

# Exhibit F

Life After Viewtron?

# Enter the E-Paper

**Technology,  
money and  
consumer  
savvy bring  
electronic  
newspapers  
near at hand**

**I**'m a Trekkie," confesses long-time newspaper publisher Uzal H. Martz Jr., "and you don't see [Star Trek characters] using much paper. They use electronic tablets. I would imagine the further out you go, the less newsprint" newspapers will use, muses the president and publisher of the Pottsville (Pa.) Republican.

For years, ponderers like Martz have anticipated the electronic newspaper, first as the stuff of fantasy, then as bold forays where no one had gone before.

Those pioneers paid a price: Experiments in the early 1980s, such as Knight-Ridder Inc.'s Viewtron videotex project, lost millions of dollars (Presstime, Aug. 1991, p. 12). But the advent of more powerful, less expensive computers; new ways of delivering information electronically, and greater consumer familiarity with the electronic world have emboldened the brave, or maybe foolhardy, anew. As a result, the E-paper—whatever it may be—is near at hand.

"What people have talked about for 10 or 15 years we can now really see happening," says Kathleen Criner, NAA senior vice president of industry development and diversity.

The leaps forward have led telephone, cable-TV, computer, entertainment and, yes, newspaper companies to form ambitious partnerships to help deliver informa-

tion. In the latest example, Cox Enterprises Inc. has linked up with BellSouth Corp. and Prodigy Services Co. (see sidebar, p. 19) to electronically expand its avenues of communication.

Other options resulting from this new-media mania include sophisticated, two-way home televisions, wireless "personal digital assistants" and systems to deliver the news both on newsprint and electronically.

"Everyone's making another run at" the electronic newspaper, says Elizabeth St.J. Loker, vice president of systems and engineering for The Washington Post. "We're all dancing around that fire once more."

Newspaper executives still worry about getting burned again. They are divided about how fast, and even *if*, electronic delivery will replace the ink-on-paper product. More agreement, and worry, has emerged that advertisers may abandon print in favor of electronic-message delivery.

Yet even as they grapple with such concerns, as well as the bigger question of whether the marketplace is ready, fast-moving events have convinced newspaper executives and others to get on with the enterprise. "Nothing has to be invented" to create an electronic newspaper, notes George W. Wilson, president of the Concord (N.H.) Monitor. The discussion is not "whether it's here, but . . . what it will be."

## **TECHNOLOGY TAKES OFF**

Driving new-media excursions is the increasing power, and decreasing prices, of computer equipment. Walter R. Bender, principal research scientist at The Media Laboratory, Massachusetts Institute of Technology, cites one example: the \$2,000, 3.8-pound ThinkPad portable minicomputer that IBM unveiled in June.

"There's more power in that little box than there was in my whole lab back in

1981 when I built my first electronic newspaper," says Bender, who works with MIT's "News in the Future" consortium (Presstime, May 1993, p. 54).

Computermakers increasingly can pack more information into less space. In fact, Wilson expects computer capability to double every 18 months. Also, people can more easily use the technology, thanks to advances like Macintosh's and Microsoft Windows' icon-based interfaces. Perhaps most importantly, consumers are more ready than ever to receive information electronically (see chart, p. 20).

Similarly, distribution channels have improved. Telephone and cable-TV companies compress their signals to squeeze much more data through their lines. Wireless technologies such as paging and personal communications services have also advanced (Presstime, July 1993, p. 36).

These changes prompted Wilson to crisscross the country, interviewing top executives of technology companies. His findings laid the foundation for "The New Media Landscape" presentation at several NAA meetings this year (Presstime, May 1993, p. 46).

"My concerns are very similar to those of a CEO of a large newspaper company," says Wilson, owner of three small New England dailies and a weekly. "That is why I've tried to educate myself on what's coming."

## **PROTOTYPICAL BEHAVIOR**

As media companies enter uncharted space, they discover new worlds of consumer-information systems, some of which even resemble newspapers.

Phone and cable companies have focused on home television that doubles as a computer screen, with the remote control evolving as a kind of computer mouse to choose options (Presstime, April 1993, p. 8).

Wireless communicators like pager manufacturer Motorola Inc. are developing alternatives. Gannett Co. already uses Motorola's NewsStream device to deliver USA Today headlines to pagers and portable personal computers. Later this year, Motorola will release NewsCard, which could download enough information to duplicate a medium-size daily newspaper, says Bradley S. Davis, director of strategic marketing for Motorola subsidiary EMBARC.

Another wireless option is the "personal digital assistant." One is already on the market from American Telephone & Telegraph Co. and partner EO Corp. More than simple pagers, PDAs can offer two-way communication, handle personal-organizing functions and send facsimiles.

"Handheld wireless reading devices will proliferate," predicts Tim Bjarin, president of Creative Strategies Research International, a consulting and market-research firm in Santa Clara, Calif. "There may be as many as 20 million out within three to seven years," costing perhaps as little as \$100 to \$300 apiece.

Newspaper companies also are considering interactive multimedia through CD-ROM (Compact Disk-Read Only Memory) technology. The Washington Post Co.'s Newsweek Interactive publishes stories from both the magazine and the Post (Presstime, Feb. 1993, p. 7). Tribune Co.



**Fidler acts out a morning ritual with coffee and his E-paper prototype.**

Photo by Knight-Ridder Inc.

spokesmen say the company's recent purchase of Compton's Multimedia Publishing Group—whose encyclopedia is available on interactive, multimedia CD-ROM—may lead to similar newspaper presentation.

Roger F. Fidler, director of the Knight-Ridder Information Design Laboratory in Boulder, Colo., has developed a prototype

to transfer a newspaper's traditional print interface to a handheld, tablet-size computer screen. His model "retains the typography and design of a newspaper so that browsing ability . . . is maintained," he says, "but the browsing mode is a map to information . . . behind the headlines." By the touch of a finger, electronic pen or even voice commands, a reader gets more information, and perhaps even sound, pictures and full-motion video. Or, the reader in a hurry can prepare a summary of the news based on preprogrammed interests. "We'll not reduce the news to USA Today [length]," says Fidler. "You can have it both ways."

This model also raises the potential for advertising, he says. "It would blend the best of video with the best of print into a compelling product," he says.

Fidler predicts a device like this will be available, and affordable, in seven to 10 years for as little as \$200.

Will non-electronic media then still have a place?

## Cox Seeks Power in Partnerships

**W**hile media companies puzzle over the electronic-information future, Cox Enterprises Inc. of Atlanta has formed two partnerships to bring it together with other newspaper companies.

On the heels of Cox's July 7 announcement of a national consortium with Prodigy Services Co.'s computer network, Newspaper Division President David E. Easterly says the companies will develop a "turnkey, low-cost" system over which Cox dailies and other newspapers could transmit local information to personal computers. Excited about the potential of joining Prodigy—itsself a joint venture of IBM Corp. and Sears, Roebuck and Co.—Easterly cites Prodigy's 130 local user connections, which he says greatly reduce expensive long-distance connections.

Prodigy's system also resembles the traditional newspaper page by

running "substantial display advertising including colorful graphics" in tandem with the information it distributes, he notes.

Finally, Prodigy has more users than any other on-line system, says Easterly, including 50,000 in the Atlanta area and 60,000 in south Florida.

"This system might work across all newspaper sizes," he says. "It could be an ideal system for small newspapers to try, given its low cost, even if they have only 1,000 users."

Cox's Atlanta Journal and Constitution and The Palm Beach Post in West Palm Beach, Fla., will offer the service later this year. The Austin American-Statesman will join shortly thereafter. They will provide services such as electronic bulletin boards, local-service directories and expansions of local stories. Cox expects so much interest in an Atlanta Braves chat line, for example, that

each team member will get his own bulletin board.

On another front, Cox and BellSouth Corp. gained two partners in their joint venture to develop and market electronic-information services based on newspaper classified and Yellow-Pages advertising. Morris Communications Corp. of Augusta, Ga., and Landmark Communications Inc. of Norfolk agreed in principle to join a Southeastern U.S. consortium Cox is forming with the regional Bell telephone company.

Initially, consumers will connect with the service by dialing a single number on conventional telephones. Independently, Cox is experimenting with a single-number phone service in West Palm Beach (Presstime, Dec. 1992, pp. 31, 37). Eventually, callers to the joint-venture service will be able to obtain information by personal computer, screenphone or other electronic means.

—W.P.