramatically.

More than half of all businesses on the Web turn away international orders because they do not have the processes in place to handle such orders. Some of these companies are losing millions of dollars' worth of international business each year. This problem is global; not only are U.S. businesses having difficulty reaching their international markets, but businesses in other countries are having similar difficulties reaching the U.S. market.

The paperwork and often convoluted processes that accompany international transactions are targets for technological solutions. Most firms that conduct business internationally rely on a complex array of freight-forwarding companies, customs brokers, international freight carriers, and importers to navigate the maze of paperwork that must be completed at every step of the transaction to satisfy government and insurance requirements. The multiple flows of information and transfers of physical objects that occur in a typical international trade transaction are illustrated in Figure 1-14 (on the next page).

As you can see in Figure 1-14, the information flows can be complex. Domestic transactions usually include only the seller, the buyer, their respective banks, and one freight carrier. International transactions almost always require physical handling of goods by several freight carriers, storage in a freight forwarder's facility before international shipment, and storage in a port or bonded warehouse facility in the destination country. This handling and storage require monitoring by government customs offices in addition to the monitoring by seller and buyer that occurs in domestic transactions. International transactions usually require the coordinated efforts of customs brokers and freight forwarding agencies because the regulations and procedures governing international transactions are so complex. You will learn more about how businesses complete international transactions in Chapter 11.

The United Nations estimated that the annual cost of handling paperwork for international transactions is $600 billion, or approximately 6 percent of the total $10 trillion spent in worldwide international trade. Some companies sell software that can automate some of the paperwork, however, many countries have their own paper-based forms and procedures with which international shippers must comply. To further complicate matters, some countries that have automated some procedures use computer systems that are incompatible with those of other countries.

Some governments provide assistance to companies that want to do international business on the Web. The Argentine government operates the **Fundación Invertir** Web site to provide information to companies that want to do business in Argentina. The **U.S. Commercial Service** (an agency of the U.S. Department of Commerce) operates the **BuyUSA.com** site, a portal for U.S. companies that want to sell abroad and non-U.S. companies that want to buy from U.S. companies.

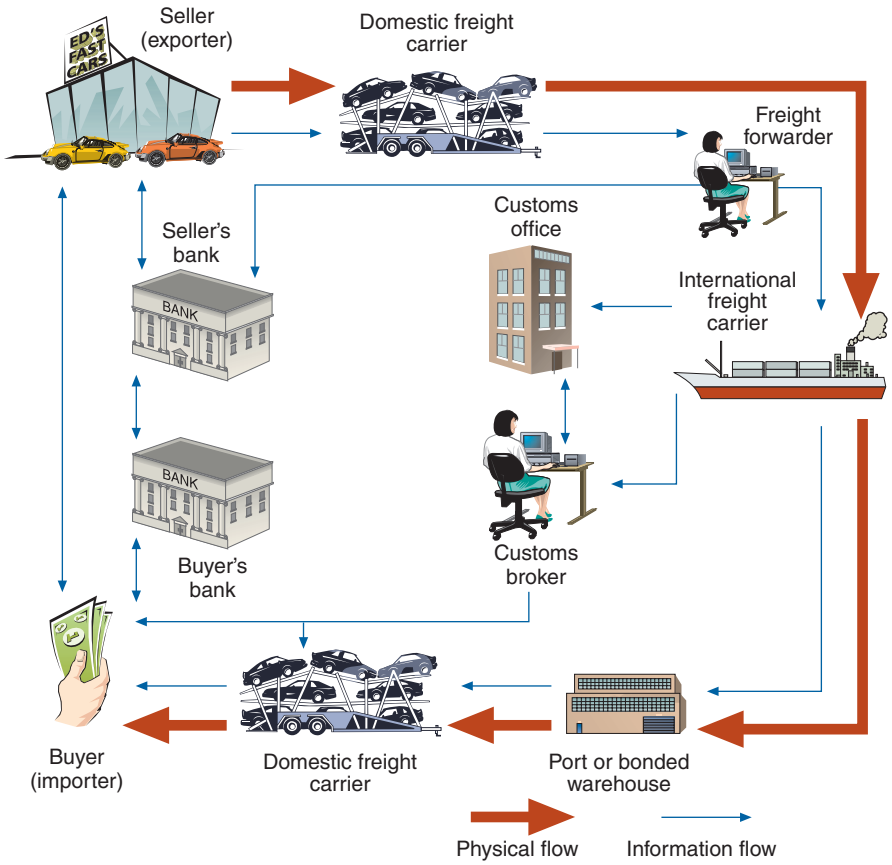

FIGURE 1-14 Parties involved in a typical international trade transaction

Summary

In this chapter, you learned that commerce, the negotiated exchange of goods or services, has been practiced in traditional ways for thousands of years. Electronic commerce is the application of new technologies, particularly Internet and Web technologies, to help individuals, businesses, and other organizations conduct business more effectively. As in the Industrial Revolution, electronic commerce will be adopted in waves of change. The first wave of electronic commerce ended in 2000. Today, a second wave with new approaches to integrating Internet technologies into business processes is under way. In this second wave, businesses are focusing less on overall business models and more on improving specific business processes.

Not all activities lend themselves to improvement with these technologies, but many do. Using electronic commerce, some businesses have been able to create new products and services, and others have improved the promotion, marketing, and delivery of existing offerings. Firms have also found many ways to use electronic commerce to improve purchasing and supply activities; identify new customers; and operate their finance, administration, and human resource management activities more efficiently. You learned that electronic commerce can help businesses reduce transaction costs or create network economic effects that can lead to greater revenue opportunities.

You examined an overview of markets, hierarchies, and networks—the economic structures in which businesses operate—and learned how electronic commerce fits into those structures. Porter's ideas about value chains at the business unit and industry levels were presented, and you learned how to use value chains and SWOT analysis as ways to understand business processes and analyze their suitability for electronic commerce implementation.

The inherently global nature of electronic commerce leads to many opportunities and a few challenges. Businesses that want to use electronic commerce to sell across international borders must be careful to understand the trust, cultural, and language legal issues that arise in international business.

Key Terms

Activity
Business model
Business processes
Business unit
Business-to-business (B2B)
Business-to-consumer (B2C)
Business-to-government (B2G)
Commodity item
Company
Consumer-to-consumer (C2C)
Culture
E-procurement
Electronic business (e-business)
Electronic commerce (e-commerce)
Electronic data interchange (EDI)
Electronic funds transfer (EFT)
Firm
First-mover advantage
Flat-rate access
Hierarchical business organization
Industry
Industry value chain
Law of diminishing returns
Localization
Machine translation
Market

Merchandising
Network economic structure
Network effect
Primary activities
Procurement
Revenue model
Shipping profile
Strategic alliance
Strategic business unit
Strategic partner
Strategic partnership
Supply management
Supporting activities
SWOT analysis
Telecommuting
Telework
Trading partners
Transaction
Transaction costs
Value-added network (VAN)
Value chain
Value system
Vertical integration
Virtual community
Virtual company
Wire transfer

Review Questions

RQ1. Describe three factors that would cause a company to continue doing business in traditional ways and avoid electronic commerce.

RQ2. Figure 1-5 lists roommate-matching services as a type of business that is well-suited to a combination of electronic and traditional commerce. In one paragraph, describe the elements of this service that would be best handled using traditional commerce and explain why.

RQ3. Choose one major difference between the first wave and the second wave of electronic commerce. Write a paragraph that describes this difference to a person who is not familiar with either business or Internet technologies.

RQ4. What are transaction costs and why are they important?

RQ5. Provide one example of how electronic commerce could help change an industry's economic structure from a hierarchy to a network.

RQ6. How might managers use SWOT analysis to identify new applications for electronic commerce in their strategic business units?

RQ7. In about 200 words, explain the difference between language translation and language localization.

RQ8. In a paragraph, describe the advantages of a flat-rate telecommunications access system for countries that want to encourage electronic commerce.

Exercises

E1. You have decided to buy a new color laser printer for your home office. List specific activities that you must undertake as you gather information about printer capabilities and features. Use the **CompUSA**, **HPshopping.com**, **Office Depot**, **OfficeMax**, and **Staples** Web sites to gather information. Write a short summary of the process you undertook so that others who plan to undertake a similar task can use your information.

E2. Choose one of the Web sites listed in the previous question and identify three ways in which the company has reduced its transaction costs by using a Web site to provide information about printers. List these three transaction cost reduction elements and write a paragraph in which you discuss one transaction cost reduction opportunity that you believe the company missed.

E3. Read the following business messages and come up with a list of words or phrases in each message that you believe might be troublesome for automated translation software. Then use either the **AltaVista Translation** Web site or the **FreeTranslation** Web site to translate the messages from English to one of the foreign languages available on that site. Translate each message back into English. Write a short memo that compares the problems you anticipated with those that occurred in the automated translation. The business messages are:

a. The flight has been delayed for several hours and your shipment of components will not arrive as scheduled.

b. We would be happy to bid on your proposal; however, we will need the drawings of subassembly #24 and the supervising mechanical engineer's quality control report by next Thursday.

c. Our company offers the latest and greatest hot deals on wheels. We would love to send you a brochure that explains why our brakes, wheels, and suspension components will do the job for you effectively and economically.

E4. Create a diagram (similar to the diagram in Figure 1-10) that describes the industry value chain for the retail book business. You can use the Online Companion links for this exercise to examine the Web sites for **Amazon.com**, **Barnes & Noble**, **Books-A-Million**, **eCampus**, **Internet Bookshop,** and **Powell's Books**.

Cases

C1. Amazon.com

In 1994, a 29-year-old financial analyst and fund manager named Jeff Bezos became intrigued by the rapid growth of the Internet. Looking for a way to capitalize on this hot new marketing tool, he made a list of 20 products that might sell well on the Internet. After some intense analysis, he determined that books were at the top of that list. Although Bezos liked the name Abracadabra, he decided to call his online bookshop Amazon.com. Today, **Amazon.com** has more than 40 million customers and sells billions of dollars worth of all types of merchandise.

When he started, Bezos had no experience in the book-selling business, but he realized that books had an ideal shipping profile for online sales. He believed that many customers would be willing to buy books without inspecting them in person and that books could be impulse purchase items if properly promoted on a Web site. By accepting orders on its Web site, Bezos believed that Amazon.com could reduce transaction costs in the sale to the customer.

More than 4 million book titles are in print at any one time throughout the world, and more than 1 million of those are in English. However, the largest physical bookstore cannot stock more than 200,000 books and carries even fewer titles because bookstores stock more than one copy of each title. Having a wide selection was important because Bezos believed it would help create a network economic effect. People would visit Amazon.com whenever they wanted to buy a

book because it would be the most likely store (physical or online) to have a particular title. After becoming satisfied customers, people would return to Amazon.com to buy more books and would eventually stop looking elsewhere.

The structure of the supply side of the book business was equally important to Amazon.com's success. Music CDs, which were second on Bezos' list, were produced by a few major recording companies who could easily control Amazon.com's supply. In contrast, there were a large number of book publishers, none of which held a dominant position in the book-selling marketplace. Thus, it was unlikely that a single supplier could restrict Bezos' supply of books or enter his market as a competitor. He decided to locate his firm in Seattle, close to a large pool of programming talent and near one of the largest book distribution warehouses in the world. These supply factors were important because Bezos wanted to develop efficiencies that would allow Amazon.com to reduce transaction costs for its purchases as well as its sales transactions.

Bezos encouraged early customers to submit reviews of books, which he posted with the publisher's information about the book and with reviews written by Amazon.com employees. This customer participation served as a substitute for the corner bookshop staff's friendly advice and recommendations. Bezos saw the power of the Internet in reaching small, highly focused market segments, but he realized that his comprehensive bookstore could not be all things to all people. Therefore, he created a sales associate program in which Web sites devoted to a particular topic, such as model railroading, could provide links to Amazon.com books that related to that topic. In return, Amazon.com remits a percentage of the referred sales to the owner of the referring site.

Although Bezos' original vision was to create an online bookstore with the world's best selection, Amazon has moved into other product lines where opportunities for network economic effects and transaction cost reductions looked promising. In 1998, Amazon.com began selling music CDs and videotapes. The Web site's software can track a customer's purchases and recommend similar book, CD, or video titles. In fact, the site can recommend related products in a variety of product categories now sold on Amazon.com. These product categories include consumer electronics, computers, toys, clothing, art, tools, hardware, housewares, furniture, and car parts.

By paying attention to every process involved in buying, promoting, selling, and shipping consumer goods, and by working to improve each process continually Bezos and Amazon.com have become one of the first highly visible success stories in electronic commerce. In fact, Amazon.com now generates significant revenue by supplying other sellers of consumer goods with the technology to sell those goods online. One of its first partnerships was with Toys R Us, a company that had experienced difficulties in selling online and making deliveries on time in the 1999 holiday shopping season. Toys R Us signed an agreement with Amazon.com in 2000 that placed Toys R Us products on the Amazon.com Web site. Amazon.com would accept the orders on its Web site and would ship products to customers for Toys R Us in exchange for a percentage of each sale. Amazon.com also agreed not to sell toys itself or on behalf of other partners for whom it might provide online sales services in the future. For example, when Amazon agreed to sell Target products online, it could not sell Target's toy lines on its Web site. (Target is the third-largest toy retailer in the world, behind Wal-Mart and Toys R Us.)

In addition to the online sales services Amazon.com provides to Toys R Us, Target, Borders, CDNow, and other large companies, it provides similar services to many smaller companies with its zShops offering. In zShops, small retailers become members of an online shopping mall on Amazon's site.

Toys R Us sells more than $300 million worth of toys each year through the Amazon.com site. Both Toys R Us and Amazon.com benefit from the network economics effect they obtain by having toys available for sale on Amazon.com's well-known electronic commerce site. Many small retailers in the zShops program who sell toys also benefit because shoppers visit the Amazon.com site looking for toys. When a site visitor searches for a toy, the zShops retailers' offerings are presented on the search results page along with results from Toys R Us, Amazon.com, and other companies for which Amazon.com provides online sales services.

Required:

1. In 2004, Toys R Us sued Amazon.com for violating terms of the agreement between the companies (specifically, Toys R Us objected to Amazon.com's permitting toys to be sold on its zShops Web pages). Amazon.com responded by filing a countersuit. Prepare a report of about 200 words in which you summarize the current state of the litigation.
2. Outline the advantages and disadvantages that Amazon.com would have considered before it made the agreement with Toys R Us to limit competing toy sales. In about 200 words, summarize these advantages and disadvantages, then evaluate Amazon.com's decision to enter such an agreement.
3. In about 200 words, outline specific recommendations to Amazon.com for negotiating a settlement with Toys R Us that would benefit both companies.
4. In 2005, Circuit City and Amazon.com agreed to end their 4-year-old partnership in which Circuit City customers could place orders on Amazon.com's Web site. In about 200 words, describe why this partnership, which made sense during the first wave of electronic commerce, might no longer be good for the two companies.

Note: Your instructor might assign you to a group to complete this case and might ask you to prepare a formal presentation of your results to your class.

C2. Hal's Hardware, Inc.

Hal Donovan is the president of Hal's Hardware, Inc. (HHI), a regional chain of 14 hardware stores located in Michigan, Ohio, and western Pennsylvania. HHI currently has a Web site that includes information about the company and some store information, such as locations and hours. Hal is thinking about expanding the HHI Web site to include online shopping. He believes that HHI customers might find the Web site to be a useful way to order items, see whether items are in stock at the nearest store, and comparison shop among different brands of a particular item. Hal is also hopeful that the Web site can reach customers who are not located near an HHI store. Many of the items sold at HHI are small and have high value-to-weight ratios, so they have good delivery service shipping profiles. Hal has decided that not all of HHI's inventory items should be available for sale on the Web site. Items such as wheelbarrows and live plants would probably be among the types of products that should be excluded. Hal does want customers to be able to order these items on the Web and pick them up in the store, however.

HHI enjoys an excellent reputation as a chain of friendly neighborhood stores. The store managers are all active in their communities and the stores regularly sponsor youth sports teams and support local charities. When hired, salespeople go through a comprehensive training program that includes skill training in the areas of the store in which they will work (plumbing, electrical, power tools, flooring, garden, and so on), and they are trained in customer service skills. As a result of HHI's focus on service, most of the stores have become community gathering places.

On Saturday afternoons, the stores are full of woodworking hobbyists, gardeners, and customers planning weekend projects of various kinds. On weekday mornings, electricians, plumbers, remodelers, and construction contractors stop by for the free coffee that the HHI stores offer when they open at 6:00 a.m. Each HHI store maintains a bulletin board next to the coffee urn in the contractors' area. Contractors can place help wanted or job wanted notices on the bulletin board. They can also place ads to buy and sell used equipment there. Many of HHI's regular customers obtained their current jobs through those bulletin boards.

HHI stores offer classes and workshops for the homeowner and hobbyist three evenings each month and regularly schedule seminars for professional customers on weekday mornings. Many of these workshops and seminars are underwritten and taught by manufacturers to promote their products, but an increasing number are being created by HHI staff members.

HHI's stores all face serious competition from national hardware chains such as **Home Depot** and **Lowe's**. These national chains have opened many new stores during the past few years, and they are larger, carry more items, and offer lower prices on some items. The competition is fierce; for example, all HHI stores have closed their lumber departments because of this competition. The national chains buy lumber in such large quantities that they can offer far lower prices. HHI was unable to earn a profit when matching the large competitors' prices, and the lumber operations consumed a large amount of store space. Hal is worried that this sort of problem could develop in other departments, so he is always looking for ways to add value to the HHI customer experience, especially ways that the national chains are not willing or able to do. For example, Hal believes that most people want to try out a new power tool in person before they spend hundreds of dollars on a purchase. Thus, every HHI store has a tool demonstration area that is always staffed with salespeople who are experts in power tool operation. For each major type of power tool (drills, power saws, joiners, grinding tools, and so on), HHI has created a small booklet of hints for using that type of tool. HHI gives these booklets to customers as free handouts. HHI also sells its own low-cost instructional videotapes and DVDs.

Hal is also concerned about competition from other sources as well. Some of the tool manufacturing companies are talking about selling directly to customers on their Web sites. None of HHI's major suppliers has done this yet, but Hal is worried that it could occur in the future. HHI also faces competition from companies such as **Outlet Tool Supply**, **Tool Crib**, **Southern Tool**, and **Tool Crib of the North**, which has formed an alliance with Amazon.com to appear on its Web site.

HHI buys most of its inventory directly from the manufacturers, but it does buy some items from distributors. Most items are shipped to one of HHI's three warehouses, but some items are shipped directly to the store locations. HHI has a new companywide inventory control system that was just installed last year at a cost of about $200,000. This information system monitors inventory in real time. When a new shipment arrives at an HHI store, it is entered into the system on the receiving dock. Each item is bar coded so it can be tracked as it moves from the receiving dock to the warehouse to the store shelf and, finally, out the door past a point-of-sale terminal (which

Hal still calls a cash register). This inventory-tracking system is accessible through a Web browser and can be connected to a Web site, so HHI could sell inventory from its existing warehouses and stores through the Web. The cost for the software is $42,000, including installation and configuration.

Required:

1. Conduct a SWOT analysis for HHI's proposed electronic commerce Web site. You can use the information in the case narrative, your personal knowledge of the retail hardware industry, and information you obtain by following links in the Online Companion or doing independent searches of the Web as you conduct your analysis. You should create a diagram similar to Figure 1-12 to summarize your SWOT analysis results.
2. Based on your SWOT analysis, write a report of about 400 words that includes a summary of your assumptions and a list of recommendations for HHI. The recommendations should be specific and should address the content that HHI's Web site should include, the features that HHI should make available on the site, and how HHI might overcome any of the weaknesses or threats you identified in the SWOT analysis.

Note: Your instructor might assign you to a group to complete this case and might ask you to prepare a formal presentation of your results to your class.

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