

THE DEVELOPMENT OF MULTIMEDIA

Advances in combined media, such as filmstrips and slide presentations with coordinated audio tracks, revolutionized training and presentations in the early 1970s. These advances followed more than a century of breakthroughs in graphics, video, and audio. Multimedia, as discussed in this book, became possible as a result of these innovations combined with the development of personal computers powerful enough to store and play audio and video.

Graphics

People have been drawing and painting since the days of the cave dwellers. With the invention of photography in the nineteenth century, it became possible for graphics to reproduce images from life rather than from an artist's memory and imagination. The earliest cameras were large, heavy devices that recorded images on glass negatives or tin prints. Smaller, less expensive cameras that used film became available in the early twentieth century. George Eastman created the first popular consumer camera. He named it *Kodak* because of the sound it made when the button was pushed to create the photograph.

Beginning in the mid-1980s, personal computers began to be equipped with devices and software for creating drawings and other pictures. A few years later, moderately priced cameras were introduced that recorded images on electronic disks rather than on film. They were called digital cameras because of the way they recorded the images. Digitally (electronically) created computer graphics and digitally recorded photographs do not need to be scanned into computer systems, as images on paper do, and are therefore much easier to integrate into multimedia.

Audio

Speech was almost certainly the first medium that human beings used to convey information, and it long predates the beginning of writing. Similarly, archeologists have found musical instruments that date back to the Neanderthal era. Although we have long had the ability to write, even to write musical notation, it was not until the nineteenth century that we developed the means to *record* sound.

The first radio broadcast of voice and music in the United States occurred in 1906. Early radios were large wooden boxes filled with vacuum tubes that conducted electrical signals. Radios became smaller in the 1950s, after the invention of the transistor. The transistor, which replaced vacuum tubes, led to other developments that resulted in smaller electronic devices of many kinds, including computers. Now, some radios are no bigger than wrist-watches, and you can record and play audio on devices smaller than wallets.

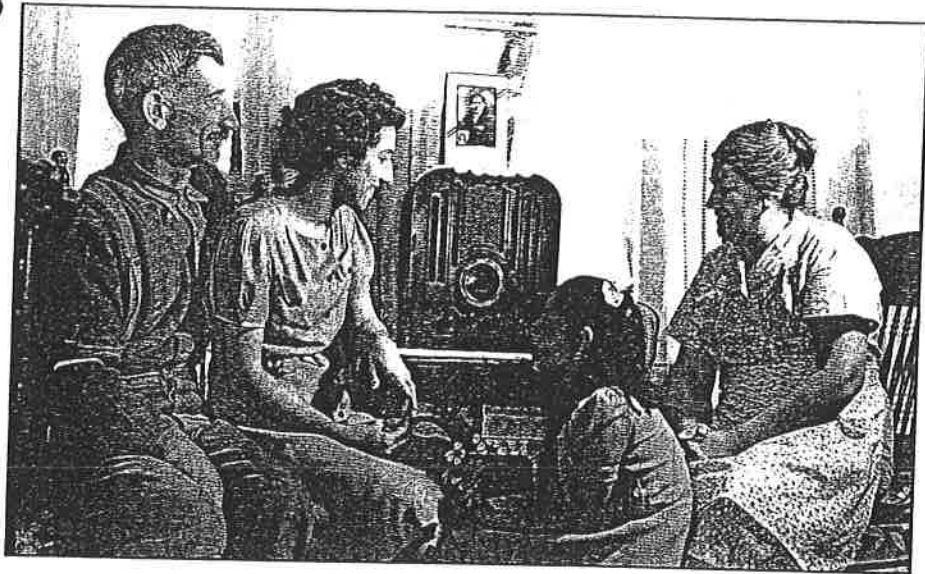
Figure 1.10

Cameras in the nineteenth century were unwieldy devices that recorded images on glass plates and used gunpowder to create a flash. **Who created the first camera for the consumer market?**



Figure 1.11

People once gathered around radios to listen to news or entertainment. Listeners had to imagine the action based on voices, music, and sound effects. *Has greater access to television encouraged more quality family time or isolated family members?*



Audio can be recorded on electronic disks rather than magnetic disks, which makes it easier to integrate them into multimedia productions.

Movies

Movies, like still photography, were invented in the nineteenth century. At first, movies did not include sound. Instead, live piano players provided music to complement the action on the screen. The earliest movies with sound were sometimes called “talkies,” because instead of reading subtitles on the screen, the audience could actually hear the actors speak.

Until recently, motion pictures were recorded only on film. Later, cameras were able to record movies on magnetic tape. Cameras that record video electronically were developed in the 1990s. Converting film-based movies for use with a computer is a difficult and expensive process, but movies made with electronic digital video cameras are relatively easy to integrate into multimedia productions.

Television

Fifty years ago, television was just beginning to make its way into living rooms. Early televisions were expensive. Their screens were small, picture quality was inconsistent, and the images were black and white. Programming was limited to a few channels, which signed off at night with the “Star Spangled Banner.” Television was very different from what we take for granted today: there was no cable or satellite dish service, no 24-hour programming, no shopping channel, and no such thing as a VCR to record favorite shows. Few people then would have envisioned a time when many houses had a TV in every bedroom.

The past few years have seen some merging of television and computer technologies. For example, televisions can now be equipped with devices that use computer technology to record shows on disks that you watch on your television or your computer. So far, although it is possible to watch some

television shows over the Internet, few people see much reason to do this. Someday soon, though, a personal computer, television, and cell phone may be combined in a single device.

Computer Technology

Multimedia is a new field because computers with enough power to record and play audio and video have been widely available for only a few years. Your parents and teachers may remember when computers were very large, very expensive devices used mainly for big jobs like processing corporate payrolls and making complex calculations for scientists and engineers.

Personal computers began showing up on desktops in the early 1980s. The earliest PCs were multimedia tools in only the narrowest sense. They lacked sufficient memory, processing power, and storage capacity to handle the full-color pictures and animations that you can now produce and edit on even the least expensive home computers. In fact, most of these early computers had monitors that displayed text on a green or orange background and were not capable of displaying color pictures.

Today's personal desktop computers have many more capabilities in a much smaller package. Laptop computers have now become indispensable to many people who travel for business or take work home from the office. Handheld computers such as Personal Digital Assistants (PDAs) have become very popular for particular tasks, including some that involve multimedia, and many people have access to the Internet from handheld computers.

In *Chapter 2: The Internet and Multimedia*, you will read how multimedia presentations have become available to billions of people around the world through the vast series of computer connections that make up the Internet. *Chapter 4: Hardware and Multimedia* will introduce you to computers and associated devices for creating and playing multimedia. In *Chapter 5: Operating Systems*, you will learn about the programs that give computers their startup instructions and enable them to run the software for creating and playing multimedia. *Chapter 6: Software and Multimedia* introduces the programs that make computers useful.

Figure 1.12

The modern laptop computer, so lightweight you can carry it wherever you go, is more powerful than the room-size computers of the 1940s. *Who might use a laptop computer?*



TOPIC CHECK



Evolving Multimedia Technology New technology has changed the way information can be shared and has helped multimedia evolve.

1. Describe three advances in technology that have contributed to the development of multimedia.
2. Why was multimedia not as widespread 25 years ago as it is today?