INFORMATION SYSTEMS, ORGANIZATIONS, AND STRATEGY III

10.1 INTERACTIVE SESSION: TECHNOLOGY

There is probably a 7-Eleven store in your neighbor- hood, and it's a convenient place for picking up a can of Coke or a quick ham-and-cheese sandwich. It's the largest convenience retailer in the world and the number one convenience store chain in the United States, with 5,300 stores. This company started out about 75 years ago as an ice-dock operator. When refrigerators started replacing iceboxes, the manager of each store asked customers one-by-one what items they'd like to stock in their new appliances. By asking customers directly and stocking only the items customers most wanted, the company grew and prospered. Over time, the company moved away from its roots, losing touch with customers along the way. It had no means of knowing what sold in each store and allowed vendors to decide what to stock on its shelves. Although large vendors, such as Coca-Cola and Frito-Lay, had powerful information systems for analyzing what they sold in individual stores, other vendors didn't have such systems.

Moreover, the vendors' systems were designed to maximize opportunities for their businesses, not for 7-Eleven. 7-Eleven stores are not all alike. What their cus- tomers want depends a great deal on the neighborhood and region of the country where they are located. What sells well in Boston may not work in Texas. Without detailed knowledge of its customer and sales patterns, 7-Eleven was unable to determine which items were selling well, or which items were most profitable to sell in the first place. This made a difference to the company's bottom line because of missed sales opportunities, lower profits, and excess store inventory, some of which consisted of perish- able goods that had a very short shelf life. Profit mar- gins are very thin in the convenience store business, so a quarter-point increase in sales volume can spell the difference between success and failure. In 2004, 7-Eleven installed Hewlett-Packard servers and networking switches in all its U.S. stores to implement a Retail Information System. This sys- tem collects data from point-of-sale terminals in every store about each purchase made daily by its six million U.S customers and transmits the information in real time to a 7-terabyte Oracle database operated by Electronic Data Systems (EDS).

7-ELEVEN STORES ASK THE CUSTOMER BY ASKING THE DATA With this database, 7-Eleven keeps track of its purchase transactions and analyzes them to amass information about customer demand, pricing, and interest in new products, such as the Diet Pepsi Slurpee. Analysis of the data shows which items are selling well in which stores, which items customers are most interested in,

seasonal demand for items, and which items are most profitable to sell in the first place. Management uses this information to identify sales trends, improve product assortment, eliminate slow-moving products from inventory, and increase same-store sales by stocking products that are high in demand. Insights gleaned from the data also help 7-Eleven develop new products such as its fresh-food offerings that attract new customers and increase transaction size. The system provides store managers with information on daily, weekly, and monthly sales of each item to help them determine which items to order and the exact quantities they will need for their stores.

Managers use this information plus their on-the-spot knowledge of the neighborhood to make final ordering decisions. Store managers enter orders into workstations or handheld computers by 10 A.M. each day. The sys- tem consolidates these orders and transmits them to 7-Eleven's suppliers. Orders are consolidated four times daily, one for each U.S. time zone in which 7-Eleven stores operate. 7-Eleven's orders for fresh food items are aggregated at 7-Eleven headquarters and transmitted to fresh food suppliers and bakeries for preparation and delivery the next day. Thanks to information technology, 7-Eleven has come full circle in its ability to respond to the needs of the customer. By tracking and analyzing its data, it knows its customers as intimately as it did when store owners talked to each customer face-to-face.

10.2 THE INTERNET'S IMPACT ON COMPETITIVE ADVANTAGE

The Internet has nearly destroyed some industries and has severely threatened more. The Internet has also created entirely new markets and formed the basis for thousands of new businesses. The first wave of e-commerce transformed the business world of books, music, and air travel. In the second wave, eight new industries are facing a similar transformation scenario: telephone services, movies, television, jewelry, real estate, hotels, bill payments, and software. The breadth of e-commerce offerings grows, especially in travel, information clearinghouses, entertainment, retail apparel, appliances, and home furnishings. For instance, the printed encyclopedia industry and the travel agency industry have been nearly decimated by the availability of substitutes over the Internet. Likewise, the Internet has had a significant impact on the retail, music, book, brokerage, and newspaper industries. At the same time, the Internet has enabled new products and services, new business models, and new industries to spring up every day, from eBay and Amazon.com to iTunes and Google. In this sense, the Internet is "transforming" entire industries, forcing firms to change how they do business. Because of the Internet, the traditional competitive forces are still at work, but competitive rivalry has become much more intense (Porter, 2001). Internet technology is based on

universal standards that any company can use, making it easy for rivals to compete on price alone and for new competitors to enter the market. Because information is available to everyone, the Internet raises the bargaining power of customers, who can quickly find the lowest-cost provider.

Substitute products or services Enables new substitutes to emerge with new approaches to meeting needs and performing functions. Customers' bargaining power Availability of global price and product information shifts; bargaining power to customers. Suppliers' bargaining power Procurement over the Internet tends to raise bargaining power over suppliers; suppliers can also benefit from reduced barriers to entry and from the elimination of distributors and other intermediaries standing between them and their users. Threat of new entrants The Internet reduces barriers to entry, such as the need for a sales force, access to channels, and physical assets; it provides a technology for driving business processes that makes other things easier to do.

 "How can we use information systems to improve operational efficiency, and improve customer and supplier intimacy?" This will force you to critically examine how you perform value-adding activities at each stage and how the business processes might be improved. You can also begin to ask how information systems can be used to improve the relationship with customers and with suppliers who lie outside the firm value chain but belong to the firm's extended value chain where they are absolutely critical to your success. Here, supply chain management systems that coordinate the flow of resources into your firm, and customer relationship management systems that coordinate your sales and support employees with customers are two of the most common system applications that result from a business value chain analysis.

Amazon.com made Internet history as one of the first large-scale retail companies to sell over the Web: in 2004 it hit $4 billion in online revenues, and by 2006 its sales guidance estimates $10 billion in revenue. It has grown to become one of the largest Internet retailers on earth.

THE VALUE WEB
Improving Decision Making: Using Web Tools to Configure and Price an Automobile Software skills: Internet-based software Business skills: Researching product information and pricing The Web is an online library of consumer information besides being a marketplace where goods and services are purchased. The Web has an extraordinary influence on off-line purchases: more than 80 percent of new car buyers research their dream cars online first (Laudon and

Traver, 2006). In this exercise, you will use software at Web sites for selling cars to find product information about a car of your choice and use that information to make an important purchase decision. You will also evaluate two of these sites as selling tools. Let's assume your seven-year-old car has tried your patience one too many times, and you've decided to purchase a new automobile. You have been interested in a Ford family car and want to investigate the Ford Fusion (if you are personally interested in another car, domestic or foreign, investigate that one instead).

Go to the Web site of CarsDirect (www.carsdirect.com) and begin your investigation. Locate the Ford Fusion. Research the various specific automobiles available in that model and determine which you prefer. Explore the full details about the specific car, including pricing, standard features, and options. Locate and read at least two reviews if possible. Investigate the safety of that model based on the U.S. government crash tests performed by the National Highway Traffic Safety Administration if those test results are available. Explore the features for locating a vehicle in inventory and purchasing directly. Finally, explore the other capabilities of the CarsDirect site for financing. Having recorded or printed the information you need from CarsDirect for your purchase decision, surf the Web site of the manufacturer, in this case Ford (www.ford.com). Compare the information available on Ford's Web site with that of CarsDirect for the Ford Fusion. Be sure to check the price and any incentives being offered (which may not agree with what you found at CarsDirect). Next, find a dealer on the Ford site so that you can view the car before making your purchase decision. Try to locate the lowest price for the car you want in a local dealer's inventory. Which site would you use to purchase your car? Why? Suggest improvements for the sites of CarsDirect and Ford.

LEARNING TRACK MODULE
The Changing Business Environment for Information Technology. This Learning Track surveys the major changes in the global business environment facing firms today.
Summary
1. Identify and describe important features of organizations that managers need to know about in order to build and use information systems successfully. Managers need to understand certain essential features of organizations to build and use information systems successfully. All modern organizations are hierarchical, specialized, and impartial, using explicit routines to maximize efficiency. All organizations have their own cultures and politics arising from differences in interest groups, and they are affected by their surrounding environment.

Organizations differ in goals, groups served, social roles, leadership styles, incentives, types of tasks performed, and type of structure. These features help explain differences in organizations' use of information systems.

2. Evaluate the impact of information systems on organizations. Information systems and the organizations in which they are used interact with and influence each other. The introduction of a new information system will affect organizational structure, goals, work design, values, competition between interest groups, decision making, and day-to-day behavior. At the same time, information systems must be designed to serve the needs of important organizational groups and will be shaped by the organization's structure, tasks, goals, culture, politics, and management. Information technology can reduce transaction and agency costs, and such changes have been accentuated in organizations using the Internet. Information systems are closely intertwined with an organization's structure, culture, and business processes. New systems disrupt established patterns of work and power relationships, so there is often considerable resistance to them when they are introduced. The complex relationship between information systems, organizational performance, and decision making must be carefully managed.

3. Demonstrate how Porter's competitive forces model and the value chain model help businesses use information systems for competitive advantage. In Porter's competitive forces model, the strategic position of the firm, and its strategies, are determined by competition with its traditional direct competitors but also they are greatly affected by new market entrants, substitute products and services, suppliers, and customers. Information systems help companies compete by maintaining low costs, differentiating products or services, focusing on market niche, strengthening ties with customer and suppliers, and increasing barriers to market entry with high levels of operational excellence. The value chain model highlights specific activities in the business where competitive strategies and information systems will have the greatest impact. The model views the firm as a series of primary and support activities that add value to a firm's products or services. Primary activities are directly related to production and distribution, whereas support activities make the delivery of primary activities possible. A firm's value chain can be linked to the value chains of its suppliers, distributors, and customers. A value web consists of information systems that enhance competitive- ness at the industry level by promoting the use of standards and industry-wide consortia, and by enabling businesses to work more efficiently with their value partners.

4. Demonstrate how information systems help businesses use synergies, core competences, and net- work-based strategies to achieve competitive advantage. Because firms consist of multiple business units, information systems achieve additional efficien- cies or enhanced services by tying together the operations of

disparate business units. Information systems help businesses leverage their core competencies by promoting the sharing of knowledge across business units. Information systems facilitate business models based on large networks of users or subscribers that take advantage of network economics. A virtual company strategy uses networks to link to other firms so that a company can use the capabilities of other companies to build, market, and distribute products and services. In business ecosystems, multiple industries work together to deliver value to the customer. Information systems support a dense network of interactions among the participating firms.

5. Assess the challenges posed by strategic information systems and management solutions. Implementing strategic systems often requires extensive organizational change and a transition from one sociotechnical level to another. Such changes are called strategic transitions and are often difficult and painful to achieve. Moreover, not all strategic systems are profitable, and they can be expensive to build. Many strategic information systems are easily copied by other firms so that strategic advantage is not always sustainable. A strategic systems analysis is helpful.