History of Television

Few inventions have had as much effect on contemporary American society as television. Before 1947 the number of U.S. homes with television sets could be measured in the thousands. By the late 1990s, 98 percent of U.S. homes had at least one television set. It marked the beginning of a phenomenon that was to have a major impact on news, advertising, film, radio, and the world—not to mention how millions of people would spend their leisure hours.

EARLY APPLICATION OF THE TECHNOLOGY

Discovering how to send audio through the airwaves opened the door to the possibility of television, but video was far more complex. It was correctly reasoned that since pictures had millions of times more data than audio, pictures would have to be broken down into bits of information (a data stream) before being transmitted.

The first application of this concept was wirephotos (using telephone lines to send still photos to newspapers). This was done by wrapping a photo around a drum, as shown on the right, and rotating the drum as a light-sensitive photocell moved over the image picking up brightness differences. The photocell created voltages that were amplified thousands of times and then sent by telephone lines to the subscribing newspapers.

At the receiving end, somewhat the reverse took place. A piece of photographic paper spun around on a cylinder within a light-tight enclosure. The intensity of a pinpoint of light focused on the paper varied with the signal being picked up by the originating machine. When the scan was finished, the paper was taken out in a darkroom and processed as a photographic print.

Wirephoto machines established the basic concept of scanning pictures a line at a time. But still photos are not motion pictures. Experiments with film had demonstrated that if a series of pictures were presented at a rate of about 16 or more per-second, an illusion of motion could be created. So the problem became one of electronically transmitting a series of still pictures every second. To do this the wirephoto approach of transmitting still photos—which originally took about 20 minutes just to transmit one picture—would have to be speeded up millions of times.

Once the problem of how to dissect images and sequentially transmit them through the air by means of radio waves was solved, we had the central elements of the television equation.

EXPERIMENTS

Electronic television was first successfully demonstrated in San Francisco on Sept. 7, 1927. The system was designed by Philo Taylor Farnsworth, a 21-year-old inventor who had lived in a house without electricity until he was 14. While still in high school, Farnsworth had begun to conceive of a system that could capture moving images in a form that could be coded onto radio waves and then transformed back into a picture on a screen.

Boris Rosing in Russia had conducted some crude experiments in transmitting images 16 years before Farnsworth’s first success. Also, a mechanical television system, which scanned images using a rotating disk with holes arranged in a spiral pattern, had been demonstrated by John Logie Baird in England and Charles Francis Jenkins in the United States earlier in the 1920s. However, Farnsworth’s invention, which scanned images with a beam of electrons, is the direct ancestor of modern television.
The first image he transmitted on it was a simple line. Soon he aimed his primitive camera at a dollar sign because an investor had asked, “When are we going to see some dollars in this thing, Farnsworth?”

EARLY DEVELOPMENT

RCA, the company that dominated the radio business in the United States with its two NBC networks, invested $50 million in the development of electronic television. To direct the effort, the company’s president, David Sarnoff, hired the Russian-born scientist Vladimir Kosma Zworykin, who had participated in Rosing’s experiments.

In 1939, RCA televised the opening of the New York World’s Fair, including a speech by President Franklin Delano Roosevelt, who was the first president to appear on television. Later that year RCA paid for a license to use Farnsworth’s television patents. RCA began selling television sets with 5 by 12 in (12.7 by 25.4 cm) picture tubes.

The company also began broadcasting regular programs, including scenes captured by a mobile unit and, on May 17, 1939, the first televised baseball game—between Princeton and Columbia universities. By 1941 the Columbia Broadcasting System (CBS), RCA’s main competition in radio, was broadcasting two 15-minute newscasts a day to a tiny audience on its New York television station.

Early television was quite primitive. All the action at that first televised baseball game had to be captured by a single camera, and the limitations of early cameras forced actors in dramas to work under impossibly hot lights, wearing black lipstick and green makeup (the cameras had trouble with the color white).

The early newscasts on CBS were “chalk talks,” with a newsmen moving a pointer across a map of Europe, then consumed by war. The poor quality of the picture made it difficult to make out the newsmen, let alone the map. World War II slowed the development of television, as companies like RCA turned their attention to military production. Television’s progress was further slowed by a struggle over wavelength allocations with the new FM radio and a battle over government regulation.

The Federal Communications Commission’s (FCC) 1941 ruling that the National Broadcasting Company (NBC) had to sell one of its two radio networks was upheld by the Supreme Court in 1943. The second network became the new American Broadcasting Company (ABC), which would enter television early in the next decade. Six experimental television stations remained on the air during the war—one each in Chicago, Philadelphia, Los Angeles, and Schenectady, N.Y., and two in New York City. But full-scale commercial television broadcasting did not begin in the United States until 1947.
THE BEGINNING OF COMMERCIAL TELEVISION

By 1949 Americans who lived within range of the growing number of television stations in the country could watch, for example, The Texaco Star Theater (1948), starring Milton Berle, or the children’s program, Howdy Doody (1947-60). They could also choose between two 15-minute newscasts—CBS TV News (1948) with Douglas Edwards and NBC’s Camel News Caravan (1948) with John Cameron Swayze (who was required by the tobacco company sponsor to have a burning cigarette always visible when he was on camera).

Many early programs—such as Amos ‘n’ Andy (1951) or The Jack Benny Show (1950-65)—were borrowed from early television’s older, more established Big Brother: network radio. Most of the formats of the new programs—newscasts, situation comedies, variety shows, and dramas—were borrowed from radio, too. NBC and CBS took the funds needed to establish this new medium from their radio profits.

However, television networks soon would be making substantial profits of their own, and network radio would all but disappear, except as a carrier of hourly newscasts. Ideas on what to do with the element television added to radio, the visuals, sometimes seemed in short supply.

On news programs, in particular, the temptation was to fill the screen with “talking heads,” newscasters simply reading the news, as they might have for radio. For shots of news events, the networks relied initially on the newsreel companies, whose work had been shown previously in movie studios.

The number of television sets in use rose from 6,000 in 1946 to some 12 million by 1951. No new invention entered American homes faster than black and white television sets; by 1955 half of all U.S. homes had one.

MCCARTHYISM

In 1947 the House Committee on Un-American Activities began an investigation of the film industry, and Sen. Joseph R. McCarthy soon began to inveigh against what he claimed was Communist infiltration of the government. Broadcasting, too, felt the impact of this growing national witch-hunt.

Three former members of the Federal Bureau of Investigation (FBI) published “Counterattack: The Newsletter of Facts on Communism,” and in 1950 a pamphlet, “Red Channels,” listed the supposedly Communist associations of 151 performing artists. Anti-Communist vigilantes applied pressure to advertisers—the source of network profits.

Political beliefs suddenly became grounds for getting fired. Most of the producers, writers, and actors who were accused of having had left-wing leanings found themselves blacklisted, unable to get work. CBS even instituted a loyalty oath for its employees.

Among the few individuals in television well positioned enough and brave enough to take a stand against McCarthyism was the distinguished former radio reporter Edward R. Murrow. In partnership with the news producer Fred Friendly, Murrow began See It Now, a television documentary series, in 1950. On Mar. 9, 1954, Murrow narrated a report on McCarthy, exposing the senator’s shoddy tactics. Of McCarthy, Murrow observed, “His mistake has been to confuse dissent with disloyalty.”

A nervous CBS refused to promote Murrow and Friendly’s program. Offered free time by CBS, McCarthy replied on April 6, calling Murrow “the leader and the cleverest of the jackal pack which is always found at the throat of
anyone who dares to expose Communist traitors.” In this TV appearance, McCarthy proved to be his own worst enemy, and it became apparent that Murrow had helped to break McCarthy’s reign of fear. In 1954 the U.S. Senate censured McCarthy, and CBS’s “security” office was closed down.

**THE GOLDEN AGE**

Between 1953 and 1955, television programming began to take some steps away from radio formats. NBC television president Sylvester Weaver devised the “spectacular,” a notable example of which was *Peter Pan* (1955), starring Mary Martin, which attracted 60 million viewers.

Weaver also developed the magazine-format programs *Today*, which made its debut in 1952 with Dave Garroway as host (until 1961), and *The Tonight Show*, which began in 1953 hosted by Steve Allen (until 1957). The third network, ABC, turned its first profit with youth-oriented shows such as *Disneyland*, which debuted in 1954 (and has since been broadcast under different names), and *The Mickey Mouse Club* (1955-59).

The programming that dominated the two major networks in the mid-1950s borrowed heavily from another medium: theater. NBC and CBS presented such noteworthy, and critically acclaimed, dramatic anthologies as *Kraft Television Theater* (1947), *Studio One* (1948), *Playhouse 90* (1956), and *The U.S. Steel Hour* (1953).

Memorable television dramas of the era—most of them broadcast live—included Paddy Chayefsky’s *Marty* (1955), starring Rod Steiger (Ernest Borgnine starred in the film), and Reginald Rose’s *Twelve Angry Men* (1954). By the 1955-56 television season, 14 of these live-drama anthology series were being broadcast. This is often looked back on as the “Golden Age” of television. However, by 1960 only one of these series was still on the air. Viewers apparently preferred dramas or comedies that, while perhaps less literary, at least had the virtue of sustaining a familiar set of characters week after week.

*I Love Lucy*, the hugely successful situation comedy starring Lucille Ball and Desi Arnaz, had been recorded on film since it debuted in 1951 (last-
ing until 1957). It had many imitators. *The Honeymooners*, starring Jackie Gleason, was first broadcast, also via film, in 1955 (lasting until 1956 with the original cast).

The first videotape recorder was invented by Ampex in 1956. Another format introduced in the mid-1950s was the big-money quiz show. *The $64,000 Question* (1955-58) and *Twenty-One* (1956-58) quickly shot to the top of the ratings. In 1959, however, the creator of *The $64,000 Question*, Louis C. Cowan, by that time president of CBS television, was forced to resign from the network amid revelations of widespread fixing of game shows.

**TELEVISION AND POLITICS**

Television news first covered the presidential nominating conventions of the two major parties, events then still at the heart of America politics, in 1952. The term “anchorman” was used, probably for the first time, to describe Walter Cronkite’s central role in CBS’s convention coverage that year. In succeeding decades these conventions would become so concerned with looking good on television that they would lose their spontaneity and eventually their news value.

The power of television news increased with the arrival of the popular newscast, *The Huntley-Brinkley Report*, on NBC in 1956. The networks had begun producing their own news film. Increasingly, they began to compete with newspapers as the country’s primary source of news.

The election of a young and vital president in 1960, John F. Kennedy, seemed to provide evidence of how profoundly television would change politics. Commentators pointed to the first televised debate that fall between Kennedy, the Democratic candidate for president, and Vice-President Richard M. Nixon, the Republican’s nominee. A survey of those who listened to the debate on radio indicated that Nixon had won; however, those who watched on television, and were able to contrast Nixon’s poor posture and poorly shaven face with Kennedy’s poise and grace, were more likely to think Kennedy had won the debate. Television’s coverage of the assassination of President Kennedy on Nov. 22, 1963, and of the events that followed, provided further evidence of the medium’s power. Most Americans joined in watching coverage of the shocking and tragic events, not as crowds in the streets, but from their own living rooms.

A newscast that would soon surpass the popularity of Huntley-Brinkley, *The CBS Evening News with Walter Cronkite*, debuted in 1962 (and was broadcast until 1981). By the end of the decade Cronkite had become not just a highly respected journalist but, according to public opinion surveys, “the most trusted man in America.” His role in coverage of the Vietnam War would be important. While the overwhelming majority of television news reports on the Vietnam War were supportive of U.S. policy, television news film of the fighting sometimes gave Americans back home an unfamiliar, harsh, and unromantic view of combat.

Many believed it contributed to growing public dissatisfaction with the war. And some of the anger of those defending U.S. policy in Vietnam was leveled against television news. In 1965, CBS reporter Morley Safer accompanied a group of U.S. Marines on a “search and destroy” mission to a complex of hamlets called Cam Ne. The Marines faced no en-
enemy resistance, yet they held cigarette lighters to the thatched roofs and proceeded to “waste” Cam Ne.

After much debate, Safer’s filmed report on the incident was shown on CBS. Early the next morning the president of CBS received an angry phone call from the president of the United States, Lyndon B. Johnson, accusing the network of a lack of patriotism.

During the Tet offensive in 1968, Cronkite went to Vietnam to report a documentary on the state of the war. That documentary, broadcast on Feb. 28, 1968, concluded with what Cronkite has described as “a clearly labeled editorial”: “It is increasingly clear to this reporter that the only rational way out will be to negotiate,” he said. President Johnson was watching Cronkite’s report. According to Bill Moyers, one of his press aids at the time: “The president flipped off the set and said, ‘If I’ve lost Cronkite, I’ve lost middle America.’”

THE THREE NETWORKS AT THE HEIGHT OF THEIR POWER

In 1964 color broadcasting began on prime-time television. The FCC initially approved a CBS color system, then swung in RCA’s favor after Sarnoff swamped the marketplace with black-and-white sets compatible with RCA color (the CBS color system was not compatible with black-and-white sets and would have required the purchase of new sets). During the 1960s and 1970s a country increasingly fascinated with television was limited to watching almost exclusively what appeared on the three major networks: CBS, NBC, and ABC.

These networks purchased time to broadcast their programs from about 200 affiliates each—stations in each of the major cities or metropolitan areas of the United States. In the larger cities, there might also be a few independent stations (mostly playing reruns of old network shows) and perhaps a fledgling public broadcasting channel. Programming on each of the three networks was designed to grab a mass audience. Network shows therefore catered, as critics put it, to the lowest common denominator.

James Aubrey, president of CBS television, doubled the network’s profits between 1960 and 1966 by broadcasting simple comedies like The Beverly Hillbillies (1962-71). In 1961, Newton Minow, then chairman of the FCC, called television a “vast wasteland.” Programming became a little more adventurous with the arrival of more realistic situation comedies, beginning with CBS’s All in the Family in 1971 (broadcast until 1979).

Along with situation comedies—usually a half-hour focused on either a family and their neighbors or a group of co-workers—the other main staple of network prime-time programming has been the one-hour drama, featuring the adventures of police, detectives, doctors, lawyers, or, in the early decades of television, cowboys. Daytime television programming consisted primarily of soap operas and quiz shows until the 1980s, when talk shows discussing subjects that were formerly taboo, such as sexuality, became popular.

The three major networks have always been in a continual race for ratings and advertising dollars. CBS and NBC dominated through the mid-1970s, when ABC, traditionally regarded as a poor third, rose to the top of the ratings, largely because of shrewd scheduling.
THE RISE OF CABLE

The force that would challenge the dominance of the three major television networks and offer Americans the choice of dozens and potentially hundreds of television channels—cable TV—began quietly in a few geographically isolated towns. Large antennas erected in high places gave everyone connected the chance to receive all the channels available in the nearest city.

By 1960 the United States had about 640 such CATV (community antenna television) systems. It soon became apparent, however, that the “television deprived” were not the only viewers who might want access to additional channels and additional programming. In New York City, cable operators contracted to broadcast the home games of the local basketball and hockey teams. By 1971 cable had more than 80,000 subscribers in New York.

Then networks specifically designed to be distributed by the cable system began to appear: Time Inc.’s Home Box Office (HBO) in 1975; Ted Turner’s “superstation,” soon renamed WTBS, in 1976; C-SPAN (live broadcasts of the House of Representatives), ESPN (sports), and Nickelodeon (children’s programming), all in 1979. Turner followed with the Cable News Network (CNN) the next year.

POLITICS ADAPTS TO TELEVISION

By the 1980s politicians and government leaders were familiar enough with the workings of television to be able to exploit the medium to their own ends. This seemed particularly apparent during the presidency of Ronald Reagan, himself formerly the host of a television show (General Electric Theater, 1954-62). Reagan’s skilled advisors were masters of the art of arranging flags and releasing balloons to place him in the most attractive settings. They also knew how to craft and release messages to maximize positive coverage on television newscasts.

The Persian Gulf War in 1991 provided further proof of the power of television, with pictures of U.S. bombs falling on the Iraqi capital broadcast live in the United States. Both Iraqi and U.S. leaders admitted to monitoring CNN to help keep up with news of the war. However, the U.S. Defense Department, armed with lessons learned in Vietnam, succeeded in keeping most reporters well away from the action and the bloodshed. Instead, pictures were provided to television by the military of “smart” bombs deftly hitting their targets.

NEW TECHNOLOGIES

In the 1980s, home videocassette recorders became widely available. Viewers gained the ability to record and replay programs and, more significantly, to rent and watch movies at times of their own choosing in their own homes. Video games also became popular during this decade, particularly with the young, and the television, formally just the site of passive entertainment, became an intricate, moving, computerized game board.

The number of cable networks grew throughout the 1980s and then exploded in the 1990s as improved cable technology and direct-broadcast satellite television multiplied the channels available to viewers. The number of broadcast networks increased also, with the success of the Fox network and then the arrival of the UPN and WB networks. The share the broadcast networks attracted contin-
ued to erode, from well over 90 percent in the early 1980s to under 50 percent by 1997.

Although the population of the United States has continued to grow, the Nielson Media Research company estimated that fewer people watched the highly publicized final episode of Seinfeld in 1998 (first aired in 1990) than watched the final episode of MASH in 1983 (first aired in 1972). The trial of former football star O. J. Simpson in 1994 for the murder of his wife (he was acquitted) further demonstrated the hold that cable networks had on American audiences. Some stations carried almost every minute of the lengthy trial live and then filled the evening with talk shows dissecting that day’s developments.

The effects of television on children, particularly through its emphasis on violence and sex, has long been an issue for social scientists, parents, and politicians. In the late 1980s and 1990s, with increased competition brought on by the proliferation of cable networks, talk shows and “tabloid” news shows seemed to broaden further frank or sensational on-air discussion of sex.

In response to government pressure, the television industry decided to display ratings of its programs in 1996. The ratings were designed to indicate the age groups for which the programs might be suitable: TV-G (for general audiences), TV-PG (parental guidance suggested), TV-14 (unsuitable for children under 14), and TV-MA (for mature audiences only). In response to additional complaints, all the networks except NBC agreed the next year to add V (for violence), S (for sex), L (for course language) and D (for suggestive dialogue) to those ratings. Also, the “V-chip” imbedded in new television sets, in accordance with a provision of a telecommunications bill passed in 1996, gave parents the power to automatically prevent their children from watching television programs with inappropriate ratings. Critics of the ratings saw them as a step toward censorship and questioned whether a TV-14 rating would make a program seem more, not less, attractive to an inquisitive child.

In 1997 the federal government gave each U.S. television broadcaster an additional channel on which to introduce high definition television, or HDTV. Initial transmissions of this high-resolution form of television, in which images appear much sharper and clearer, began in 1998. Standard television sets cannot pick up HDTV and were replaced in 2006, when traditional, low-definition television broadcasts ended and broadcasters returned their original, non-HDTV channel to the government. The HDTV format approved in the United States calls for television signals to be transmitted digitally. This will allow for further convergence between computers, the Internet, and television.
This article was taken in large part from a Grolier Encyclopedia article by Mitchell Stephens

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