

# ELECTRONIC MEDIA FORMS

## Part 1

A wide variety of electronic media exists for the dissemination of entertainment and information.

Within less than the average lifetime, these media have proliferated into more than a dozen forms. These media both complement and compete with each other, experiencing the slings and the security of the free enterprise system. Some people wonder how many forms of media the market can bear; others marvel at how many it does bear. As these media develop, change is inevitable, brought about both by external and internal forces. Although all the media forms are young, they are already rich in history and adaptation.

## Chapter 1

### RADIO

**R**adio knows how to reinvent itself. At present it consists largely of disc jockeys announcing music, of talk show hosts



*It is inconceivable that we should allow so great a possibility for public service as broadcasting to be drowned in advertising chatter.*

**Herbert Hoover, while serving as secretary of commerce**

engaging in controversial discussions, and of newscasters giving the latest information. This, however, has not always been the case.

During the 1930s and 1940s, radio was the main source of national entertainment programming. Most of the models of entertainment and information that are common to the media today were formed by radio during these years. When television took away radio's audience in the 1950s, some believed radio would die, but today it is a healthy medium that enters homes, automobiles, and virtually every other place people inhabit.

#### 1.1 Early Inventions

The very beginnings of radio are veiled in dispute. People living in various countries devised virtually the same inventions. Ironically, this was partly because no communication system was available for people to learn what others were inventing. This led to numerous rivalries, claims, counterclaims, and patent suits.

Many people believe that radio originated in 1873 when James Clerk Maxwell, a British physics professor, published his theory of electromagnetism. His treatise predicted the existence of **radio waves** and how they should behave based on his observations of how light waves behave.<sup>1</sup> Experiments to prove Maxwell's theory were undertaken by the German physics professor Heinrich Hertz during the 1880s. Hertz actually generated at one end of his laboratory and transmitted to the other end the radio energy that Maxwell had theorized.<sup>2</sup>

Maxwell

Hertz

Marconi

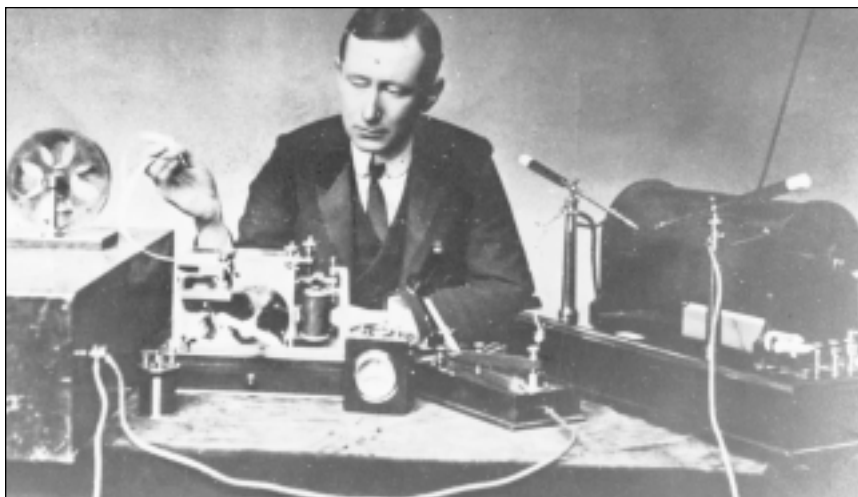
Guglielmo Marconi (see Exhibit 1–1) expanded upon radio principles. Marconi, the son of a wealthy Italian father and an Irish mother, was scientifically inclined from an early age. Fortunately, he had the leisure and wealth to pursue his interests. Soon after he heard of Hertz's ideas, he began working fanatically in his workshop, finally reaching a point where he could transmit the dots and dashes of Morse code using radio waves. Marconi then wrote to the Italian government in an attempt to interest it in his project. The government replied in the negative. His determined mother decided he should take his invention to England. There, in 1897, he received a patent and the financial backing to set up the Marconi Wireless Telegraph Company, Ltd. Under the auspices of this company, Marconi continued to improve on wireless technology and began to supply equipment to ships. In 1899, he formed a subsidiary company in the United States.<sup>3</sup>

Although Marconi maintained a dominant international position in wireless communication, many other people were experimenting and securing patents in Russia, Germany, France, and the United States. People became intrigued with the idea of voice transmission and in 1904, John Fleming of Britain took a significant step in this direction. He developed the **vacuum tube**, which led the way to voice transmission.<sup>4</sup> It was developed further by Reginald Aubrey Fessenden and Lee De Forest, among others.

Fleming

Fessenden, a Canadian-born professor who worked at the University of Pittsburgh, proposed that radio waves not be sent out in bursts—which

Fessenden

**Exhibit 1–1**

Guglielmo Marconi shown here with wireless apparatus (about 1902).

(*Smithsonian Institution, Photo No. 52202*)

**Exhibit 1-2**

Lee De Forest,  
shown here  
with wireless  
apparatus  
(about 1920).

(Smithsonian Institution,  
Photo No. 52216)

**De Forest**

accommodated the dots and dashes of Morse code—but rather as a continuous wave on which voice could be superimposed. On Christmas Eve of 1906, Fessenden broadcast to ships at sea his own violin solo, a few verses from the Bible, and a phonograph recording of Handel’s “Largo.”<sup>5</sup>

De Forest (see Exhibit 1–2) is known primarily for the invention of the **audion tube**, an improvement on Fleming’s vacuum tube. It was capable of amplifying sound to a much greater degree than was previously possible. This tube, which De Forest patented in 1907, was the most crucial key to voice transmission (see also Section 6.7).

De Forest, like Marconi, was fascinated with electronics at an early age and later secured financial backing to form his own company. However, he experienced management and financial problems that frequently rendered him penniless and led him eventually to sell his patent rights. De Forest was farsighted in his views of radio wave utilization, and he strongly advocated voice transmission for entertainment purposes. In 1910 he broadcast the singing of Enrico Caruso from the New York Metropolitan Opera House. Several years later he started a radio station of sorts in the Columbia Gramophone Building, playing Columbia records (he later referred to himself as the first disc jockey) in hopes of increasing their sales.<sup>6</sup>

## 1.2 Early Control

**ship radios**

During these early stages, radio grew virtually without government control. The first congressional law to mention radio was passed in 1910 and required all ships holding more than 50 passengers to carry radios for safety purposes.

The rules concerning this safety requirement were not very effective, as was proven with the 1912 sinking of the *Titanic*. As the “unsinkable” *Titanic* sped through the night on its maiden voyage, radio operators on other ships warned it

**Exhibit 1-3**

David Sarnoff working at his radio station position atop the Wanamaker store in New York where he heard the *Titanic's* distress call.

(Courtesy of RCA)

of icebergs in the area. The *Titanic's* radio operator, concerned with transmitting the messages of the many famous passengers to friends in other parts of the world, passed the warnings on to the captain, who disregarded them. The wireless operator transmitted SOS signals when the *Titanic* struck the fatal iceberg about midnight April 14, but none of the nearby ships, which could have helped save some of the 1,500 passengers and crew who died, heard the distress calls because their wireless operators had signed off for the night.

The operators on land who had been receiving the passengers' messages also heard the distress calls, so for the first time in history people knew of a distant tragedy as it was happening. One wireless operator decoding the messages in New York was David Sarnoff (see Exhibit 1-3), who later became president of RCA. He and others relayed information about the rescue efforts to anxious friends and relatives and to the newspapers. This brought wireless communication to the attention of the general public for the first time.<sup>7</sup>

Soon after the sinking of the *Titanic*, Congress passed the Radio Act of 1912 that emphasized safety and required everyone who transmitted on radio waves to obtain a license from the secretary of commerce. The secretary could not refuse a license but could assign particular wavelengths to particular transmitters. Thus, ship transmissions were kept separate from amateur transmissions, which were, in turn, separate from government transmissions. All this was done without any thought of broadcasting as we know it today.

### 1.3 World War I

In 1917, near the beginning of World War I, the U.S. government took over all radio operation. Bitter patent disputes were set aside for the good of the country. Marconi's company, still the leader in wireless, had aroused the concern of American Telephone and Telegraph (AT&T) by suggesting the possibility of starting a wireless phone business. AT&T, in an effort to maintain its supremacy in the telephone business, had acquired some wireless patents, primarily those of Lee De Forest. The stalemate that grew out of the refusal of Marconi's company, AT&T, and several smaller companies to allow one another to interchange patents had stifled the technical growth of radio communications.

sinking of the  
*Titanic*

licenses

patent problems

**alternator**

With the onset of the war, these disputes were set aside so the government could develop the transmitters and receivers needed. World War I also ushered two other large companies into the radio field: General Electric (GE) and Westinghouse. Both were established manufacturers of lightbulbs. GE and Westinghouse assumed responsibility for manufacturing tubes because both lightbulbs and radio tubes require a vacuum. General Electric had also participated in the development of Ernst F. W. Alexanderson's construction of the **alternator** to improve long-distance wireless.

**Navy intervention**

The patent problem returned after the war, and GE began negotiating with the Marconi company to sell the rights to its Alexanderson alternator. The Navy, which had controlled radio during the war, feared this sale would enable the Marconi company to achieve a monopoly on radio communication. The Navy did not want radio controlled by a foreign company, so it convinced GE to renege on the Marconi deal. This cancellation left GE sitting with an expensive patent from which it could not profit because GE did not control other patents necessary for its utilization, but the patent placed GE in an excellent negotiating position because of its value for long-distance transmission.

**Marconi, AT&T, GE, and Westinghouse involvement****1.4 The Founding of RCA**

What ensued was a series of discussions among Marconi American, AT&T, GE, and Westinghouse that culminated in the formation of Radio Corporation of America (RCA) in 1919. The Marconi American subsidiary, realizing with reluctance that it would not receive Navy contracts as long as it was controlled primarily by the British, transferred its assets to RCA. AT&T, GE, and Westinghouse bought blocks of RCA stock and agreed to make patents available to one another, thus averting the patent problem and allowing radio to grow. This was undertaken with ship-to-shore transmission in mind, not entertainment broadcasting.<sup>8</sup>

**Sarnoff's memo**

One person who saw entertainment possibilities was David Sarnoff, a Russian immigrant who at age 15 had become an employee of Marconi and at age 21 received distress messages from the *Titanic*. Legend has it that in 1915, at the age of 24, he wrote a memo to Marconi management suggesting entertainment radio that read in part as follows:<sup>9</sup>

I have in mind a plan of development which would make radio a "household utility" in the same sense as the piano or phonograph. The idea is to bring music into the home by wireless. . . . The receiver can be designed in the form of a simple "Radio Music Box" and arranged for several different wavelengths, which should be changeable with the throwing of a single switch or pressing of a single button. . . .

The same principle can be extended to numerous other fields as, for example, receiving lectures at home which can be made perfectly audible; also, events of national importance can be simultaneously announced and received. Baseball scores can be transmitted in the air by the use of one set installed at the Polo Grounds. The same would be true of other cities. This proposition would be especially interesting to farmers and others in outlying districts

removed from cities. By purchase of a "Radio Music Box," they could enjoy concerts, lectures, music recitals, etc. . . .

It is not possible to estimate the total amount of business obtainable with this plan until it has been developed and actually tried out; but there are about 15 million families in the United States alone, and if only one million or 7 percent of the total families thought well of the idea, it would, at the figure mentioned (\$75 per outfit), mean a gross business of about \$75 million, which would yield considerable revenue.

This idea was not acted upon, and Sarnoff, who joined RCA when RCA bought out Marconi, had to wait for a more propitious time.

### 1.5 Early Radio Stations

Meanwhile, many amateur radio enthusiasts began undertaking experiments. One of these was Frank Conrad, a physicist and an employee of Westinghouse in Pittsburgh (see Exhibit 1-4). From his garage he programmed music and talk during his spare time. A local department store began selling wireless reception sets and placed an ad for these in a local newspaper, mentioning that the sets could receive Conrad's concerts. One of Conrad's superiors at Westinghouse saw the ad and envisioned a market. Until this time, both radio transmission and reception had been for the technical-minded who could assemble their own sets. It was obvious that sets could be preassembled for everyone who wished to listen to what was being transmitted.

Conrad was asked to build a stronger transmitter at the Westinghouse plant, one capable of broadcasting on a regular schedule so that people who purchased



#### Exhibit 1-4

Frank Conrad, who worked with experimental equipment and supervised the construction of KDKA.

*(Courtesy of KDKA, Pittsburgh)*

**Exhibit 1-5**

A tent atop a Westinghouse building in East Pittsburgh served as KDKA's first studio. It caused some of early radio's unusual moments, such as the whistle of a passing freight train heard nightly at 8:30 and a tenor's aria abruptly concluded when an insect flew into his mouth.

*(Courtesy of KDKA, Pittsburgh)*



### Conrad and KDKA

receivers would be assured listening fare. In 1920, Westinghouse applied to the Department of Commerce for a special type of license to begin a broadcasting service. The station was given the call letters KDKA (see Exhibit 1-5) and was authorized to use a frequency away from amateur interference. KDKA is generally considered the first radio station in terms of how we consider radio today, but other stations that were experimenting at the same time lay claim to the title of "first." KDKA launched its programming schedule with the Harding-Cox election returns, interspersed with music, and then continued with regular broadcasting hours. Public reaction could be measured by the long lines at department stores where radio receivers were sold.<sup>10</sup>

### Dempsey-Carpentier fight

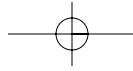
KDKA's success spurred others to enter broadcasting, including David Sarnoff, who now received more acceptance for the ideas in his memo. He convinced RCA management to invest \$2,000 to cover the Jack Dempsey-Georges Carpentier fight on July 2, 1921, and a temporary transmitter was set up in New Jersey for the fight. Fortunately, Dempsey knocked Carpentier out in the fourth round, for soon after the overheated transmitter became a molten mass. This fight, however, helped to popularize radio, and both radio stations and sets multiplied rapidly.

### 1923 status

By 1923, radio licenses had been issued to more than 600 stations, and receiving sets were in nearly 1 million homes.<sup>11</sup> The stations were owned and operated primarily by those who wanted to sell sets (Westinghouse, GE, RCA) and by retail department stores, as well as radio repair shops, newspapers wanting to publicize themselves, and universities that wanted to offer college credit courses that people could listen to in their homes.

Unfortunately, all stations were on the same frequency—360 meters (approximately 830 on the AM dial). Stations in the same reception area worked





out voluntary arrangements to share the frequency by broadcasting at different times of day. However, as more stations went on the air, interference became common. This was particularly hard on students trying to hear their lessons for college credit courses, and many universities had to cease this form of instruction.

## 1.6 Early Programming

Programming was no problem in the early days. People were mainly interested in the novelty of picking up any signal on their battery-operated crystal headphone receivers. Programs consisted primarily of phonograph record music, call letter announcements, and performances by endless free talent who wandered in the door eager to display their virtuosity on this new medium.

Sometimes the use of amateurs created awkward situations. For example, a woman who was a strong advocate of birth control asked to speak on radio. The people at the station were nervous about what she might say, but when she assured them that she only wanted to recite some nursery rhymes, they allowed her into the studio. She then broadcast, “There was an old woman who lived in a shoe/She had so many children because she didn’t know what to do.” She was not invited back.<sup>12</sup>

early anecdotes

A Chicago man wanted to discuss Americanism over a Chicago station and even submitted a script ahead of time. He appeared at the station with a group of bodyguards who assured no buttons were pushed to take him off the air. It turned out that he was a potentate of the Ku Klux Klan, and, digressing from the script, he extolled the virtues of white supremacy.<sup>13</sup>

A young man in New Jersey wanted to let his mother know how he sounded over the air, so he dropped in at WOR, which had just opened a studio near the music department of a store. The singer the studio was expecting had not arrived, so this young man was put on the air before he even had time to notify his mother. He sang to piano accompaniment for over an hour as a messenger rushed sheet music from the music counter to the studio.<sup>14</sup>

The primary programming of the era was dubbed **potted palm music**—the kind played at teatime by hotel orchestras usually flanked by potted palms (see Exhibit 1–6). Sometimes a vocalist was featured and sometimes a pianist or small instrumental group played. Sopranos outnumbered all other “potted palm” performers. Often the performers who “appeared” on radio wore tuxedos or evening gowns.

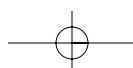
music

Drama was also attempted, even though engineers at first insisted that men and women needed to use separate microphones placed some distance from each other. Performers found it difficult to play love scenes this way. Finally it was discovered that men and women could share a microphone.

drama

Religious broadcasts were part of early radio. Evangelist Aimee Semple McPherson operated a station in Los Angeles that frequently wandered off frequency. When the secretary of commerce threatened to shut her station down, she wired back, “Please order your minions of Satan to leave my station alone. You cannot expect the Almighty to abide by your wave length nonsense.”<sup>15</sup>

religion



**Exhibit 1-6**

Los Angeles's first station, KFI, began broadcasting in 1922. Its studio shows that although only the audio was received by the audience, special attention was given to the decor, including the potted palms.

*(Courtesy of KFI, Los Angeles)*

**public affairs**

From time to time radio excelled in the public affairs area, broadcasting political conventions and presidential speeches. When the 6-year-old son of Ernst F. W. Alexanderson, the builder of the alternator, was kidnapped, a radio report of the child's description was responsible for his recovery.

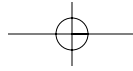
**1.7 The Rise of Advertising**

As the novelty of radio wore off, people were less eager to perform and some means of financing programming had to be found. Many ideas were proposed, including donations from citizens, tax levies on radio sets, and payment from radio set manufacturers. Commercials evolved largely by accident.

AT&T was involved mainly in the telephone business and, although it was a partner with RCA, was reluctant to see radio grow because such growth might diminish the demand for wired services. One of its broadcasting entries was closely akin to phone philosophy. It established station WEAF in New York as what it termed a **toll station**. AT&T stated it would provide no programming, but anyone who wished to broadcast a message could pay a "toll" to AT&T and then air the message publicly in much the same way as private messages were communicated by dropping money in pay telephones. In fact, the original studio was about the size of a phone booth. The idea did not take hold. People willing to pay to broadcast messages did not materialize.

AT&T realized that before people would pay to be heard, they wanted to be sure that someone out there was listening. As a result, WEAF began broadcasting entertainment material, drawing mainly on amateur talent found among the employees. Still there were no long lines of people willing to pay to have messages broadcast.

**WEAF "toll" experiment**



Finally, on August 22, 1922, WEAF aired its first income-producing program—a 10-minute message from the Queensboro Corporation, a Long Island real estate company, which paid \$50 for the time. The commercial was just a simple courtesy announcement because AT&T ruled out direct advertising as poor taste. Many people of the era said that advertising on radio would never sell products. In fact, every dollar of income that WEAF obtained was a painful struggle.

**Queensboro ad**

Eventually, AT&T convinced the Department of Commerce that WEAF should have a different frequency. The argument was that other broadcasters were using stations for their own purposes, while WEAF was for everyone and therefore should have special standing and not be made to broadcast on 360 meters. As a result, WEAF and a few other stations were assigned to the 400-meter wavelength. This meant less interference and more broadcast time. The phone booth was abandoned, a new studio was erected, and showmanship took hold.<sup>16</sup>

**WEAF frequency change**

## 1.8 The Formation of Networks

AT&T began using phone lines for remote broadcasts because it was still predominantly in the phone business. It aired descriptions of football games over its long-distance lines and established “toll” stations in other cities that it interconnected by phone lines—in effect, establishing a network.

During this time AT&T did not allow other radio stations to use phone lines and also claimed sole rights to sell radio “toll” time. At first, other stations were not bothered because they were not considering selling ads. In fact, there was an antiadvertising sentiment in the early 1920s. For example, people felt toothpaste should never be advertised because it was an intimate product.

**AT&T’s network**

As the AT&T toll network emerged and began to prosper, however, other stations became discontent with a second-class status. The fires of this flame were further fanned by a Federal Trade Commission inquiry that accused AT&T, RCA, GE, and Westinghouse of creating a monopoly in the radio business.

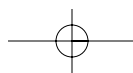
A series of closed hearings, held by the major radio companies, resulted in the 1926 formation of the National Broadcasting Company (NBC)—owned by RCA, GE, and Westinghouse. AT&T agreed to withdraw from radio programming in exchange for a long-term contract assuring that NBC would lease AT&T wires. This agreement earned the phone company millions of dollars per year. NBC also purchased WEAF from AT&T, thus embracing the concepts of both toll broadcasting and networking.

**formation of NBC**

In November 1926, the NBC Red Network, which consisted of WEAF and a 23-station national hookup, was launched in a spectacular debut that aired a symphony orchestra from New York, a singer from Chicago, comedian Will Rogers from Kansas City, and dance bands from various cities throughout the nation. A year later NBC’s Blue Network was officially launched, consisting of different stations and different programming.

**GE and Westinghouse withdraw from RCA**

In 1932, GE and Westinghouse withdrew from RCA, largely because of the U.S. attorney general’s order that the group should be dispersed and partly



**Exhibit 1-7**

William S. Paley originally worked with his father, who owned a cigar company. The younger Paley took a six-month leave to get CBS going, but he never returned to the cigar business.

(UPI/Bettman News Photos)

### Paley and CBS ABC

### Mutual

because David Sarnoff, now president of RCA, believed his company should be its own entity. Again a series of closed-door meetings resulted in a divorce settlement. RCA became the sole owner of NBC, and GE and Westinghouse received RCA bonds and some real estate. In retrospect, it appears that RCA walked off with the lion's share of value. But all this happened during the Depression, and GE and Westinghouse were not eager to keep what they thought might be an expensive broadcasting liability.<sup>17</sup>

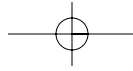
Both RCA and NBC have an interesting parentage. NBC was originally owned by RCA, GE, and Westinghouse, which ousted AT&T in forming NBC. RCA was formed by GE, Westinghouse, and AT&T, which ousted Marconi during RCA's formation. The exact details of all these corporate maneuvers will probably never be known.

What eventually became the Columbia Broadcasting System (CBS) was founded in 1927 by a man who wanted to supply radio talent to stations. His plans did not work out, and his failing company was bought by the family of William S. Paley (see Exhibit 1-7). Paley became president and built a radio network that was similar in organization to NBC in that it consisted of a chain of stations. The network became successful, and during the 1930s and 1940s, Paley lured much of the top radio talent, including Jack Benny, from NBC to CBS.<sup>18</sup>

The American Broadcasting Company (ABC) came to the fore because of Federal Communications Commission (FCC) actions in the early 1940s. By 1940 the networks had established a power base that the FCC thought could be detrimental, so it attempted to limit their power by issuing rules that prohibited one company from owning and operating more than one national radio network. In 1943, NBC sold its Blue Network to a group of investors who, in 1945, changed the network's name to the American Broadcasting Company.<sup>19</sup>

A fourth radio network, Mutual Broadcasting Company, was formed in 1934 when four stations decided to work jointly to obtain advertising. Unlike the other networks, Mutual owned no stations. Instead, it sold ads and bought programs. Then it paid the stations in its network to carry the programs and the network ads. It also allowed stations to sell their own ads.<sup>20</sup>

Mutual, too, was involved with FCC regulations. NBC and CBS affiliate contracts stipulated that the local stations could not carry programs from a different network. In 1938, Mutual gained exclusive rights to broadcast the World Series, but the NBC and CBS contracts would not allow their affiliated stations to carry these games, even in cities where there were no Mutual stations. The people wanted the games, the stations wanted to carry them, and advertisers wanted to pay for the coverage. Many Americans, nevertheless, did not hear the 1938 World Series. The FCC determined that this type of program thwarting was not in the public interest. It stated that no station could have an arrangement with a network that hindered that station from broadcasting programs of another network.



## 1.9 Chaos and Government Action

The problem of broadcast frequency overcrowding continued to grow during the 1920s. Secretary of Commerce Herbert Hoover was besieged with requests that the broadcast frequencies be expanded and that stations be allowed to leave the 360-meter frequency band on which most of them were broadcasting. Hoover made various attempts to improve the situation by altering frequencies, powers, and broadcast times, and he called four national radio conferences to discuss problems and solutions to the radio situation with broadcasters, but he was unable to deal with the problem in any systematic manner because he could not persuade Congress to give him the power to do so.

### Hoover and radio

One ramification of the frequency situation was that commercial stations overpowered educational radio stations. In the early 1920s, educational and commercial stations often alternated hours on a shared frequency. If the commercial station decided it wanted a larger share of the time, it would petition the government and usually win because it could afford an expensive, time-consuming hearing in Washington while the educators could not. In addition, Hoover urged people who wished to enter broadcasting to buy an existing station rather than add one to the already overcrowded airwaves. As a result, many educational facilities were propositioned by commercial ventures and sold out.<sup>21</sup>

### educational stations

By 1925, even though additional frequencies had been assigned to radio, the interference problem was so widespread that the only remedy would have been to reassign frequencies being used for other purposes. Under the existing law, however, the secretary of commerce was powerless to act. Hoover threw up his hands and told radio station operators to regulate themselves as best they could.<sup>22</sup>

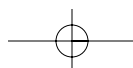
During 1926–27, 200 stations were created, most of them using any frequency or power they wished and changing at whim. Chaos reigned on the airwaves. To help remedy this situation, Congress passed the **Radio Act of 1927**. The act proclaimed that radio waves belonged to the people and could be used by individuals only if they had a license and were broadcasting in the “public convenience, interest, or necessity.”<sup>23</sup>

### Radio Act of 1927

All previous licenses were revoked, and applicants were allowed 60 days to apply for new licenses from the newly created Federal Radio Commission (FRC). The commission gave temporary licenses while it worked out the jigsaw puzzle of which frequencies should be used for what purposes. It granted 620 licenses in what is now the **AM (amplitude modulation)** band. The FRC also designated the power at which each station could broadcast.<sup>24</sup>

Several years later Congress passed the **Communications Act of 1934**, which created the Federal Communications Commission. This act was passed primarily because both Congress and the president felt all regulation of communications should rest with one body. The FCC was given power over not just radio but also over telephone and other forms of wired and wireless communications. As the act was being formulated, educators lobbied for 15 percent of the frequencies to be reserved for educational radio; however, they were unsuccessful in their bid and today there are few any educational stations left in the AM band.<sup>25</sup>

### Communications Act of 1934



## 1.10 The Golden Era of Radio

### equipment improvements

With the chaotic frequency situation under control, radio was now ready to enter the era of truly significant programming development—a heyday that lasted some 20 years. Improvements in radio equipment helped (see Exhibit 1–8). **Earphones** that only one person could use had already been replaced by **loudspeakers** so that the whole family could listen simultaneously. The early **carbon microphones** were replaced by **ribbon microphones**, which had greater fidelity. Battery sets were introduced for portability and use in automobiles. (The first portables, however, were cumbersome because of the size of early dry batteries.)

Radio became the primary entertainment medium during the Depression. In 1930, 12 million homes were equipped with radio receivers, but by 1940 this number had jumped to 30 million. During the same period, advertising revenue rose from \$40 million to \$155 million. In 1930, NBC Red, NBC Blue, and CBS offered approximately 60 combined hours of sponsored programs a week. By 1940, the four networks (Mutual had been added) carried 156 hours.<sup>26</sup>

### Amos 'n' Andy

The first program to generate nationwide enthusiasm was *Amos 'n' Andy* (see Exhibit 1–9). It was created by Freeman Fisher Gosden and Charles J. Correll, who met while working for a company that staged local vaudeville-type shows. Gosden and Correll, who were white, worked up a blackface act for the company and later tried it on WGN radio in Chicago as *Sam 'n' Henry*. When WGN did not renew their contract, they took the show to WMAQ in Chicago and changed the name to *Amos 'n' Andy* because WGN owned the title *Sam 'n' Henry*.

Correll and Gosden wrote all the material themselves and played most of the characters by changing the pitch, volume, and tone of their voices. Gosden always played Amos, a simple, hardworking fellow, and Correll played Andy, a clever, conniving, and somewhat lazy individual who usually took credit for Amos's ideas. According to the scripts, Amos and Andy had come from Atlanta to Chicago to seek their fortune, but all they had amassed was a broken-down automobile, also known as the Fresh-Air Taxicab Company of America. Much of the show's humor revolved around a fraternity-type organization called the Mystic Knights of the Sea headed by a character called Kingfish, who was played by Gosden.

WMAQ allowed Correll and Gosden to syndicate the show on other stations. Its success caught the attention of the NBC Blue Network, which hired the two in 1929 at \$100,000 a year. Their program, which aired from 7:00 to 7:15 P.M. Eastern time, became such a nationwide hit that it affected dinner hours, plant closing times, and even, on one notable occasion, the speaking schedule of the president of the United States.<sup>27</sup>

### comedy

Many other comedians followed in the wake of the success of Correll and Gosden—Jack Benny, Lum and Abner, George Burns and Gracie Allen, Edgar Bergen and Charlie McCarthy, and Fibber McGee and Molly (see Exhibit 1–10).

### music

Music, especially classical music, was also frequently aired. Broadcasts featured New York Philharmonic concerts and performances from the



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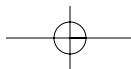


e.

**Exhibit 1-8**

a. A carbon microphone that was the best quality available during the formative years of radio. b. An early station setup that included a carbon microphone, a multitubed audio board, and Westinghouse receivers. c. A battery-operated radio receiver from about 1923. d. A home radio receiver with speaker from about 1924. e. Early backpack equipment for remote radio broadcasting.

*(a, b, e: courtesy of KFI, Los Angeles; c, d: courtesy of RCA)*



**Exhibit 1-9**

*Amos 'n' Andy* as it appeared when broadcasting from Studio B in NBC's Hollywood Radio City. Freeman Fisher Gosden is on the left side of the table with Madaline Lee. Charles J. Correll is at the right, and sitting in the left foreground is the "Here th' are" man, announcer Bill Hay.

*(Courtesy of KFI, Los Angeles)*



**Exhibit 1-10**

**a.** Jack Benny with his wife and costar, Mary Livingstone, in 1933. The *Jack Benny Show*, sponsored for many years by Jell-O and Lucky Strike cigarettes, featured such surefire laugh provokers as an ancient Maxwell automobile that coughed and sputtered, Benny's perennial age of 39 years, a constant feud with Fred Allen, and Benny's horrible violin playing.

*(Courtesy of NBC)*



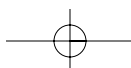
**a.**



**b.**

**b.** Lum and Abner, played by Chester Lauck (*left*) and Norris Goff. This comedy took place in the Jot 'Em Down grocery store in the fictional town of Pine Ridge, Arkansas. In 1936 the town of Waters, Arkansas, changed its name to Pine Ridge in honor of Lum and Abner.

*(Courtesy of KFI, Los Angeles)*







c.

c. George Burns and Gracie Allen. Many jokes in this program were plays on words based on Gracie's supposed empty-headedness. At one point Gracie started searching for her "lost brother" by suddenly appearing on other shows to inquire about him.

*(Courtesy of NBC)*



d.

d. Charlie McCarthy and ventriloquist Edgar Bergen (*right*) with W. C. Fields (*left*) and Dorothy Lamour. Charlie had a running feud with W. C. and a love affair with just about all the 30s and 40s beauties and even the 50s movie idol Marilyn Monroe.

*(Courtesy of NBC)*



e.

e. Marian and Jim Jordon as Fibber McGee and Molly. The commercials were integrated directly into the program when the announcer visited the McGee home and talked about Johnson's Wax. The two also had a famous overstuffed closet. Whenever one of them opened it, a raft of sound effects would indicate that all sorts of things had fallen out.

*(Courtesy of NBC)*

**Exhibit 1-11**

**a.** Arturo Toscanini and the NBC orchestra. Toscanini was coaxed out of retirement in Italy by David Sarnoff, head of NBC and classical music lover. A special studio, 8H, was built for the orchestra and was referred to as the world's only floating studio because of its unique construction.

(Courtesy of NBC)

**b.** Tommy Dorsey's Band. When cigarette companies backed many of the swing bands, Raleigh-Kool sponsored the Dorsey musicians. Since the radio programs were performed before live audiences, the huge cigarette packs did make an impact.

(Courtesy of KFI, Los Angeles)



**a.**



**b.**

Metropolitan Opera House. NBC established its own orchestra led by Arturo Toscanini. *Your Hit Parade*, which featured the top-selling songs of the week, was introduced in 1935, and people who later became well-known singers, such as Kate Smith and Bing Crosby, took to the air. The big bands of the 1940s could also be heard over the airwaves (see Exhibit 1-11).

One program innovation was to involve the audience. Among many amateur hours, perhaps the most famous was the one hosted by Major Edward Bowes. Quiz shows, such as *Professor Quiz*, rewarded people for responding with little-known facts. Stunt shows, such as *Truth or Consequences*, which prompted people to undertake silly assignments if they answered questions incorrectly, attracted large and faithful audiences.

**audience  
participation**

Many programs were developed for children, including *Let's Pretend*, a multisegment program that emphasized creative fantasy; *The Lone Ranger*, a western; *Quiz Kids*, a panel of precocious children who answered questions; and *Little Orphan Annie*, a drama about a child's trials and tribulations.

**children's shows**

During the day, many stations broadcast continuing dramas. These programs, called soap operas because soap manufacturers were frequent sponsors, always ended with an unresolved situation to entice the listener to "tune in tomorrow." Most did. The scripts for a major portion of the soap operas were developed by a husband-wife team, Frank and Ann Hummert. They defined the basic idea for each series, wrote synopses of programs, and then farmed the actual script writing to a bevy of writers around the country, some of whom they never even met.

**soap operas**

In the area of drama, the networks first tried to rebroadcast the sound of Broadway plays but discovered that this was akin to sitting in a theater blindfolded. So the networks hired writers such as Norman Corwin, Maxwell Anderson, and Stephen Vincent Benet to script original dramas for radio. These dramas usually used many sound effects and were sponsored by one company that often incorporated its name into the program, such as *Lux Radio Theater* or *Collier's Hour*. In 1938, Orson Welles (see Section 4.9) produced *War of the Worlds*, a fantasy about a Martian invasion in New Jersey. Upon hearing the broadcast, an estimated 1.2 million people succumbed to hysteria. They panicked in the streets, fled to the country, and seized arms to prepare to fight—despite the fact that the *Mercury Theater* program included interruptions to inform the listeners that the presentation was only a drama.<sup>28</sup>

**drama**

The Depression spurred the growth of commercials. During the 1920s, advertisements were brief and tasteful, and price was not mentioned. As radio stations and all facets of the American economy began digging for money in any way they could, the commercial standards dissolved. Some advertisers believed commercials should irritate, and broadcasters, anxious for the buck, acquiesced. The commercials became long, loud, dramatic, hard-driving, and cutthroat.

**commercials**

Most radio programs were produced not by the networks but by **advertising agencies**. These agencies found that personal help programs could effectively promote products. As a result, a large number of these programs appeared. Listeners would send letters to radio human relations "experts" detailing traumas, crimes, and transgressions and asking for help. Product box tops accompanying a letter qualified it for an answer; or the suggested solution might involve the sponsor's drug product; or the contentment derived from puffing on the sponsor's brand of cigarette might be recommended. By 1932, more airtime was spent on commercials than on news, education, lectures, and religion combined. The commercials brought in profits for NBC, CBS, and some individual radio stations. They also brought profits to the advertising agencies that were intimately involved in most details of programming, including selecting program ideas, overseeing scripts, selling and producing advertisements for the shows, and placing the programs on the network schedule (see Exhibit 1–12).<sup>29</sup>



▲ **THE INCOMPARABLE AMOS 'N' ANDY**, returning to air via NBC Friday Oct. 8.



▲ **THE INCORRIGIBLE BABY SHOOKS** and Frank Morgan on Maxwell House show Thursday, 8:30 p. m.

▼ **THE INVENTIVE ARKANSAS TRAVELER**, Bob Burns, back on air Thursday night.

▼ **THE INGENIOUS JACK BENNY**, airing with all the gang at 4 p. m., Sunday.

# NBC PROUDLY Presents:

**T**RAMP, TRAMP, TRAMP.  
It's NBC's parade of stars marching along to open the fall and winter season of happy listening.

For dialers, the biggest news of all is the return of Amos 'n' Andy. The two old favorites introduce a brand new show on Friday, October 8, complete with guest stars, music and the kind of laughter which made Freeman Gosden and Charles Correll famous.

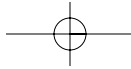
**T**RAMP, TRAMP, TRAMP.  
"The Great Gildersleeve" started the parade by buffing and puffing his way back to his fans late in August. This is Hal Peary's third season on the air with his own program and from the way the polls were going when he went off in June, it looks like his biggest.

**T**RAMP, TRAMP, TRAMP.  
Fanny Brice, with more antics of

▼ **THE INFALLIBLE H. V. KATENBORN**, commentator, heard four afternoons weekly.



**Exhibit 1-12**  
A wartime plug for NBC's programs.  
*(Courtesy of KFI, Los Angeles)*



★ ★ ★  
*A Star-Bedazzled Parade  
 Of Fast-Stepping Radio  
 Entertainers, on March  
 To Storm Your Listening*  
 ★ ★ ★

her inimitable Baby Snooks, and Frank Morgan, with a new batch of tall stories, followed "Gildersleeve" to NBC microphones on the first Thursday in September.

TRAMP, TRAMP, TRAMP.

Edgar Bergen and Charlie McCarthy marched back from Newfoundland, where they entertained the troops stationed there. This season they are presenting Victor Moore and William Gaxton, in addition to Ray Noble's orchestra and the songs of Dale Evans.

TRAMP, TRAMP, TRAMP.

That bad little boy, Red Skelton, was next in line, and with him were the popular members of his cast—Harriet Hilliard and Ozzie Nelson and his band.

TRAMP, TRAMP, TRAMP.

An account of Bob Hope's travels while away from his radio show for the summer sounds like a review of the war headlines—England, Biberie, Tunis, Algiers, Sicily. Back on the air with him for the new season comes another grand trouper, Frances Langford, who also went into the battle areas with Bob. And, of course, Jerry Colonna and Vera Vague will be on hand.

TRAMP, TRAMP, TRAMP.

And so they come. Those two top



▲ THE IMPERTINENT CHARLIE McCARTHY and Bergen for Chase & Sash, Sunday, 6 p. m.

comedians, Jim and Marian Jordan, who have more delightful sessions with "Fibber McGee and Molly" ready for their listeners.

Eddie Cantor with another season of Wednesday night laughfests.

Jack Benny, another of radio's globe-trotters, only recently returned from the European and North African battlefronts.

And, of course, there are all the favorites who have been on NBC this summer and who will continue to make radio listening America's Number One pastime—"One Man's Family;" Bing Crosby; the Standard Symphony Hour; H. V. Kaltenborn and the other commentators who bring the world into our homes; Kay Kyser's "College of Musical Knowledge;" Ginny Simms; the Joan Davis-Jack Haley show; and the Sunday morning Westinghouse program.

Happy listening? Yes, indeed!

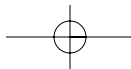


▲ THE INGRATIATING FATH AND MOTHER BARBOUR "One Man's Family," Sunday, 5:30 p.

▼ THE INIMITABLE FIBBER MCGEE AND MOLLY, back with their friends Tuesday, 6 p. m.

▼ THE INEXHAUSTIBLE LAUGH CREATOR, Bob Hope, back in his regular Tuesday spot, 7 p. m.

▼ THE IRREPRESSIBLE LITTLE as played by Red Skelton, Tuesday, 7:30 p. m.



**stunt broadcasts**

There were also many events that could be termed **stunt broadcasts** (see Exhibit 1–13), such as those from widely separated points, gliders, and underwater locations. A four-way conversation involved participants in Chicago, in New York, in Washington, and in a balloon. One music program featured a singer in New York accompanied by an orchestra in Buenos Aires.

**public events**

These stunt broadcasts paved the way for the broadcasting of legitimate public events from distant points. In 1931, 19 locations around the world participated in a program dedicated to Marconi. People heard the farewell address of King Edward VIII when he abdicated the British throne and the trial of the man who kidnapped aviator Charles Lindbergh's baby.

**politics**

Radio also figured in politics of the day. President Franklin Delano Roosevelt effectively used radio for his **fireside chats** (see Exhibit 1–14) to

**Exhibit 1–13**

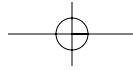
The NBC radio mobile unit making contact with an airplane. This 1929 experimentation led to future possibilities for news coverage.

*(Courtesy of NBC)*

**Exhibit 1–14**

President Franklin Delano Roosevelt delivering a “fireside chat.”

*(Courtesy of NBC)*



reassure the nation during the Depression. Louisiana's firebrand Governor Huey Long was often heard on the airwaves, and Father Charles E. Coughlin, a Detroit priest, tried to build a political movement through radio.<sup>30</sup>

## 1.11 The Press-Radio War

News was destined to become one of radio's strongest services, but not without a struggle. At first, announcers merely read newspaper headlines over the air, but gradually networks began purchasing news from the **wire services**. In 1932, the Associated Press sold presidential election bulletins to the networks, and programs were interrupted with news flashes. Newspapers objected to all of this on the grounds that news on radio would diminish the sale of papers. From 1933 to 1935, a **press-radio war** ensued.

**newspaper  
objections**

A meeting of newspaper publishers, network executives, and wire service representatives, held at the Biltmore Hotel in New York in 1933, established the **Biltmore Agreement**. It stipulated that networks could air two five-minute newscasts a day consisting of material received from the established wire services. These newscasts had to be aired in the morning after 9:30 A.M. and in the evening after 9:00 P.M. so they would not compete with the primary hours of newspaper sales. No "hot-off-the-wire" news was to be broadcast, and newscasts were not to have advertising support because this might detract from newspaper advertising. Newspaper publishers ensured that these provisions appeared in the Biltmore Agreement because they were the most numerous, most powerful, and wealthiest of the meeting participants.

**Biltmore  
Agreement**

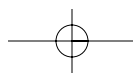
But the ink on this agreement was barely dry when its intent began to be subverted. The newspaper publishers had agreed to allow radio stations and networks to have commentators. Radio took advantage of this provision, and often these commentators became thinly disguised news reporters.

**commentators**

NBC and CBS began their own news-gathering activities. At NBC, one person gathered news simply by making telephone calls. Sometimes he scooped newspaper reporters because almost anyone would answer a call from NBC. In addition, he could reward news sources with highly prized tickets to NBC's top shows. Most of the material he collected was broadcast by NBC's prime newscaster, Lowell Thomas, but an item or two usually wound up on Walter Winchell's Sunday night gossip program. CBS set up a larger news force that included **stringers**—reporters paid only for material actually used. That network's top news commentator was H. V. Kaltenborn (see Exhibit 1–15).

**network news  
gathering**

The public became increasingly aware of news as world tensions grew. Advertisers became interested in sponsoring news radio programs because of the growing potential listener market. At one point, two services agreed to make their news available to advertisers, which would then broadcast it over radio, but they would not make it available to radio stations directly. This arrangement led to a breakdown of broadcast news blackouts, and radio began to develop as an important news disseminator. Americans heard actual sounds of Germany's march into Austria and the voices of Adolf Hitler and Benito Mussolini.<sup>31</sup>



**Exhibit 1-15**

**a.** Lowell Thomas began broadcasting in 1929 with one of the earliest programs, called *Headline Hunters*, and remained on the radio regularly until after his 80th birthday. For many years he preceded *Amos 'n' Andy* with the news, prompting him to say of himself, "Here is the bird that everyone heard while waiting to hear *Amos 'n' Andy*."

*(Courtesy of Lowell Thomas)*

**b.** Walter Winchell with the signal key he used to accent his rapid-fire speaking style. He always worked with his hat on in the studio and always began his programs, "Good evening, Mr. and Mrs. North and South America and all the ships at sea. Let's go to press."

*(Courtesy of NBC)*



**a.**



**b.**



**c.**

**c.** H. V. Kaltenborn, the dean of radio commentators, received his greatest recognition during the 1938 Munich crisis, when he didn't leave the CBS studios for eighteen days and went on the air eighty-five times to analyze news from Europe.

*(Courtesy of KFI, Los Angeles)*



## 1.12 World War II

The government did not take over broadcasting during the 1940–45 World War II period as it had during World War I. It did, however, solicit radio's cooperation for bond purchase appeals, conservation campaigns, and civil defense instructions. Among the most famous of these solicitations were singer Kate Smith's marathon broadcasts for war bonds. Her appeals sold over \$100 million worth of bonds. Many of the plays and soap operas produced during the period dealt with the war effort, and some even tried to address segregation, which was an issue because of racial separation in the armed forces. Several soap operas presented African Americans in esteemed professional roles.

The news function greatly increased as up-to-date material was broadcast at least every hour. One of the best-known voices heard from overseas was that of Edward R. Murrow (see Exhibit 1–16), whose broadcasts from London detailed what was happening to the English during the war.<sup>32</sup>

One result of the war was the perfection of audiotape recorders. Events could now be recorded and played back whenever desired. Before the war, NBC and CBS policies forbid the use of recorded material for anything other than sound effects, and even most of those were performed live. This policy was abetted by the musicians' union, which insisted that all broadcast music utilize musicians rather than phonograph records.

The recording technique used before the audiotape recorder usually employed phonograph discs, for the only magnetic recording known in America before World War II was **wire recording**. To edit or splice, a knot had to be tied in the wire and then fused with heat, making it a cumbersome and essentially unusable technique. During the war, American troops entering German radio stations found them operating without any people. The broadcasting was handled by a machine that used plastic tape of higher fidelity than Americans had ever heard from wire. This plastic tape could be cut with scissors and spliced with adhesive. The recorders were confiscated, sent to America, and improved, and they eventually revolutionized programming procedures.<sup>33</sup>

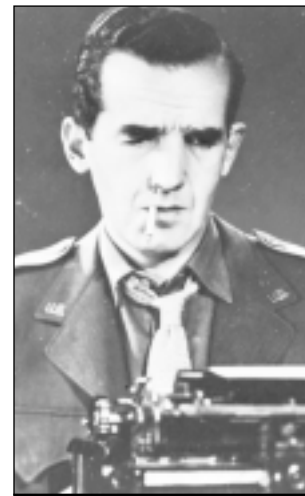
Radio stations enjoyed great economic prosperity during the war. About 950 stations were on the air when the war began. No more were licensed during the war, so these 950 received all the advertisements. A newsprint shortage reduced ad space in newspapers, and some of that advertising money was channeled into broadcasting. Institutional advertising became common because of high wartime taxes: Companies preferred to pay for advertising rather than turn money over to the government. And with few consumer products to sell because industry was geared to the war effort, companies were happy to sponsor such prestigious programs as symphony orchestra concerts. Thus, radio station revenue increased from \$155 million in 1940 to \$310 million in 1945.<sup>34</sup>

**war efforts**

**news function**

**audiotape recorders**

**economic prosperity**



### Exhibit 1–16

Correspondent Edward R. Murrow at his typewriter in wartime London.

*(From United Press International)*

### 1.13 Postwar Radio

Postwar radio prospered. Advertisers were standing in line, and the main programming problem was finding a way to squeeze in the commercials. To the networks, especially NBC, this boon provided the necessary capital to support the then-unprofitable television development. To invest even more in the new technology, nonsponsored public affairs radio programs dropped by the wayside, as did some expensive entertainment. Radio fed the mouth that bit it.

**station  
expansion**

On the local level, this prosperity created a demand for new radio station licenses as both entrepreneurs and large companies scrambled to cash in on the boom. The 950 wartime stations expanded rapidly to more than 2,000 by 1950.<sup>35</sup> Advertising revenues increased from \$310 million in 1945 to \$454 million in 1950.<sup>36</sup>

**TV takeover**

The bubble burst, however, as advertisers deserted radio to try TV, the medium that featured both sound and sight. This left radio networks as hollow shells. The 2,000 local stations found that the advertising dollars remaining in radio did not stretch to keep them all in the black. In 1961, almost 40 percent of radio stations lost money.<sup>37</sup>

After the war, radio networks returned to prewar programming—comedy, drama, soap operas, children’s programs, and news. However, a new phenomenon appeared on the scene—the disc jockey (DJ). Several conditions precipitated this emergence.

A court decision in 1940 ruled that if broadcasters purchased a record, they could then play it. Previously, records had been stamped “not licensed for radio broadcast.” Removing this restriction added legal stature to disc jockey programs.

During the mid-1940s, the musicians’ union, which had previously voted to halt recording, was appeased with a musicians’ welfare fund to which record companies would contribute. This opened the door to mass record production.

This mass production of records led to a symbiotic relationship between radio and the record business that is still in force today. The beginnings of this relationship can be traced to several people, most notably Alan Freed (see Exhibit 1–17), Gordon McLendon, and Todd Storz. During the early 1950s, Freed, a Cleveland DJ, began playing a new form of music he called rock and roll. The music caught the fancy of teenagers and gave radio a new primary audience and a new role in society—a mouth-piece and sounding board for youth.

McLendon and Storz were both station owners who began programming Top 40 music. According to radio lore, Storz was in a bar one night trying to drown his sorrows over the sinking income of his radio stations when



**Exhibit 1–17**

Alan Freed.

(AP/Wide World Photos)

he noticed that the same tunes seemed to be played over and over on the jukebox. After almost everyone had left, a waitress went over to the jukebox. Rather than playing something that had not been heard all evening, she inserted her nickel and played the same song that had been selected most often. Storz decided to try playing the same songs over and over on his radio stations. Top 40 radio was born. McLendon programmed the same Top 40 format and promoted it heavily.<sup>38</sup>

At the same time that recorded music was being introduced on radio, radios were becoming more portable, and Americans were becoming more mobile. The public (especially the young) appreciated the disc jockey shows, which could be enjoyed while listeners were engaged in other activities, such as studying, going to the beach, or talking with friends.

A final important reason for the rise of the DJ was that station management appreciated the lower overhead, fewer headaches, and higher profits associated with disc jockey programming. A DJ did not need a writer, a bevy of actors, a sound effects person, an audience, or even a studio. All that was needed were records, and these were readily available from companies that would eagerly court disc jockeys in the hope that they would plug certain tunes, thus assuring sales of the records.<sup>39</sup>

This courtship slightly tarnished the disc jockeys' image during the late 1950s when it was discovered that a number of disc jockeys were engaged in **payola**, accepting money or gifts in exchange for favoring certain records. To remedy the situation, Congress amended the Communications Act so that if station employees received money from individuals other than their employers for airing records or other material, they had to disclose that before broadcast time under penalty of fine or imprisonment. This helped control the practice of payola, but every now and then it still rears its ugly head.<sup>40</sup>

The stations' need for the networks declined as the stations courted the disc jockeys and top talent left radio for TV. The increasing number of stations also meant that more stations existed in each city, so more of them were programming independently of networks. Therefore, the percentage of network-affiliated stations decreased dramatically. The overall result was a slow but steady erosion of network entertainment programming that began during the 1950s.

## 1.14 FM Radio Development

During the early 1930s, David Sarnoff mentioned to Edwin H. Armstrong that someone should invent a black box to eliminate static. Armstrong did not invent just a black box, but a whole new system—**frequency modulation (FM)**. He wanted RCA to back its development and promotion, but Sarnoff had committed RCA funds to television and was not interested in underwriting a new radio structure despite its obviously superior fidelity.

Armstrong continued his interest in FM, built an experimental 50,000-watt FM station in New Jersey, and solicited the support and enthusiasm of GE for his project. During the late 1930s and early 1940s, an FM bandwagon was rolling, and some 150 applications for FM stations were submitted to the FCC.

changes in the  
record business

Top 40

mobility

lower overhead

payola

decline of  
networks

Armstrong

The FCC altered Channel 1 on the TV band and awarded spectrum space to FM. It also ruled that TV sound should be frequency modulated. Armstrong's triumphant boom seemed just around the corner, but World War II intervened and commercial FM had to wait.

### moving FM

After the war, the FCC reviewed spectrum space and decided to move FM to another part of the broadcast spectrum, ostensibly because it thought sunspots might interfere with FM. Armstrong protested this move because it rendered all prewar FM sets worthless and saddled the FM business with heavy conversion costs.

Armstrong was further infuriated because, although FM sound was to be used for TV, RCA had never paid him royalties for the sets it manufactured. In 1948, he sued RCA. The suit proceeded for more than a year, and the harassment and illness it caused Armstrong led him to leap from the window of his 13th-floor apartment to his death.<sup>41</sup>

### FM's slow start

FM continued to develop slowly. With television on the horizon, there was little interest in a new radio system. Many of the major AM stations acquired FM licenses as insurance in case FM replaced AM, as its proponents were predicting. AM stations simply duplicated their AM programming on FM, which did not increase the public's incentive to purchase FM sets. In fact, for a while an industry joke ran, "What do the letters 'FM' in FM radio stand for?" The answer was "Find me."

### noncommercial radio

One brighter spot was on the education front. In 1945, educators convinced the FCC to reserve the 20 FM channels between 88.1 and 91.9 exclusively for noncommercial radio. Most of these stations were used by universities, although some were owned by nonprofit community groups, such as the Pacifica Foundation, and others were operated by religious organizations. Six of these noncommercial stations were on the air by the end of 1948, and by 1950 there were 48. In 1949, the National Association of Educational Broadcasters (NAEB) formed a **bicycle network** to provide programming for educational stations. The programs were duplicated at a central location and then sent by mail from one station to another on a scheduled round-robin basis.<sup>42</sup>

### FM success

As general interest in high-fidelity music grew, FM's interference-free signal became an asset to commercial stations. In 1961, the FCC authorized stereophonic sound transmission for FM, which led to increased awareness of the medium. At first classical and semiclassical music dominated the FM airwaves. Hi-fi equipment then became inexpensive enough to be purchased by teenagers, and rock music became prominent FM fare. This led to an increased number of listeners followed by an increased number of advertisers.

A further aid to FM's success was a 1965 FCC ruling stating that in cities of more than 100,000 population, AM and FM stations with the same ownership had to have separate programming at least 50 percent of the time. This helped FM gain a foothold because it now developed its own distinctive programming. In 1986, when it was obvious FM had become established, the FCC rescinded the 1965 ruling and again allowed AM and FM stations to have the same programming.<sup>43</sup>

During the 1970s, FM developed so successfully that it began taking audience away from AM. In 1972, AM had 75 percent of the audience, and FM had a paltry 25 percent. By the mid-1980s, those percentages had reversed, and AM stations were the ones losing money.<sup>44</sup>

The switch to FM was mostly caused by the superior sound quality of the medium, including the capability for **stereo** sound. AM proponents tried to combat this by developing an AM stereo system. During the late 1970s and early 1980s, several companies proposed stereo transmission systems that, unfortunately, were not compatible with each other. AM stations hoped the FCC would choose a standard, as it had for FM, but in 1982, the FCC refused to rule on one common standard, stating instead that the marketplace should decide. The marketplace was not quick to decide. By the 1990s, the C-Quam system developed by Motorola seemed to have become the *de facto* standard, so the FCC rubber-stamped it, but very few stations switched to stereo. AM stereo sound is not as good as FM and does not seem to have given AM the competitive boost it needs.<sup>45</sup>

**AM stereo**

## 1.15 The Restructuring of Public Radio

The educational stations at the lower end of the FM dial received some sprucing up with the passage of the Public Broadcasting Act in 1967. This act was adopted mainly to benefit educational television, but radio was also included. The term *educational* was dropped and *public radio* was used instead. The act resulted in funding for a wired network, National Public Radio (NPR), that began operating from Washington, D.C., in 1970. It replaced the bicycle network of the NAEB and today delivers programming by satellite. NPR's mission was to upgrade the quality of public radio programming with news, senate hearings, music, talk shows, documentaries, and programming from other countries. One of the most popular early programs was the in-depth evening news program *All Things Considered*, which is still on the air (see Exhibit 1–18).

Over the years, some structural elements of NPR were not popular with many of the stations, most notably the fact that most of the programming was produced in Washington, D.C. Local stations thought their programs deserved wider dissemination. A group of public stations in 1982 formed American Public Radio, which in 1994 changed its name to Public Radio International (PRI). PRI is an independent, nonprofit network headquartered in



### Exhibit 1–18

Hosts Robert Siegel and Linda Wertheimer in Studio 2A at National Public Radio's headquarters in Washington, D.C., during the broadcast of *All Things Considered*.

(Courtesy of National Public Radio)

**Exhibit 1-19**

*A Prairie Home Companion* feature called “Buster, The Show Dog.” Host Garrison Keillor (*left*) performs with Kate MacKenzie, Dan Rowles, Stevie Beck, and Tom Keith.

(Courtesy of American Public Radio/Rob Levine, photographer)

**NPR**

Minneapolis, Minnesota. Unlike NPR, PRI does not receive direct federal funding. Station members pay fees that support the national office and the satellite distribution system. Most programs are donated by local stations and can be aired free by the affiliates. The most popular personality on PRI has been Garrison Keillor, with his weekly program *A Prairie Home Companion* (see Exhibit 1-19). Keillor’s programs consist of a combination of music, skits, and homespun philosophy.<sup>46</sup>

**PRI**

The public broadcasting networks do not fill all the airtime on the public radio stations. Local programming includes music—classical, jazz, swing, and other forms not generally heard on commercial radio. Some stations also produce their own public affairs programs, dramas, and children’s programs.

### 1.16 College Radio

**10-watters**

Many stations at the lower end of the FM band are not affiliated with either NPR or PRI. They are operated by colleges and serve as a training ground or extracurricular activity for students interested in music or broadcasting. These stations arose because of a 1948 FCC ruling authorizing low-powered, 10-watt educational stations that generally reached only a two- to five-mile radius and were easily and inexpensively installed and operated. These **10-watter** stations grew rapidly and many have since increased their power.

During the 1970s, NPR tried to woo these stations into becoming affiliates. Some did and are operated within universities by professional staff members who allow some student involvement. But many stations have remained student operated, with students making the programming and operating decisions. The student-run stations have become important to the music industry because new

**Exhibit 1–20**

Pearl Jam, one of the musical groups that got its start on college radio.

*(Reuters/Bettmann)*

groups and new sounds are often aired on them first. Groups such as R.E.M., Nirvana, and Pearl Jam (see Exhibit 1–20) got their start on college radio.

In addition to FM stations, some colleges and universities have closed-circuit stations that operate only on campus, programming primarily to the dorms. Others operate low-power AM stations that are designated to provide traffic and weather information. The student groups supplement this programming material with announcements about campus events. Many colleges have placed their FM stations on the Internet, and a number have established Internet-only student stations (see Section 5.4c).<sup>47</sup>

**other stations**

### **1.17 Reemergence of Commercial Networks**

On the commercial front, the significance of networks, which hit a low in the 1960s, began to increase in the 1970s. These networks do not serve the same function as the old radio networks that brought common programming to the nation. Instead, the companies owning networks deliver several satellite services with different features and formats so that they can appeal to a variety of stations. Some of the stations use only bits and pieces from the network, some

use the network music along with local personalities, and others use a preponderance of the network material. Also, several stations in one market may affiliate with the same network or one station may affiliate with several networks.

### ABC redevelopment

ABC was the first to redevelop its network. In 1968, its shell of a network was providing primarily news to a limited number of affiliates. It received a waiver from the FCC's previous rules so that it could, in essence, operate four networks—American Contemporary, American Information, American Entertainment, and American FM. Each network provided some combination of news, sports, and features for a different target audience (e.g., teens, young adults, adults).<sup>48</sup>

### changes in other networks

Shortly thereafter, CBS restructured its news network to add features and old-fashioned radio drama. NBC experimented with a news service that tried to make it economically possible for stations in small markets to provide an all-news format. When that failed, NBC experimented with other news, feature, and talk concepts. Mutual also made some minor changes in its offerings, and several other companies started radio networks, many of which folded.<sup>49</sup>

### Westwood One

An upstart in the network business, Westwood One, purchased Mutual in 1985 and then in 1987 pulled an even bigger coup by buying the NBC networks. As a result, the original radio network was no longer in business, although Westwood One continued to use the term “NBC News.” In 1995, Disney bought ABC, and Westinghouse bought CBS, so all the original radio networks now had new owners.<sup>50</sup>

### Disney and Westinghouse

More than 500 companies now distribute radio programming, primarily over satellite. Some call themselves *networks* and others call themselves *syndicators* or *program producers*. The large players—ABC, CBS, and Westwood One, each of which has multiple networks—deliver the most programming and take in the most revenue. Obviously the old rules against one company owning more than one network have been dropped.<sup>51</sup>

## 1.18 The Current Radio Scene

### license renewal

Of the more than 12,500 radio stations, approximately 5,000 are AM and 7,500 are FM.<sup>52</sup> In the last decade, **deregulation**, particularly that encompassed in the **Telecommunications Act of 1996**, has relaxed ownership restrictions regarding these stations. License renewal, which used to be a very complicated procedure occurring every three years, is now a simplified process that only occurs every eight years.

In previous decades, a particular company could own no more than seven AM and seven FM stations and could have no more than one of each in any listening area. Now there are no national ownership limits, and local ownership limits are greatly relaxed. In general, the larger the market, the more stations one company can own. If a market has 45 or more stations, one company can own



up to 8 stations, but no more than 5 can be of one kind (AM or FM). For markets with 30 to 44 stations, one company can own 7 stations, 5 of one kind. In markets with 15 to 29 stations, ownership of up to 6 stations is allowed, 4 of one kind. This deregulation has resulted in companies with large financial resources buying many radio stations; some now own more than 1,000 nationwide.<sup>53</sup>

Another related result of deregulation is that companies can operate stations even if they do not own them. They operate multiple stations in the same area with the same sales and management team, a process referred to as a

**ownership  
changes**

### Issues **Women and Minorities**

In April 2001, the National Association of Broadcasters (NAB) bestowed its Distinguished Service Award on Catherine Hughes, the founder and chairperson of Radio One, which is the largest African-American-owned station group in the United States.

Hughes entered radio in 1973 as general sales manager at WHUR-FM Howard University Radio in Washington, D.C. She then became the first female vice president and general manager of a station in the nation's capital and made WHUR one of the most listened to stations in the D.C. area. In 1979, she and her husband bought a small Washington radio station and founded Radio One. When her marriage ended, she bought her husband's share, but for a while she had to give up her apartment and live at the station to make ends meet. Eventually the station became profitable and she purchased other stations, so that Radio One now has 65 stations in 22 markets. She is the first African-American woman to head a publicly traded firm.

In her NAB acceptance speech, she told of a time when she needed money to close a deal. "There was only one problem. I needed \$1.5 million to close the deal, and I was only \$1.5 million short." She credits a Puerto Rican woman banker with believing in her enough to find her the funding. Her speech also urged those in broadcasting to make room for more women and minorities.

The FCC has had rules that give priority to women and minorities in terms of station ownership. These rules no longer exist. Should they be reinstated? How will the ownership deregulation trends affect minority radio ownership?



*(Courtesy of Catherine Hughes)*

**LMA**s

**local marketing agreement (LMA).** The formats of the stations are usually different, but one person acts as general manager of all of them and the salespeople sell ads for all of them. The stations are often located in the same building. All of this cuts down on overhead, thus increasing profit.<sup>54</sup>

**ethnic radio**

Another recent phenomenon is the growth of ethnic radio. Foreign-language stations existed near the periphery of radio for many years, but by the mid-1990s, more than 400 stations were operating with an ethnic format. In Los Angeles, several Spanish-language stations have been rated number one during different rating periods.<sup>55</sup>

**talk radio**

Talk radio is now center stage. Conservative hosts such as Rush Limbaugh and G. Gordon Liddy developed large followings. “Shock jocks” such as Howard Stern and Don Imus have stirred controversy with their sexual and scatological language and their often outlandish antics on and off the radio. But the personality who is heard on the most radio stations is an old-timer, Paul Harvey, who has his own brand of news and commentary for ABC and who started his radio career in 1933 (see Exhibit 1–21).<sup>56</sup>

**a.****b.****c.****Exhibit 1-21**

**a.** Rush Limbaugh, conservative talk show host.

*(Courtesy of the EIB Network)*

**b.** “Shock jock” Howard Stern.

*(AP/Wide World Photos/Marty Lederhandler)*

**c.** Longtime commentator Paul Harvey.

*(AP/Wide World Photos/ABC Radio, HO)*

## 1.19 Issues and the Future

The greatest threat to conventional radio is a logical extension of satellite-delivered services, namely audio that goes directly from the satellite to the home or automobile receiver. Such a service, **digital audio radio service (DARS)**, started in 2001 and is delivering digital sound of CD quality to consumers. Two companies, XM Satellite Radio and Sirius Satellite Radio, received permission to broadcast from the FCC in 1997 and shortly thereafter arranged with automobile manufacturers to install satellite radios in cars. They have the capability of offering more than 100 channels of music, news, sports, and features. Many of the channels are advertising-free, and because listeners pay about \$10 a month for the service, there are fewer ads than on conventional radio. AM and FM station owners are obviously not happy about DARS and have two companies, Lucent and USA Digital Radio, working toward a means for delivering digital CD-quality audio within the current AM and FM bands.<sup>57</sup>

Another phenomenon that conventional radio stations have been fighting is **low-power FM (LPFM)**. In 1999, the FCC approved the concept, which could have allowed thousands of new radio stations to operate within the FM band. Their power was to be so low (1 to 100 watts) that they would cover only a radius of several miles. The FCC's intent, now that most stations are owned by conglomerates, was to make these stations available to community groups, schools, and churches so that they had access to the airwaves. The established radio industry, fearful that these stations would interfere with their signals as well as their economic well-being by creating more competition, lobbied hard against the provision. They met with some success in 2001 when Congress significantly scaled back the number of potential LPFM stations.<sup>58</sup>

A potential competitor to traditional radio is Internet-only stations. Many AM and FM stations place their signals on the Internet as well as over the air, but it is also possible for just about anyone to create a radio station that transmits only over the Internet. As these Internet stations develop more fully, they could steal audience and advertising from the conventional stations. The Internet also has the capability of taking a local radio station and giving it worldwide audience base, something that may increase the value of both conventional and Internet-only radio stations. **Web pages** enable radio to communicate with and receive feedback from its audience, but it also opens the door to many controversies such as those surrounding copyright and music licensing (see Sections 5.4 and 10.8).<sup>59</sup>

Radio's history is full of cataclysmic changes. Its resilience in reinventing itself during the 1960s could serve as a model as it marches forward in the twenty-first century.

**DARS****LPFM****Internet radio**

## 1.20 Summary

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Radio has survived periods of experimentation, glory, and trauma. Early inventors, such as Maxwell, Hertz, Marconi, Fleming, Fessenden, and De Forest, would not recognize radio in its present form. Many people who knew and loved radio during the 1930s and 1940s do not truly recognize it today. Radio has endured and along the way has chalked up an impressive list of great moments: picking up the *Titanic*'s frantic distress calls, broadcasting the Harding–Cox presidential election returns, broadcasting the World War II newscasts of Edward R. Murrow, and surviving the television takeover.

Along the way, government interaction with radio illustrates the medium's growth as a broadcasting entity. Early laws dealt with radio primarily as a safety medium. The fact that government took control of radio during World War I but did not do so during World War II indicates that radio had grown from a private communication medium to a very public one that most Americans relied on for information. The need for the government to step in to solve the problem of overcrowded airwaves during the late 1920s proved the popularity and prestige of radio. The ensuing Communications Act of 1934 and the various FCC regulations helped solidify the government's role in broadcasting. When Congress passed the Public Broadcasting Act of 1967, it set the groundwork for the reorganization of public radio. Government both hindered and helped the development of FM and is now involved with the establishment of DARS and LPFM. The lessening of ownership regulations in recent times is further evidence that radio has survived.

Companies from the private-enterprise sector have also played significant roles in the history of radio, starting with the Marconi company and progressing through the founding of RCA by the still-powerful AT&T, GE, and Westinghouse. These early companies contributed a great deal in terms of technology, programming, and finance. The networks, each in its own peculiar way, set the scene for both healthy competition and elements of unhealthy intrigue. Intrigue also characterized the rivalry between newspapers and radio in the prewar days, and free enterprise in its purest sense altered the format of radio when television stole its listeners. The formation of new networks by Westwood One and the revitalization of networks by ABC and CBS are further proof that radio has survived.

Radio programming is indebted to early pioneers who filled the airwaves with boxing matches, “potted palm” music, and call letters, and to *Amos 'n' Andy*, Jack Benny, and others who are remembered for creating the golden era of radio. Today countless disc jockeys, talk show hosts, and newscasters let us know that radio has survived.



### See CD-ROM for:

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Sample test questions

Chapter exercise

Questions for critical thinking

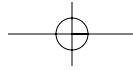
Pertinent websites

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