

# Technology Review

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

FEBRUARY/MARCH 1996

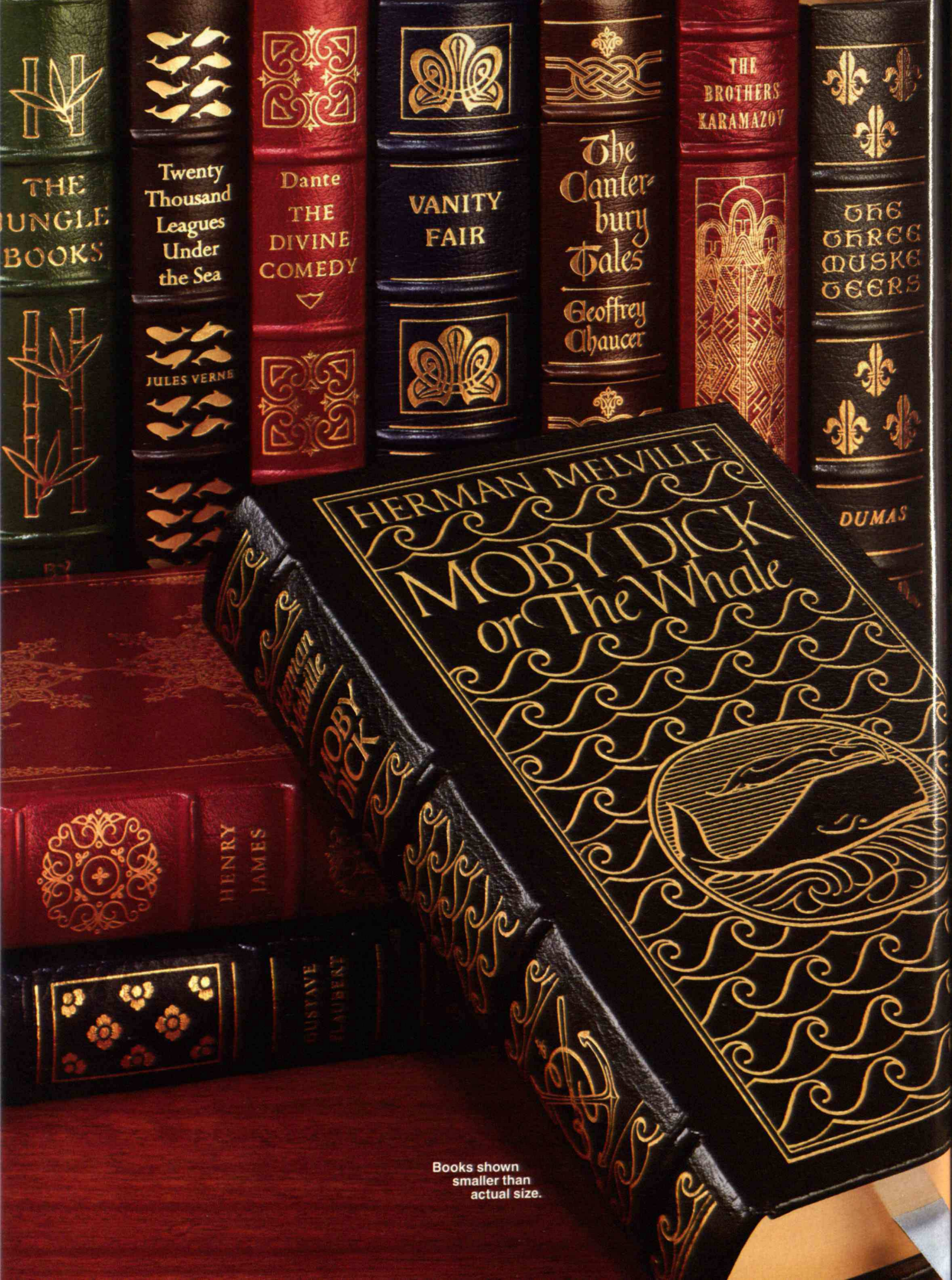
\$3.75/CANADA \$4.95

window!!  
TNT035 : PAT!!!!  
Reason45 : \$160 ... \$200 ... \$380 .... this'll make m  
better when MasterCard comes in !!!  
DStagers : Mine Too  
Pat909 : TNT ... ay husband wants to throw ME out the  
apartment!  
Armad809 : What's going on in Houston??  
Luvama4 : well, for last two months they have been all  
\$1000 ...  
TNT035 : What's your Reason??  
TNT035 : LOL L/A Pat  
Reason45 : Armad ... it's chilly here ... windy in the  
Pat909 : glad I could finally make you smile, TNT!  
TNT035 : thanks Pat  
Armad809 : About the same in Dallas  
Pat909 : Lol ...  
TNT035 : Reason Heat wave here ... 10 degrees here!  
OhTwo73975 : Pat! Room  
Luvama4 : so we're in the ...  
Reason45 : Pat ...  
Luvama4 : hey OhTwo  
Pat909 : Reason ... you caught ...  
OhTwo73975 : Hi Luv  
Pat909 : re ...  
TNT035 : Morning TNT!  
Reason45 : Armad ... we've had hot weather/cold weath  
weather etc. Every ...  
OhTwo73975 : Luvama4 I like your name  
OhTwo73975 : Hi Pat  
Luvama4 : I think all of us stay in chat rooms..inter  
confusing  
OhTwo73975 : Hi TNT  
Luvama4 : Thanks TNT  
Fun4Play4U : Goodbye room  
Pat909 : I have to go now....have a great day everyo  
TNT035 : ...  
TNT035 : Bye Pat

## SESSION WITH THE CYBERSHRINK

SHERRY TURKLE  
ON THE  
PSYCHOLOGY  
OF THE INTERNET





Books shown  
smaller than  
actual size.



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
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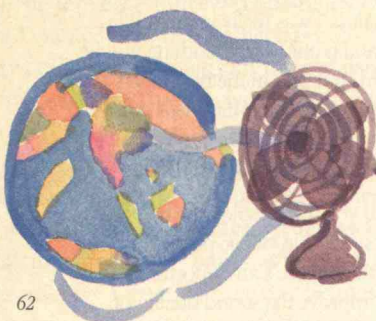
A seaside town in Denmark provides one of the world's most sophisticated examples of industrial symbiosis, in which companies exchange their wastes and reuse their byproducts in a complex arrangement that mimics the workings of natural ecosystems. Fostering similar pollution-reducing and energy-saving initiatives in the U.S. will require friendlier signals from regulators as well as a little help from entrepreneurial matchmakers.



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Ken Jacob, in one of the Bose® Acoustic Research Labs.

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# First Line

## MAGAZINES MEET THE ONLINE REVOLUTION

*Let's be nice to the kid.  
When he grows up,  
he may be our boss.*

**M**Y cousin Mel is a professional “liquidator”—or, as he likes to call himself, a “master merchant.” He acquires the physical assets of defunct businesses and then profitably resells them, either as products or raw materials, in other markets.

A few years ago he told me that he had just purchased a warehouse full of slide rules, some several hundred thousand of them. The “master merchant,” I sadly informed him, had been duped—the slide rule, traditionally an indispensable tool for engineers, had been rendered totally obsolete by the electronic calculator. “Oh, I knew that,” he replied. “I threw them all away. What I wanted was their leather cases.”

My colleagues throughout the publishing industry are openly worrying these days that another traditional tool—the print magazine—might suffer a similar fate. With the ascendancy of the Internet, and its potential for changing the world of journalism to one that is virtually all-electronic, we fantasize that our beloved and hard-earned products will one day retain only salvage value, say, for making wallboard or grocery bags.

At the recent American Magazine Conference, the event of the year for the business's leaders, this dominant concern was clear. In formal sessions and casual conversations alike, participants made constant reference to the perceived threat that the “online revolution” poses to conventional magazines. Commentators would then quickly follow up, in whistling-past-the-graveyard fashion, with reasons why cyberspace couldn't, wouldn't, shouldn't kill print. The World Wide Web serves sizzle, we serve steak. “Electronic publishing” (seemingly an oxymoron) is lightweight, while our stuff is serious. Print has “primacy,” asserted Tina Brown, editor of the *New Yorker*, while online is “an approximate world” that cannot match print's “complexity, sophistication, and staying power.”

Of course, online can do things that print cannot do so well, or at all. It can be a prodigious engine for information searching. It is not one-way, but interactive. And it is unsurpassed as a global communications medium permitting not only

low-cost conversations or transactions but the establishment of whole new social and professional networks.

All that is very promising and exciting. But why should it threaten print? Even the cyberspace aficionados concede that when you actually have to read something longer than a couple of paragraphs, nothing beats ink on paper. “The computer is remarkably clumsy for delivering prose,” Raymond W. Smith, chairman and CEO of the Bell Atlantic Corp., admitted at the magazine conference. “People turn to online not to read but to become part of a community.”

In that spirit, print magazines are increasingly establishing electronic presences. One can sample *Time* and the *Atlantic Monthly* on America Online, for example, or visit the *Technology Review* home page on the World Wide Web. By so doing, you can tap into some of the magazines' archives or converse with their staffs. But although these cyberspace versions provide some unique services, they are adjuncts to, not replacements of, our main business. Because print can't do the job of online, and online can't do the job of print, the two must coexist. Such complementarity satisfies the needs of the audience to alternatively read and reach out, each in their optimal domains.

That's true for the present. But what if cyberspace continues to expand and

mature so much that it eventually is capable of taking over areas, like much of print, previously considered sacrosanct? As playwright George S. Kaufman noted, children didn't bother him. He objected only that they grew up and crowded the subways. What if the Internet also grows up? If reading from a computer is currently clumsy, who says it can't become graceful, maybe even more convenient than print?

“Digital documents,” predicts computer-industry entrepreneur Bill Gates in his new book *The Road Ahead*, ultimately “won't even be fully printable on paper. They will be like a movie or a song is today.” Likewise, “incremental improvements in computer and screen technology will give us a lightweight, universal electronic book” that “will be able to help us in new ways.”

If such predictions indeed come to pass, they will clearly begin fulfilling some of print journalists' worst fears. But as spiritual leader Meher Baba used to advise, “Don't worry. Be happy.” Even in the extreme and unlikely case that print becomes utterly obsolete, the skills and standards behind magazines would not die with it. The new medium would still need to be replete with “software” types—people who do the actual journalism and deliver high-quality products. The same defenders of the language, crafters of intellectual beats, and explorers of policy issues, and their commitment to telling a good story and satisfying the audience, would be as crucial as ever. They would just be doing business in a new location.

So our task is not necessarily to hold onto a medium that's in the process of fading out—if that's in fact what is happening—but to be open to gradual and meaningful opportunities for applying our skills and pursuing our visions in ever more interesting, diverse, accessible, and useful ways. If my cousin Mel ever comes to purchase and resell *TR*'s stock of past issues simply for the paper, I hope I'll have long since stopped worrying. The concepts, talents, and materials the magazine embodies will ideally have been recycled to new and possibly more productive enterprises. ■

—STEVEN J. MARCUS



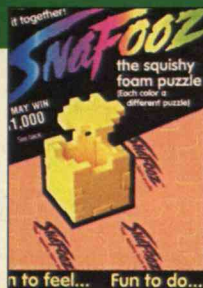
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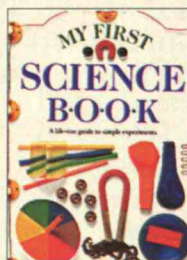
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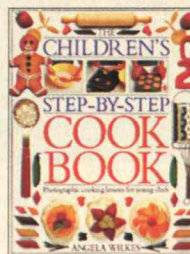


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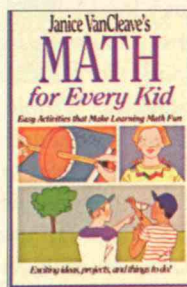


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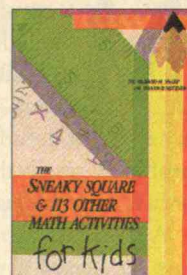


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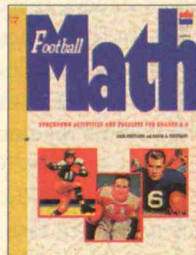
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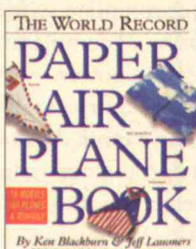
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# Letters

## DON'T DISCONNECT THE BRIGHT LIGHTS

In "The National Labs Unplugged?" (*Trends*, *TR* October 1995), Seth Shulman lumps the Department of Energy's weapons laboratories with the non-weapons multiprogram laboratories. The Brookhaven National Laboratory, which belongs in the latter category, was established after World War II by scientists from nine eastern universities (including MIT), not to build bombs but to create research tools for universities and industry that otherwise could not individually handle such projects.

Brookhaven has been remarkably successful in its mission. Eight scientists have received Nobel Prizes for work that was conducted in our facilities. The National Synchrotron Light Source, one of the most intense sources of x-rays and ultraviolet light in the world, attracts more than 2,300 users each year. The light source has enabled IBM and AT&T to develop x-ray lithography, Exxon and Mobil to study catalysts, and Du Pont to categorize chemical waste. MIT researchers have three beamlines for x-ray scattering studies at the light source. U.S. industries and universities have shown their support for Brookhaven by adding more than \$100 million dollars' worth of their own experimental equipment.

Shulman refers to the Galvin report's claims of "increasing overhead, poor morale, and gross inefficiencies" in the federal laboratory system." But by omitting the rest of the phrase, "... as a result of the overly prescriptive Congressional management and excessive oversight by the Department," Shulman leaves the impression that this statement was aimed at the laboratories. The Galvin report, far from criticizing Brookhaven, had high praise for the laboratory, as stated directly by Mr. Galvin to 300 users of the National Synchrotron Light Source at their annual meeting in 1995. Indeed, most of the report's barbs were directed at the DOE bureaucracy and not at the laboratories.

MARTIN BLUME

Deputy Director

Brookhaven National Laboratory  
Upton, N.Y.

## DIS-ORGANIZATION

Even more disturbing than the demise of "the organization man" that Langdon Winner discusses in "The Age of Expendability" (*TR* August/September 1995) is that this phenomenon has gone beyond the corporate world. Thus, institutions that were created to provide long-term vision, reflection, and guidance have been deemed expendable as well. An example is the recent closure of the Office of Technology Assessment, which was highly regarded not only in the United States but in other parts of the world.

Even here at the United Nations, fewer and fewer of us are part of an international civil service while more and more work is being done by short-term consultants. Although the reasons for this trend are manifold, political and financial pressures to deprofessionalize the U.N. under the pretext of inefficiency are obvious.

The long-term social costs of this trend surpass the suffering of individuals thrown out of their jobs and careers. A society where people no longer have a sense of belonging to an organization, and where there are no institutions to soundly analyze and guide political decision making, is unlikely to be a stable one.

DIETER KOENING

Division for Science and Technology

United Nations Conference on Trade

and Development

Geneva, Switzerland

## FITTING IN THE POOR AT A PRICE

The opening to "Fitting the Poor into the Economy" (*Forum*, *TR* October 1995) is as eloquent a statement as I've read countering the general notion of the poor as undeserving and the specific notion that they are the cause of social and economic problems.

However, author Herbert J. Gans's suggestion that we discourage the development and use of labor-saving technology stopped me cold. Although some technology should be discouraged, I would not collectively label all labor-saving technology as bad. I doubt many peo-