

# TRENDS & Ideas

## INFORMATION TECHNOLOGY

### The Coming Computer Crash



Sim Gellman

A specter is haunting the world's hundreds of thousands of computerized operations. At midnight on December 31, 1999, the clocks in their computers will try to click over to January 1, 2000—and many may fail to do it. As a result, write John M. Broder and Laurence Zuckerman in the *New York Times*, those operations could come to a halt.

The cause of the coming crisis—sometimes called “the year 2000 problem” or the “millennium virus”—is simple. Many computers built in the 1960s were programmed with software (Cobol, for example) that employed only six-digit dates. That hap-

pened because the software makers of those years did not expect their programs to last into the new century. They were mistaken. Now such software is automatically set to register the big day as 010100—meaning 1900 rather than 2000, a full century behind the calendar. Some computer experts think that as much as half the world's data are in these old programs.

Most experts say that, because information managers have finally become aware of the 2000 problem, it will be solved before the dreaded day arrives.

Unfortunately, because no one has yet come up with a single “silver bullet,” the solutions are sure to be expensive. Sally Katzen, a

Biologists, long frustrated by their inability to put genetic science to practical use fighting human illness, have been encouraged by a recent laboratory creation, writes Nicholas Wade in the *New York Times*. The creation is an artificial human chromosome.

The artificial chromosome was invented by Huntington F. Willard, a geneticist at the Case Western Reserve University School of Medicine in Cleveland, and colleagues at the university and at Athersys, a local biotechnology firm.

Until now, scientists' efforts to develop gene therapy have been thwarted by the fact that they had no effective way to introduce a curative gene into a human cell. But the new artificial chromosome acts as a vehicle for the curative gene. The cell not only accepts the artificial chromosome; when the cell divides, it furnishes copies to its “daughter” cells too, thus ensuring that the curative gene is reproduced throughout the entire organism.

Athersys intends to improve the artificial chromosomes so they can carry genes capable of treating such blood cell disorders as

## BIOLOGICAL RESEARCH

### Gene Therapy Gets a Boost

sickle-cell anemia, hemophilia, and immune deficiencies. In the long run, the company says, the new technique will be employed to fight developmental diseases like muscular dystrophy, cystic fibrosis, and some hereditary forms of cancer.

Gil Van Bokkelen, Athersys's president and chief executive, says the firm will limit its work to somatic cells, which make up most human body tissue, rather than experiment with the germ-line cells that develop into eggs and sperm. “The idea of germ-line therapy”—fighting disease in future human generations—is something people aren't ready even to consider at this point,” he said.



White House official, estimates that the federal government will pay \$2.3 billion to reprogram its computers. The Gartner Group, a consulting firm based in Connecticut, says the global costs will run from \$300 to \$600 billion.

Many business and government leaders find the projected costs especially dis-

maying. “It's not even as satisfying as fixing a roof,” says John Lubs, a Wisconsin shoe manufacturer who has budgeted \$500,000 to reprogram his firm's computers. “We get absolutely nothing out of it. We get to stay in business, that's all.”

On the other hand, companies that specialize in reprogramming computers

tend to see the year 2000 problem as a wonderful opportunity, according to the *Times*'s Leslie Eaton. The reporter describes a firm called ZMAX that, after failing at prospecting for gold and drilling for oil, announced last year it had entered the millennium virus business. Its stock immediately soared.

GERONTOLOGY

## Golden Years Are Healthier, Too

Scientists have assumed that, as the average life expectancy in this country has increased, people's extra years would be spent coping with disabilities or failing health. But this is not the case, according to a recent Duke University study. George Anders reports in the *Wall Street Journal* that, contrary to expectations, study researchers found that the number of people aged 65 and over who were classified as disabled has steadily decreased since 1982.

Examining data on 55,000 people in 1982, 1989, and 1994, researchers found that the percentage of the elderly who could not

perform simple tasks such as cooking, bathing, or dressing themselves declined from 24.9 percent in 1982 to 21.3 percent in 1994. This is good news for an aging population and, possibly, for the financially strapped Medicare program.

The researchers are not quite sure why the elderly are enjoying better health, but point to better nutrition and hygiene as well as medical advances. More women are using estrogen supplements, which may help prevent osteoporosis and heart attacks, and more older people are taking daily aspirin to ward off strokes, heart

attacks, and colorectal cancer.

If the decline in chronic disabilities continues, it may help stave off financial crisis for the burdened Medicare program, which is expected to meet serious funding problems in the next decade. Nursing home costs have already slowed as a result of improved health among the elderly, resulting in \$17.3 billion in annual savings, according to the researchers' calculations. However, spending projections by the Department of Health and Human Services, which oversees Medicare, already include reductions in disability rates, so the future sav-



ings may not be as large as the study indicates.

The results of the study have already spurred calls for increased funding for medical research. As Daniel Perry,

executive director of the Alliance for Aging Research, points out, "[The study] reinforces the obvious: Keeping older Americans healthier is cost-effective."

FAMILIES

## A Penalty for Parenting?

For all of society's current emphasis on "family values," having a family may actually be a liability to hopeful up-and-comers in corporate America, writes Betsy Morris in *Fortune*. Although companies may pay lip service to the idea of families, studies have shown that professional men with working wives are paid and promoted less than men whose wives do not work—possibly because men whose wives work have more time-consuming responsibilities on the home front. In one 1993 study of 236 male managers, the men married to nonworking women earned 32 percent more, on average, than the men married to women who worked part-time or full-time.

A family may be damaging to a person's career, but that career can also be damaging to his or her children. While parents wildly juggle to meet the demands of home and jobs that increasingly demand nearly constant availability for work or travel, their children may feel the lack of reassuring routines or parental presence. A recent report found

that children spend significantly less time with adults than they did a few decades ago. About one-third of all adolescents have contemplated suicide; half are at moderate or high risk of abusing drugs, failing in school, or getting pregnant.

Companies do offer some help through child-care programs or flexible scheduling, but the basic structural problems remain, as do the economic realities of skyrocketing costs of having, raising, and educating children.

The demand—and rewards for—unencumbered workers may be one reason young people are delaying marriage and children as never before. One-third of women and one-half of men aged 25 to 29 have never been married—an all-time high—and in 1994 the percentage of childless women aged 40 to 45 was 17.5 percent, another all-time high.

"We are making it less likely for people to have families," says Rosalind C. Barnett, a research psychologist and author of *She Works/He Works*. "It is just too punitive."

