

TUNING IN: Communications technologies historically have had broad appeal for consumers

IF YOU LOOK AT the history of technology, said high-tech guru George Forrester Colony in 1995, "there is a threshold where one day, you had to have something. You had to have a fax machine. Remember that day? It was 1981 or something. You had to have a fax machine on that day. The day before, you didn't need it."

"And there came a day, I think it was last year, when you had to have an e-mail address," he continued. "It's possible that in the home, there will come a day when you will need [two-way] video, because there are enough people out there you want to talk to who also have video and it's cheap enough."

"But I guess I see it as a gradual, incremental thing. It's going to take the regional Bell operating companies many, many, many more years, chucking in capital year after year, to do this. It'll take the cable companies a similar timetable."

The Electric Age

The history of communications technology is filled with things people had to have. In the 1920s and 1930s, it was radio, which quickly became an important part of U.S. culture.

Families would gather around the radio nightly to listen. In 1924, people were tuning in to political conventions, which spurred sales of radio sets. In 1925,

Chicago station WGN broadcast from the famous Scopes "monkey" trial.

The growing popularity of radio is easy to see in the chart below. Notice the disparity in the percentage of homes with radios compared to those with telephones in the 1930s. By the end of 1939, nearly 80% of homes had radios while only about 36% had telephones.

This trend continued with the advent of television. A little more than 10 years after it began to be mass-produced, TV surpassed the telephone in U.S. household penetration. By the end of 1957, 80% of homes had television sets compared to about 76% with telephones. Radios could be found in 96% of homes.

In the early 1950s, color television added another dimension to America's newfound obsession. Cable-television systems had already begun in 1948 and home-use video recorders were introduced in 1965, although they didn't reach significant levels of household penetration until 1979. Within 19 years, however, 91% of U.S. homes had VCRs.

The Electronic Age

In the 1940s, an equally important wave of new technology was emerging: the computer.

One significant invention was the Electronic Numerical Integrator and Computer (Eniac) in 1946. Eniac ran a thousand

times faster in performing calculations than older electromechanical machines.

By the 1950s, other inventions such as the silicon transistor, silicon chip and integrated circuit made computers smaller, yet more powerful. These devices also made computers more affordable and desirable to businesses.

The Information Age

As the computer age entered the 1960s and 1970s, the pace of development accelerated. IBM introduced its 360 computer in 1964. Compatible with a wide range of peripherals, it became a commercial success. The first home computer, the Altair 8800, appeared in 1975.

In the 1980s, other products such as the Apple Macintosh, CD-ROM, the laptop computer and Windows software helped to revolutionize the industry, making computers easier to operate and more convenient for personal use.

By 1998, about 43% of U.S. homes had computers — and access to the Internet suddenly seemed to be the thing everybody had to have. Household penetration of the Internet stood at 24%, well below the level many people believe it eventually will reach.

Other hot products in 1998 were the pager, with penetration of 31%, up from 1% in 1993, and the cellular phone, which rose to 48% from 1% in 1987.

How to Read this Chart

This chart shows the percentage of household penetration for consumer-electronics products in the U.S. from 1920 to 1998.

The colored lines represent the major product types. The red lines relate to television; the gold lines, radio; the blue lines, telephone; and the green lines, computers. Some lines aren't complete because the data for these products aren't available for early years of use.

The light-blue vertical areas represent U.S. recessions. The scale on the left and right sides of the chart

are the percentages for household penetration. The bottom of the chart shows years, wars and the Great Depression. The presidents are at the top (Democrats in light green; Republicans in gold).

The flags on the chart identify the introduction of specific consumer-electronics products and services, and show their relationship to historical events.

This chart allows you to compare the popularity of these products over time. Notice the number of products introduced since the mid-1980s.

