ESSENTIALS OF MANAGEMENT

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Information Technology and e-Commerce

Objectives

After studying this chapter and doing the exercises, you should be able to:

1 Summarize the demands information technology places on the manager's job.

2 Describe positive and negative consequences of information technology for the manager.

3 Discuss the impact of the Internet on customer and other external relationships.

4 Explain the effects of the Internet on internal company operations.

5 Pinpoint factors associated with success in e-commerce.

Jerry Driggs, chief operation officer of Little Earth, took four months one winter to move his business onto the NetSuite system. (The system features a *dashboard*—software that presents corporate information such as sales data and customer service requests on a PC in colorful graphics, similar to an automobile speedometer.) Little Earth sells funky eco-fashion products, such as a handbag made with recycled license plates. Today half of the company's 50 employees use the system to manage their production, sales, and financial operations. "Once you see it is so intuitive, you wonder how we ran the business before," says Driggs.

In fact, Driggs ran the business by the seat of his pants, and it showed. Because the company had no system to measure its production requirements or level of raw materials, much of which came from China, it took about six weeks to make and ship a handbag. And Little Earth constantly struggled with cash problems because Driggs would often buy more trim pieces than he needed. "You used to see dollars sitting on the shelves," he says. Now, using NetSuite, Driggs can monitor his purchase orders and inventory levels, and the system even alerts him when he is running low on closures and other parts. The result: Little Earth has

481

slashed its shipping time to three days. "All those things that used to drive us crazy are literally at out fingertips," says Driggs.[1]

The story about the fashion company CEO relying on dashboard software to help operate his business efficiently illustrates how information technology has become incorporated in the manager's job. This chapter highlights how information technology, including e-commerce, influences the manager's job. Although e-commerce is part of information technology, it is described separately here because of its profound impact on both the manager's job and the conduct of the business. Your present knowledge of information technology, including computers, provides the necessary technical background for understanding this chapter.

INFORMATION TECHNOLOGY AND THE MANAGER'S JOB

Learning Objective 1

Summarize the demands information technology places on the manager's job.

Information technology changes the work methods of workers in a wide variety of jobs. For example, office workers are rarely out of touch with their computers, and associates in auto supply stores use computerized databases to search for the availability of replacement parts. Managerial workers also feel the profound influence of information technology. In this section we look at the heavy demand information technology places on managers, as well as the specific impact of wireless devices.

Increased Demands Placed on Managers

From the perspective of work methods, the landscape of a manager's job looks substantially different. Instead of handing work to an office assistant, the manager now types, sends, and receives his or her own messages, and makes appointments on a palm-sized computer. Our concern here, however, is with the broader implications of the changes created by information technology. Management today must build an organization that constantly transforms itself because information technology increases competition. For instance, Mark Kolko, the CEO of a supplier of industrial motors, said there is no such thing as a loyal customer anymore because other vendors can be found so readily through the Internet.[2]

Managers must develop and respond continuously to new technologies, new types of businesses, and new people in the form of employees and customers. Information technology itself changes so rapidly that managers must adapt themselves to the changes, and help others adapt. For example, managers expect and prepare for productivity dips while workers adapt to a new companywide software system.

PLAY VIDEO ▶

INFORMATION TECHNOLOGY AND E-COMMERCE

"Go to academic.cengage.com/ management/dubrin and view the video. What other types of information technology systems might be useful to Peet's?"

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1 Spencer E. Ante with Jena McGregor, "Giving the Boss the Big Picture," *Business Week*, February 13, 2006, pp. 50–51.
2 Interview with Mark Kolko, CEO of Power Equipment Co., Rochester, New York, October 14, 2006.

Another general issue with technology, including information technology, is how the development and spread of the new technology increases the importance of innovating to remain competitive. The continuous development of technology decreases product life cycles, creating more pressure on managers and workers involved in the development and manufacture of products.

Information and communications technology is at the center of the technological revolution. This technology is used in most business firms and provides an integral part of many systems, such as inventory control. Information technology makes globalization more practical because it allows ready access to employees all over the world at nominal cost. The same technology makes it feasible to customize many industrial products by combining special features with standard features, such as a Dell computer to meet your personal preferences.

The sampling of technological changes just mentioned illustrates why information technology pushes managers into a continuous learning mode. Even if the manager is not an expert on how to use information technology to customize mass-produced products, the manager still requires a working understanding of the process. Otherwise, he or she will seem foolish when asked questions.

The Wireless Environment, Including Wi-Fi

A specific, direct consequence of information technology comes from managers' use of wireless communication devices to facilitate their work from different locations. For almost a century, managers used wired telephones to stay in touch with the office. In the modern environment, a rapidly evolving number of devices give managers more constant access to the office and to customers. Cell phones, personal digital assistants (such as the BlackBerry), and laptop computers are standard in the manager's tool kit.

Many managers use laptop computers away from the office for the same purposes they would use a desktop computer when in the office. Managers who travel find laptops particularly convenient for preparing daily reports as well as processing e-mail and conducting Internet searches while on the road. The growing availability of Wi-Fi has enhanced the value of laptop computers because the Internet can be accessed even when an electric outlet is not available. (*Wi-Fi* refers to wireless fidelity, a high-speed, high-capacity network built on radio signals.) Most business-oriented hotels and restaurants now offer Wi-Fi networks, as do Internet cafés. A current limitation to Wi-Fi is that hackers can penetrate these networks easier than they can cell phones and wired Internet access.

To use most mobile devices effectively, the manager must be able to tolerate a miniaturized keyboard and have sharp vision. Also note that not every manager finds these devices comfortable or productive. For example, many managers and professionals still prefer paper-based desk planners over personal digital assistants. And many managers can wait until they return to the office to obtain information through e-mail and the Internet so they can enjoy the comforts of a large monitor.

THE POSITIVE AND NEGATIVE CONSEQUENCES OF INFORMATION TECHNOLOGY

Learning Objective **2**

Describe the positive and negative consequences of information technology for the manager.

Information technology is integrated into the everyday work of first-level and middle-level managers and staff professionals. Top-level managers also rely on PCs and laptops to conduct their work. Furthermore, executives who depend on office assistants to access their e-mail, or open Web pages, are extremely rare. The vast majority of executives are information tech-savvy. Here we look at both the advantages and disadvantages of information technology as part of the manager's job.

Positive Consequences of Information Technology for the Manager

An information technology revolution that did not help managers, other workers, and organizations perform better would not last. The following description of the positive consequences of IT emphasizes its benefits to managerial work. Exhibit 14-1 outlines these potential advantages.

Improved Productivity and Teamwork

A major justification for installing information technology is its capability for improving productivity. Information technology facilitated much of the slimming down of organizations. A reduction in staffing leads to increased productivity, providing that the sales volume remains constant or improves. For example, most banks found they could reduce the number of branches and consolidate customer service into centralized call centers. From the perspective of the job seeker, a negative side to improved productivity has been slow job growth.

Small business owners can increase their productivity in many ways by exploiting information technology. An advanced application of IT is using online services to find sources of investment capital. The business owner posts a message to which potential investors (venture capitalists) respond.

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exhibit 14-1   **Positive Consequences of Information Technology for the Manager**

Information technology can help the manager work smarter.

1. Improved productivity and teamwork
2. Increased competitive advantage
3. Enhanced business models
4. Improved customer service and supplier relationships
5. Enhanced communication and coordination, including the Virtual Office
6. Quick access to vast information (e.g. dashboard)
7. Enhanced analysis of data and decision making
8. Greater empowerment and flatter organizations
9. Time-saving through employee self-service
10. Monitoring work and employee surveillance

Finding investors online can be quicker than extensive letter writing and telephone-calling campaigns.

Information technology enhances teamwork by allowing team members to maintain frequent contact with each other through e-mail and pagers. Even if the group cannot hold an in-person meeting, team members can give electronic feedback to each other's ideas. Furthermore, with extensive use of IT, teammates can work in geographically dispersed locations. (The virtual office will be described later.)

Increased Competitive Advantage

Effective use of information technology can give a firm a competitive advantage. Information technology enables companies to conduct business in ways that would be impossible without such technology. For example, it would be difficult to buy and sell used cars throughout the country without using the Internet, such as done through eBay. The alternative would be to use a combination of toll-free telephone numbers along with faxing photos of the vehicles. Today, not using modern information technology makes a company noncompetitive. Imagine how embarrassing it would be for a company to have neither a Web site nor e-mail for interacting with customers and suppliers. Today, even low-tech establishments like restaurants and sub shops often have Web sites and e-mail addresses.

Enhanced Business Models

A *business model* refers to a company's general plan for earning money, such as Victoria's Secrets selling merchandise through toll-free telephone numbers, by mail, physical stores, and online. By using information technology, Victoria's Secrets has expanded its method of distribution. Information technology assists not only in direct selling but also in maintaining inventory and targeting expensive catalogs to the right potential buyers. Business strategy expert James Champy cites the Dell model as being dependent on information technology: Build to order while reducing costs substantially and creating a direct path to the consumer. This model would not work without information technology. The Internet enables a tech-savvy company like Dell to extend the model even further, smoothly interacting with suppliers and providing new channels to customers.[3] Note that an enhanced business model is another way of gaining competitive advantage.

Improved Customer Service and Supplier Relationships

Advances in information technology, including networking, can lead to improved customer service and smoother working relationships with suppliers. Customer service improves when service representatives can immediately access information to resolve a customer problem. USAA, a large financial services firm, provides a model for the industry in terms of prompt service. The company sells insurance directly to the public, without the use of external sales representatives or insurance agents. Policyholders can call an 800 number to receive immediate answers to complex questions such as

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3 James Champy, "Technology Doesn't Matter—but Only at Harvard," *Fast Company,* December 2003, p. 119.

how much rates will increase if a 16-year-old family member becomes a licensed driver.

Supplier relationships can be more productive when suppliers and purchasers are part of the same network. Large retailers such as Wal-Mart authorize some of their suppliers to ship and stock goods based on electronic messages sent from point of purchase to the suppliers' computers. When inventory gets low on a fast-moving item, supplies are replenished automatically without a retail store official having to make a phone call or send a letter.

Another development to improve customer services is the **extranet,** a secure section of a Web site that only visitors with a password can enter. Many financial services firms use an extranet to allow customers to manage accounts and trade stocks online. The extranet is also used to share inventory or customer information with suppliers, send information to vendors, and sell products and services.

Enhanced Communication and Coordination, Including the Virtual Office

Nowhere is the impact of information technology on the manager's job more visible than in communication and coordination. By relying on information technology, managers can be in frequent contact with group members without being physically present. They can also be part of the **virtual office**, in which employees work together as if they were part of a single office despite being physically separated. Highly coordinated virtual office members form a virtual team. Such teams are groups of geographically separated coworkers who are assembled using information technology to accomplish a task.

Virtual teams rarely meet face-to-face. They are sometimes established as temporary structures to accomplish a specific task such as developing a companywide mentoring program. At other times virtual teams assume an ongoing responsibility such as providing input for the future direction of the organization. Geographically dispersed workers, such as those working in different countries or in different parts of the same country, are sometimes assigned to virtual teams.

The virtual office and virtual teams conduct much of the work through virtual meetings, a gathering of participants in scattered locations using videoconferencing or e-mail. A videoconference enables people to see and hear each other through real-time video. Virtual meetings can accommodate from 4 to 200 people. Large firms often establish their own videoconferencing centers, whereas smaller firms typically rent a center as needed. Videoconferencing can enhance productivity by reducing travel costs and time, and also appeals to workers who fear flying and dislike going through airport security.

Frequent electronic contact with company employees, customers, and suppliers enhances coordination. The alternative is for the manager to communicate primarily when back at the office. A high-tech manager is never away from the office—even if he or she would like to be!

Virtual teams, virtual meetings, and other means of communicating via information technology have created the necessity for **e-leadership,** or providing leadership to people when their work is mediated by information

extranet
A secure section of a Web site that only visitors with a password can enter.

virtual office
Employees who work together as if they were part of a single office despite being physically separated.

e-leadership
Providing leadership to people when their work is mediated by information technology.

technology. Instead of a warm smile and a handshake, the leader might send a congratulatory note by e-mail. Or the leader might set up a chat room to obtain input from workers about a controversial or complex issue. The general idea is that the e-leader relies heavily on information technology to build and maintain relationships with group members.[4]

intranet
(or company intranet) A Web site for company use only.

Quick Access to Vast Information

Information technology gives managers quick access to vast amounts of information. A careful library researcher could always access vast amounts of business-related information. Advances in information technology, however, allow for fingertip access if the manager has the right computer search skills. For example, a sales manager might want a targeted list of prospects for her company's new pool tables. She uses an electronic database to locate sporting goods stores in her region, ranking them by revenue and zip code to streamline her sales strategy.

A major contributor to accessing information quickly is the company **intranet**, a Web site for company use only. Workers at all levels can use the intranet for critical information such as inventory levels, new product development, and sales. According to WiseGeek.com, executives make regular use of an intranet for such purposes as accessing bottom-line information like quarterly profit/loss reports, company stock reports, profiles of key employees and customers, and meeting minutes.[5] Google uses an intranet to collect employee suggestions for improving the company's products and services. Employees from all departments are expected to regularly submit ideas to advance the company.

The Web-based dashboard described in the chapter opener might be classified as a type of intranet. The essential idea behind a dashboard is that it places all the computerized data the manager, business owner, or corporate professional might need in one place. Instead of a batch of reports to integrate, the dashboard generates key data in an easy-to-read, constantly updated dashboard-style readout. For a dashboard to be highly valuable, the manager must first identify the company's critical drivers (or success factors). These typically include revenue and sales data, and marketing data such as new sales leads. Other drivers include customer satisfaction, and worker productivity and satisfaction. Lewis Farsedakis, the owner of the cosmetics firm Blinc Inc., says, "The dashboard [supplied by NetSuite] enables me to measure the business results on a daily basis. It also enables me to catch business problems as they emerge, as opposed to later."[6]

Although dashboards have a scientific, slick appearance they provide useful readouts only if they are based on accurate data. For example, is someone who clicked on your Web site to receive product information truly a sales lead? Or is a sales lead someone who has received the production information and has requested that a representative visit his or her company?

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4 Bruce J. Avolio and Surinder S. Kahai, "Adding the 'E' to E-Leadership: How It May Impact Your Leadership," *Organizational Dynamics,* No. 4, 2003, pp. 325–326.
5 "What is an Intranet?" http://www.wiseGEEK.com, accessed October 17, 2006.
6 The information about dashboards and the quote are from Mark Henricks, "Dashing Looks," *Entrepreneur,* August 2006, p. 60.

Enhanced Analysis of Data and Decision Making

Closely related to gathering a wider array of information, information technology allows for better analysis of data and decision making. Managers at business firms of all sizes now analyze data better to improve efficiency. A before-and-after example follows:

The office manager of a large medical practice in Birmingham, Michigan, observed that during December, January, February, and the first half of March many patients cancelled their appointments. As a result, revenue for the medical group was down during these months. The medical staff as well as the office manager accepted these cancellations as a reality of medical practice. The office manager then decided to conduct a computerized statistical analysis of which patients in particular had the most cancellations. It was found that, in general, older patients as well as others with mobility problems had the highest number of cancellations during the most severe part of winter. The partial solution to the cancellation problem was for a member of the office staff to telephone older patients and those with mobility problems in advance and encourage them to visit the office along with the suggestion of having a family member or friend drive them to the office. The outreach program, based on an analysis of patient data, reduced wintertime cancellations 40 percent.

Another way in which information technology helps managers make better decisions is through gathering multiple inputs on an online document before taking action. A **wiki** is a password-protected Web page that allows for the collaboration of multiple users. Each contributor can add ideas to the document or plan, plus make suggestions for improving the suggestions of other contributors. Visualize a manager posting on the company wiki a proposal for reducing retirement costs. He suggests reducing the pension of every retiree by $60 per month. One of the collaborators on the document writes, "You better not rush into this. The negative publicity for our company could be enormous." Several other collaborators agree with the comment about the bad publicity, so the manager decides to look for another way to reduce costs.

The two main benefits of wikis are boosting group productivity, and serving as a business knowledge base where information is stored and readily accessed. Informative, a Brisbane, California-based marketing company, found that using as wiki reduced the amount of group e-mails and intranet traffic required to accomplish projects.[7]

Greater Empowerment and Flatter Organizations

The widespread use of information technology gives more workers access to information they need for decision making. As a result, more workers can be empowered to make decisions. Fewer layers of management are needed to act as information conduits. Instead, workers at lower levels access information directly through computer networks. Information technology therefore

wiki
A password-protected Web page that allows for collaboration of multiple users.

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7 Amanda C. Kooser, "Get Wiki with It: Boost Group Productivity—and Cut Down on e-Mails—with Wiki," *Entrepreneur*, April 2005, p. 28.

provides line employees with the documents they need to perform their jobs more effectively and make decisions on their own.

Time Saving Through Employee Self-service

Another important way in which information technology benefits managers is when employees are able to serve themselves in some areas rather than requiring managerial or staff assistance. Managers are freed from the need to supervise routine activities. Also, from the standpoint of top management, fewer managers and staff support need to be hired.

A notable example of information technology–based employee self-service is the electronic travel and expense reporting (T&E) system used at Cisco Systems Inc. Employees submit expense reports through an intranet and browser. When an employee logs on to the system, it registers charges from his or her corporate American Express card. The employee then adds out-of-pocket expenses and the system generates a travel and expense report. Within four days, the employee receives the reimbursement by direct deposit to his or her bank. Expense reports submitted by paper took 21 days for reimbursement at Cisco.

Another advantage to the company is that the system can spot discrepancies and send the e-form back to the employee for clarification. A suspicious form can be routed for audit approval. However, after all the proper information is in place, the system can generate the credit card payments to American Express and cash reimbursements to the employee. By automating the process, Cisco auditors boosted the number of claims they can review annually from 19,000 to 35,000. The firm saves money by paying off credit card debt faster. Additionally, the cost of processing an expense report went from upwards of $25 down to $3.

Cisco now uses many of the same self-service techniques to improve its internal travel reservation system. Jennifer Loftin, manager of T&E automation, says, "It's letting managers and employees focus on high-value activities."[8]

Monitoring Work and Employee Surveillance

Automation in the workplace not only changes how employees labor, it changes the ability of management to measure and monitor the work, and the workers. In many jobs—especially in manufacturing and the more mechanical service industries—employees are increasingly held to standards derived from metering or measuring the work. Management also has new responsibilities and tools to oversee employee behavior in the wired workplace. Closer monitoring of work might be perceived as an advantage of information technology from the perspective of some managers. However, some workers and managers as well might perceive such surveillance to be a *negative* feature of information technology. The topic of computer-aided monitoring of work will be reintroduced in Chapter 15 about controls. One example of technology-based employee surveillance will therefore suffice for now:

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8 Samuel Greengard, "Technology Finally Advances HR," *Workforce*, January 2000, pp. 38–39.

An employee called in sick to Scott McDonald, CEO of Monument Security in Sacramento, California. The CEO decided to investigate. He had already informed his staff of 400 security guards and patrol drivers that he was installing Xora, a software program that tracks workers' whereabouts through surveillance technology on their company cell phones. A Web-based "geo-fence" around work territories would alert the boss if workers strayed or even drove too fast. (The technology also enabled McDonald to route workers more efficiently.) So when McDonald logged on, the program told him exactly where the worker was—and it wasn't in bed with the sniffles. "How come you're eastbound on 80 heading to Reno right now if you're sick?" asked the boss. There was a long silence—the sound of a job ending— followed by "You got me."[9]

What is your opinion of the fairness of using Xora to track the where- abouts of workers? Also, does a worker have the right for an occasional "mental health day" at Reno, Nevada?

Negative Consequences of Information Technology

Information technology continues to make extraordinary contributions to organizational productivity. Nevertheless, the same exciting technology produces some unintended negative consequences. Even when these negative consequences do not affect the manager directly, he or she usually plays a major role in dealing with the consequences. For example, if extensive use of information technology deteriorates customer service, the manager faces angry customers and discouraged employees. Awareness of these potential problems can help managers prevent them from occurring.

1. *Wasting time at the computer.* One subtle problem occurs when managers or other employees become **computer goof-offs.** They spend so much time attempting new computer routines and accessing information of question- able value that they neglect key aspects of their jobs. Some managers, for example, would prefer to surf the Internet for low-value information than to confront an employee about a discipline problem. Lost productivity is a major problem as workers surf the Internet for nonwork reasons. According to an Accountemps survey of senior executives, workers spend an average of 56 minutes per day with nonwork-related Internet use.[10] A related prob- lem is bandwith waste, as workers download complex graphics and videos (especially with the popularity of YouTube). Legal liability may surface when workers transfer or display sexually explicit content because such material may be interpreted as creating a hostile work environment. E-mail and Internet-born viruses may work their way into the company's information technology system as a by-product of surfing.

2. *Repetitive-motion disorders.* As was described in Chapter 7, information tech- nology contributes to repetitive motion disorders found in the workplace. In addition to well-designed workplaces, improved technology may decrease

computer goof-offs
Employees who spend so much time attempting new computer routines and accessing information of questionable value that they neglect key aspects of their job.

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9 Kristina Dell and Lisa Takeuchi Cullen, "Snooping Bosses," *Time,* September 11, 2006, p. 62.
10 Survey cited in "Workers Dawdle on Net an Hour a Day, Firm Says," *Rochester (NY), Democrat and Chronicle,* August 22, 2005, p. 10D.

repetitive-motion disorders. Voice recognition systems enable computer users to dictate commands into word processors, thereby cutting back on keyboarding. The software is cumbersome at present because it has to be adapted to an individual user's speech patterns, including pronunciation and accents. Dictation software now allows for continuous speech, rather than pauses between words as in the past. But watch out for the "Wreck a nice beach" problem. (Repeat "Wreck a nice beach" a few times until you get the joke.)

3. *Deterioration of customer* service. A problem of considerable magnitude comes from the deterioration in customer service that sometimes accompanies information technology. Many banks, for example, force customers with a service problem to call a toll-free number rather than allowing them to deal with a branch representative. A voice-response system instructs the customer to punch in lengthy account numbers and make choices from a complicated menu. The process is time-consuming and impersonal, and difficult for customers unfamiliar with information technology. A related problem occurs when highly automated customer-service operations appear unfriendly and detached. An extensive investigation into self-service technologies uncovered several areas of customer discontent. Self-service machines were often broken, Web sites were down, personal identification numbers failed to work, and items were not shipped as promised.[11] (The same study also found many positive features of employee self-service such as being able to order goods 24/7.)

4. *Dealing with baffled consumers.* Another challenge for managers in dealing with consumers in the information age is that some electronic products are baffling to use for many people. As a result these customers become dissatisfied customers, and the manager may have to deal with angry customers and poor sales of a particular product. A case in point are advanced digital cameras that come with a 125-page operator's manual—not including the software guide. Analysts attribute some of the blame to falling electronics prices, which leaves less money to spend on after-sales service. The problem for managers is that many consumers may finally be getting fed up. People are embracing the latest gadgets with less enthusiasm than for previous generations of technology, partly because the new consumer electronics are difficult to comprehend. A small industry of information technology technicians who make house calls has arisen to help baffled consumers. One such national chain is Geeks on Wheels. However, there is a limit to how many baffled customers are willing to pay an outside firm to help them work their information technology gadget.

5. *Wired managerial workers.* As implied in the discussion of wireless communication, information technology results in wired managerial workers. Being electronically connected to the office at all times leads many managers and professionals to complain that their employers expect them to be always available for consultation. Many managers, for example, are expected to bring pagers, laptop computers, and cell phones on vacation so they can

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11 Mary Jo Bitner, Amy L. Ostrom, and Matthew L. Meuter, "Implementing Successful Self-Service Technologies," *Academy of Management Executive,* November 2002, p. 110.

respond to inquiries from the office and customers. The spreading use of Wi-Fi intensifies the problem because there are more opportunities to remain linked to the office. Another contributor to mobile computing, and keeping managers connected to the office, are key fobs that enable employees get beyond corporate firewalls from anywhere. The devices establish a private network for access to e-mail and intranets.[12] A problem noted with devices such as a BlackBerry is that managers sometimes make decisions too quickly because instant communication lends itself to superficial thinking. Instead of reflecting on a problem, the manager dashes back an answer to a problem.[13]

6. *The encouragement of nonproductive multitasking.* A major negative consequence of information technology is that it encourages inappropriate multitasking. Using several electronic devices at once often interferes with a person's ability to concentrate carefully on the major problem at hand. Computerized information encourages multitasking to the point that may managers feel they are wasting time unless they are attempting two tasks at once, such as talking on a cell phone and accessing e-mail at the same time. The problem is that diminished concentration often leads to poorer-quality work. "Multitasking doesn't look to be one of the great strengths of human cognition," according to James C. Johnston, a research psychologist at NASA. "It's almost inevitable that each individual task will be slower and of lower quality."[14] Another way to understand the potential hazards of multitasking is to personalize the problem. If you were a passenger in an airplane going through a storm would you want the pilot to be chatting on the cell phone or reading e-mail while commandeering the plane?

THE IMPACT OF THE INTERNET ON CUSTOMERS AND OTHER EXTERNAL RELATIONSHIPS

Learning Objective 3

Discuss the impact of the Internet on customer and other external relationships.

The Internet profoundly affects how business is conducted. Developments of similar magnitude include electricity, the railroad, and the interstate highway system. As a consequence, the Internet also influences managerial work, especially the technical problem-solver role of a manager who might be contributing ideas about such work as marketing, purchasing, and information systems. Even when managers are not directly involved in such specialized activities, they are still concerned with making decisions about the Internet. Here we look at six ways in which the Internet affects external relationships: e-commerce marketing, e-commerce purchasing, changing of intermediaries, enhanced globalization, integrating the old and new economies, and living with increased visibility.

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12 Robert D. Hof, "The Future of Tech: The Power of Us," *Business Week*, June 20, 2005, p. 90.

13 Bill Husted, "Execs Embrace, Lament Always Being in Touch," *The Atlanta Journal Constitution,* http://www.ajc.com, June 9, 2006.

14 Quoted in Jared Sandberg, "Cubicle Culture: Yes, Sell All my Stocks. No, the 3:15 from JFK. And Get Me Mr. Sister," *The Wall Street Journal,* September 12, 2006, p. B1.

The Marketing Side of e-Commerce

The biggest impact on business comes from selling many goods and services to other businesses and consumers over the Internet. Eighty percent of business conducted on the Net today takes place between firms (B2B, or business-to-business) rather than with individual consumers. Business-to-business sales online are running about $800 billion per year, whereas e-tailing sales are approximately $130 billion. Online shopping, however, still accounts for only about 5 percent of all retail sales. According to Shop.org, retail sales in general are growing about 3 percent per year, where online growth is in double digits.[15] Michael Dell is one of many influential business executives who believe that online business will continue to grow.[16]

The influence of the Internet on marketing is far greater than on sales conducted online because many consumers first research a product online and then make a purchase at a store. A specific example of the interrelationship between online and offline selling might occur in this manner: A person reads a print ad about a Web site, visits the Web site to learn about a specific product, and then visits the store to make the purchase.

E-commerce affects managerial work in two major ways. First, the manager must be familiar with e-commerce to suggest strategies for marketing over the Internet and resolving problems. Second, managers who formerly worked directly with salespeople (such as coaching and motivating) may have fewer subordinates. One Web specialist might replace 50 face-to-face salespeople. The manager, with fewer people to supervise, would spend more time developing business strategy and perhaps interacting with a few major customers. Exhibit 14-2 presents some technical details managers need to know in working with e-commerce.

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exhibit 14-2   **How to Make Your Web Site Pop**

Allan Gorman, director of Bandspa, a marketing and branding consultant firm in Montclair, New Jersey, offers the following five tips for companies trying to make a splash on the Web:

1. *Wow them from the first page*. First impressions mean everything on the Web, so your site's front page must shine in order to be effective. A company's front page, for example, should forgo bandwidth-heavy graphics and instead feature a bulleted list of services and a simple, readily accessible way to contact the owner for an estimate or additional information. Subsequent pages can showcase your portfolio, testimonials from satisfied customers, and links to free e-newsletters.

2. *Make it user friendly*. Ease of use equates to both a pleasant visiting experience and marketing effectiveness. Use clear language, useful links, and navigation bars to steer customers in the right direction.

3. *Make them eager to return soon*. Attracting visitors is important, but persuading them to return is even more important. Create long-term customers by incorporating relevant, self-assessment tests, surveys, and other tools with related products and services

(Continued)

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15 Data reported in Mindy Fetterman, "Retailers' Online Business Burgeons: Travel is Biggest Part of Growing Internet Sales," *USA Today* syndicated story, May 24, 2006; James Mehring, "Cash Registers are Ringing Online," *Business Week*, March 5, 2007, p. 24.

16 "Michael Dell: Still Betting on the Future of Online Commerce and Supply Chain Effectiveness," *Knowledge @Wharton*, http://knowledge.wharton.upenn.edu/, September 6, 2006.

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exhibit 14-2   **How to Make Your Web Site Pop** *(Continued)*

that your business provides. This ensures an educational and interactive experience for the customer and is an effective marketing tool for your business. Start with a simple biweekly newsletter, a blog, or a chat forum on a topic of interest to your customers.

4. *Get back to basics.* Browse through a few sites and you'll quickly discover that accessing information can be a challenge. To make sure your visitors don't get turned off by poor navigation, broken links, and irrelevant information, be sure to give them a clear explanation of your product or service, making sure to highlight exactly what makes your firm and its offerings unique.

5. *Give 'em the royal tour.* When designing your site, put yourself in your customers' shoes. What do they want to see or know? What format suitably presents this information? How can you keep them interested and make the experience fun?

Source: Bridget McCrea, "Make Your Website Pop," *Black Enterprise,* November 2005, p. 70.

A largely unanticipated positive consequence of e-commerce is that many firms are beginning to generate more revenue from small, niche products. According to *Wired* Editor-in-Chief Chris Anderson, the Internet continues to cut the cost of finding and distributing products. As a result, the Internet facilitates the creation of new markets for obscure books, movies, and similar products that never made it to local stores and theaters. These products lie at the long, tailing-off part of the demand curve as depicted by the normal curve. Most physical retailers need to conserve their available space for products that sell well. Today niche products can be stocked efficiently in warehouses or superstores and sold to anyone throughout the world via the Internet.[17] In the past, only a few customers would order by mail, and this service was not always available. Keep in mind, however, that hit products still make up for a large percentage of Internet sales, even if *misses* are getting more play. For example, industry data suggest that misses will not outsell hits at Netflix and Amazon for another decade. Also, hits are still the driving force in the music business.[18]

The Purchasing Side of e-Commerce

An important consequence of e-commerce is that it sometimes enables companies to purchase more efficiently than they could by speaking to sales representatives or purchasing through catalogs over the telephone. Many companies assume that both customers and suppliers prefer to conduct business with them over the Internet. For example, a company cannot stay on the General Electric–approved supplier list unless the company is willing to accept orders and inquiries online.

Companies realize smaller transaction costs and a time saving by purchasing over the Web. As a result, product prices tend to be lower than when purchasing

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17 Chris Anderson, *The Long Tail: Why the Future of Business is Selling Less of More* (New York: Hyperion, 2006).

18 Lee Gomes, "Many Companies Still Cling to Big Hits To Drive Earnings," *The Wall Street Journal,* August 2, 2006, p. B1; Gomes, "It May Be a Long Time Before the Long Tail Is Wagging the Web," *The Wall Street Journal,* July 26, 2006, p. B1.

through sales representatives or catalogs. The purchaser can also ask questions online about products and services. A good starting point for any company wanting to purchase over the Internet would be to visit http://www.yahoo.com/business. The manager or professional can quickly locate companies that offer the product or service he or she needs, and then make inquiries.

Purchasing over the Internet saves time because purchasing agents spend less time talking to and being entertained by sales representatives. Nevertheless, e-commerce has not completely eliminated the human touch in business. Many big deals are still made over lunch and on the golf course, and executives tend to purchase from people they like. Furthermore, many well-established companies that have worked hard to develop their brand names refuse to join buyer exchanges. The established companies are concerned that online buying through an exchange or open market often results in the lowest bidder (sometimes an unknown supplier) getting the sale. Business is conducted with customers online, but not through the medium of a large buyer exchange. A company with a good reputation would prefer that customers stay loyal to them based on high product quality and after-sale service.

Changing of Intermediaries

The Internet has made it easier for buyers and sellers to deal directly with each other. As a result, many business firms that acted as intermediaries between buyers and sellers have been forced out of business, or have had to redefine themselves. Among the intermediaries affected are travel agents, many retailers, food brokers, and independent sales representatives. For example, airlines are now selling only about 50 percent of their tickets through outside agents. Included in this figure are online travel agencies not directly owned by airlines, further reducing the share of sales for the traditional agency. Most travel agencies that have survived offer services such as arranging complex business trips and vacations where knowledge of the hotels and best airline service is important.

The Internet has badly squeezed music retailers, in terms of both paid legal purchases such as iTunes and illegal downloading or file sharing. Of enormous significance to music publishers, the popular social network MySpace began a program in 2006 to enable its members to sell their own tunes directly on the site, circumventing music publishers entirely. MySpace says it hosts Web pages for more than 3 million recording artists with bands of many different sizes.[19]

Although the Internet may be forcing out some intermediaries, others have been created, such as a broker that promises to obtain you the best price for airline tickets. An example of a Web-based intermediary is an online auction for business that locates suppliers who are willing to supply what a company needs at the price the company is willing to pay. Many companies now sell through eBay as well as Amazon.com Inc. and Yahoo Inc. Another Internet-based intermediary is an eBay store that takes care of preparing your offerings for sale on eBay, and also handles the shipping.

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19 Alex Veiga, "MySpace Intrudes on Music's Middlemen: Website to Enable Members to Sell Own Tunes Directly," The Associated Press, September 4, 2006.

The Enhancement of Globalization

The Internet is a driving force in globalization for several reasons. E-mail allows for rapid communication with business partners throughout the world. Being in rapid contact with partners in other countries, such as a company's call center in a country 7,000 miles away, helps bring about a feeling of closeness. Companies throughout the world can trade more readily with each other because so much buying and selling takes place over the Internet.

The Internet facilitates globalization in part because more and more countries throughout the world have developed their telecommunications infrastructure. A case in point is China, which has surpassed the United States in Internet use. According to research conducted by Sohu.com, Chinese Internet users number about 150 million, and possibly up to 200 million. The United States had 154 million active Internet users in January 2006—about one half the population.[20] The vast majority of Web users in China are individuals, not companies. However, still plenty of business firms are included among the online Chinese, thereby contributing to globalization. It is therefore easier for a company like Hewlett-Packard to be in frequent contact with its Chinese subcontractors to review such issues as delivery dates and product quality.

Integrating the New Economy with the Old Economy

Managers at all levels face the challenge of how to integrate the traditional way of doing business (the old economy) with e-business (the new economy). In Net-speak, it is the difference between bricks and clicks. During the initial surge of e-businesses, many Internet-based companies regarded traditional business firms as virtually obsolete. Many predicted that establishments like shopping malls, automobile dealers, and companies that sold hard-copy greeting cards would soon go the way of the dinosaurs. Furthermore, they thought companies that acted as brokers between business firms and suppliers would soon be vaporized (tough talk for being run out of business). By early 2000, that prediction turned into a realization that the vast majority of companies relying strictly on the Internet for sales could not earn a profit, and continue to sustain enormous losses. Today, approximately 50 percent of Web-based businesses earn a profit.

Well-established companies that integrated e-commerce into their marketing and internal operations became the biggest beneficiaries of the Internet revolution. Also, the well-established companies suffer from less business swings. Traditional retailers such as Wal-Mart, Target, Best Buy, and Macy's are attracting more shoppers with enhanced Web sites including easy-to-use search capabilities.[21] Also, virtually every large industrial firm has its own Web site.

At Staples, customers can purchase from Staples' catalog, retail stores, or Web site. Each of these channels is designed to serve as a sales pitch and backup for the others. In terms of channels, there is no effort to sway the

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20 Chinese and U.S. data from Natalie Pace, "China Surpasses U.S. In Internet Use," http://www.Forbes.com, April 3, 2006.
21 Mylene Mangalindan, "Web Sales Boom Could Leave Amazon Behind," *The Wall Street Journal,* January 21, 2005, p. C1.

customers one way or another. "Whatever makes their life easier," comments Paul Gaffney, the company's chief information officer.[22]

Living with Increased Visibility

An unanticipated consequence of the Internet is a different kind of visibility than in the past to which companies must adjust. People who like or dislike the organization can disseminate this information over the Internet, including the placement of personal blogs. Several current Web sites encourage consumers to voice their complaints. Negative comments on the Web can be dismissed as the work of jealous people or kooks, but the exposure carries the potential to badly hurt the corporate image. Companies recognize the need for risk and damage control in a variety of scenarios. For example, management at several large companies purchases a set of potential negative domain names, such as http://www.companyname.sucks.org. In this way, the critics will not be able to launch such a site.

To counteract the downside of increased visibility, management must work extra hard to create fans and to deal openly with the issues that make people dislike you. Suppose a company subcontracts the manufacture of a clothing line to a company that hires prison labor at low wages under punitive working conditions. The company addresses the issue by setting higher standards for subcontractors to minimize negative publicity over the Internet.[23] Another hope is that only a handful of consumers with an ax to grind will bother visiting a negative Web site about your company.

The accompanying Management in Action illustrates the workings of a successful e-business in a basic industry.

management in action

Using e-Commerce to Turn Surplus Steel into Gold

In early 2003, Scott Shapiro, an independent steel broker, was trolling for leads online when he came across an auction site called SteelSalvor. The site provided a way for steel importers or insurance companies to find buyers for their damaged or surplus steel, potentially putting middlemen such as Shapiro out of business. "As a steel broker, I hated it—in capital letters—what the guy was doing," said Shapiro. "But as a businessperson, I thought it was a brilliant idea."

Shapiro promptly flew to Houston to meet with the site's owner, Scott Dawson. Dawson had worked inspecting and selling rejected steel for a marine insurance adjuster before he came up with the idea of putting the surplus steel on a virtual auction block instead. About $5 billion of steel is orphaned in U.S. ports each year, much of it damaged during shipping. Importers and their insurance companies, on the hook for the value of the steel in its pristine state, must then scramble

(Continued)

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22 Tim Hanrahan, "When Worlds Collide," *The Wall Street Journal,* April 28, 2003, p. R4.
23 Esther Dyson, "Mirror, Mirror, on the Wall," *Harvard Business Review,* September–October 1997, pp. 24–25.

management in action (Continued)

Using e-Commerce to Turn Surplus Steel into Gold

to find local salvage buyers. With $100,000 from investors and his own savings, Dawson figured he could put the whole process on the Web.

Shapiro impressed Dawson with ideas to lure new sellers and a hefty Rolodex filled with potential steel buyers. The two men quickly realized they could make great partners. Since then, what had been just another struggling e-marketplace has become a fast-growing and profitable partnership. SteelSalvor collects a 5 percent fee on every sale that meets or exceeds the seller's minimum price. Annual revenues are about $15 million, based on about 20 auctions a month. SteelSalvor signs up about four new bidders a day. With only four employees, and little overhead, "Everything we do is geared toward making a profit," says Shapiro. "You don't grow for growth's sake."

Sellers can auction anything from a 20-ton coil of sheet steel to entire truckloads. SteelSalvor sends e-mails with details about sales to a list of 6,300 registered bidders, most of whom are brokers or smaller manufacturers. Buyers must pay cash, usually via wire transfer. SteelSalvor's roster of regular sellers includes manufacturers such as Honda, which sells odd lots every month,

and Ryerson Tull, which auctions off slow-moving inventory. "SteelSalvor has been saving us a lot of legwork," says Katie Jorgenson, a claims manager with Cargill's steel trading unit. "Their site provides a very good vehicle for customers to gather around. It creates a competitive environment."

Much of SteelSalvor's rapid growth is the result of the 49-year-old Shapiro's won't-take-no-for-an-answer attitude. It took 13 months of phone calls, for instance, before Honda agreed to a trial auction. Shapiro's next frontier is Europe, where he's working with insurance companies on a separate European site.

Questions
1. What contribution does SteelSalvor make to the steel industry?
2. In what way is SteelSalvor's approach to e-commerce an improvement of doing all the buy and selling over the telephone?

Source: Michael Arndt, "An eBay for Steel: Turning Surplus Steel into Gold," *Business Week Small Biz*, Fall 2005, p. 30; http://www.steelsalvor.com.

THE EFFECTS OF THE INTERNET ON INTERNAL OPERATIONS

Learning Objective 4

Explain the effects of the Internet on internal company operations.

Working in an Internet environment affects internal operations as well as relationships with outsiders. Doing business on the Internet is far more complicated than simply taking orders over an electronic catalog. E-commerce often brings about changes in the way in which a company operates. Here we look at several issues influenced by the Internet environment: more effective work processes, a squeeze on profits and pressure toward cost control, dealing with instability and chaos, and data mining.

More Effective Work Processes

The Internet ushered in a new era and transforms the way in which businesses operate internally. Using the Internet, many companies changed

their methods of distributing goods, of collaborating inside the company, and of dealing with suppliers. Technology companies pioneered this use of the Internet to develop more effective work processes and overhaul their operations. In general, the flattening of the business playing field (see the section in Chapter 2 about the *flat world*) has encouraged more effective work processes for companies to stay competitive in a global economy. Information technology makes it is easier to send work offshore and keep a project going 24/7. The Internet and workflow software have reduced the importance of geography. For example, radiologists in Los Angeles might send CAT-scans of the brain to Barcelona, Spain, for diagnosis and interpretation of images.[24]

Here we look at several examples of how the impact of information technology, including the Internet, has improved work processes and operations.

The Ordering and Production of PCs

Ingram Micro, the biggest PC distributor, teamed up with Solectron, a major contract manufacturer of high-technology equipment. Ingram custom-makes PCs inexpensively for brand-name computer companies. Instead of the PC companies handling orders and manufacturing, Ingram and Solectron perform the task for them. The Web-based system speeds up communication and decreases assembly times. The PC companies continue to design and market their products, and handle quality assurance. The difference in operations comes from their alliance with Ingram, which functions as a virtual company.[25] The Web-based system enhances productivity because products are shipped more rapidly.

Exhibit 14-3 presents a step-by-step analysis of the Web-based process for customizing an order for a PC.

Unifying Knob Production at Nissan

Nissan Motor Company faced a problem with its automobile knobs. Because of the difficulty of getting engineers across three worldwide divisions to collaborate smoothly, each division designed its own knob. With 3 million cars sold every year, a lot of money is tied up in knobs. Nissan management decided it needed to improve its operational and manufacturing practices in a highly competitive business environment. So, beginning in 2003, Nissan employed a wide array of Microsoft® technology tools. Now, all divisions integrate their activities. Executives stay in touch wherever they are via personal computers or smart phones using Microsoft software, something that could not be done previously because of incompatible networks. Nissan saved approximately $135 million in a three-year period, shortened its time-to-market cycle, and improved work processes and customer service.[26] And, yes the production of knobs is uniform, saving some money on every Nissan vehicle.
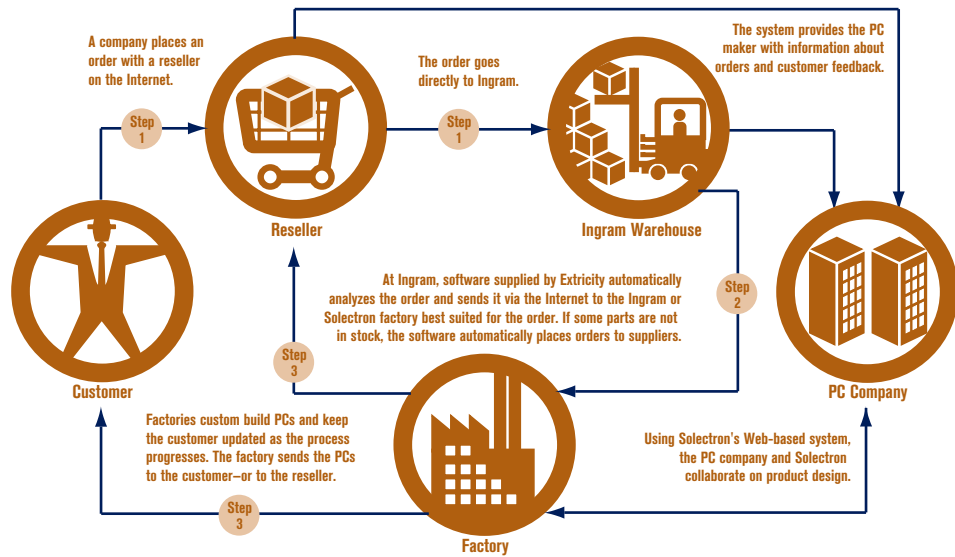
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24 Silviya Svejenova, "Quo Vadis, Europe?" *Academy of Management Perspectives*, May 2006, p. 83.
25 Steve Hamm and Marcia Stepanek, "From Reengineering to E-Engineering," *Business Week e.biz*, March 22, 1999, p. 16.
26 "Business Impact in Manufacturing: The Pace of Change," http://www.microsoft.com/net/business/industry, August 8, 2006.

exhibit 14-3 **The Internet Supply Chain**

A company places an order with a reseller on the Internet.

The order goes directly to Ingram.

The system provides the PC maker with information about orders and customer feedback.

Step 1

Step 1

Step 2

Reseller

Ingram Warehouse

PC Company

At Ingram, software supplied by Extricity automatically analyzes the order and sends it via the Internet to the Ingram or Solectron factory best suited for the order. If some parts are not in stock, the software automatically places orders to suppliers.

Step 3

Customer

Factories custom build PCs and keep the customer updated as the process progresses. The factory sends the PCs to the customer–or to the reseller.

Step 3

Factory

Using Solectron's Web-based system, the PC company and Solectron collaborate on product design.

Source: Solectron Corp., Ingram Micro Inc., and Extricity Inc.

Work Streamlining at a Wine Maker

work streamlining
Eliminating as much low-value work as possible and concentrating on activities that add value for customers or clients.

A major contribution of information technology has been **work streamlining,** the elimination of as much low-value work as possible and concentrating on activities that add value for customers or clients. Streamlining thus minimizes waste and helps perform work more efficiently. You are probably quite familiar with streamlining research by accessing databases from your computer rather than visiting a physical library. An industrial example took place at Trinchero Family Estates, the winery that produces Sutter Hill and other popular brands of wines. Because the wine is low priced, production efficiency receives high priority.

Company management wanted to track the processing of grapes from harvesting to bottling to selling. So Trinchero specialists set up an online system, fed by bar codes on everything from barrels of grapes to bottles of wine. The payoff was a reduction in the cost of handling raw materials by 3 percent. Furthermore, the company avoided spending $100,000 on a system to comply with new bioterrorism rules.[27] The company could now document when and who was handling the grapes. According to the Bioterrorism Response Act of 2002, every U.S. food processing company except farms and restaurants must be able to account for every link in the supply chain.

Squeeze on Profits and Pressure Toward Cost Control

The changing flow of information created by the Internet tipped the balance of power from sellers to buyers. In the past, sellers had almost all the

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27 Heather Green, "The Web Smart 50," *Business Week*, November 21, 2005, p. 94.

information about profit margins and manufacturer's true costs. Industrial buyers and individual consumers can now use the Web to uncover information about costs that puts them on the same level as professionals. Many prospective car purchasers today walk into dealers' offices with copies of factory invoices showing the true dealer cost of a given car model. The dealer can no longer claim, "We are giving you this car at $50 over dealer cost," unless it is true.

Given that the buyer knows so much about costs, the seller must offer products with lower profit margins than in the past. The manager is therefore responsible for controlling costs in any sensible way possible including reducing turnover, minimizing expenditures, and using the Internet for purchasing!

Data Mining

Data mining is yet another useful application of information technology to business, yet also is linked to the Internet because some of the databases are accessed over the Internet. However, companies develop some of their own databases, and others are purchased in CD format. The term **data mining** describes the extraction of useful analyses from the raw mass of business transactions and other information. Data mining derives its name from the similarities between searching for valuable business information in a large database, and mining a mountain to find valuable ore.[28] Insurance companies use data mining to help price insurance policies, particularly automobile policies. For example, a revamped pricing model used by Allstate Corp. considers data such as the driver's credit history, allowing the company to predict more accurately how many claims a driver is likely to file. The underlying human factor here might be that someone with a good credit record tends to be responsible about both paying bills on time and driving safely. Data mining by an insurance company can therefore lead to lower premiums for some drivers, and higher premiums for others.

Data mining helps deliver answers to such questions as "Which customers are most likely to respond to my next promotional mailing, and why?" and "Which job candidates are likely to stay with the company a long time, and why?" Two major outputs of data mining are as follows:

- *Automated prediction of trends and behavior.* Questions that traditionally required extensive hands-on analysis can now be answered directly from the data in rapid fashion. Predictive marketing is a key example. Data on previous promotional mailings can be used to identify the targets most likely to maximize return on investment in future mailings. A certain age group within a particular zip code, for example, might be the most receptive to purchasing smoked meats through the mail.

data mining
The extraction of useful analyses from the raw mass of business transactions and other information.

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28 This section is based closely on Kurt Thearling, "An Introduction to Data Mining," http://www.thearling.com/text/dmwhite/dmwhite.htm, accessed April 2, 2004.

- *Automated discovery of previously unknown patterns.* Data mining tools rifle though databases and identify previously hidden patterns. An example of pattern discovery is the analysis of retail sales data to identify seemingly unrelated products that are often purchased together, such as laser cartridges and video games.

The technique underlying data mining is modeling. In brief, modeling refers to building a model (or general framework) in one situation and where you know the answer and then applying the model to a situation where the answer is yet unknown. You might know how your customers behaved in one situation—such as whether they were receptive to caller ID—and use that model to estimate who might purchase a satellite television service.

SUCCESS FACTORS IN E-COMMERCE

Learning Objective 5

Pinpoint factors associated with success in e-business.

To help synthesize the vast amounts of information about the impact of the Internet, here we list six factors that contribute to success in e-business. Factors that contribute to success in any type of business, such as offering high-quality products that customers want, also apply.[29]

1. *Develop an excellent call center to allow for the human touch.* Despite conducting business over the Internet, many customers want to follow up with telephone calls. Several online investment brokers found that telephone traffic actually increases after online trading is initiated. Many customers want to follow up online inquiries with human beings. Customers often seek the type of clarification that is difficult to obtain by asking questions online.

2. *Keep customers informed about order progress.* The online transaction is not completed until the customer receives the order and is satisfied. If the company experiences shipping delays, it should notify the customer. The problem of delays is especially relevant for complex products such as industrial machinery or custom-made computer servers.

3. *Constantly monitor and update the e-business system.* "There's nothing more annoying to a customer than going through the buying process and not being able to close the transaction," says Sam Taylor of onlineretailpartners. com. "It's very tiring for them to have to re-input the information."[30] Many order systems turn out to be much more complex than their developers realize, and executing an order can be complicated and time-consuming.

29 Adrienne Carter, "Telling the Risky From the Reliable," *Business Week*, August 1, 2005, p. 57; Rosabeth Moss Kanter, "The Ten Deadly Sins of Wanna-Dots," *Harvard Business Review*, January 2001, p. 91; Jennifer Reingold, "What We Have Learned in the New Economy," *Fast Company*, March 2004, pp. 57–58; Beckey Bright, "How Do You Say 'Web'," *The Wall Street Journal*, May 23, 2005, p. R11; Brian Gow and Ben Elgin, "Click Fraud: The Dark Side of Online Advertising," *Business Week*, October 2, 2006, pp. 46–56; Loretta Chao, "What Happens When an e-Bay Steal Is a Fake?" *The Wall Street Journal*, June 26, 2006, p. D1; Joël-Denis Bellavance, «Les Criminels Menacent la Cyberéconomie,» [Criminals Threaten the Cybereconomy] http://www.cyberpress.ca, le 16 octobre, 2006.
30 "Three Overlooked Keys to E-Commerce Success," *What's Working Online,* Special Issue of *Business Week*, 2001, p. 6.

4. *Mix bricks and clicks.* The most successful players in e-tailing give customers the opportunity to purchase online, in stores, and by telephone. Among the many successful companies that offer multiple channels for customers to make purchases are Gateway Computer, Macy's, Panasonic, and Lands End (now a division of Sears).

5. *Develop a global presence.* Customers throughout the world like to shop on American Web sites, which provides a unique opportunity for U.S. companies. Although the U.S. firm must adapt to local tastes and laws, back-office, distribution, and marketing functions translate well overseas. Web veterans suggest that the best way to perform well in foreign markets is to bring in experienced local partners who know the nuances of the market and can work through local rules and regulations. One key regulation is to obtain a local domain name, such as one ending in ".co.uk" for Britain. Several surveys indicate that up to 80 percent of Europeans shop first at Web sites with local domains. So how about CarloRossi.co.fr for selling low-price California wine in France?

6. *Protect customers against fraud.* At the retail level in particular, crime and fraud are rampant on the Internet. To maintain a good reputation and to prevent losing valuable customers, companies need to protect their customers against identity threat. A given customer may now know which Web site led to identify theft, but might become discouraged about making future purchases on the Web. As a consequence, all companies engaged in e-commerce need to protect customers as much as possible through secure Web sites. Another common type of fraud found on the Internet is offering for sale counterfeits (or knockoffs) of luxury brands. The problem is more pronounced on the Internet because prospective purchasers see only a photograph of the merchandise, and even the photo might not be of the product at hand. Auction sites on eBay, Yahoo!, and Amazon cannot be blamed for fake merchandise offered on their sites because they only put buyers and sellers together. However, a person who learns he or she has purchased a fake Gucci wallet on eBay may not want to make another purchase on that site. (eBay as well as other auction sites are aware of this fraud, and try hard to screen out criminals.) Click fraud, or fake hits on your Web site as described in Chapter 3, is another type of Internet fraud, but only directed at companies that advertise on Web sites.

Despite the many positive changes brought about by the Internet revolution, some of its promises fell short. The vast majority of consumers prefer to shop in physically real stores, most automobile dealers don't pay much attention to auto prices listed on the Internet, and personal contacts still dominate high-level business. The Internet supplements and enhances traditional business activity but does not replace the practice of management and personal relationships.

SUMMARY OF
Key Points

1 **Summarize the demands information technology places on the manager's job.**

Management must build an organization that constantly transforms itself as information technology increases competition. To remain competitive requires innovation. Information and communications technology is at the center of the technological revolution and also makes globalization more practical because of ready access to employees everywhere. In general, information technology places managers in a continuous learning mode. Wireless communication devices facilitate work from different locations.

2 **Describe the positive and negative consequences of information technology for the manager.**

Information technology helps the manager work smarter in such ways as improved productivity and teamwork, gaining competitive advantage, enhanced business models, improved customer service and supplier relationships, enhanced communication including the virtual office, quick access to vast information, enhanced analysis of data and decision making, greater empowerment and flatter organizations, time saved through employee self-service, and monitoring work and employee surveillance.

Negative consequences of information technology include wasting time at the computer, repetitive-motion disorder, deterioration of customer service, dealing with baffled customers, wired managerial workers, and the encouragement of nonproductive multitasking.

3 **Discuss the impact of the Internet on customer and other external relationships.**

The biggest impact of the Internet on business comes from selling many goods and services to other businesses over the Internet. Eighty percent of business conducted on the Net today occurs between firms (B2B). The manager must be familiar with e-commerce to help develop strategy, and the manager may work with a reduced staff because of online selling. E-commerce sometimes enables companies to purchase more efficiently than they could through other channels. Managers face the major challenge of how to integrate the traditional way of doing business (the old economy) with e-business (the new economy). Relying strictly on Internet sales is rarely profitable. Well-established companies that integrate e-commerce into their marketing and internal operations have benefited the most from the Net revolution.

Using the Internet, many companies changed their methods of distributing goods, of collaborating inside the company, and of dealing with suppliers. Buyers' power makes it more difficult to charge higher prices, forcing companies to more carefully control costs. Some intermediaries, such as travel agents, have changed because of the Internet. Globalization is enhanced because of the Internet. Companies also experience increased visibility, particularly from angry consumers.

4 **Explain the effects of the Internet on internal company operations.**

The Internet affects companies in a number of ways, beginning with more effective work

processes as encouraged by the flattening of the business playing field through global competition. Information technology facilitates changing the method of distributing goods, and work streamlining. The Internet also squeezes profits and exerts pressure toward cost control, and facilitates data mining. Two outputs of data mining are automated prediction of trends and behavior, and automated discovery of unknown patterns.

5 Pinpoint factors associated with success in e-commerce.

Successful e-businesses provide an excellent call center to allow for the human touch and keep customers informed about order progress. The e-business system requires constant monitoring and updating. Other strategies e-businesses can employ include mixing bricks and clicks, developing a global perspective, and protecting customers against fraud.

KEY TERMS AND PHRASES

Extranet, 486
Virtual office, 486
e-leadership, 486
Intranet (or company intranet), 487

Wiki, 488
Computer goof-off, 490
Work streamlining, 500
Data mining, 501

QUESTIONS

1. What do you regard as the most important way in which a manager can use information technology?

2. What is it about using a BlackBerry (or another brand of personal digital assistant) that so many managers believe increases their productivity?

3. Walk through almost any office, laboratory, or factory today, and you will see most of the workers seated in front of a computer. What did workers do before the advent of computers?

4. Propose a new model for restaurants (other than the quick service type) that will capitalize on automation and information technology.

5. A growing number of managers believe that in order to work on difficult business problems, they must refrain from looking at e-mail for certain blocks of time during the day. In what ways might checking e-mail frequently interfere with problem solving?

6. Many retailing experts predict that retail stores will never die because online shopping cannot replace the experience of visiting a store. What aspects of visiting a store make it preferable to shopping online for so many people?

7. You may have noticed that one of the most frequently offered product categories online is pharmaceuticals. However, the number of physical pharmacies, such as those at CVS, Rite Aid, and Wal-Mart continue to grow. Why do so many consumers continue to choose to purchase pharmaceuticals offline?

SKILL-BUILDING EXERCISE 14-A: Cost Reduction through Information Technology

Work in small groups to identify ten tangible ways that a manager can use information technology to reduce costs. For each item on your list, explain precisely the way in which information technology will reduce costs.

Take into account all types of information technology, from a desktop printer to the Internet. A team leader from each group might present the team's findings to the rest of the class.

SKILL-BUILDING EXERCISE 14-B: Thinking about Data Mining

As implied in the text, data mining boils down to making sense of bits of information embedded in a large mass of information. No matter how exquisite the software performing the data mining, the manager or professional has to have good intuition about the potential value of information or patterns of information. To get you in the right mind-set for data mining, do the following puzzlers.

- You are a manager in an insurance company. Your data mining software notes that people under 30 purchase less sun-blocking lotion, buy more cigarettes, and are more likely to let their auto inspection stickers expire. What sense do you make of these data that could help your insurance company?

- You are a human resources professional. Your data mining software indicates that employees who purchase American flags, watch professional football on TV, and own an SUV tend to stay longer with the company. What implications might this information have for staffing your company?

- You are a marketing specialist at a music company. Your data mining software indicates that people who purchase toothpaste with fluoride, own an umbrella, and give money to charity are more likely to pay to download music. What value for your company might you extract from this information?

INTERNET SKILL-BUILDING EXERCISE: E-Commerce Fraud

Many people, including Bill Gates, the cofounder of Microsoft, are worried that Internet fraud, scam, and spam could severely damage the future effectiveness of the Internet. For example, in 2006, a private citizen in Rochester, New York, placed for sale on eBay the city's ferry although he had no involvement with the ferry. (He did receive a bid of $29.8 million from one jokester.) Working individually or as part of a team, find ten apparent e-mail or Web site frauds. Divide your search between Web sites, including online auctions, and e-mail offerings. For Web sites, attempt to identify the person or organization behind the fraud. What prompted you or your group to conclude that the particular offerings were frauds? Should any level of government be taking action about these apparent frauds?

Case Problem 14-A

Tesco PLC Mines Data to Combat Wal-Mart

When Wal-Mart Stores Inc. entered the British market in 1999 by buying Asda, a chain of stores in England, they expected to dominate. Instead, Wal-Mart's largest non-American operation has been struggling recently, and its top British rival is thriving.

That rival is Tesco PLC, Britain's largest retailer. Its big weapon is information about its customers. Tesco has signed up 12 million Britons for its Clubcard program, giving cardholders discounts in exchange for their name, address, and other personal information. The Clubcard has helped boost Tesco's market share in groceries to 31 percent, nearly double the 16 percent held by Wal-Mart's Asda chain.

The data let Tesco tailor promotions to individual shoppers and figure out quickly how new initiatives are working. After Tesco introduced Asian herbs, cooking oil, and other ethnic foods in neighborhoods with many Indians and Pakistanis, the data showed the new products were also popular with affluent white customers. The company quickly expanded the rollout.

Tesco's computers often turn up counterintuitive results. Shoppers who buy diapers for the first time at a Tesco store can expect to receive coupons by mail for baby wipes, toys—and beer. Tesco's analysis showed that new fathers tend to buy more beer because they are home with the baby and can't go to the pub.

The data-driven strategy puts Tesco at the vanguard in retailing as traditional advertising loses effectiveness. Procter & Gamble, Coca-Cola Co., and Kimberly-Clark are among the consumer-products companies that buy analyses based on Tesco data.

The British retailer is increasingly battling Wal-Mart around the globe. It plans to open a chain of small stores on the West Coast of the United States, its first foray onto Wal-Mart's home turf. Wal-Mart wants to expand in Central Europe, where Tesco has a firm foothold.

Tesco has used its knowledge of shoppers to fight Wal-Mart's core appeal: low prices. After Wal-Mart bought Asda, Tesco searched its database and singled out shoppers who buy the cheapest available item. They were most likely to be tempted by Asda, Tesco figured. Tesco then identified 300 items that these price-sensitive shoppers bought regularly. One was Tesco Value Brand Margarine. Tesco lowered the price of the margarine, along with other products with similar profiles. As a result, shoppers didn't defect to Asda, says Clive Humby, chairman of a British research firm that is majority-owned by Tesco and analyzes customer data for the retailer.

One of the company's private labels is the "Tesco Finest" line that includes duck pâté and cashmere sweaters. The idea for the finest line came a few years ago when Clubcard data showed that higher-spending customers weren't buying wine, cheese, and fruit from Tesco. The retailer upgraded its offerings in those categories.

Discussion Questions
1. What has this case description got to do with data mining?
2. How ethical is Tesco in making use of information about its customers?
3. Advise Tesco management on how they could make even more profitable use of customer data.
4. Wal-Mart has great information technology of its own, so why are they not able to out-compete Tesco in England?

Source: Cecile Rohwedder, "Stores of Knowledge: No. 1 Retailer in Britain Uses 'Clubcard' to Thwart Wal-Mart," *The Wall Street Journal*, June 6, 2006, pp. A1, A16.

Case Problem 14-B

Down the Tubes at utube

YouTube's enormous popularity has created a big headache for another "utube"—a Toledo, Ohio, company that sells used machines that makes tubes. Universal Tube & Rollform Equipment Corp.'s Web site, http://www.utube.com, was inaccessible for most of the week, overwhelmed by millions of people looking for the popular online video site. The confusion took off during the summer of 2006, said Ralph Girkins, Universal Tube's president.

The company with just 17 employees got 68 million hits on its site in August 2006, making it one of the most popular manufacturing websites. The site shut down just before Google Inc. announced plans to buy YouTube for $1.65 billion. A move to a new server didn't help, but a few days later Universal Tube's site was back up after the company added more capacity.

"We couldn't work on it, couldn't do anything," Girkins said one day after the site was back up and running. At least 50 customers called during the week to point out the problem, he said. He hasn't figured out yet how much it has cost to get the site running. "Just get me going. I don't care," Girkins said. "If I miss a $300,000 sale because of a Web site problem, it doesn't make any sense not to fix it."

Universal Tube, based in suburban Perrysburg and founded in 1985, has about $12 million in annual sales. The company is looking to sell the Web address and find a new home for its Web site even though the company uses the http://www.utube.com name to advertise to customers overseas, Girkins said.

"We know we can't keep it," he said. "It's going to be a never-ending problem."

Discussion Questions

1. What would you advise Universal Tube to do about the conflict with YouTube versus utube?
2. Utube preceded YouTube, so should Google (the owner of YouTube) be sued for damages done to Universal Tube?
3. Is there any way in which utube might be able to capitalize on the confusion by YouTube visitors?
4. What does this case tell us about the hazards of e-commerce?

Source: Keith Regan, "You Tube Sued Over Domain Name," *E-Commerce Times*, March 5, 2007; Justin Mann, "UTube Sues You Tube," *TechSpot*, November 2, 2006; John Seewer, "You Tube Causes Headache for Another 'utube'," Associated Press, October 13, 2006.