Learning objectives

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

- Define e-marketplaces and list their components.
- List the major types of electronic markets and describe their features.
- Define supply chains and value chains and understand their roles.
- Describe the role of intermediaries in EC.
- Discuss competition, quality, and liquidity issues in e-marketplaces.
- Describe electronic catalogs, shopping carts, and search engines.
- Describe the various types of auctions and list their characteristics.
- Discuss the benefits, limitations, and impacts of auctions.
- Describe bartering and negotiating online.
- Describe the impact of e-marketplaces on organizations.
- Define m-commerce and explain its role as a market mechanism.

Content

How Raffles Hotel Is Conducting E-Commerce

2.1 Electronic Marketplaces
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2.3 Supply Chains and Value Chains
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2.5 Issues in E-Markets: Competition, Liquidity, Quality, and Success Factors
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2.7 Auctions
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2.9 Mobile Commerce
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Managerial Issues

Real-World Case:

FreeMarkets.com Revolutionizes Procurement
HOW RAFFLES HOTEL IS CONDUCTING E-COMMERCE

The Problem

Raffles Hotel, one of Singapore’s colonial-era landmarks, is the flagship of Raffles Holding Ltd., which owns and manages luxury and business hotels worldwide. Raffles Hotel operates in a very competitive environment. To maintain its world-renowned reputation, the hotel spent lavishly on every facet of its operation. For example, it once stocked 12 different kinds of butter, at a high cost. The success of the company and each of its hotels depends on the company’s ability to lure customers to its hotels and facilities and on its ability to contain costs.

The Solution

To maintain its image and contain costs, Raffles must address two types of issues—business-to-consumer and business-to-business. On the business-to-consumer side, Raffles maintains a diversified public portal (raffles.com) that introduces customers to the company and its services. The portal includes information on the hotels, a reservation system, links to travelers’ resources, a customer relationship management (CRM) program, and an online store for Raffles products.

On the business-to-business side, Raffles has interorganizational systems that enable efficient contacts with its suppliers. To do business with Raffles, each of 5,000 potential vendors must log on to Raffles’ private marketplace. As for purchasing, Raffles conducts e-procurement using reverse auctions among qualified suppliers, in which sellers bid for the sales contract, and the lowest bidder wins. With the reverse auction, the number of suppliers is reduced and the quantity purchased from each increases, which leads to lower purchasing prices. For example, butter is now purchased from only two suppliers. Procurement negotiations now take place online. Buyer-seller relationships have been strengthened by the private, online marketplace.

The e-marketplace also has a sell-side, allowing other hotels to buy Raffles-branded products, such as tiny shampoo bottles and bathrobes, from electronic catalogs. Even competitors buy Raffles-branded products because they are relatively inexpensive. Also, the luxury products make the hotel that purchases them look upscale.

The Results

The public portal helps in customer acquisition. Using promotions and direct sales, the hotel is able to maintain high occupancy rates in difficult economic times. The private marketplace is strategically advantageous to Raffles in forcing suppliers to disclose their prices, thus increasing competition among suppliers. The company is saving about $1 million a year on procurement of eight high-volume supplies (toilet paper, detergents, etc.) alone. The success of the company is evidenced by its aggressive expansion in the Asian markets.

What We Can Learn . . .

For an old-economy hotel to transform itself into a click-and-mortar business, it had to create two separate electronic markets: a B2C private market for selling its services to consumers and a B2B market to buy from its suppliers and to sell products to other hotels. In addition, it had to use several e-commerce mechanisms: a corporate portal, electronic catalogs, and e-procurement using reverse auctions. Electronic markets and some of their supporting mechanisms are described in this chapter. We also will examine the economics of e-commerce and its impacts on organizations.
**2.1 ELECTRONIC MARKETPLACES**

According to Bakos (1998), markets play a central role in the economy, facilitating the exchange of information, goods, services, and payments. In the process, they create economic value for buyers, sellers, market intermediaries, and for society at large.

Markets (electronic or otherwise) have three main functions: (1) matching buyers and sellers; (2) facilitating the exchange of information, goods, services, and payments associated with market transactions; and (3) providing an institutional infrastructure, such as a legal and regulatory framework, that enables the efficient functioning of the market (Exhibit 2.1).

In recent years, markets have seen a dramatic increase in the use of IT and EC (Turban et al. 2002). EC has increased market efficiencies by expediting or improving the functions listed in Exhibit 2.1. Furthermore, EC has been able to significantly decrease the cost of executing these functions.

The emergence of electronic marketplaces, also called marketspace, especially Internet-based marketspaces, changed several of the processes used in trading and in supply chains. These changes, driven by IT, resulted in even greater economic efficiencies. EC leverages IT with increased effectiveness and lower transaction and distribution costs, leading to more efficient, “friction-free” markets. An example of such efficiency can be seen in the NTE case (EC Application Case 2.1). Another example is provided in the Real-World Case at the end of this chapter.

**MARKETSPACE COMPONENTS**

Similar to a marketplace, in a marketspace sellers and buyers exchange goods and services for money (or for other goods and services), but do so electronically. A marketspace includes electronic transactions that bring
about a new distribution of goods and services. The major components and players of a marketspace are customers, sellers, goods (physical or digital), infrastructure, a front end, a back end, intermediaries and other business partners, and support services. A brief description of each follows.

- **Customers.** The tens of millions of people worldwide that surf the Web are potential buyers of the goods and services offered or advertised on the Internet. These consumers are looking for bargains, customized items, collectors’ items, entertainment, and more. They are in the driver’s seat. They can search for detailed information, compare, bid, and sometimes negotiate. Organizations are the major consumers, accounting for over 85 percent of E-Commerce activities.

- **Sellers.** Hundreds of thousands of storefronts are on the Web, advertising and offering millions of items. Every day it is possible to find new offerings of products and services. Sellers can sell direct from their Web site or from e-marketplaces.

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**EC APPLICATION CASE 2.1**

**Interorganization and Collaboration**

**NTE EVENS THE LOAD**

The hauling industry is not very efficient. Though trucks are likely to be full on outbound journeys, they are often empty on the way back. (About 50 percent of the trucks on America’s roads at any one time are not full.) National Transportation Exchange (NTE) is attempting to solve this problem.

NTE (nte.com) uses the Internet to connect shippers who have loads they want to move cheaply with fleet managers who have space to fill. NTE helps create what is called a spot market (a very short-term market) by setting daily prices based on information from several hundred fleet managers about the destinations of their vehicles and the amount of space they have available. It also gets information from shippers about their needs and flexibility in dates. NTE then works out the best deals for the shippers and the haulers. When a deal is agreed upon, NTE issues the contract and handles payments. The entire process takes only a few minutes. NTE collects a commission based on the value of each deal, the fleet manager gets extra revenue that they would otherwise have missed out on, and the shipper gets a bargain price, at the cost of some loss of flexibility. When NTE was first set up in 1995, it used a proprietary network that was expensive and limited the number of buyers and sellers who could connect through it. By using the Internet, NTE has been able to extend its reach down to the level of individual truck drivers and provide a much wider range of services. Today, drivers can use wireless Internet access devices to connect to the NTE Web site on the road.

In 2001, NTE expanded its services to improve inventory management, scheduling, and vendor compliance along the entire supply chain. NTE’s software is integrated with its customers’ operations and systems. NTE’s business is currently limited to ground transportation within the United States. In Hong Kong, arena.com.hk (called Line) provides similar port services.

**Source:** Compiled from The Economist, June 26, 1999; Davidson, April 2001, and arena.com.hk, April 2001.

**Questions**

- What are the benefits of NTE’s services to truckers? To shippers?
One of the major differences between the marketplace and the marketspace is the possible digitization of products and services in a marketspace. Although both types of markets can sell physical products, the marketspace also can sell digital products, which are goods that can be transformed to digital format and delivered over the Internet. In addition to digitization of software and music, it is possible to digitize dozens of other products and services, as shown in Exhibit 2–2. As described in Chapter 1, digital products have different cost curves than those of regular products. In digitization, most of the costs are fixed and the variable cost is very small. Thus, profit will increase very rapidly as volume increases once the fixed costs are paid for. This is one of the major potentials of electronic markets.

### Infrastructure

An electronic market infrastructure includes hardware, software, and networks.

#### Front end

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

#### Back end

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

#### Intermediaries

A third party that operates between sellers and buyers.

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**EXHIBIT 2.2 Examples of Digital Products**

<table>
<thead>
<tr>
<th>Information and Entertainment Products</th>
<th>Symbols, Tokens, and Concepts</th>
<th>Processes and Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>◦ Paper-based documents: books, newspapers, magazines, journals, store coupons, marketing brochures, newsletters, research papers, and training materials</td>
<td>◦ Tickets and reservations: airlines, hotels, concerts, sports events, transportation</td>
<td>◦ Government services: forms, benefits, welfare payments, licenses</td>
</tr>
<tr>
<td>◦ Product information: product specifications, catalogs, user manuals, sales training manuals</td>
<td>◦ Financial instruments: checks, electronic currencies, credit cards, securities, letters of credit</td>
<td>◦ Electronic messaging: letters, faxes, telephone calls</td>
</tr>
<tr>
<td>◦ Graphics: photographs, postcards, calendars, maps, posters, x-rays</td>
<td></td>
<td>◦ Business-value-creation processes: ordering, bookkeeping, inventorying, contracting</td>
</tr>
<tr>
<td>◦ Audio: music recordings, speeches, lectures, industrial voice</td>
<td></td>
<td>◦ Auctions, bidding, bartering</td>
</tr>
<tr>
<td>◦ Video: movies, television programs, video clips</td>
<td></td>
<td>◦ Remote education, telemedicine and other interactive services</td>
</tr>
<tr>
<td>◦ Software: programs, games, development tools</td>
<td></td>
<td>◦ Cybercafes, interactive entertainment, virtual communities</td>
</tr>
</tbody>
</table>

*Source: Adapted from Choi et al., 1997, p. 64.*
ate and manage the online markets (such as in the NTE case). They help match buyers and sellers, provide some infrastructure services, and help customers and/or sellers to institute and complete transactions. Most of these online intermediaries are computerized systems.

- **Other business partners.** In addition to intermediaries, there are several types of partners, such as shippers, that collaborate on the Internet, mostly along the supply chain.

- **Support services.** Many different support services are available, ranging from certification and trust services, which ensure security, to knowledge providers. These services are created to address implementation issues.

These components are available in different types of e-markets.

- What is the difference between a marketplace and a marketspace?
- List the components of a marketspace.
- Define a digital product and provide five examples.

### 2.2 TYPES OF ELECTRONIC MARKETS: FROM STOREFRONTS TO PORTALS

There are several types of e-marketplaces. In B2C the major e-marketplaces are storefronts and Internet malls. In B2B we observe private sell-side (one seller–many buyers), and buy-side (one buyer–many sellers), e-marketplaces and public exchanges. Let’s elaborate on these as well as on the gateways to the e-marketplaces—the portals.

**ELECTRONIC STOREFRONTS**

An electronic or Web storefront refers to a single company’s Web site where products and services are sold. It is an electronic store. The storefront may belong to a manufacturer (e.g., geappliances.com), to a retailer (e.g., walmart.com), to individuals selling from their home, or to another type of business.

A storefront includes several mechanisms that are necessary for conducting the sale. The most common features are:

- Electronic catalogs
- A search engine that helps the consumer to find products in the catalog
- An electronic cart for holding items until check-out
- E-auction facilities
- A payment gateway where payment arrangements can be made
- A shipment court where shipping arrangements are made
- Customer services, including product information and a register for warranties

We will describe the first three mechanisms in Section 2.6; e-auction facilities are described in Section 2.7; and mechanisms for payments and shipments are...
ELECTRONIC MALLS

In addition to shopping in individual storefronts, consumers can shop in electronic malls (e-malls). Similar to malls in the physical world, an e-mall is an online shopping location where many stores are located. For example, hawaii.com is an e-mall that aggregates Hawaiian products and stores. It contains a directory of product categories and the stores in each category. When a consumer indicates the category they are interested in, they are transferred to the appropriate independent storefront to conduct their shopping. This kind of a mall does not provide any shared services. Other malls do provide shared services (e.g., choicemall.com). Some malls are actually large click-and-mortar retailers, and some (e.g., buy.com) are virtual retailers.

TYPES OFSTORES AND MALLS

There are several types of stores and malls:

- **General stores/malls.** These are large marketspaces that sell all types of products. Examples are choicemall.com, shop4.com, spree.com, and the major public portals (yahoo.com, aol.com, and lycos.com). All major department and discount stores fall into this category.

- **Specialized stores/malls.** These sell only one or a few types of products, such as books, flowers, wine, cars, or pet toys. Amazon.com started as a specialized e-bookstore, but today is a generalized store. At buy.com you can only purchase computers and consumer electronic products. Beautyjungle.com specializes in beauty tips, trends, and products.

- **Regional vs. global stores.** Some stores, such as e-groceries or sellers of heavy furniture, serve customers that live in a close-by area. For example, parknshop.com serves the Hong Kong community; it will not deliver groceries to New York. However, some local stores will sell to customers in other countries if the customer will pay the shipping, insurance, and other costs.

- **Pure online organizations vs. click-and-mortar stores.** Stores can be pure online (“virtual”) organizations, such as Amazon.com, buy.com, or cattoys.com. They do not have physical stores. Others are physical (“brick-and-mortar”) stores that also sell online (e.g., Walmart.com, 1800flowers.com, or woolworths.com.au). This second category is called click-and-mortar. Both categories will be discussed in Chapter 3.

MARKETPLACES

In general conversation, the distinction between a mall and a marketplace is not always clear. In the physical world, we view a mall as a collection of stores (a shopping center) where the stores are isolated from each other and prices are generally fixed. In contrast, markets/marketplaces, some of which are open air, imply a place where people are looking for bargains and are expected to negotiate prices.
On the Web, the term marketplace has a different and distinct meaning. If individual customers want to negotiate prices, they may be able to do so in some storefronts or malls. However, the term e-marketplace usually implies B2B, not B2C. We distinguish three types of such e-marketplaces: private, public, and consortia.

**Private E-Marketplaces**

Private e-marketplaces are those owned by a single company. As can be seen in the Raffles Hotel story, two types of such markets exist: sell-side and buy-side. In a sell-side e-marketplace, a company such as Cisco Systems will sell either standard or customized products to qualified companies. This is similar to a storefront in B2C. In a buy-side e-marketplace, a company conducts purchasing from invited suppliers. For example, Raffles Hotel buys butter from two approved vendors. We will return to the topic of private e-marketplaces in Chapter 5.

**Public E-Marketplaces**

Public e-marketplaces are B2B markets that include many sellers and many buyers. These markets are usually owned and/or managed by an independent third party. These markets are also known as exchanges (e.g., a stock exchange), and they are regulated by the government or the exchange's owners. We will look at public e-marketplaces in more detail in Chapter 6.

**Consortia**

A small group of major buyers may create an e-marketplace to deal with suppliers, usually in their same industry. A group of sellers may also create an e-marketplace to deal with industry buyers. Such e-marketplaces are called consortia (singular, a consortium). They can be completely private, where only invited suppliers can participate, or they can be open to more suppliers, resembling a public e-marketplace. Regardless of whether they are owned by buyers or sellers, these markets can be vertical, meaning they are confined to one industry, or horizontal, meaning that different industries trade there. We will revisit consortia in Chapter 6.

**INFORMATION PORTALS**

With the growing use of intranets and the Internet, many organizations encounter information overload at a number of different levels. Information is scattered across numerous documents, e-mail messages, and databases at different locations and systems. Finding relevant and accurate information is often time consuming and requires access to multiple systems.

As a consequence, organizations lose a lot of productive employee time. One solution to this problem is to use portals. A portal is simply a gateway. It attempts to address information overload through an intranet-based environment to search and access relevant information from disparate IT systems and the Internet, using advanced search and indexing techniques. An information portal is a personalized, single point of access through a Web browser to critical business information located inside an organization. In Chapter 1 we discussed public portals and corporate portals. Both of these are types of information portals.

Portals appear under many descriptions and shapes. One way to distinguish among them is to look at their content, which can vary from narrow to broad,
Part 1: Introduction to EC

and their community or audience, which can also vary. We distinguish five types of portals:

1. **Publishing portals** are intended for large communities with diverse interests. These portals involve relatively little customization of content except online search and some interactive capabilities, which would be typical for the Web. Examples are techweb.com and zdnet.com.

2. **Commercial portals** offer narrow content for diverse communities and are the most popular portals for online communities. Although they offer customization of the user interface, they are still intended for broad audiences and offer fairly simple content (a stock ticker and news on a few preselected items). Examples are My Yahoo!, lycos.com, and msn.com.

3. **Personal portals** target specific filtered information for individuals. As with commercial portals, they offer relatively narrow content but are typically much more personalized, effectively having an audience of one.

4. **Corporate portals** coordinate rich content within a relatively narrow community. They are also known as enterprise portals or enterprise information portals. Corporate portals are described in more detail in Chapter 6.

5. **Mobile portals** are portals that are accessible from mobile devices. Although most of the other portals mentioned here are PC-based, increasing numbers of portals are accessible via mobile devices. One example of such a mobile portal is iMode, which we will discuss in Section 2.9.

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**2.3 SUPPLY CHAINS AND VALUE CHAINS**

Electronic markets differ from regular markets in that the customers do not physically travel to the market. Although they are physically disconnected from their customers in the purchasing process, electronic markets are connected to the physical world through market mechanisms for production and logistics. To better understand these and other market mechanisms and how they operate, we look first at the essential concepts of the supply and value chains.

**SUPPLY CHAINS**

A **supply chain** is the flow of materials, information, money, and services from raw material suppliers through factories and warehouses to the end customers. A supply chain also includes the organizations and processes that create and deliver these products, information, and services to the end customers. The term supply chain comes from a picture of how the partnering organizations are linked together.
As shown in Exhibit 2.3, a simple linear supply chain links a company that manufactures or assembles a product (middle of the chain) with its suppliers (on the left) and distributors and customers (on the right). The upper part of the figure shows a generic supply chain. The bottom part shows a specific example of the toy-making process. The solid lines in the figure show the flow of materials among the various partners. Not shown is the flow of returned goods (e.g., defective products) and money, which are flowing in the reverse direction. The broken lines, which are shown only in the upper part of Exhibit 2.3, indicate the bidirectional flow of information.

As you can see, a supply chain involves activities that take place during the entire product life cycle, from “dirt to dust.” However, a supply chain is more than that, as it also includes movement of information and money and procedures that support the movement of a product or a service. Finally, the organizations and individuals involved are considered a part of the supply chain as well.

**Supply Chain Components**

A supply chain can be broken into three parts: upstream, internal, and downstream.

**Upstream supply chain.** The upstream part of the supply chain includes the activities of suppliers (which can be manufacturers and/or assemblers) and their

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**EXHIBIT 2.3  A Simple Supply Chain**

![Diagram of supply chain components](image-url)
suppliers. The supplier relationship can be extended to the left in several tiers, all the way to the origin of the material (e.g., mining ores, growing crops).

**Internal supply chain.** The internal part of the supply chain includes all the in-house processes used in transforming the inputs received from the suppliers into the organization's outputs. It extends from the time the inputs enter an organization to the time that the products go to distribution outside of the organization.

**Downstream supply chain.** The downstream part of the supply chain includes all the activities involved in delivering the product to the final customers. Looked at very broadly, the supply chain actually ends when the product reaches its after-use disposal—presumably back to Mother Earth somewhere.

### TYPES OF SUPPLY CHAINS

The supply chain that was shown in Exhibit 2.3 is typical for a manufacturing company. However, supply chains can be much more complex. The following are four very common types of supply chains.

**Integrated Make-to-Stock**

The integrated make-to-stock supply chain model focuses on tracking customer demand so that the production process can efficiently restock the inventory of finished goods. To accomplish this goal, the company must integrate customer demand for products and services in real time, which can be in one or several marketing channels, and the sources of supply of the products and services. For example, Starbucks Coffee (starbucks.com) uses several distribution channels, selling not only hot coffee to consumers, but also coffee to businesses, such as airlines, supermarkets, department stores, and ice-cream makers. Sales are also done through direct mail, as well as the Internet. Starbucks is successfully integrating all sources of demand and matching it with supply by using Oracle's automated information system for manufacturing (called GEMM). The system does distribution planning, manufacturing scheduling, and inventory control. The coordination of supply with multiple distribution channels requires timely and accurate information flow about demand, inventories, storage capacity, transportation scheduling, and more.

**Continuous Replenishment**

The idea of the continuous replenishment model is to constantly replenish the inventory as it declines, by working closely with suppliers and/or intermediaries. However, if the replenishment process involves many shipments, shipping costs may be too high, causing the supply chain to collapse. For example, daily deliveries in small amounts or unplanned shipments cost more for both an organization and its supplier than would biweekly shipments in larger amounts. To avoid this cost problem, real-time information on changes in demand is required in order to plan ahead and maintain the desired replenishment schedules and levels. Such information can be provided by EDI, extranets, and other EC systems. A continuous replenishment distribution channel which is suitable for a stable environment is shown in Exhibit 2.4a for McKesson Co., a leading distributor of pharmaceuticals to retail pharmacies.
Build-to-Order

Dell Computer is best known for its application of the build-to-order supply chain model. The concept behind this model is to begin assembly of the customer’s order almost immediately upon receipt of the order. This requires careful management of the component inventories and supply chain in order to have the needed materials on hand (or be able to obtain quickly, at the right cost) at each point in the production process. A solution to this potential inventory problem is to utilize

**EXHIBIT 2.4 Supply Chains: Integrated and Build-to-Order**

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*Source: (b) Kalakota and Robinson, 2000, p. 301.*
many common components across several production lines and in several locations. With such planning, it is easy to make customized products.

**Channel Assembly**

A slight modification to the build-to-order supply chain model is channel assembly. In this model, the product is assembled as it moves through the distribution channel. This is accomplished through strategic alliances with third-party logistics (3PL) firms, such as Federal Express or UPS. These services sometimes involve physical assembly of a product at a 3PL facility, or collection of finished components for delivery to the customer. With this model, the customer's order would come together only once all items were placed on a vehicle for final delivery. Dell Computer is an excellent example. Dell makes and ships the computer via United Parcel Service (UPS) in a “From Dell” box. Dell sends the monitor order to Sony (or others) for shipping via UPS in a “From Dell” box. Dell also sends the software order to a software clearinghouse, which ships the software via UPS in a “From Dell” box. When all three items are in the UPS depot nearest the customer’s house (within 1 to 2 days after the order was placed), UPS delivers all three boxes together to a customer who thinks that all of this came from Dell. By this model, Dell moves information down the supply chain, rather than moving physical product up the supply chain.

A channel assembly may have low or zero inventories. In the preceding example, Dell saves on warehousing costs and inventory management overhead. Channel assembly is popular in the computer technology industry. An example of this model is shown in Exhibit 2.4b, with a large distributor, Ingram Micro, at the center of the supply chain. (For further discussion of Ingram Micro, see Section 2.4.)

**THE VALUE CHAIN**

The value chain is the series of activities that an organization performs to achieve its goal(s) at various stages of the production process, from resource acquisition to product delivery. The added value of these activities contributes to profit and enhances the asset value as well as the competitive position of the company in the market. Activities can be primary, such as manufacturing, or secondary (support), such as accounting. These activities are interconnected and sequenced and can be shown graphically for each product or process. The value chain is used mainly to analyze the activities by looking at their cost in comparison to the value delivered. The value chain can be drawn for supply chain participants, and therefore the value provided to business partners and customers also can be analyzed.

Michael Porter, the creator of the value-chain concept, examined the impact of the Internet on the value chain (Porter 2001). He showed that the Internet can be incorporated into every type of activity in the value chain. The magnitude and nature of the integration depends on the specific industry and company. Porter views this impact as a step of an evolutionary process in which information technologies increasingly penetrate the value chain. Currently, the Internet enables the integration of the value chain and entire value systems, which are a set of value chains in an entire industry, including the value chains of tiers of suppliers, distribution channels, and customers.
Chapter Two: E-Commerce Market Mechanisms

The value chain and the supply chain concepts are interrelated. The value chain shows the activities performed by an organization and the values added (the contribution) by each. The supply chain shows flows of materials, money, and information that support the execution of these activities. E-commerce, as will be shown throughout the book, increases the value added by introducing new business models, automating business processes, and so on. It also smooths the supply chain by reducing problems in the flows of material, money, and information. Finally, E-commerce facilitates the restructuring of business activities and supply chains. Intermediaries are found in many supply chains.

Define supply chains and list their components.
Describe the four major types of supply chains.
Describe value chains.

2.4 INTERMEDIATION AND SYNDICATION IN E-COMMERCE

Intermediaries (brokers) play an important role in commerce by providing value-added activities and services to buyers and sellers. There are many types of intermediaries. The most well-known intermediaries in the physical world are wholesalers and retailers. In cyberspace there are, in addition, intermediaries that control information flow. These electronic intermediaries are known as infomediaries. Frequently, they aggregate information and sell it to others. As we continue our study of e-commerce market mechanisms, we need to examine the roles of intermediaries.

THE ROLES AND VALUE OF INTERMEDIARIES IN E-MARKETS

Producers and consumers may interact directly in an e-marketplace: Producers provide information to customers, who then select from among the available products. In general, producers set prices, but sometimes prices are negotiated. However, direct interactions are sometimes undesirable or unfeasible. In that case, intermediation is needed. Intermediaries, whether human or electronic, can address the following five important limitations of direct interaction.

1. Search costs. It may be expensive for providers and consumers to find each other. In electronic bazaars, thousands of products are exchanged among millions of people. Producers may have trouble accurately gauging consumer demand for new products; many desirable items may never be produced simply because no one recognizes the demand for them. Some intermediaries maintain databases of customer preferences, and they can predict demand and reduce search costs by selectively routing information from providers to consumers and by matching customers with products and/or services.

2. Lack of privacy. Either the buyer or seller may wish to remain anonymous or at least protect some information relevant to a trade. Intermediaries can relay messages and make pricing and allocation decisions without revealing the identity of one or both parties.

The image contains a picture of a person reading a book on a table with a blue background.

infomediaries Electronic intermediaries that control information flow in cyberspace, often aggregating information and selling it to others.
3. **Incomplete information.** The buyer may need more information than the seller is able or willing to provide, such as information about product quality, competing products, or customer satisfaction. An intermediary can gather product information from sources other than the product provider, including independent evaluators and other customers. Many third-party websites provide such information (e.g., bizrate.com, mysimon.com, and consumerguide.com).

4. **Contract risk.** A consumer may refuse to pay after receiving a product or a producer may provide inferior products or give inadequate postpurchase service. Intermediaries have a number of tools to reduce such risks. First, the broker can disseminate information about the behavior of providers and consumers. The threat of publicizing bad behavior or removing a seal of approval may encourage both producers and consumers to meet the broker’s standard for fair dealing. Or, the broker may accept responsibility for the behavior of parties in transactions it arranges and act as a policeman on its own. Third, the broker can provide insurance against bad behavior. The credit card industry uses all three approaches to reduce providers’ and consumers’ exposure to risk.

   In the online auction area, there are companies that act as “escrow agencies,” accepting and holding payment from the buyer while the seller completes delivery of the product or service to the escrow agency. Then, if the product is satisfactory, the agency releases payment to the seller and the product to the buyer.

5. **Pricing inefficiencies.** By jockeying to secure a desirable price for a product, providers and consumers may miss opportunities for mutually desirable trades. This is particularly likely in negotiations over unique or custom products, such as houses, and in markets for information products and other public goods where freeloading is a problem. Intermediaries can use pricing mechanisms that induce just the appropriate trades, for example, dealing with an imbalance of buy and sell orders in stock markets.

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**E-DISTRIBUTORS ON B2B**

A special type of intermediary in e-commerce is the B2B **e-distributor.** These intermediaries connect manufacturers (suppliers) with buyers, such as retailers (or resellers in the computer industry). E-distributors basically aggregate the catalogs of many suppliers, sometimes thousands of them, in one place—the intermediary’s Web site. In the past such intermediaries worked with paper catalogs. For buyers, e-distributors offer a one-stop location from which to place an order. The items purchased are mostly maintenance, repair, and operation items (MROs), that is, items that are usually not under regular contract with suppliers. One of the most well-known distributors that moved aggressively online is W.W. Grainger (grainger.com), the largest U.S. distributor of MROs. Grainger actually buys products from manufacturers and, like a retailer in B2C, sells them, but to businesses.

Another B2B e-distributor is Ingram Micro (ingrammicro.com), the largest global wholesale provider of technology products and supply chain management services. Of its many EC initiatives, one of the more interesting is IM Logistics, which connects leading technology and consumer electronic manufacturers to more than 7,500 retailers in the United States. Ingram Micro is operating in a complex...
supply chain, which was shown in Exhibit 2.4(b), page 51. Note that there is an additional intermediary in the chain, Solectron. The job of Solectron is to match customized orders collected by Ingram and arrange for one or more suppliers to fulfill them.

Many e-distributors also provide support services, such as payments, deliveries, or escrow services. E-distributors aggregate buyers’ and or sellers’ orders, they provide valuable services such as security, payments, escrows, and they may arrange delivery.

**DISINTERMEDIATION AND REINTERMEDIATION**

Intermediaries provide two types of services: (1) they provide relevant information about demand, supply, prices, and requirements, and in doing so, help match sellers and buyers; (2) they offer value-added services such as consulting or assistance in finding a business partner. The first type of service can be fully automated, and thus is likely to be assumed by e-marketplaces, infomediaries, and portals that provide free or low-commission services. The second type requires expertise, such as knowledge of the industry, the products and technological trends, and it can only be partially automated. Intermediaries who provide only (or mainly) the first type of service may be eliminated, a phenomena called **disintermediation**. For example, discount stockbrokers that only execute trades will disappear. On the other hand, brokers who provide the second type of service or who manage electronic intermediation are not only surviving, but may actually be prospering. This phenomenon is called **reintermediation**.

The Web offers new opportunities for reintermediation. First, brokers are especially valuable when the number of market participants is enormous, as with the stock market, or when complex information products are exchanged. Second, many brokering services require information processing. Electronic versions of these services can offer more sophisticated features at a lower cost than is possible with human labor. Finally, for delicate negotiations, a computer mediator may be more predictable, and hence trustworthy, than a human. For example, suppose a mediator’s role is to inform a buyer and a seller whether a deal can be made, without revealing either side’s initial price to the other, as such a revelation would influence subsequent price negotiations. A software-based mediator will reveal only the information it is supposed to; a human mediator’s fairness is less easily ensured. Intermediation and reintermediation are discussed further in Chapters 3, 6, and 11.

**SYNDICATION AS AN EC MECHANISM**

According to Werbach (2000), **syndication** involves the sale of the same good to many customers, who then integrate it with other offerings and resell it or give it away free. Syndication is extremely popular in the world of entertainment, but was rare elsewhere until the arrival of the Internet. The digitization of products and services and the ease with which information flows, makes syndication a popular business model. Let’s look at a few examples.

Virtual stockbrokers, such as E*Trade, offer considerable information on their portals (e.g., financial news, stock quotes, research, etc.). Yahoo! and other portals offer other types of information. These brokers and portals buy the information from information creators or originators, such as Reuters, who sell the same information to many customers.
information to many portals or other users. Customers may buy directly from the information creators, but in many cases creators use a supply chain of syndicators and distributors to move news and information to the end consumers, as shown in Exhibit 2.5. Content creators, such as Inktomi (see Carr 2000) and Reuters, make their money by selling the same information to many syndicators and/or distributors. The information distributors, such as E*Trade, then distribute free information to the public (customers).

Syndication is especially popular with software and other digitizable items. For example, companies syndicate EC services such as payments and shopping-cart ordering systems for e-tailers. Logistics, security, and systems integration tools are frequently syndicated.

Syndication can be done in several ways. Therefore, there are a number of different revenue-sharing models along the supply chain in Exhibit 2.5. For example, the affiliate program discussed in Chapter 1, which is used by CD Now, Amazon.com, and many other e-tailers, is a variation of syndication (Helmstetter and Metivier 2000). For discussion of the organizational impacts of syndication, see Werbach (2000) and Carr (2000).

- List the roles of intermediaries in e-markets.
- Describe e-distributors.
- What are disintermediation and reintermediation?
- Explain how syndication works in e-commerce.

### 2.5 ISSUES IN E-MARKETS: COMPETITION, LIQUIDITY, QUALITY, AND SUCCESS FACTORS

**COMPETITION IN THE INTERNET ECOSYSTEM**

The Internet ecosystem is the business model of the online economy. The prevailing model of competition in the Internet economy is more like a web of interrelationships than the hierarchical, command-and-control model of the industrial economy. The Internet economy has low barriers to entry. Just like an ecosystem in nature, activity in the Internet economy is self-organizing: The process of natural selection takes place around company profits and value to customers. As the Internet ecosystem evolves, both technologically and in population, it will be even easier and likelier for countries, companies, and individuals to participate in the
Internet economy. Already, there is $1 trillion in technical infrastructure in place, ready and available for anyone to use at any time—free of charge. New ideas and ways of doing things can come from anywhere at any time in the Internet economy, some of the old rules no longer apply.

**Competitive Factors**

EC competition is very intense for the following reasons.

**Lower buyers’ search costs.** E-markets reduce the cost of searching for product information, frequently to zero. This can significantly impact competition, enabling customers to find cheaper (or better) products and forcing sellers, in turn, to reduce prices and/or improve customer service. Companies that do just that can exploit the Internet to gain a considerably larger market share.

**Speedy comparisons.** Not only can customers find inexpensive products online, but they can find them quickly. For example, a customer does not have to go to several bookstores to quickly find the best price for a particular book. Using shopping search engines such as allbookstores.com or bestwebbuys.com/books, customers can find what they want and compare prices. Companies that trade online and provide information to search engines will gain a competitive advantage.

**Differentiation and personalization.** Differentiation involves providing a product or service that is not usually available elsewhere. For example, Amazon.com differentiates itself from other book retailers by providing customers with information that is not available in a physical bookstore, such as communication with authors, almost real-time book reviews, and book recommendations. In addition, EC provides for personalization or customization of products and services. Personalization refers to the ability to tailor a product, service, or Web content to specific user preferences. For example, Amazon.com will notify you by e-mail when new books on your favorite subject or by your favorite author are published.

Consumers like differentiation and personalization and are frequently willing to pay more for them. Differentiation reduces the substitutability between products. Also, price cutting in differentiated markets does not impact market share very much: Many customers are willing to pay a bit more for the personalized products or services.

**Lower prices.** Buy.com and other companies can offer low prices due to their low costs of operation (no physical facilities, minimum inventories, and so on). If volume is large enough, prices can be reduced by 40 percent or more.

**Customer service.** Amazon.com provides superior customer service. As we will see in Chapters 3 and 4, such a service is an extremely important competitive factor.

Certain other competitive factors have become less important as a result of EC. For example, the size of a company may no longer be a significant competitive advantage (as will be shown later). Similarly, location (geographical distance from the consumer) now plays an insignificant role, and language is becoming less important, as translation programs remove some language barriers. Finally, product condition is unimportant for digital products, which are not subject to normal wear and tear. (See discussion in Choi and Whinston 2000.)

All in all, EC supports efficient markets and could result in almost perfect competition. In such markets, a commodity (undifferentiated product) is produced when the consumer’s willingness to pay equals the marginal cost of producing the
commodity, and neither sellers nor buyers can influence supply or demand conditions individually. The characteristics necessary for perfect competition are the following:

1. Many buyers and sellers must be able to enter the market at no entry cost (no barriers to entry).
2. Large buyers or sellers are not able to individually influence the market.
3. The products must be homogeneous (no product differentiation). (For customized products, there is no perfect competition.)
4. Buyers and sellers must have comprehensive information about the products and about the market participants’ demands, supplies, and conditions.

EC could provide, or come close to providing, these conditions. It is interesting to note that the ease of finding information benefits both buyers (finding information about products, vendors, prices, etc.) and sellers (finding information about customer demands, competitors, etc.).

It can be said that competition between companies is being replaced by competition between networks. The company with better networks, advertisement capabilities, and relationships with other Web companies (such as Amazon.com) has a strategic advantage. It can also be said that competition is between business models. The company with a better business model will win.

**Porter’s Competitive Analysis in an Industry**

Porter’s (2001) competitive forces model applied to an industry, views five major forces of competition that determine the industry’s structural attractiveness. These forces, in combination, determine how the economic value created in an industry is divided among the players in the industry. Such an industry analysis helps companies develop their competitive strategy.

As the five forces are affected by both the Internet and e-commerce, it is interesting to examine how the Internet influences the industry structure portrayed by Porter’s model. Porter divided the impacts of the Internet into either positive or negative for the industry. As shown in Exhibit 2.6, most of the impacts are negative (marked by a minus sign). (Of course, there are variations and exceptions to the impacts shown in the illustration, depending on the industry, its location, and its size.) A negative impact means that competition will intensify in most industries as the Internet is introduced. The competition is not only between online and off-line companies, but also among the online newcomers. This competition, which is especially strong in commodity-type products (toys, books, CDs), was a major contributor to the collapse of many dot-com companies in 2000 to 2001. To survive and prosper in such an environment, a company needs to use innovative strategies.

**LIQUIDITY: THE NEED FOR A CRITICAL MASS OF BUYERS AND SELLERS**

A critical mass of buyers is needed for an EC company or initiative to survive. As indicated earlier, the fixed cost of deploying EC can be high, sometimes very high. Without a large number of buyers, sellers will not make money. In 2001, the num-
ber of Internet users worldwide was estimated by Forrester Research to be between 350 million and 450 million, and many of them do not shop online. This number is small compared with an estimated 2 billion television viewers worldwide. This situation will change, especially when TV/PC integration becomes widespread and wireless devices become a popular way to access the Internet (see Section 2.9).

At the global level, governments are assisting industry to achieve a critical mass of buyers. Canada, for example, has a goal to be recognized as an EC-friendly country in order to attract international investments and business. Hong Kong is developing a multibillion-dollar “cyberport” that will facilitate EC development and

may position the country as a center for global EC in Southeast Asia. Korea supports nine major B2B exchanges that relate to the country’s major industries (e.g., semiconductors). Finally, in 2001, the U.S. government introduced buyUSA.com to facilitate global trade.

Having a critical mass of buyers and sellers is referred to as **liquidity**. One of the major success factors for a start-up B2B vendor is **early liquidity**— achieving a critical mass of buyers and sellers as fast as possible, before the company’s cash disappears (see Ramlall 2000 and Chapter 6). Finally, in addition to the issue of profitability, critical mass of both buyers and sellers is needed for markets to be truly efficient, so that strong and fair competition can develop.

### QUALITY UNCERTAINTY AND QUALITY ASSURANCE

Although price is a major factor for any buyer, quality is extremely important in many situations, especially when buyers cannot see and feel a product before they purchase it. When a consumer buys a brand-name PC from Dell, IBM, or Compaq, they are fairly sure about the quality of the product or service purchased. When a consumer buys from a not-so-well-known vendor, however, quality can become a major issue. The issue of quality is related to the issues of trust (discussed in Chapter 4) and consumer protection (in Chapter 9). Quality assurance can be provided through a trusted third-party intermediary. For example, TRUSTe and the BBBOnline provide a testimonial seal for participating vendors. BBBOnline is known for its quality-assurance system and its physical testing of products.

The problem of quality is frequently referred to as **quality uncertainty**. Customers have a cognitive difficulty accepting products that they have never seen, especially from an unknown vendor. The BBBOnline and TRUSTe seals can convince some customers, but not all. Those who remain skeptical are not sure what they will get. Here are some possible solutions to quality uncertainty.

- **Provide free samples.** This is a clear signal that the vendor is confident about the quality of its products. However, samples cost money. It is a sunk cost that will need to be recovered from future sales. The cost for digital samples, however, is minimal. Shareware-type software is based on this concept.

- **Return if not satisfied.** This policy is common in several countries and is used by most large retailers and manufacturers. This policy, which provides a guarantee or a full refund for dissatisfied customers, is helpful in facilitating trust in EC. Such a policy, however, might not be feasible for digital products for the following reasons.

  First, many digital products, such as information, knowledge, or educational materials, are fully consumed when they are viewed by consumers. After they are consumed, returning the products has little meaning. Unlike physical products, returning a digital product does not prevent the consumer from using the product in the future. Also, the vendor cannot resell the returned product.

  Second, returning a product or refunding a purchase price may be impractical due to transaction costs. For example, a **microproduct**, a small digital product costing a few cents, must be transported twice over the network, so the cost of the refund may exceed the price. Therefore, for microproducts sup-
ported by micropayments (small payments, see Chapter 10), some companies do not offer a quality guarantee or a refund. (For further discussion of quality uncertainty, see Choi et al. 1997 and Choi and Whinston 2000.)

- Insurance, escrow, and other services. Many services, such as insurance and escrow, are available to ensure quality and prevent fraud. Of special interest are those offered by auction houses, such as eBay.com, as discussed in Chapter 9 and Appendix 2A online.

E-MARKET SUCCESS FACTORS

Based on an analysis of the EC examples we have discussed, it is apparent that EC will impact some industries more than others. The question is, “What are some of the factors that determine this level of impact?” Strader and Shaw (1997) have identified factors that fall within one of four categories: product, industry, seller, and consumer characteristics.

Product Characteristics

Digitizable products are particularly suited for e-markets because they can be electronically distributed to customers, resulting in very low distribution costs. Digitization also allows the order-fulfillment cycle time to be minimized.

A product’s price may also be an important determinant to its success. The higher the product price, the greater the level of risk involved in the market transaction between buyers and sellers who are geographically separated and may have never dealt with each other before. Therefore, some of the most common items currently sold through e-markets are low-priced items such as CDs and books.

Finally, computers, electronic products, consumer products, and even cars can be sold electronically because the consumer knows exactly what they are buying. The more product information available, the better. The use of multimedia, for example, can dramatically facilitate product description.

Industry Characteristics

Electronic markets are most useful when they are able to directly match buyers and sellers. However, some industries require transaction brokers, so they may be affected less by e-markets than are industries where no brokers are required. Stockbrokers, insurance agents, and travel agents may provide services that are still needed, but in some cases software may be able to reduce the need for these brokers. This is particularly true as intelligent systems become more available to assist consumers.

Seller Characteristics

Electronic markets reduce search costs, allowing consumers to find sellers offering lower prices. In the long run, this may reduce profit margins for sellers that compete in e-markets, although it may also increase the number of transactions that take place. If sellers are unwilling to participate in this environment, then the impact of e-markets may be reduced. However, in highly competitive industries with low barriers to entry, sellers may not have a choice but to join in.
Consumer Characteristics

Consumers can be classified either as impulse, patient, or analytical (as we will discuss further in Chapter 4). Electronic markets may have little impact on industries where a sizable percentage of purchases are made by impulse buyers. Because e-markets require a certain degree of effort on the part of the consumer, e-markets are more conducive to consumers who do some comparisons and analyses before buying (the patient and analytical buyers). Analytical buyers can use the Internet to evaluate a wide range of information before deciding where to buy. On the other hand, m-commerce is banking on impulse buyers.

Why is competition so intense online?
Describe Porter's competitive forces model on the Internet.
What is early liquidity? Why is it important?
How can quality be assured in EC?
Describe the success factors for e-markets.

2.6 ELECTRONIC CATALOGS AND OTHER MARKET MECHANISMS

To enable selling online, one usually needs EC merchant server software (see Chapter 12, online). The basic functionality offered by such software includes electronic catalogs, search engines, and shopping carts.

Electronic Catalogs

Catalogs have been printed on paper for generations. Recently, electronic catalogs on CD-ROM and the Internet have gained popularity. Electronic catalogs consist of a product database, directory and search capabilities, and a presentation function. They are the backbone of most e-commerce sites. For merchants, the objective of electronic catalogs is to advertise and promote products and services. For the customer, the purpose of such catalogs is to provide a source of information on products and services. Electronic catalogs can be searched quickly with the help of search engines.

The majority of early online catalogs were replications of text and pictures from printed catalogs. However, online catalogs have evolved to become more dynamic, customized, and integrated with selling and buying procedures. As the online catalog is integrated with shopping carts, order taking, and payment, the tools for building online catalogs are being integrated with merchant sites (e.g., see store.yahoo.com).

Electronic catalogs can be classified according to three dimensions:

1. The dynamics of the information presentation. Catalogs can be static or dynamic. In static catalogs, information is presented in text and static pictures. In dynamic catalogs, information is presented in motion pictures or animation, possibly with supplemental sound.
2. **The degree of customization.** Catalogs can be standard or customized. In standard catalogs, merchants offer the same catalog to any customer. In customized catalogs, content, pricing, and display are tailored to the characteristics of specific customers.

3. **Integration with business processes.** Catalogs can be classified according to the degree of integration with the following business processes or features: order taking and fulfillment; electronic payment systems; intranet workflow software and systems; inventory and accounting systems; suppliers’ or customers’ extranets; and paper catalogs. For example, when you place an order with Amazon.com, your order will be transferred automatically to a computerized inventory check.

Although used occasionally in B2C commerce, customized catalogs are especially useful in B2B e-commerce. For example, e-catalogs can show only the items that the employees are able to purchase and can exclude items the buying company’s managers do not want their employees to see or to buy. E-catalogs can be customized to show the same item to different customers at different prices, reflecting discounts or purchase contract agreements. They can even show the buyer's item, model, or stock-keeping unit (SKU) numbers, rather than the seller's numbers. Extranets, especially, can deliver customized catalogs to different business customers.

For a comprehensive discussion of online catalogs see jcmax.com/advantages.html and purchasing.about.com.

**Comparison of Online Catalogs with Paper Catalogs**

The advantages and disadvantages of online catalogs are contrasted with those of paper catalogs in Exhibit 2.7 (page 64). Although online catalogs have significant advantages, such as ease of updating, ability to integrate with the purchasing process, coverage of a wide spectrum of products, and a strong search capability, they do have disadvantages and limitations. To begin with, customers need computers and the Internet to access online catalogs. However, as computers and Internet access are spreading rapidly, we can expect a large portion of paper catalogs to be replaced by, or at least be supplemented by, electronic catalogs. On the other hand, considering the fact that printed newspapers and magazines have not diminished due to the online ones, we can guess that paper catalogs will not disappear. There seems to be room for both media, at least in the near future. However, in B2B, paper catalogs may disappear more quickly.

Representative tools for building online catalogs are Boise Cascade’s Marketing Service (Boise), IBM’s Net.commerce (IBM), and Oracle’s Internet Commerce Server (ICS).

**Customized Catalogs**

A customized catalog is a catalog assembled specifically for a company, usually a customer of the catalog owner. It can also be tailored to loyal individual shoppers or a segment of shoppers (e.g., frequent buyers). There are two approaches to customized catalogs.
The first approach is to let the customers identify the interesting parts out of the total catalog, as is done by software products such as One-to-One from broadvision.com. Customers then do not have to deal with topics that are irrelevant to them. Such software allows the creation of catalogs with branded value-added capabilities that make it easy for customers to find the products they want to purchase, locate the information they need, and quickly compose their order.

The second approach is to let the system automatically identify the characteristics of customers based on their transaction records. However, to generalize the relationship between the customer and items of interest, data-mining technology (Chapter 4) may be needed. This second approach can be effectively combined with the first one.

As an example of the second approach, consider this scenario, which uses Oracle’s ICS:

**Scenario:** Joe Public logs on to the Acme Shopping site, where he has the option to register as an account customer and record his preferences in terms of address details, preferred method of payment, and interest areas. Acme Shopping offers a wide range of products, including elec-

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**EXHIBIT 2.7 Comparison of Online Catalogs with Paper Catalogs**

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<thead>
<tr>
<th>Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>Paper Catalogs</td>
<td>◗ Easy to create without high technology</td>
<td>◗ Difficult to update changed product information promptly</td>
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<tr>
<td></td>
<td>◗ Reader is able to look at the catalog without computer system</td>
<td>◗ Only a limited number of products can be displayed</td>
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<tr>
<td></td>
<td>◗ More portable than electronic catalog</td>
<td>◗ Limited information through photographs and textual description is available</td>
</tr>
<tr>
<td>Online Catalogs</td>
<td>◗ Easy to update product information</td>
<td>◗ No possibility for advanced multimedia such as animation and voice</td>
</tr>
<tr>
<td></td>
<td>◗ Able to integrate with the purchasing process</td>
<td>◗ Difficult to develop catalogs, large fixed cost</td>
</tr>
<tr>
<td></td>
<td>◗ Good search and comparison capabilities</td>
<td>◗ There is a need for customer skill to deal with computers and browsers</td>
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<tr>
<td></td>
<td>◗ Able to provide timely, up-to-date product information</td>
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<tr>
<td></td>
<td>◗ Provision for globally broad range of product information</td>
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<td></td>
<td>◗ Possibility of adding on voice and animated pictures</td>
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<td></td>
<td>◗ Long-term cost savings</td>
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<td></td>
<td>◗ Easy to customize</td>
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<td></td>
<td>◗ More comparative shopping</td>
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<td></td>
<td>◗ Ease of connecting order processing, inventory processing, and payment</td>
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tronics, clothing, books, and sporting goods. Joe is interested only in clothing and electronics. He is not a sportsman nor a great book lover. Joe also has some very distinct hobby areas—one is photography.

After Joe has recorded his preferences, each time he returns to Acme’s electronic store, the first page will show him only the clothing and electronics departments. Furthermore, when Joe goes into the electronics department, he sees only products related to photography—cameras and accessories. Some of the products are out of Joe’s price range, so Joe further can refine his preferences to indicate that he is interested only in electronics that relate to photography and cost $300 or less. Such personalization gives consumers a value-added experience and adds to their reasons for revisiting the site, thus building brand loyalty to that Internet store. Against the backdrop of intense competition for Web time, personalization provides a valuable way to get consumers matched to the products and information in which they are most interested as quickly and painlessly as possible. An example of how corporations customize their catalogs for corporate clients is provided in EC Application Case 2.2 (page 66).

SEARCH ENGINES AND INTELLIGENT AGENTS

A search engine is a computer program that can access a database of Internet resources, search for specific information or keywords, and report the results. For example, customers tend to ask for information (e.g., requests for product information or pricing) in the same general manner. This type of request is repetitive, and answering such requests is costly when done by a human. Search engines deliver answers economically and efficiently by matching questions with FAQ templates, which include standard questions and “canned” answers to them. Google, AltaVista, and Lycos are popular search engines. Portals such as AOL, Netscape, and MSN have their own search engines. Special search engines, organized to answer certain questions or search in specified areas, include AskJeeves and Looksmart. There are over 3,000 different search engines.

Unlike a search engine, a software (intelligent) agent can do more than just “search and match.” It has capabilities that can be used to perform routine tasks that require intelligence. For example, it can monitor movements on a Web site to check whether a customer seems lost or ventures into areas that may not fit their profile. If it detects such confusion, the agent can notify the customer and provide assistance. Software agents can be used in e-commerce to support tasks such as shopping, interpreting information, monitoring activities, and working as an assistant. Users can even chat or collaborate with agents.

In e-commerce, users use both search engines and intelligent agents. If customers are inside a storefront or an e-mail, they can use the search engine to find a product or a service. They will also use Web search engines, such as google.com, to find general information about a product or service. Finally, they will use software agents, such those that do comparisons (e.g., mySimon.com) and conduct other tasks. The essentials of software agents are provided in online Appendix D. Applications of software agents are described in several chapters, especially in Chapters 3, 4, and 5.
Boise Cascade Office Products is a $3-billion office products wholesaler. Its customer base includes over 100,000 large corporate customers and 1 million small ones. The company’s 900-page paper catalog used to be mailed to customers once each year. Throughout the year, Boise also sent minicatalogs tailored to customers’ individual needs based on past buying habits and purchase patterns. The company sells over 200,000 different items.

In 1996, the company placed its catalogs online. Customers view the catalog at boiseoffice.com and can order straight from the site or submit orders by e-mail. The orders are shipped the next day. Customers are then billed. In 1997, the company generated 20 percent of its sales through the Web site. In early 1999, the figure was over 30 percent. The company acknowledges that its Internet business is the fastest growing segment of its business. It expects the Internet business to generate 80 percent of its total sales by 2004.

Boise prepares thousands of individualized catalogs for its customers. In 2002, the company was sending paper catalogs only when specifically requested. As indicated earlier, the vast majority of customers use the online catalogs. It used to take about 6 weeks to produce a single paper customer catalog, primarily because of the time involved in pulling together all the data. Now the process of producing a Web catalog takes only 1 week. One major advantage of customized catalogs is pricing. If everyone has the same catalog, you cannot show the customized price for each buyer, which is based on the type of the contract signed and the volume of goods being purchased.

Boise estimates that electronic orders cost approximately 55 percent less to process than paper-based orders. The figure above shows the process of working with the electronic catalogs. Some catalogs on Web sites provide text and pictures without linking them to order taking. For instance, Coca-Cola’s Web site (cocacola.com) is not set up to take Coke’s orders online; it just reminds people about the taste of Coca-Cola. However, you can buy Coca-Cola collectors items and more at the online store.


Questions

➢ What are the advantages of the electronic catalog to Boise Cascade? To its customers?
➢ How are the customized catalogs created?
**SHOPPING CARTS**

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

Shopping carts for B2C are fairly simple (visit amazon.com to see an example), but for B2B, a shopping cart may be more complex. A B2B shopping cart could enable a business customer to shop at several sites while keeping the cart on the buyer’s Web site to integrate it with the buyer’s e-procurement system. A special B2B cart was proposed for this purpose by Lim and Lee (2002) where, in addition to the cart offered at the seller’s site, there is a buyers’ cart (“b-cart”) that resides on the buyers’ sites and is sponsored by the participating sellers.

Shopping-cart software is sold or provided for free as an independent component (e.g., monstercommerce.com, e-shopping-cart-software.com). It also is embedded in merchants’ servers such as store.yahoo.com.

- List the benefits of electronic catalogs.
- Explain how customized catalogs are created and used.
- List the dimensions by which electronic catalogs can be classified.
- Compare search engines with software agents.
- Describe an electronic shopping cart.

### 2.7 AUCTIONS

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

**DEFINITION AND CHARACTERISTICS**

An auction is a market mechanism by which a seller places an offer to sell a product and buyers make bids sequentially and competitively until a final price is reached. A wide variety of online markets qualify as auctions using this definition. Auctions, an established method of commerce for generations, deal with products and services for which conventional marketing channels are ineffective or inefficient. For example, auctions can expedite the disposal of items that need liquidation or a quick sale. They offer trading opportunities for both buyers and sellers that are not available in the conventional channels, and they ensure prudent execution of contracts.

There are several types of auctions, each with its own motives and procedures. Klein (1997) classified them into four major categories. Auctions can be done online or off-line. They can be conducted in public auction sites, such as at eBay. They can also be done by invitation to private auctions.
In this section we present the essential information about auctions that is necessary for understanding Chapters 3–11. An even fuller treatment of auctions is available in online Appendix 2A.

Limitations of Traditional Auctions

Traditional auctions, regardless of their type, have the following limitations: They generally last only a few minutes, or even seconds, for each item sold. This rapid process may give potential buyers little time to make a decision, so they may decide not to bid. Therefore, sellers may not get the highest possible price, and bidders may not get what they really want or they may pay too much for the item. Also, in many cases, the bidders do not have much time to examine the goods. As bidders must usually be physically present at auctions, many potential bidders are excluded.

Similarly, it may be difficult for sellers to move goods to the auction site. Commissions are fairly high, as a place must be rented, the auction needs to be advertised, and an auctioneer and other employees need to be paid. Electronic auctioning removes these deficiencies.

Electronic Auctions

The Internet provides an infrastructure for executing auctions electronically at lower cost, with a wide array of support services, and with many more sellers and buyers. Individual consumers and corporations both can participate in this rapidly growing and very convenient form of e-commerce. The Internet auction industry is projected to reach $100 billion in sales by 2004.

Electronic auctions (e-auctions) have been in existence for several years on local area networks and were started on the Internet in 1995. They are similar to off-line auctions except that they are done on a computer. Host sites on the Internet serve as brokers, offering services for sellers to post their goods for sale and allowing buyers to bid on those items. Many sites have certain etiquette rules that must be adhered to in order to conduct fair business. (For examples, see ebay.com and infospace.com.) The usaweb.com site provides an Internet auction list and a search engine. bidfind.com is an auction aggregator that enters hundreds of auction sites and lets consumers know which items are being auctioned at which sites.

Major online auctions offer consumer products, electronic parts, artwork, vacation packages, airline tickets, and collectibles, as well as excess supplies and inventories being auctioned off by B2B marketers. Another type of B2B online auction is increasingly used to trade special types of commodities, such as electricity transmission capacities and gas and energy options. Furthermore, conventional business practices that traditionally have relied on contracts and fixed prices are increasingly being converted into auctions with bidding for online procurements (e.g., Raffles Hotel).

Of course, many consumer goods are not suitable for auctions, and for these items, conventional selling—such as posted-price retailing— is more than adequate. Yet the flexibility offered by online auction trading offers innovative market processes for many other goods. For example, instead of searching for products and vendors by visiting sellers' Web sites, a buyer may solicit offers from all potential sellers. Such a buying mechanism is so innovative that it has the potential to be used in almost all types of consumer goods (as will be shown later when we discuss reverse auctions and “name-your-own-price” auctions).
DYNAMIC PRICING AND TYPES OF AUCTIONS

A major characteristic of auctions is that they are based on dynamic pricing. Dynamic pricing refers to prices that change based on supply-and-demand relationships at any given time. That is, the prices are not fixed, but are allowed to change as supply and demand in a market change. In contrast, catalog prices are fixed, as are prices in department stores, supermarkets, and many electronic storefronts.

Dynamic pricing appears in several forms. Perhaps the oldest ones are negotiation and bargaining, which have been practiced for many generations in open-air markets. It is customary to classify dynamic pricing into four major categories, depending on how many buyers and sellers are involved. These four categories are shown in Exhibit 2.8 and discussed in the following sections.

One Buyer, One Seller
In this configuration, one can use negotiation, bargaining, or bartering. The resulting price will be determined by each party’s bargaining power, supply and demand in the item’s market, and (possibly) business environment factors.

One Seller, Many Potential Buyers
In this configuration, the seller uses forward auctions, auctions in which a seller entertains bids from buyers. (Because forward auctions are the most common and traditional form, they are often simply called auctions.) There are four major types of forward auctions: English, Yankee, Dutch, and free-fall.

English auction. In an English auction, one item is sold at a time and buyers bid on it in sequence and the price increases with time. A minimum bid that specifies the smallest amount that can be entered is usually part of an English auction. (The seller can also set a reserve price, the lowest acceptable price that the seller is willing to accept for the item.) The auction will continue until no more bids are rendered or until the auction time is over. The winner is the one with the highest bid. English auctions can take days on the Internet, but they can also be conducted in real time (“live”) and take only minutes. English auctions are used in dynamic pricing
Prices that change based on supply and demand relationships at any given time.

forward auction
An auction in which a seller entertains bids from buyers.

EXHIBIT 2.8 Types of Dynamic Pricing

<table>
<thead>
<tr>
<th>Buyers</th>
<th>Sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Negotiation, Bartering, Bargaining</td>
</tr>
<tr>
<td>Many</td>
<td>Forward (regular) auctions</td>
</tr>
</tbody>
</table>

English auction
An auction in which buyers bid on an item in sequence and the price increases with time.

Yankee auction. In a Yankee auction, a seller offers multiple identical items, usually with a minimum bid. Bidders can bid for any number of the items offered. The winner is the one with the highest bid.

Dutch auction. Like Yankee auctions, Dutch auctions are designed for multiple identical items. The difference is that prices in Dutch auctions start at a very high level and are reduced as the auction time passes. The bidders specify the quantity they want to buy at a posted price. An example is the international flower market in the Netherlands. Before the Internet, the process was done manually, using a big clock whose hands showed the price. Now the clock is computerized (see Chapter 6, p. 264). Once a bidder is willing to pay the price indicated by the auctioneer, the quantity available is adjusted until the entire quantity is sold. Dutch auctions happen very fast. There are several variations of this method.

1. The following describes how a Dutch auction is conducted at eBay: Sellers list a starting price for one item and the number of items for sale. If no bids are made, the starting price is reduced.
2. Bidders specify both a bid price and the quantity they want to buy. All winning bidders pay the same price per item, which is the lowest bid when the time expires (This might be less than a bidder's last bid!)
3. If there are more buyers than items, the earliest successful bids get the goods. Higher bidders are more likely to get the quantities they have requested.
4. Winning bidders can refuse partial quantities. For example, if a bidder places a bid for 10 items and only 8 are available after the auction, the bidder does not have to buy any of them.

EXHIBIT 2.9  English Auction, Ascending Price

![Diagram of an English auction process]

- **Cost**
- **Price**
- **Time**
- **High Bid Winner**
- **Bid**
- **Sellers**
- **Buyers**
Free-fall (declining-price) auction. A free-fall (declining-price) auction is a variation of the Dutch auction in which only one item is auctioned at a time. The price starts at a very high level, and then is reduced at fixed time intervals. The lowest bid when the time expires is the winning bid. This type of auction is used with popular items where many bidders are expected. In such a case, the free-fall auction moves very fast.

One Buyer, Many Potential Sellers

There are two types of auctions in which there is one buyer and many potential sellers: reverse and “name-your-own-price.” These are two of the most popular auction models on the Internet.

Reverse auctions. When there is one buyer and many potential sellers, one uses a reverse auction (also called a bidding or tendering system). In a reverse auction, the buyer places an item for bid (or tender) on a request for quote (RFQ) system. Potential suppliers bid on the job, reducing the price sequentially (see Exhibit 2.10). In electronic bidding in a reverse auction, several rounds of bidding take place until the bidders do not reduce the price. The winner is the one with the lowest bid (assuming that only price is considered). Reverse auctions are primarily a B2B or G2B mechanism. (For further discussion and examples, see Chapter 5.)

The name-your-own-price model. Priceline.com pioneered the “name-your-own-price” model. In this model, a would-be buyer specifies the price (and other terms) they are willing to pay to any willing and able seller. Priceline.com presents consumer requests to sellers who can fill as much of the guaranteed demand as they wish at prices and terms requested by buyers or Priceline.com searches its own database that contains vendors’ lowest prices and tries to match supply against requests. Priceline.com asks customers to guarantee acceptance of the offer if it is accepted by sellers.

EXHIBIT 2.10 The Reverse Auction Process
at or below the requested price by giving a credit card number. This is basically a consumer-to-business (C2B) model, although some businesses use it too. Priceline.com is currently selling multiple products and services, mainly across the following product categories: a travel service that offers leisure airline tickets, hotel rooms, and rental cars; a personal finance service that offers home refinancing and home equity loans; an automotive service that offers new cars; credit cards; and long-distance calling plans. In 2000, the company teamed up with Hutchison Whampoa of Hong Kong, to offer a range of services in Asia.

Many Sellers, Many Buyers

When there are many sellers and many buyers, buyers and their bidding prices and sellers and their asking prices are matched, considering the quantities on both sides. Stocks and commodities markets are typical examples of this configuration. Buyers and sellers can be individuals or businesses. Such an auction is called a double auction.

BENEFITS, LIMITATIONS, AND IMPACTS OF E-AUCTIONS

Electronic auctions are becoming important selling and buying channels for many companies and individuals. E-auctions enable buyers to access goods and services anywhere auctions are conducted. Moreover, almost perfect market information is available about prices, products, current supply and demand, and so on. These characteristics provide benefits to all.

Benefits of E-Auctions

A listing of the benefits of e-auctions to sellers, buyers, and e-auctioneers is provided in the following Insights and Additions box.

<table>
<thead>
<tr>
<th>Insights and Additions</th>
<th>Benefits of Electronic Auctions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BENEFITS TO SELLERS</strong></td>
<td><strong>BENEFITS TO BUYERS</strong></td>
</tr>
<tr>
<td>Increased revenues from broadening customer base and shortening cycle time</td>
<td>Opportunity to find unique items and collectibles.</td>
</tr>
<tr>
<td>Optimal price setting, determined by the market (more buyers).</td>
<td>Chance to bargain instead of buying at a fixed price.</td>
</tr>
<tr>
<td>Sellers can gain more customer dollars by offering items directly (disintermediation). Also saves on the commission to intermediaries. (Physical auctions' fees are very expensive compared to e-auctions.)</td>
<td>Entertainment. Participation in e-auctions can be entertaining and exciting.</td>
</tr>
<tr>
<td>Can liquidate large quantities quickly.</td>
<td>Anonymity. With the help of a third party, buyers can remain anonymous.</td>
</tr>
<tr>
<td>Improved customer relationship and loyalty (in the case of specialized B2B auction sites and electronic exchanges).</td>
<td>Convenience. Buyers can trade from anywhere, even with a cell phone; they do not have to travel to an auction place.</td>
</tr>
<tr>
<td><strong>BENEFITS TO E-AUCTIONEERS</strong></td>
<td></td>
</tr>
<tr>
<td>Higher repeat purchases.</td>
<td></td>
</tr>
<tr>
<td>Higher repeat purchases. Jupiter Media Metrix (jmm.com) found that auction sites such as eBay tend to garner higher repeat-purchase rates than the top e-commerce B2C sites, such as Amazon.com.</td>
<td></td>
</tr>
<tr>
<td>High “stickiness” to the Web site (the tendency of customers to stay at sites longer and come back more often). Auction sites are frequently “stickier” than fixed-priced sites. Stickier sites generate more ad revenue for the e-auctioneer.</td>
<td></td>
</tr>
<tr>
<td>Expansion of the auction business.</td>
<td></td>
</tr>
</tbody>
</table>
Limitations of E-Auctions

E-auctions have several limitations. The most significant limitations are the following:

- **Possibility of fraud.** Auction items are in many cases unique, used, or antique. Because the buyer cannot see the items, the buyer may get defective products. Also, buyers can commit fraud by receiving goods or services without paying for them; thus, the fraud rate is very high. For a discussion of fraud by both buyers and sellers and of fraud prevention, see online Appendix 2A.

- **Limited participation.** Some auctions are by invitation only, whereas others are open to dealers only.

- **Lack of security.** Some of the C2C auctions conducted on the Internet are not secure because they are done in an unencrypted environment and credit card numbers could be stolen during the payment process. Recent payment methods such as paypal.com (Chapter 10) can solve the payment problem. However, some B2B auctions are conducted on highly secure private lines.

- **Limited software.** Unfortunately, there are only a few “complete” or “off-the-shelf” market-enabling solutions that can completely support the functionality required for optimizing auctions.

Impacts of Auctions

Because the trade objects and contexts for auctions are very diverse, the rationale behind auctions and the motives of the different participants for setting up auctions are quite different. Representative impacts of e-auctions include the following:

- **Auctions as a coordination mechanism.** Auctions are increasingly used as an efficient coordination mechanism for establishing an equilibrium in price. An example is auctions for the allocation of telecommunications bandwidth.

- **Auctions as a social mechanism to determine a price.** For objects not being traded in traditional markets, such as unique or rare items, or for items that may be offered randomly or at long intervals, an auction creates a marketplace that attracts potential buyers, and often experts. By offering many of these special items at a single time, and by attracting considerable attention, auctions provide the requisite exposure of purchase and sale orders, and hence liquidity of the market in which an optimal price can be determined. Typical examples are auctions of fine arts or rare items, as well as auctions of communication frequencies, Web banners, and advertising space. For example, winebid.com is a global auction site for wine collectors.

- **Auctions as a highly visible distribution mechanism.** Another type of auction is similar to the previous one, but deals with special offers. In this case, a supplier typically auctions off a limited amount of items, using the auction primarily as a mechanism to gain attention and to attract those customers who are bargain hunters or have a preference for the gambling dimension of the
Auction process. The airline-seat auctions by Cathy Pacific, American Airlines, and Lufthansa fall into this category.

Auctions as a component in e-commerce. Auctions can stand alone or they can be combined with other e-commerce activities. An example is the combination of group purchasing with reverse auctions, as described in EC Application Case 2.3.

- Define auctions and describe how they work.
- Describe the benefits of electronic auctions over traditional (nonelectronic) auctions.
- List the general types of auctions.
- Distinguish between forward and reverse auctions.
- Describe the “name-your-own-price” model.
- List the major benefits of auctions to buyers, sellers, and auctioneers.

Questions

- How is the group purchasing organized at dollardex.com? What services are offered?
- Why does a reverse auction take place?
- Can this model exist without an intermediary?
What are the major limitations of auctions?
List the major impacts of auctions trading on markets.

2.8 BARTERING AND NEGOTIATING ONLINE

ONLINE BARTERING

Bartering, an exchange of goods and services, is the oldest method of trade. Today, it is usually done primarily between organizations. The problem with bartering is that it is difficult to find trading partners. Businesses and individuals may use e-classified ads to advertise what they need and what they offer.

E-bartering (electronic bartering) can improve the matching process by attracting more customers to the barter. In addition, matching can be done faster and as a result, better matches can be found. Items that are frequently bartered online include office, storage, and factory space; idle facilities; as well as labor, products, and banner ads. Representative bartering Web sites include allbusiness.com, intagio.com, ubarter.com, and whosbartering.com. (Note that e-bartering may have tax implications that need to be considered.)

E-bartering is usually done in a bartering exchange, a marketplace in which an intermediary arranges the transactions. These can be very effective. The process works like this:

1. You tell the bartering exchange what you want to offer.
2. The exchange assesses the value of your products or services and offers you certain “points” or “bartering dollars.”
3. You use the “points” to buy the things you need from a participating member in the exchange.

The problem with manual matching by a third-party bartering exchange is that the commission is very high (30 percent or more). (The commission is much lower in an e-bartering exchange; in the range of 5 to 10 percent.) Also, it may take a long time to arrange a transaction in a manual barter.

Bartering sites must be financially secure. Otherwise users may not have a chance to use the points they accumulate. (For further details, see “virtual bartering 101” at fortune.com/smallbusiness and Lorek 2000).

ONLINE NEGOTIATING

Dynamic prices can also be determined by negotiation, especially for expensive or specialized products. Much like in auctions, negotiated prices result from interactions and bargaining among sellers and buyers. However, in contrast with auctions, negotiation also deals with nonpricing terms, such as payment method and credit. Negotiation is a well-known process in the off-line world, for example in real estate, automobile purchases, and contract work. In addition, in cases where there is no standard service or product to speak of, some digital
products and services can be personalized and “bundled” at a standard price. Preferences for these bundled services differ among consumers, and thus they are frequently negotiated.

According to Choi and Whinston (2000), negotiating in the electronic environment is easier than in the physical environment. Also, due to customization and bundling of products and services, it is necessary to negotiate both prices and terms. E-markets allow such negotiations to be conducted for virtually all products and services. Three factors may facilitate online negotiation:

1. Products and services that are bundled and customized.
2. Computer technology that facilitates the negotiation process.
3. Software (intelligent) agents that perform searches and comparisons, thereby providing quality customer service and a base from which prices can be negotiated.

- Define bartering and describe the advantages of e-bartering.
- Explain the role of online negotiation in EC.

2.9 MOBILE COMMERCE

The widespread adoption of wireless and mobile networks, devices, and middleware (software that links application modules from different computer languages and platforms) is creating exciting new opportunities. These new technologies are making mobile computing possible—meaning fully portable, real-time access to information, applications, and tools that, until recently, were accessible only from a desktop computer. Mobile commerce (m-commerce) refers to the conduct of e-commerce via wireless devices. It is also sometimes called m-business when reference is made to its broadest definition (Kalakota and Robinson 2001), in which the e-business environment is wireless.

There is a reason for the strong interest in the topic of mobile commerce. According to the International Data Corporation and Gartner Group, the number of mobile devices is projected to top 1.3 billion by 2004 (predictions made in March 2002). These devices can be connected to the Internet, allowing users to conduct transactions from anywhere. Gartner Group estimates that at least 40 percent of all B2C transactions, totaling over $200 billion by 2004, will be initiated from smart wireless devices. Others predict much higher figures because mobile devices (handsets, PDAs, etc.) will soon overtake PCs as the predominant Internet access device, creating a global market of over 500 million subscribers.

THE PROMISE OF M-COMMERCE

Since 1999, m-commerce has become one of the hottest topics in IT in general and in EC in particular. Mobility significantly changes the manner in which people and customers interact, communicate, and collaborate, and mobile applications are expected to change the way we live, play, and do business. Much of the
Internet culture, which is currently PC-based, may change to one based on mobile devices. As a result, m-commerce creates new business models for E-C, notably location-based applications (which we cover in Chapter 8).

Although there are currently many hurdles to the widespread adoption of m-commerce, it is clear that many of these will be reduced or eliminated in the future. Many companies are already shifting their strategy to the mobile world. Many large corporations with huge marketing presence—Microsoft, Intel, Sony, AT&T, AOL-Time-Warner, to name a few—are transforming their businesses to include m-commerce-based products and services. Nokia emerged as a world-class company not just because it sells more cell phones than anyone else, but also because it has become the major player in the mobile economy. Similarly, major telecommunications companies, from Verizon to Vodafone, are shifting their strategies to wireless products and services. In Europe alone, over 200 companies offer mobile portal services. In the United States, over 2 million subscribers used General Motors’ OnStar in-vehicle mobile services in 2002 (see onstar.com). DoCoMo, the world’s largest mobile portal, with more than 30 million customers in Japan, is investing billions of dollars to expand its services to other countries, via its i-Mode services.

I-MODE: A SUCCESSFUL MOBILE PORTAL

To illustrate the potential spread of m-commerce, let’s examine DoCoMo’s i-Mode, the pioneering wireless service that took Japan by storm in 1999 and 2000. With a few clicks on a handset, i-Mode users can conduct a large variety of m-commerce activities ranging from online stock trading and banking to purchasing travel tickets and booking Karaoke rooms. Users can also use i-Mode to send and receive color images. Launched in February 1999, i-Mode went international in 2000 and had over 15 millions users by the end of that year (nttdocomo.com). Here are some interesting applications of i-Mode:

- **Shopping guides.** Addresses and telephone numbers of the favorite shops in the major shopping malls in Tokyo and other cities are provided with a supporting search engine. Consumers can locate information about best-selling books and then buy them. Users can purchase music online to enjoy anywhere.

- **Maps and transportation.** Digital maps show detailed guides of local routes and stops of the major public transportation systems in all major cities. Users can access train and bus timetables, guides to shopping areas, and automatic notification of train delays.

- **Ticketing.** Airline tickets and movie tickets can be purchased online.

- **News and reports.** Fast access to global news, local updated traffic conditions, the air pollution index, and weather reports are provided continuously.

- **Personalized movie service.** Updates on the latest movies with related information, such as casting and show times, are provided. Also, subscribers can search for their own favorite movies by entering the name of the movie or the name of the movie theater.
Entertainment. Up-to-date personalized entertainment, such as playing favorite games, can be searched easily. Online “chatting” is also provided, and users can send or receive photos. Also, users can subscribe to receive Tamagotchi’s characters each day for only $1 a month. These virtual pets (the translation of their Japanese name means “cute little eggs”) exhibit intelligent behavior; for example, a Tamagotchi cat will purr if you pet it, but “bite” if it is hungry.

Dining and reservations. The exact location of a selected participating restaurant is shown on a digital map. Subscribers can also find a restaurant that provides a meal in a particular price range. Reservations can be made online. Discount coupons are also available online.

Additional services. Additional services such as banking, stock trading, telephone directory searches, dictionary services, and a horoscope are available.

These applications are for individual users and are provided via a mobile portal. An even greater number of applications is available in the B2B area and in the intra-business area. For a complete coverage of m-business applications, see Chapter 8 and Kalakota and Robinson (2001).

2.10 IMPACTS OF E-MARKETS ON BUSINESS PROCESSES AND ORGANIZATIONS

Because the field of EC is relatively new, little statistical data or empirical research on it are available. Therefore, the discussion in this section is based primarily on experts’ opinions, logic, and some actual data. The discussion here is also based in part on the work of Bloch et al. (1996), who approached the impact of e-markets from a value-added point of view. Their model, which is shown in Exhibit 2.11 (page 79), divides the impact of e-markets into three major categories: improving direct marketing, transforming organizations, and redefining organizations. We will look at each of these impacts, in turn.

IMPROVING DIRECT MARKETING

Traditional direct marketing was done by mail order (catalogs) and telephone (telemarketing). According to the U.S. Department of Commerce, in 2001, direct mail generated sales of over $110 billion in the United States, of which only $5 billion was via e-markets. This figure is small, but growing.

Bloch et al. (1996) suggested the following impacts of e-markets on B2C direct marketing:
**Product promotion.** The existence of e-markets has increased the promotion of products and services through direct marketing. Contact with customers has become more information-rich and interactive.

**New sales channel.** Because of the direct reach to customers and the bidirectional nature of communications in EC, a new distribution channel for existing products has been created.

**Direct savings.** The cost of delivering information to customers over the Internet results in substantial savings to senders. Major savings are also realized in delivering digitized products (such as music and software) versus delivery of physical products.

**Reduced cycle time.** The delivery time of digitized products and services can be reduced to seconds. Also, the administrative work related to physical delivery, especially across international borders, can be reduced significantly, cutting the cycle time by more than 90 percent. One example of this is TradeNet in Singapore, which reduced the administrative time of port-related transactions from days to minutes. Cycle time can be reduced through improvements along the supply chain.

**Customer service.** Customer service can be greatly enhanced by enabling customers to find detailed information online. For example, FedEx and other shippers allow customers to trace the status of their packages. Also, software (intelligent)
can answer standard e-mail questions in seconds. Finally, human experts’ services can be expedited using help-desk software.

**Brand or corporate image.** On the Web, newcomers can establish corporate images very quickly. What Amazon.com did in just 3 years took traditional companies generations to achieve. A good corporate image facilitates trust, which is necessary for direct sales. Traditional companies such as Intel, Disney, Wal-Mart, Dell, and Cisco use their Web activities to affirm their corporate identity and brand image.

In addition to the preceding impacts suggested by Bloch et al. (1996), other impacts of e-markets on direct marketing include the following:

**Customization.** EC enables customization of products and services. In contrast, buying in a store or ordering from a television advertisement usually limits customers to a supply of standard products. Dell Computer is the classic example of customization success. Today, customers can configure not only computers, but also cars, jewelry, gifts, and hundreds of other products and services. If properly done, a company can achieve mass customization that provides a competitive advantage, as well as increases the overall demand for certain products and services. Customization will change marketing and sales activities both in B2C and in B2B.

**Advertising.** With direct marketing and customization comes one-to-one or direct advertising, which can be much more effective than mass advertising. This creates a fundamental change in the manner in which advertising is conducted, not only for online transactions, but also for products and services that are ordered and shipped in traditional ways. As we will see in Chapter 4, the entire concept of advertising is going through a fundamental change due to EC.

**Ordering systems.** Taking orders from customers can be drastically improved if it is done online, reducing both processing time and mistakes. Electronic orders can be quickly routed to the appropriate order-processing site. This process reduces expenses and also saves time, freeing salespeople to sell products. Also, when ordering online, customers can configure their own orders and compute the costs, saving time for all parties involved.

**Market operations.** Direct e-marketing is changing traditional markets. Some physical markets may disappear, as does the need to make deliveries of goods to intermediaries in the marketplace. In an electronic marketplace, goods are delivered directly to buyers upon completion of the purchase, making markets much more efficient and saving the cost of the shipment into and from the brick-and-mortar store.

For digitally based products—software, music, and information—the changes brought by e-markets will be dramatic. Already, small but powerful software packages are delivered over the Internet. The ability to deliver digitized products electronically affects (eliminates) packaging and greatly reduces the need for specialized distribution models.

**New sales models such as shareware, freeware, and pay-as-you-use are emerging. Although these models currently exist only within particular sectors, such as the software and publishing industries, they will eventually pervade other sectors.** All of these impacts of e-markets on direct marketing provide companies with a competitive advantage over the traditional direct-sales methods. Furthermore, because the competitive advantage is so large, e-markets are likely to replace many
nondirect marketing channels. Some people predict the “fall of the shopping mall,” and many retail stores and brokers of services (stocks, real estate, and insurance) are labeled by some as soon-to-be-endangered species.

**TRANSFORMING ORGANIZATIONS**

The second impact of e-markets suggested by Bloch et al. (1996) is the transformation of organizations. Here, we look at two key organizational transformations: organizational learning and the nature of work.

**Technology and Organizational Learning**

Rapid progress in EC will force a Darwinian struggle: To survive, companies will have to learn and adapt quickly to the new technologies. This struggle will offer them an opportunity to experiment with new products, services, and business models, which may lead to strategic and structural changes. These changes may transform the way in which business is done. Bloch et al. (1996) believe that as EC progresses, it will have a large and durable impact on the strategies of most organizations.

Thus, new technologies will require new organizational structures and approaches. For instance, the structure of the organizational unit dealing with e-marketspace might have to be different from the conventional sales and marketing departments. Specifically, a company’s e-commerce unit might report directly to the chief information officer (CIO) rather than to the sales and marketing vice president. To be more flexible and responsive to the market, new processes must be put in place. For a while, new measurements of success may be needed. For example, the measures (called “metrics”) used to gauge success of an EC project in its early stages might need to be different from the traditional revenues–expenses framework. However, in the long run, as many dot-coms have found out, no business can escape the traditional revenue–expenses framework.

In summary, corporate change must be planned and managed. Before getting it right, organizations may have to struggle with different experiments and learn from their mistakes.

**The Changing Nature of Work**

The nature of some work and employment will be transformed in the Digital Age; it is already happening before our eyes. For example, driven by increased competition in the global marketplace, firms are reducing the number of employees down to a core of essential staff and outsourcing whatever work they can to countries where wages are significantly less. The upheaval brought on by these changes is creating new opportunities and new risks, and is forcing us into new ways of thinking about jobs, careers, and salaries.

Digital-Age workers will have to be very flexible. Few will have truly secure jobs in the traditional sense, and many will have to be willing and able to constantly learn, adapt, make decisions, and stand by them. Many will work from home.

The Digital-Age company will have to prize its core of essential workers as its most valuable asset. It will have to constantly nurture and empower them and provide them with every means possible to expand their knowledge and skill base.
REDEFINING ORGANIZATIONS
Some of the ways in which e-markets will redefine organizations are presented in the following sections.

New and Improved Product Capabilities
E-markets allow for new products to be created and/or for existing products to be customized in innovative ways. Such changes may redefine organizations’ missions and the manner in which they operate. Customer profiles (see Chapter 4), as well as data on customer preferences, can be used as a source of information for improving products or designing new ones.

Mass customization, as described earlier, enables manufacturers to create specific products for each customer, based on the customer’s exact needs. For example, Motorola gathers customer needs for a pager or a cellular phone, transmits the customer’s specifications electronically to the manufacturing plant where the device is manufactured, and then sends the finished product to the customer within a day. Dell Computer and General Motors use the same approach in building their products. Using the Web, customers can design or configure products for themselves. For example, customers can use the Web to design T-shirts, furniture, cars, jewelry, Nike shoes, and even a Swatch watch. Using mass-customization methods, the cost of customized products is at or slightly above the comparable retail price of standard products.

New Business Models
E-markets affect not only individual companies and their products, but also entire industries. The wide availability of information and its direct distribution to consumers will lead to the use of new business models (e.g., the name-your-own-price model of Priceline.com). Another example of a new business model is that of DM& S Trucking Company, which added an online bidding system. The system not only improved the company’s operations, but eventually expanded to be a matching e-marketplace for small trucking companies, as described in EC Application Case 2.4 (page 84).

Improving the Supply Chain
One of the major benefits of e-markets is the potential improvement in supply chains. A major change is the creation of a hub-based chain, shown in Exhibit 2.12.

Impacts on Manufacturing
EC is changing manufacturing systems from mass production lines to demand-driven, just-in-time manufacturing. These new production systems are integrated with finance, marketing, and other functional systems, as well as with business partners and customers. Using Web-based enterprise resource planning (ERP) systems (supported by software such as SAP R/3), companies can direct customer orders to designers and/or to the production floor within seconds. Production cycle time is cut by 50 percent or more in many cases, especially if production is done in a different country from where the designers and engineers are located.

A n interesting organizational concept is that of virtual manufacturing, which is the ability to run multiple manufacturing plants as though they were at one location. A single company controls the entire manufacturing process, from the supply
of components to shipment, while making it completely transparent to customers and employees. For example, Cisco System works with 34 plants globally, 32 of which are owned by other companies. Each of Cisco's products will look exactly alike, regardless of where it was manufactured. Up-to-the-minute information sharing is critical for the success of this mass-production approach (Pine 1999).

Companies such as IBM, General Motors, General Electric, and Boeing assemble products from components that are manufactured in many different locations, even different countries. Sub-assemblers gather materials and parts from their vendors, and they may use one or more tiers of manufacturers.

EXHIBIT 2.12 Changes in the Supply Chain

a. Traditional Intermediaries

b. Hub-Based Chain
collaboration, and coordination are critical in such multitier systems. Using electronic bidding, assemblers get subassemblies 15 to 20 percent cheaper than before and 80 percent faster (e.g., see the GE case in Chapter 5). Furthermore, such systems are flexible and adaptable, allowing for fast changes with minimum cost. Also, costly inventories that are part of mass-production systems can be minimized.

Build-to-Order. The biggest change in manufacturing will be the move to build-to-order systems. Manufacturing or assembly will start only after an order is received. This will change not only the production planning and control, but also the entire supply chain.

Impacts on Finance and Accounting

E-markets require special finance and accounting systems. Most notable of these are electronic payment systems. Traditional payment systems are ineffective or inefficient for electronic trade. The use of new payment systems such as electronic cash is complicated because legal issues and agreements on international standards are involved. Nevertheless, electronic cash is certain to come soon, and it will

EC APPLICATION CASE 2.4

A NEW MODEL FOR SMALL MOVERS

DM & S is a small trucking company with $1.8 million in annual sales. In early 2000, the U.S. economy started to slow down, and fuel prices increased. DM & S started to lose money, as did many other small movers.

A major problem in the trucking industry is that trucks need to move cargos at certain times, but they may not have a full load. Furthermore, on return trips, trucks are usually not completely full. Unused cargo space is lost revenue. Bert Lampers, owner and CEO of DM & S, had an idea: Create a service in which small moving companies bid on jobs of moving goods for individuals. Customers with flexible moving dates can benefit the most. This is basically a reverse-auction process.

Lampers spent $15,000 to create an auction site, dickerabid.com, for the new service. Once customers place notice of their job on the site, small truckers start to bid. For a trucker with a destination and travel date that matches the customers’ requirements, hauling almost anything is better than going with empty space. Customers can get huge discounts, and winning truckers can earn money to help cover their fuel expenses.

Starting with four truckers and increasing to 20, the auction site increased DM & S’s revenues by $14,000 during the first few months of operation. Additional revenue is generated by advertisers that cater to people who are relocating, such as furniture and window-blind companies. The Web site won third place in Inc.’s Web innovations in 2000.

DM & S is a third-party auction maker, as well as a buyer of small truckers’ services. Larger truckers (moving companies) also have their own Web site, imove.com, which provides a considerable amount of services and information.


Questions

- Why is dickerabid.com useful for a small moving company?
- What kind of service is dickerabid.com providing?
- Compare this model with the Priceline.com model.
- Compare the service provided to an individual who wants to move using dickerabid.com with what is offered at imove.com (check “Moving”).
change how payments are made. It could also change consumers’ financial lives and shake the foundations of financial systems.

Executing an electronic order triggers an action in what is called the back office. Back-office transactions include buyers’ credit checks, product availability checks, order confirmation, changes in accounts payable, receivables, billing, and much more. These activities must be efficient, synchronized, and fast so the electronic trade will not be slowed down. An example of this is online stock trading. In most cases, orders are executed in less than 1 second, and the trader can find an online confirmation of the trade immediately.

One of the most innovative concepts in accounting and finance is the “virtual close,” which would allow companies to close their accounting records within a day. This Cisco Systems project is described in the following Insights and Additions box.

---

**Insights and Additions  Cisco’s Virtual Close**

Cisco Systems, the company that supplies vast networks that connect computers to the Internet, is using technology to develop a product, Virtual Close, with which a company can close its accounting records (its “books”) more quickly. This will be done by connecting the accounting and financial records of an entire company, even one with operations in dozens of countries, via an intranet. Cisco’s infrastructure will permit information sharing almost instantly.

Cisco is implementing such a system for itself. Closing the quarterly accounts used to take up to 10 days. Within 4 years, the chief financial officer worked the close down to 2 days (and significantly cut its cost). Cisco’s goal is to be able to close the books with 1 hour’s notice, on any day in the quarter, by 2002 or 2003.

The advantages for Cisco and any other company that uses Virtual Close are:

- Companies can become proactive, spotting problems at any time, instead of just once a quarter. Problems that would otherwise have remained unseen for months can be quickly addressed and their damage minimized.

- New opportunities can be detected early, allowing companies to exploit them quickly.

- Virtual Close will enable quick “drill down” analysis, which locates the causes of either poor or excellent performance.

- It will bring huge productivity gains related to corporate financial reporting.

Implementing Virtual Close is a lengthy process that may end in failure due to the project’s complexity. However, not implementing it might result in a competitive disadvantage.

---

Impact on Human Resources Management and Training

EC is changing how people are recruited, evaluated, promoted, and developed (Chapter 3). EC also is changing the way training and education are offered to employees. Online distance learning is exploding, providing opportunities that never existed in the past. Companies are cutting training costs by 50 percent or more, and virtual courses and programs are mushrooming.

New e-learning systems offer two-way video, on-the-fly interaction, and application sharing. Such systems provide for interactive remote instruction systems, which link sites over a high-speed intranet (as shown in Chapter 7). At the same time, corporations are finding that e-learning may be their ticket to survival as changing environments, new technologies, and continuously changing procedures make it necessary for employees to be trained and retrained constantly.

List the major parts of Bloch et al.’s model.

describe how EC improves direct marketing.

describe how EC transforms organizations.

describe how EC redefines organizations.

Managerial Issues

Some managerial issues related to this chapter are as follows.

1. How do we compete in the digital economy?
   Although the basic theories of competition are unchanged, the rules are different. Of special interest are digital products and services, whose variable costs are very low. Competition involves both old-economy and new-economy companies. The speed of changes in competitive forces can be rapid, and the impact of new business models can be devastating. As Bill Gates once said, “Competition is not among companies, but among business models.”

2. What about intermediaries?
   Many EC applications will change the role of intermediation. This may create a conflict between a company and its distributors. It may also create opportunities. In many cases, the distributors will need to change their roles. This is a sensitive issue that needs to be planned for during the transformation plan.

3. What organizational changes will be needed?
   Companies should expect organizational changes in all functional areas once e-commerce reaches momentum. At minimum, purchasing will be done differently in many organizations, but introducing models such as name-your-own-price and affiliate programs may also have a major impact on business operations.

4. Should we auction?
   A major strategic issue is whether or not to do auctions. Auctions do have risks, and forward auctions may create conflicts with other distribution channels. If a company decides to do an auction, it needs to select an auction mechanism and determine pricing. These strategies determine the success of the auction and the ability to attract and retain visitors on the site. Auctions also require support services. Decisions about how to provide these services and to what extent to use business partners are critical to the success of repeated high-volume auctions.

5. What should be auctioned?
   Both individuals and companies would like to auction everything. However, is it ethical or even legal to do so? Ask eBay, which is trying, for example, to clean up pornographic auctions by banning some items and directing some items into a “mature audi-
ences” area. Another issue is pirated software, which is offered on about 2,000 auction sites worldwide. In fact, eBay was sued in 2000 by video-game manufacturers Nintendo, Sega, and Electronic Arts for auctioning pirated video games. (For further discussion, see Beato 2000.)

6. Should we have our own auction site or use a third-party site? This is a strategic issue, and there are pluses and minuses to each alternative. However, if a company decides to auction from their own site, they will need to advertise and attract visitors, which may be expensive. Also, the company will need to install fraud-prevention mechanisms and provide other services. Either way, the company may need to consider connectivity to its back-office and logistics system.

7. Should we barter? Bartering can be an interesting strategy, especially for companies that need cash and have some surplus inventory. However, the valuation of what is bought or sold may be hard to determine, and the tax implications in some countries are not clear.

8. What m-commerce opportunities are available? A company should develop an m-commerce strategy if it will be impacted by it. The opportunities presented by m-commerce are enormous, but so are the risks. However, doing nothing may be even riskier. (For further discussion, see Kalakota and Robinson 2001 and Sadeh 2002).

SUMMARY

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

1. E-marketplaces and their components. A marketplace or e-marketplace is a virtual market that does not suffer from limitations of space, time, or borders. As such, it can be very effective. Its major components include sellers, buyers, products (some digital), electronic intermediaries, electronic catalogs, search engines, and more.

2. The major types of e-markets. In the B2C area there are storefronts and e-malls. In the B2B area there are private and public e-marketplaces, which can be vertical (by industry) or horizontal. Different types of portals provide access to e-marketplaces.

3. Supply chains and value chains. A supply chain is the flow of materials, information, money, and services among business partners. The value chain is the series of activities done by an organization to create its products or services. These activities create economic value for which customers are willing to pay. Both concepts are critical to understanding the benefits and limitations of e-commerce.

4. The role of intermediation. The role of intermediaries will change as e-markets develop; some will be eliminated, others will prosper. New value-added services that range from content creation to syndication are mushrooming.

5. Competition, quality, and liquidity in e-markets. Three major e-market issues are strong online competition, the need for quality assurance, and the need for a large number of participating sellers and buyers.

6. Electronic catalogs, search engines, and shopping carts. The major mechanisms in e-markets are electronic catalogs, search engines and software (intelligent) agents, and electronic shopping carts. These mechanisms facilitate EC by providing a user-friendly shopping environment.

7. Types of auctions and their characteristics. In forward auctions, bids from buyers are placed sequentially, either in increasing (English) mode or in decreasing (Dutch) mode. In reverse auctions, buyers place an RFQ and suppliers submit offers in one or several rounds. In “name-your-own-price” auctions, buyers specify how much they are willing to pay for a product or service and an intermediary tries to find a supplier to fulfill the request.
8. **The benefits and limitations of auctions.**

The major benefits for sellers are the ability to reach many buyers, to sell quickly, and to save on commissions to intermediaries. Buyers have a chance to obtain collectibles while shopping from their homes, and they can find bargains. The major limitation is the possibility of fraud.

9. **Bartering and negotiating.**

Electronic bartering can greatly facilitate the swapping of goods and services among organizations, thanks to improved search and matching capabilities. Search engines can facilitate online negotiation.

10. **The role of m-commerce.**

Mobile commerce is emerging as a phenomenon that can provide Internet access to millions of people. It also creates new location-related applications.

11. **The impact of e-markets on organizations.**

All functional areas of an organization are affected by e-markets. Broadly, e-markets improve direct marketing and transform and redefine organizations. Direct marketing (manufacturers to customers) and one-to-one marketing and advertisement are becoming the norm, and mass customization and personalization are taking off. Production is moving to a pull model, changing supply-chain relationships and reducing cycle time. Virtual manufacturing is on the rise. Financial systems are becoming more efficient as they become networked with other business functions, and the human resources activities of recruiting, evaluation, and training are being managed more efficiently due to employees’ interactions with machines.

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**KEY TERMS**

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<td>M-product</td>
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<td>Software (intelligent) agent</td>
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DISCUSSION QUESTIONS

1. Compare marketplaces with marketspaces. What are the advantages and limitations of each?
2. What are the major benefits of syndication to the various participants?
3. Compare and contrast competition in traditional markets with that in digital markets.
4. Discuss the differences between a supply chain and a value chain. How are they related?
5. Explain how NTE provides real-time procurement services (EC Application Case 2.1).
6. Which type of e-marketplace is NTE (EC Application Case 2.1)? Why?
7. The “name-your-own-price” model is considered a reverse auction. However, this model does not include RFQs or consecutive bidding. Why is it called a reverse auction?
8. Discuss the advantages of dynamic pricing over fixed pricing. What are the potential disadvantages of dynamic pricing?
9. Discuss the need for search and software agents in EC and in auctions.
10. Why are sell-side and buy-side markets in the same company usually separated, whereas in an exchange they are combined?
11. Discuss the advantages of m-commerce over e-commerce.

INTERNET EXERCISES

1. Enter arena.com.hk and examine the products and services provided. Which are similar to those offered by NTE? Examine the Global Cargo exchange and other initiatives. Classify the services according to the models presented in Chapter 1.
2. Go to cisco.com, google.com, and cio.com and locate information about the status of the “virtual close.” Write a report based on your findings.
3. Visit ebay.com and examine all the quality-assurance measures available, either for a fee or for free. Prepare a list of the mechanisms.
4. Visit ticketmaster.com, ticketonline.com, and other sites that sell event tickets online. Assess the competition in online ticket selling. What services do the different sites provide?
5. Examine how bartering is conducted online at tradeaway.com, abarter.com, and intagio.com.
6. Enter ebay.com/anywhere and investigate the use of “anywhere wireless.” Review the wireless devices and find out how they work.
7. Enter imandi.com and review the process by which buyers can send RFQs to merchants of their choice. Also, evaluate the services provided in their choice. Also, evaluate the services provided in the areas of marketing, staffing, and travel. Write a report based on your findings.
8. Examine the process used by office.com regarding auctions. Review its reverse auction arrangement with bigbuyer.com. Write a report based on your findings.
9. Enter bidder-network.co.nz/software/ and view all the different types of auction software and auction hosting available. Find what the site has for a company-centric auction and learn about exchanges.
10. Enter ingrammicro.com and go to its IM-logistics product. Identify all the services provided by IM-logistics to both suppliers and buyers.

11. Enter respond.com and send a request for a product or a service. Once you receive replies, select the best deal. You have no obligation to buy. Write a short report on your experience.

12. Enter onstar.com and review its services. Comment on the usability of each.

TEAM ASSIGNMENTS AND ROLE PLAYING

1. Several competing exchanges operate in the steel industry (e.g., newview.com and isteelasia.com). Assign one group to each exchange. Look at its market structure, at the services it offers, and so on. The group then will make a presentation to convince buyers and sellers to join its exchange.

2. Assign each team an auction method (English, Dutch, etc.). Each team should convince a company that wants to liquidate items that its method is the best. Items to be liquidated include:
   a. Five IBM top-of-the-line mainframe systems valued at about $500,000 each.
   b. 750 PCs valued at about $1,000 each.
   c. A real estate property valued at about $10 million.

   Present different arguments for each type of item.

3. Assign teams to major auction sites from your country and from two other countries. Each team should present the major functionalities of the sites and the fraud protection measures they use.

REAL-WORLD CASE

FREEMARKETS.COM REVOLUTIONIZES PROCUREMENT

FreeMarkets.com began in 1995 with an idea: By conducting auctions online, procurement professionals could raise the quality of the direct materials and services they buy while substantially lowering the prices they pay for them.

FreeMarkets.com is a leader in creating B2B online auctions for buyers of industrial parts, raw materials, commodities, and services around the globe. The company has created auctions for goods and services in more than 70 industrial-product categories. In 1999, FreeMarkets.com auctioned more than $2.7 billion worth of purchase orders and saved buyers an estimated 2 to 25 percent.

FreeMarkets.com has helped customers find sources for billions of dollars worth of goods and services in hundreds of product and service categories through its B2B Global Marketplace. FreeMarkets.com also has helped companies improve their asset-recovery results by getting timely market prices for surplus assets through the FreeMarkets.com Asset Exchange.

FreeMarkets.com Asset Exchange addresses even the most complex transactions over a flexible trading platform. It bridges the gaps in information, geography, and industry that make traditional surplus-asset markets so inefficient. With a combination of online and onsite sales venues, FreeMarkets.com Asset
Exchange offers the following solutions to help companies meet their asset recovery goals:

- **FreeMarkets.com online markets.** An effective method for asset disposal that delivers timely, market-based pricing.
- **FreeMarkets.com online marketplace.** A self-service venue where sellers post available assets. This service is useful when getting the right price is more important than a quick sale.
- **FreeMarkets onsite auctions.** Live auction events that are ideal for clearing a facility, time-critical sales, or selling a mix of high- and low-value assets.

When the commercial situation demands, the company also combines onsite auctions and online markets into a single asset-disposal solution.

FreeMarkets Onsite Auctions provide the following:

- **Asset-disposal analysis.** Market makers work with sellers to determine the best strategy to meet asset-recovery goals.
- **Detailed sales offering.** The company collects and consolidates asset information into a printed or online sales offering for buyers.
- **Targeted market outreach.** FreeMarkets conducts targeted marketing to a global database of 500,000 buyers and suppliers.
- **Event coordination.** The company prepares the site, provides qualified personnel, and enforces auction rules.
- **Sales implementation.** FreeMarkets summarizes auction results and assists in closing sales.

Emerson Corp., a global diversified manufacturing firm, faced the difficult challenge of consolidating millions of dollars of printed circuit board (PCB) purchases across 14 global divisions. The company wanted to consolidate its supply base and standardize data to understand future buying patterns. It turned to FreeMarkets for assistance. Using an RFQ, Emerson received 755 bids and achieved the following:

- Obtained buy-in from 14 divisions to participate in a corporate-wide event.
- Standardized data on more than 1,000 PCB designs across 19 divisions.
- Introduced several qualified suppliers from Asian countries.
- Consolidated its supplier's base from 58 to nine.

The company saved more than $10 million in 1 year.

**Questions**

1. Enter freemarkets.com and explore its current activities and services.
2. Look at five customer success stories. What common elements can you find?
3. If you work for a company, register and examine the process as a buyer and as a seller.
4. Compare the use of FreeMarkets.com to the option of building your own auction site.
5. How does surplus asset recovery become more efficient with FreeMarkets?