

Expect a communications revolution

By Barbara S. Moffet
National Geographic Society

When communications technology was introduced to the computer, it may not have been loved at first sight, but it certainly looked like a promising romance.

Today the two are practically inseparable. "It's getting awfully hard to tell the difference between modern call-processing equipment and a computer," says Dr. Joel Krugler, director of GTE's Telecommunications Research Laboratory.

The romance is still in the honeymoon stage, but by the next century the union will be complete. Its effects permeating nearly every aspect of American communication. In some forms of communication, such as mail, the effect will be a new, possibly intimidating intrusion of electronics.

In others, the computers will be so sophisticated that they may go unnoticed. Artificial intelligence research, for example, will create computers that will respond to voice commands, requiring neither special knowledge nor a keyboard.

As basic forms of communication become electronic, society may divide into "information haves and have-nots." Some Americans may lack the financial or technical ability to survive, says Gary Arlen, president of Arlen Communications, a Bethesda, Md., consulting company. "Will we have 'information stamps' like the food stamps of today?" he asks.

Most of the new technologies share a purpose: letting the communicator be somewhere he's not. The next step in their evolution will be "telepresence," says Dr. Robert W. Lucky, a research director at AT&T Bell Laboratories.

This form of artificial intelligence will allow a person in one place to see through the eyes, hear through the ears, and feel through the hands of a robot in another place. "But the world could get pretty boring," Lucky admits, "if everyone just sat still and let robots do all the interacting."

THE PROSPECT of a global communications network worries some sociologists, who fear that it could unleash an information overload, as freeways have inadvertently encouraged traffic. Growing reliance on satellites poses another peril: accidental or deliberate disruption of services with a laser device used by another nation.

Today, 100 million electronic mail messages a year, excluding interoffice communications, are being sent. But postal officials say they expect conventional mail delivery to continue well in to the next century. If, as some predict, bill-paying goes totally electronic, the

Postal Service may be scraping for business.

Here's a look at other changes coming in communications technology.

• Newspapers, magazines, videotex — Cleaner fingers will be one benefit of the 21st-century newspaper. That generation of printing presses will use photography, a technology guaranteeing sharper printing and ink that won't rub off.

Next century's newspaper may not have classified ads and stock quotations. Instead, those space-consuming features will be accessible through videotex, the marriage of the telephone and home computer or television screen. "If you're looking for a certain kind of car, for instance, you would key in the information and a list of candidates would appear on your screen," explains Frank Tuttle of AT&T.

Videotex will provide some news, airline schedules, and other specialty information. A few such services already exist. Dow Jones News/Retrieval, for example, sends 35 services to its customers, most of them using personal computers. Future videotex probably will be used for banking, shopping and planning vacations.

Another newborn technology, videodisc, may replace some future magazine. The videodisc probably will provide a moving-picture version of a magazine that can be delivered through phone lines and played on a home device.

• Telephones — A digital form of transmission will allow people and computers to communicate over enormous distances with nearly perfect reproduction of information. Hair-thin optical fibers, replacing today's copper cables, will bring a flood of information services to homes. "With fiber optics, there will suddenly be a superhighway of communications into the home," says Dr. Robert Lucky, a research director at AT&T Bell Laboratories.

Some telephones also will be low-cost computer terminals. Eventually, callers in two cities may view a graph or document simultaneously over their phone displays. Voice commands may replace phone dials.

Another technology could allow people to assign priorities to callers, using "personal keys" — codes give out to certain friends. People may have a life-long phone number, assigned at birth. "The whole concept of dialing will change," says Lucky. "You'll dial a person, not a place."

Mobile phones in today's cars and airplanes, based on cellular technology, are steps toward personal satellite communications. "By 2000, I would ex-

pect to see the equivalent of the Dick Tracy wrist phone," predicts Krugler of GTE.

BUT MOBILE PHONES could threaten privacy, warns Stuart Crump Jr., editor and publisher of Personal Communications magazine. "If you have a wrist phone on all the time, someone could track you and compile a dossier on everything you do," he says. "But you'll be able to walk the streets at night and feel that help is available at the touch of a button."

By 2000, the globe will be ringed with ocean-floor optical fibers that will use laser beams to shoot digital bits of information along strands of glass with less distortion and far more speed than in metal cables. "Today's computer transmission is so slow between continents that weather has already gotten to Europe before the information about it does," says Frank Tuttle of AT&T.

The ultimate in international communications may be the Integrated Services Digital Network, which someday is expected to tie together all the world's conversations and data and picture transmission. With such standardization, computer systems in all countries could communicate and, some say, finally create a paperless society.

• Television — When you awaken on Nov. 7, 2000 — Election Day — you may go no farther than your television screen to vote. It will be a vehicle for cable and direct-broadcast satellite TV, videocassette recorder and video disc player, home computer, videotex information wires, and video games.

Two-way video may become commonplace. One possible use: doctor and patient could discuss symptoms and diagnosis "face to face."

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NOTICE OF PUBLIC HEARING ON INCREASING PROPERTY TAXES AND GENERAL FUND OPERATING BUDGET

Pursuant to Public Act No. 5 of 1982 and Public Act No. 43 of 1963 (2nd Ex. Sess.) the School District will hold Public Hearings on increasing property taxes for operating purposes and the Proposed Operating Budget. The hearing will be held:

Thursday, May 9, 1985
Office of the Board of Education
20210 Middlebelt Road
Livonia, Michigan 48152
8:00 P.M.

The authorized millage rate of the School District is 37.90 mills. Public Act No. 5 of 1982 would limit the levy to 37.961 mills. The Board proposes to levy additional millage of .5039 mills or a total of 37.90 mills which it is anticipated will result in a 6.75% increase in operating revenues from ad valorem taxes. However, due to the State Aid formula, the increase in operating revenues from ad valorem taxes will be offset, in part, by a decrease in State Aid. As a consequence, the School District's total operating revenues from these sources in 1985-86 will increase approximately 5%. The Board has the complete authority to establish the number of mills to be levied (37.90 mills) from within its authorized millage rate.

The electorate of the School District have been requested to approve ½ mill at the Annual Election in the School District on June 10, 1985 for capital improvements for the School District. If approved, this millage will be levied for building and site improvements and purposes.

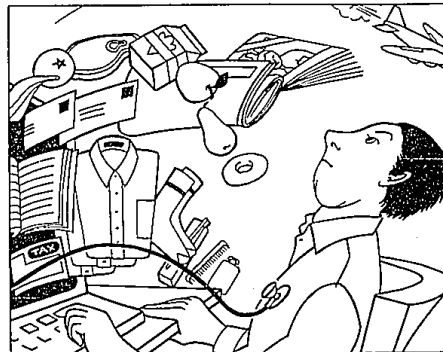
The figures presented are based upon information currently available to the School District and are subject to final confirmation.

Copies of the proposed 1985-86 Budget are available for inspection at the Offices of the Board of Education.

Dated: April 30, 1985

/s/RICHARD J. WOOD
Richard J. Wood, Secretary
Board of Education

Published: May 1, 1985



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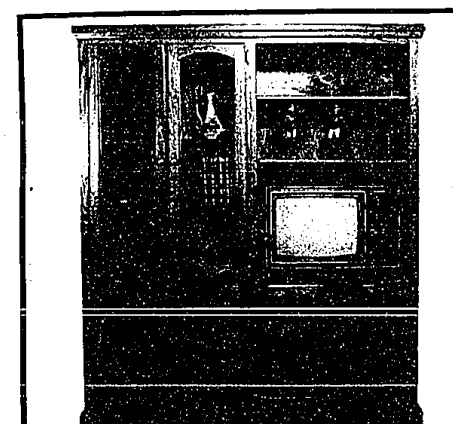
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May 2-5 HOME IMPROVEMENT SHOW

May 3 FASHION SEMINAR - 12:30 p.m.

"DOLLARS & SENSE" - Investment buying & building a wardrobe

May 8-11 AT&T FREE 3 MINUTE CALLS (within the Continental U.S., outside of Michigan)

AT&T TEACH-A-CHILD PROGRAM - 11:30 a.m.-7:30 p.m.

May 10 FASHION SEMINAR - 12:30 p.m.

"HOW TO CAMOUFLAGED" - proportional dressing and accessorizing

May 12 HAPPY MOTHER'S DAY FASHION SEMINAR - 12:30 p.m.

May 17 "MAKEOVERS"

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Sunday - 12:00 Noon to 6:00 p.m.

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