# Part Two

## Survey of Multimedia Applications

*Tell me and I will forget; show me and I may remember; involve me and I will understand.*

—Chinese proverb

*Imagine if our kids' test scores were as high as their Nintendo scores.*

—Computer Curriculum Corporation advertisement

The purpose of this multimedia application survey is to make you aware of the tremendous growth and development of multimedia throughout business, education, government, industry, and entertainment. The applications are illustrated with full-color pictures to give you an idea of what they are like. Demonstrations of many of these applications have been linked to the *Multilit* Web site.

Perusing these application summaries may give you ideas for multimedia titles you would like to develop. If you have an idea for an application that you do not find mentioned here, chances are it has not yet been developed, and there may be an opportunity for you to be the first to market it. On the other hand, if you find titles described here that are similar to your idea, you will know that the market is already developing, and examining these applications will help you gauge how your idea measures up against the competition. To find out if a title has already been developed, follow the *Multilit* Web site links to online catalogs of multimedia titles.

# 3

# Business and Industry

*After completing this chapter, you will be able to:*

■ **Understand how multimedia is transforming business and industry into a global economy**

■ **Consider the appropriate uses of point-of-sale kiosks, videoconferencing, and just-in-time training systems**

■ **Examine how these technologies are being used in your local community**

■ **Predict whether digital video will replace the VCR as the primary means of distributing video recordings**

■ **Experience what it is like to shop for merchandise on the World Wide Web**

■ **Define the term *day trading* and know why to be careful if you try it**

● Multimedia provides businesses with powerful new ways to reach and service customers. Interactive multimedia merchandising is replacing storefronts with point-of-sale kiosks and home-shopping networks that have increased sales dramatically. Videoconferencing permits face-to-face meetings without traveling. Multimedia teaching systems provide just-in-time training whenever and wherever needed, significantly reducing corporate training costs. Global networking makes these services available anytime, anywhere.

## Interactive Multimedia Merchandising

Anyone who shops has been frustrated by the time and effort required to locate a product you want in the style, color, and size you need. How often have you been told that what you want is out of stock? This section discusses how multimedia computers are being used in specific businesses to solve this problem. These businesses provide interactive merchandising systems that can help you find the product you want in the size you need, and that permit you to comparison-shop without having to spend all day visiting different stores.

### Merchandising Kiosks

If you are tall like the author, and have big feet, Florsheim's merchandising kiosk is a godsend. It lets you shop for shoes by style, size, and color by touching the screen and following voice instructions. The kiosk includes a keyboard that lets you enter your name, address, and credit card number, and the system then arranges for drop-shipping the shoes via UPS overnight.

According to Computer Technology Research (CTR), "The Florsheim stores with kiosks report a 20% overall increase in shoe sales, not only through the automated system but also by freeing store salesmen [and women] to handle more customers faster and more expeditiously." In addition to locating kiosks in more than 300 company-operated stores, Florsheim has placed kiosks in 320 Sears department stores and is experimenting with kiosk placements at selected JC Penney stores. You can also shop Florsheim Online at http://www.florsheim.com.

## Video Merchandising

Olmstead (1993) describes how kiosks are boosting retail sales by providing customers with in-store video search capabilities. FastTake Video kiosks, for example, let consumers preview movie trailers, search titles, and order movies for next-day delivery. Retailers get monthly updates to the database, advertising opportunities, point-of-purchase promotions, demographic targeting, and studio/retailer cross promotion. Installation and field service are provided by IBM Corporation. Figure 3-1 shows the FastTake kiosk. Customers are drawn to the futuristic design of the kiosk and the movement of the trailers playing on the menu. Under Editor's Pics you can find more details about featured videos whose trailers run in a continuous loop on the home screen. Through Just for Kids you find children's videos on the kiosk. Under New Releases you can quickly view this month's new features. In Coming Soon you search for new releases that will be available in the months ahead.

Blockbuster Video, meanwhile, is marketing videos on the Web at http://www.blockbuster.com. In addition to searching movie categories and titles, Blockbuster has a feature called Blockbuster Recommends that helps you find movies that suit your tastes. You rate movies you have seen, and Blockbuster Recommends diagnoses your tastes and suggests new movies based on your personal preferences. The more movies you rate, the more the wizard learns about your personal tastes. You can register online for free to use the service, which remembers your preferences from session to session so you can come back anytime for another personal movie recommendation. Follow the *Multilit* Web site links to learn more about video merchandising.

## Virtual Shopping

The Information Superhighway provides consumers with convenient shopping in any store connected to an online service. This benefits not only the shopper, but also the manufacturer. Online shopping bypasses the traditional distributor to put an information-rich virtual storefront right where a preferred customer is waiting. By enabling the manufacturer to compile and analyze customer habits and buying trends, the network boosts sales, letting vendors market specific products directly to the consumers most likely to buy them.

Consider the Galleria 21 virtual shopping mall at London's Heathrow Airport. A touch-screen kiosk provides online access to dozens of stores, including Royal Doulton, Bally, Waterford Crystal, Burberry's, and The Scotch House.



**Figure 3-1** The FastTake Video Merchandising Kiosk.

Galleria 21 guarantees speedy delivery of purchases almost anywhere in the world. Galleria 21 is multilingual, accepts a wide variety of credit cards, and recognizes worldwide monetary standards.

MontegoNet Solutions designs, manufactures, and markets Internet kiosks for use in bank lobbies, cyber cafés, concert halls, convention centers, hotel lobbies, retail stores, museums, and exhibit halls. Internet kiosks expand the virtual shopping experience by integrating it with personal services such as banking, faxing, and e-mail. NCR and CyberFlyer Technologies are marketing Internet kiosks to banks as replacements for automated teller machines (ATM). In addition to withdrawing and depositing money, consumers can browse through their checking accounts and inspect their 401(k) retirement records. Kinko's has added Internet access to its entire chain of more than 800 copy shops, connecting customers for $12 an hour through ISDN lines provided by GTE. Follow the *Multilit* Web site links to learn more about Internet kiosks.

Virtually any store planning to stay in business in the twenty-first century has established a Web site. Table 3-1 lists the Web addresses of some Internet shopping sites and describes what they do. Anyone with a Web browser can visit these stores online. Secured payment services such as CyberCash have made it safe for consumers to shop online and charge purchases to their credit cards. For more information, follow the *Multilit* Web site link to CyberCash.

**Table 3-1**  World Wide Web Online Shopping Locations

| World Wide Web Address | What You'll Find There |
|---|---|
| http://malls.com | A mall of malls, featuring hundreds of online theme malls, city malls, and global malls |
| http://www.amazon.com | One of the most innovative online shopping sites, originally for books and CDs, now for anything you want to buy or sell |
| http://www.1800flowers.com | The online store for 1-800-flowers, where you can order flowers, gourmet food, and gifts appropriate for any season |
| http://ipw.internet.com | A wide range of information technology products, including network connections, Internet providers, World Wide Web products, digital cameras, video products, and more |
| http://www.isn.com | The Internet Shopping Network (ISN), the first online retailer in the world when it was launched in April 1994; here you'll find an online auction where you can buy or sell a wide range of products including furniture, electronics, jewelry, sporting goods, and toys |
| http://www.wal-mart.com | Online access to the world's largest retail store chain |
| http://www.landsend.com | Lands' End, a direct merchant of traditionally styled, casual clothing for men, women, and children, as well as soft luggage and products for the home |

For an extensive list of Internet shopping sites on the Web, go to www.yahoo.com and search for the key words "online malls" and "online shopping."

## Comparison Shopping

Back in the good old days, when you bought products at a shopping mall and wanted to make sure you were getting a good price, you could walk to three or four different stores and compare prices. In the online shopping world, on the other hand, with tens of thousands of stores online, how can you ever compare all the prices? The answer is easy: You can use online comparison-shopping services.

At the Yahoo shopping service, for example, you can type the name of a product, and within a few seconds, Yahoo will search its directory of thousands of stores and millions

of products. Then you click the option to sort the hits by price, and Yahoo does your comparison shopping for you. The Lycos search engine also offers a comparison shopping service. If you do not know the specific product name you are looking for, Lycos steps you through the process of determining your needs and helps you decide what product to buy. The AltaVista search engine offers Smart Shopping, which lets you search the Web for products to buy, see how other users rate products and merchants, and compare products side by side.

To learn more about comparison shopping, follow the *Multilit* Web site links to the Yahoo shopping service, Lycos Comparison Shopping, and AltaVista Smart Shopping. For a list of other shopping agents, go to www.yahoo.com and search for shopping agents.

# Videoconferencing

Due to the high cost of transportation and the large amount of employee time spent traveling to meetings, videoconferencing is on the rise. More than 50 countries have videoconferencing equipment, and in North America alone there are more than 10,000 videoconferencing rooms. One of the largest public networks is in Kinko's stores. To find out whether your local Kinko's store has videoconferencing, follow the *Multilit* Web site links to Kinko's. Figure 3-2 shows a videoconference in progress.



**Figure 3-2**   A videoconference in progress.

Not everyone can afford expensive videoconferencing equipment and high-speed dedicated communications lines. A lower-cost alternative on the Internet is CU-SeeMe (pronounced *see you see me*), which is one of the more creative product names created in the twentieth century. *CU* stands for Carnegie-Mellon University, where the CU-SeeMe videoconferencing technology was invented in 1993. Anyone who has a multimedia PC with an installed video camera can get on the Internet and establish a real-time videoconference via the CU-SeeMe software. In 1998, White Pine Software acquired complete ownership of the trademark, source code, and all intellectual property rights to CU-SeeMe, which lets up to 50 people participate in a videoconference with chat and an electronic whiteboard. For larger meetings, White Pine offers a more expensive alternative called MeetingPoint. For more information, follow the *Multilit* Web site links to CU-SeeMe, MeetingPoint, and White Pine Software.

One of the fastest-growing videoconferencing networks is based on Microsoft's NetMeeting software. Microsoft lets you download the NetMeeting software for free. In Chapter 42, you will learn how to get online with NetMeeting and use it to share multimedia applications over the Internet. If you have a videoconferencing camera, people in the meeting will also be able to see you. Follow the *Multilit* Web site links to NetMeeting and Microsoft's recommendations for cameras to use with it.

Logitech sells a complete line of videoconferencing cameras that can turn any multimedia PC into a videoconferencing terminal. Prices for the Logitech cameras range from $49.95 to $149.95. They plug in to your computer's USB or parallel port, thereby alleviating the need to open your computer and install a digital video board. Eventually, video lenses the size of pens will be integrated into laptop computers that can be used as portable videoconferencing terminals.

For case studies of different approaches to videoconferencing, follow the *Multilit* Web site link to the *ComputerWorld* focus article in which Burden (1999) describes how

different industries are using NetMeeting and CU-SeeMe as well as Intel's ProShare, Lucent's MMCX, Corel's CorelVideo, White Pine's MeetingPoint, and PictureTel's Concorde and LiveShare products.

## Multimedia Travel Systems

Travel is a natural subject for multimedia because the more you can show customers about where they will travel, what their accommodations will be like, and what they will be able to do at their destination, the more likely the person will enjoy the trip and want to use your service again. That is the goal of Web-based travel services that include fare finders, travel news, featured vacation packages, and online booking for lodging and transportation by land, rail, air, or sea. At travelocity.com, for example, you can find the lowest fare or best schedule on more than 400 airlines.

Fodor's Travel Online offers a comprehensive service that allows you to create a custom mini-guide for more than 110 global destinations. The user can request information about transportation, accommodations, entertainment, and restaurants. In addition to showing lush, graphic images of your dream vacation, Fodor's offers the *Living Language* Web page, which helps you learn more than 500 fundamental travel phrases in French, German, Italian, and Spanish.

To test-drive some online travel services, follow the *Multilit* Web site links to multimedia travel systems.

## Financial Services

Anyone who invests in the stock market knows what a dramatic effect current events have on the day-to-day value of volatile stocks. This is why the financial services industry is using multimedia to provide on-screen windows that display broadcast videos and news feeds from the Cable News Network (CNN), Reuters, Dow Jones News, Knight-Ridder, and CNN's Financial Network (CNNfn). Brokers can buy or sell quickly when news breaks. Follow the *Multilit* Web site links to tour these Web-based news feeds.

EntryPoint is a customizable Internet toolbar that puts a stock market ticker on your computer screen, as illustrated in Figure 3-3. You can customize the ticker to show the precise stocks you want to monitor, and EntryPoint provides you with news stories telling how the companies are doing. Lots of other EntryPoint services are available, including local and national news, weather, sports, online shopping, and e-commerce services. You can download the toolbar for free by following the *Multilit* Web site links to EntryPoint.

The Securities and Exchange Commission (SEC) has a Web site providing access to corporate filings made with federal agencies one day after they are filed with the agency. Located at http://www.sec.gov, the SEC site also contains policy initiatives, speeches, and enforcement actions.
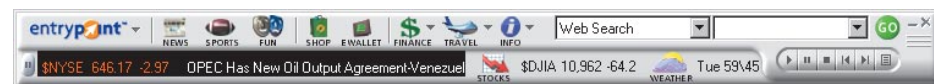


**Figure 3-3** The EntryPoint toolbar displays a customizable stock ticker.

## Real Estate

Another natural for multimedia is the real estate industry. Visiting properties for sale consumes a tremendous amount of time for brokers and buyers alike. Multimedia computers enable buyers to visit hundreds of properties virtually, view on-screen photos of homes, inspect floor plans, see street maps, and study neighborhood demographics to minimize the number of actual visits required. *Computer Technology Research* (page 53) tells how multimedia cut in half the number of houses customers would see before deciding which one to buy, resulting in a 50% increase in sales.

At realtor.com, for example, you can search more than 1.3 million homes, locate the area you want, find a realtor, identify lenders in the area, and plan how to finance your new home. Checklists help prevent you from forgetting something important. Virtual tours let you pan around 360-degree views of selected properties. At ColdwellBanker.com, you can find out information about any neighborhood in the United States, attend virtual open houses, and apply for a mortgage. At HomeQuest Network, you can view videos of selected homes and take a virtual tour online. Follow the *Multilit* Web site links to tour your dream home virtually.

## Corporate Training

Corporate America spends a fortune on training. The American Society for Training and Development (ASTD) estimates that as much as $210 billion is spent on employee training each year; 78% of this amount is the cost of participant time and expenses incurred while attending training sessions. Analyzing these costs, Dennis (1994) notes that "Even a small reduction in participant time could make a large impact; for instance, a 5% reduction in training time could save employee time worth $8 billion a year." International Data Corporation, an Internet market research firm, forecasts an explosive growth of Internet-based training (IBT), from $197 million in 1997 to more than $5.5 billion in 2002, which represents a compounded annual growth rate of nearly 95% (ASTD 1998, *Multilit* Web site).

Many corporations have used multimedia to reduce training costs and improve employee productivity. For example, Figure 3-4 shows how Omaha-based transportation giant



**Figure 3-4**    The Harriman Dispatching Center controls 2,500 trains on 34,000 miles of track.

Photo provided by Union Pacific Railroad.

Union Pacific's Harriman Dispatching Center controls the operation of more than 2,500 trains daily across 34,000 miles of track. Cantwell (1993) notes that Union Pacific used multimedia to reduce training costs by 35% while increasing the speed at which trainees learn by 30% and boosting retention by 40%. The Union Pacific courseware was developed with Allen Communication's Quest authoring system.

Arnold (1993) describes how trainers at AT&T use multimedia to prepare employees to handle blackouts. For obvious reasons, the field managers will not let technicians train on live equipment. So AT&T uses multimedia to simulate a live situation. Figures 3-5 through 3-7 show how AT&T designed their screen displays. On the right of the screen is a text window in which printed instructions appear. On the left is a presentation window in which graphics, animation, and video appear. Beneath that is a smaller window that displays the active part of the tool. Technicians train on dozens of tasks and subtasks until they master the learning objectives. This learning strategy saved AT&T considerable costs by eliminating the need to fly 2,000 technicians to corporate headquarters for training.

Large libraries of multimedia training materials are available. For example, the ITC Learning Corporation publishes the Enterprise Learning System consisting of more than 700 titles used by more than 5,000 companies. Lesson libraries include instrumentation, information technology, operator performance, call center training, PC skills, regulatory compliance, technical/vocational skills, and basic skills. The Instrument Society of America (ISA) publishes a series of online courses covering analyzers, control valves, digital instrumentation, electronic maintenance, industrial measurement, process control calibration, control safety, pneumatic maintenance, and troubleshooting. Interactive Media Communications (IMC) publishes a series of CD-ROMs and videotapes dealing with laboratory and operator safety. Follow the *Multilit* Web site links to learn more about the ITC, ISA, and IMC courseware libraries.

## Mass Market Applications

Multimedia is wide open for entrepreneurs who can make a lot of money dreaming up ways to use it in mass market applications. For example, nearly everyone is concerned about their appearance, and choosing hairstyles has mass
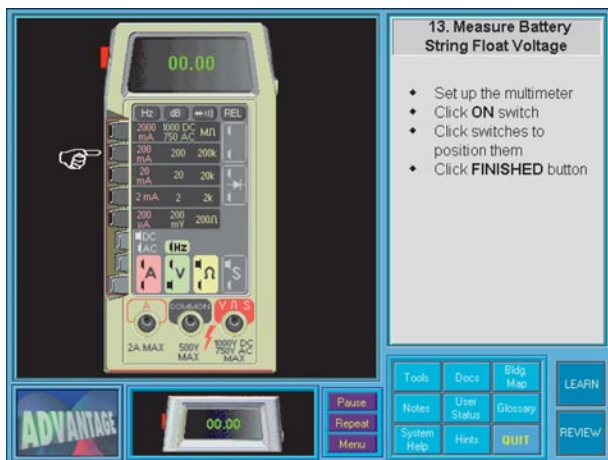


**Figure 3-5**   Measuring battery string float voltage in AT&T's Regen Hut application.
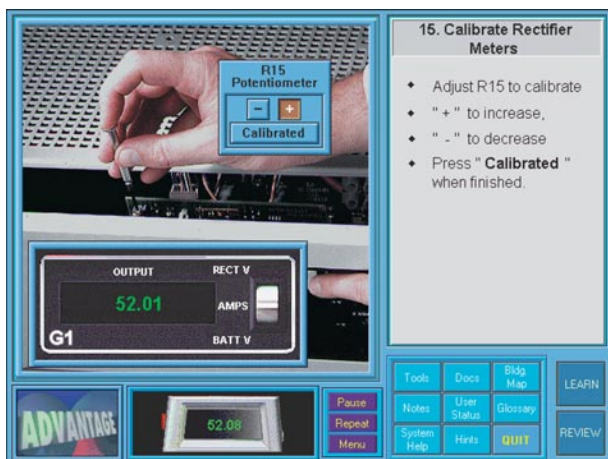


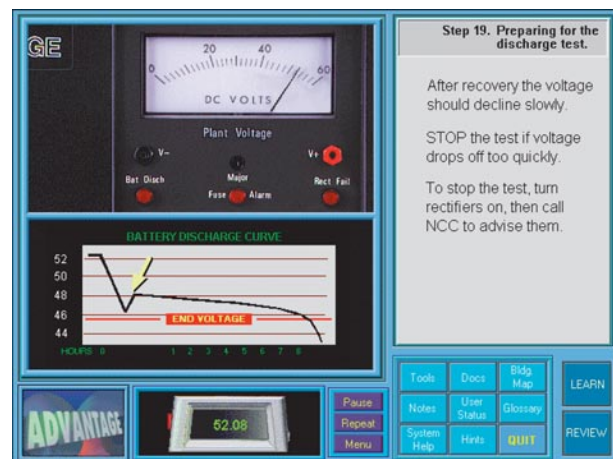**Figure 3-6**   Calibrating rectifier meters in AT&T's Regen Hut application.



**Figure 3-7**   Preparing for the discharge test in AT&T's Regen Hut application.

**Figure 3-8** A Styles-On-Video system in action in a hair salon.



**Figure 3-9** The Styles-On-Video system consists of a multimedia computer with video camera, digital video capture card, VCR, pen, and digitizing tablet.

market appeal. Figure 3-8 shows how New Image Industries has made clever use of multimedia to help you decide what hairstyle suits you best. The Styles-On-Video system uses a multimedia computer with a video capture board and a camera to digitize your head onto the computer screen. Then the operator uses the digitizing tablet and stylus pen shown in Figure 3-9 to remove your hair. The system proceeds to put other hairstyles on your head to show what you would look like in different fashions and hair colors, as shown in Figure 3-10. Then the system creates a videotape that you can study privately or show friends to get their opinion on which style you should choose. Follow the *Multilit* Web site links to find out where the nearest Styles-On-Video imaging salon is in your area.



**Figure 3-10** Styles-On-Video lets you explore your hairstyle fantasies.

# Day Trading

**Day trading** is the use of the Internet to track the value of individual stocks and buy or sell them rapidly depending on how the market goes. You buy a stock whose value is rising, for example, and you hope that its value will continue climbing for the seconds or minutes that you own the stock. Be careful how you react to the glitzy television ads enticing you to become a day trader. While it is possible to make a lot of money day trading, you can also lose a lot. Testifying before the U.S. Senate about this new form of trading, SEC Chairman Levitt warned that "Most individual investors do not have the wealth, the time, or the temperament to make money and to sustain the devastating losses that day trading can bring" (SEC Congressional Testimony 9/16/99, *Multilit* Web site). With this caveat, follow the *Multilit* Web site links if you want to learn more about day trading.

## exercises

1. Have you ever used a point-of-sale kiosk? Where? Did it have multimedia? Compare the way it functioned to traditional shopping; did the kiosk complement, replace, or make traditional shopping unnecessary?

2. Find a point-of-sale kiosk in your community. Describe its look and feel. Observe people using it and describe any problems or advantages you observe.

3. What are the obstacles to digital video replacing the VCR as the primary means of distributing video recordings? If your home has access to a digital video service, how has the service impacted the use of your VCR? Do you rent more or fewer videotapes from your local video store? Why?

4. Visit your local Kinko's and ask to see their videoconferencing facilities. Do you think videoconferencing has become a viable business at Kinko's? For whom and for what purpose? Would you use it in your planned line of work, or for personal matters? Why?

5. Visit a local realty office and find out whether its realtors use multimedia to sell homes. If so, ask what is the benefit; if not, find out why they do not use multimedia.

6. Visit a local business and find out whether it has ever used multimedia computers for training. How is computer-based training used in your chosen profession?