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A large, silver e-reader device is centered on the cover. The screen displays the text "Will E-Readers Save Newspapers?" in a black, serif font. Below the screen are three touch-sensitive buttons: a left arrow, a central circle, and a right arrow.

Will
E-Readers
Save
Newspapers?

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Will E-Readers Save Newspapers?

By Roger Fidler



ILLUSTRATION BY AIMEE WACHTEL

THE VISION OF paperless newspapers is no longer a pipedream. Electronic paper displays in the form of mobile reading devices called e-readers are finally emerging as a viable “green” alternative to ink printed on pulp paper.

Three companies—Amazon.com, Sony and iRex Technologies—have been pushing paper-like e-readers into the consumer marketplace since 2006. Plastic Logic and Polymer Vision will soon begin selling e-readers with thin flexible displays. Several other companies are expected to join their ranks in 2009.

For newspaper publishers, the e-reader is not just another mobile device; it could be their salvation.

The rapid exodus of subscribers and advertisers from print to online has put enormous pressure on newspaper publishers in this first decade of the twenty-first century. Since 2000, publishers have seen steep declines in their revenues from printed editions combined with hefty increases in production and distribution costs. The market values of media companies have fallen so precipitously in the past few years that some of the world's leading newspapers are now in jeopardy.

The announcement on Dec. 9, 2008, that the Tribune Company, one of the largest U.S. media companies and the parent of the *Los Angeles Times* and *Chicago Tribune*, was filing for bankruptcy protection punctuated the seriousness of the crisis.

Forty years ago newspaper publishers were under similar pressure. Then as now subscribers and advertisers were rapidly shifting from print to a new medium—television. In the 1960s and

How Are E-Readers Different from Tablet PCs?

Tablet PCs are essentially pen-based notebook computers. E-readers are not multipurpose mobile computers; they are electronic display media intended as environmentally friendly alternatives to paper for reading and interacting with documents. Like paper, they are envisioned to be lightweight, thin, easy to use and comfortable to read in nearly every lighting condition from bright sunlight to lamplight. They also are expected to become relatively inexpensive and to have long battery duty cycles.

1970s, however, the problems for publishers were compounded by the burden of expensive, labor-intensive production and business systems that had not changed significantly in nearly a century.

Their salvation was digitization. It began with the insertion of computers into newspaper accounting and production departments. By the end of the twentieth century, digital technologies had replaced nearly all of the industrial-age

systems in the “front-end” departments—editorial, advertising, composing, prepress and accounting.

For those newspaper publishers who successfully negotiated this difficult transition, digitization resulted in dramatically reduced costs and higher profits throughout the last two decades of the twentieth century.

In recent years, publishers have invested in digital technologies to make their “back-end” depart-

ments—pressroom, mailroom and circulation—more efficient and less costly. But rising costs for newsprint, inks, energy, transportation and labor have more than offset the savings.

THE FINAL STEP IN THE DIGITIZATION OF NEWSPAPERS

Today, newspaper publishers are facing a far more difficult and risky transition. Their salvation now depends on how quickly they

can take the final step in the digitization of newspapers—a complete shift from pigmented ink printed on pulp paper to digital ink displayed on computer screens and electronic paper.

Nearly all newspaper publishers clearly see their future in an array of Web and mobile services. What is not clear is where the money will come from. So far the revenue gained from online news services



The Amazon Kindle (left), introduced in 2007, is now the most popular e-reader in the U.S. market. The device has a 6-inch electronic paper display in a plastic case. Its success is attributed to its wireless access to Amazon's online bookstore. The Sony Reader, introduced in 2006, also has a 6-inch electronic paper display, but must be connected to a computer to access the Sony bookstore.

and digital media has not come close to replacing the revenue lost by their printed editions.

Even though most newspaper publishers are quickly shifting resources from print to online and mobile services, few are likely to give up on paper immediately. Despite the phenomenal growth of the Internet and reading on computer screens in this decade, reading on paper is still preferred by a majority of people around the globe, even among those who routinely use computers.

A GREEN ALTERNATIVE TO INK ON PAPER

Back in the 1970s and 1980s, pundits were predicting that by the end of the century personal computers would greatly reduce the demand for paper, but that didn't happen. Per capita consumption of paper actually has grown substantially since the emergence of personal computers.

The reason is that paper has proven to be a difficult display medium for digital technology to replace. Its attributes are so taken for granted that no one thinks of



The iRex Technologies iLiad Reader, introduced in 2006, offers an 8-inch high-resolution electronic paper display and wireless access to the iRex server. A number of European newspapers are now experimenting with digital editions designed for the pen-based iLiad.

paper as the highly evolved technology that it is. The development of paper began nearly 1,500 years ago. The technologies required for producing electronic paper (also referred to as electronic ink) have been under development for less than two decades.

E-readers with electronic paper displays (EPDs) are intended as “green” alternatives to paper for accessing, storing and reading all types of printed documents—newspapers, magazines, newsletters, books, journals, manuals, reports, memos, etc. They retain most of the characteristics of paper while incorporating many of the hypermedia features of the Web.

Newspaper publishers have long held an affinity for the concept of e-readers. In theory, the development and widespread adoption of e-readers with a capacity to wirelessly access and display digital editions of newspapers would allow publishers to eliminate the production and distribution costs associated with their printed editions, which account for more than half of most newspapers’ operating expenses.

Turning this theory into practice, however, will not be a simple matter. Most newspaper companies have huge investments in printing plants and distribution networks, so established publishers are unlikely to suddenly shut them down and give every sub-

scriber an e-reader. A phased transition spanning at least a decade is much more likely.

ELECTRONIC PAPER DISPLAYS STILL EVOLVING

Electronic paper displays are still evolving, but they now are able to provide a reading experience nearly comparable to ink printed on paper. They are reflective, so they can be read comfortably in the same lighting conditions people use for reading on paper, even under bright overhead lights and sunlight. They also require much less power to operate than the liquid crystal displays used in notebook computers, so e-readers with EPDs typically can be used for several days without recharging their batteries.

These attributes would seem to make the current generation of e-readers with EPDs ideal for delivering and displaying digital editions of newspapers, but the devices have several limitations that still make publishers wary.

Their main concerns are the lack of color (all are black-and-white) and the high cost (their

retail prices range between \$300 and \$800). Another often cited drawback is the slow “flip” rate of the electronic ink that causes a slight delay when pages are flipped. This also prevents the e-readers from displaying videos.

For books and documents that are predominantly text, the lack of color and video is not a serious problem. Thirty years ago this might not have been seen as a serious problem for newspapers either. But now readers and advertisers have come to expect full color photos, graphics and advertisements in printed editions. And they now also expect video as well as color on newspaper Web sites.

DIGITAL NEWSPAPERS FOR E-READERS

Despite these concerns, a number of newspapers around the world



In September 2008, iRex introduced its pen-based Digital Reader 1000 series, the first e-readers with a magazine-size (10-inch) electronic paper display. The company expects to release a wireless version in mid-2009. The device can now access more than 800 newspapers from around the world through Newspaper Direct's PressDisplay service at www.newspaperdirect.com.

are beginning to experiment with digital editions designed for e-readers. The Amazon Kindle, which was introduced in November 2007 in the U.S. market only, is the first e-reader to offer a selection of daily newspapers. As of the end of 2008, Kindle owners could purchase subscriptions to 28 newspapers—20 of which are U.S. newspapers—through Ama-

Many factors will influence the pace of the transition to paperless newspapers, not the least of which will be the state of the global economy.

zon.com's online store. Subscriptions range from \$5.99 to \$14.99 per month. All Kindle editions are non-interactive, static snapshots of the newspapers' editorial content delivered wirelessly without advertising.

While the Kindle finally awakened U.S. publishers and the general public to the potential of e-readers, the first iteration of this device has not been well suited to reading newspapers. Its small low-resolution EPD confines presentations to single columns of plain text with a few black-and-white images interspersed. And its menu-based navigation system, which is adequate for reading books, makes browsing newspapers awkward.

The limitations of the Kindle and other e-readers with 6-inch displays, such as the Sony Reader, are somewhat overcome by iRex Technologies' pen-based iLiad with its 8-inch high-resolution EPD. A number of European newspapers

are now experimenting with this device to wirelessly deliver daily editions that include advertising.

For newspapers and magazines, however, letter-size e-readers with at least 10-inch displays are required to provide a reading experience comparable to printed editions. This size allows for visually compelling presentations with multi-column layouts, distinctive typography, information graphics, photos and advertising.

In September 2008, iRex Technologies introduced the Digital Reader 1000 series, the first e-readers with a 10-inch EPD. More than 800 newspapers from around the world can now be accessed and displayed on these letter-size e-readers using software developed by Newspaper Direct.

Many factors will influence the pace of the transition to paperless newspapers, not the least of which will be the state of the global economy. All major technologi-

cal hurdles have been overcome (broadband wireless communications, low-cost mass storage, low-power processors and fast image-rendering software) save one—the display.

Development of thin, lightweight, durable, full-color, video-capable, flexible, low-power and low-cost paper-like displays is essential to the widespread adoption of e-readers and digital newspapers by consumers, publishers and advertisers. This is no small order. Displays that meet all these criteria are at least five years away from commercial production and probably 10 years away from being able to displace printing presses and delivery trucks.

The pressing question today is will e-readers with suitable electronic paper displays arrive in time to help save newspapers? ■



Roger Fidler is the program director for digital publishing at the Donald W. Reynolds Journalism Institute. He is an internationally recognized new media pioneer who has been actively involved in the development of online and digital media since 1979.

Publishing Alliance Seeks To Accelerate Development of E-Readers

More than 30 organizations, including The New York Times, Washington Post, Wall Street Journal and Los Angeles Times, are now working with the University of Missouri's Reynolds Journalism Institute (RJI), through its Digital Publishing Alliance (DPA), to develop and test new products and presentation formats that are optimized for e-readers. The DPA members also are devising and evaluating business models that could help publishers negotiate the final step in the digitization of newspapers and other forms of print media.

The central premise of the DPA, which is headed by the author, is that publishers must work together to accelerate the development and adoption of digital alternatives to ink printed on paper. And that they

must move quickly to adapt their content for reading on e-readers and other mobile display devices.

The DPA's first project involves the production and test marketing of a new revenue-generating digital product for publishers that the author calls "Digital Newsbooks." Digital Newsbooks are substantive, visually rich e-books designed for downloading quickly and reading comfortably on e-readers, tablet PCs and notebook computers.

Their content consists primarily of journalistic investigative and explanatory reports that were originally published in newspapers or magazines. The book-size format blends the readability of printed publications with the interactivity of the Web while preserving each publisher's typographic branding.

RJI has been producing electronic versions of Global Journalist magazine in the Digital Newsbook format since December 2006. They can be found at www.globaljournalist.org/emprint-edition/.

In November, RJI partnered with eReader Outfitters to launch a pilot online store where Digital Newsbooks produced at RJI for DPA members could be marketed and sold. It can be found at www.ereaderoutfitters.com/RJI+Digital+Newsbooks.110/.

The RJI Digital Newsbook Publishing Project employs a "long-tail" marketing strategy. Only a few copies of individual newsbooks might be sold each month, but over the course of several years the aggregated revenue could be significant. Educators, students and policy makers are among the most likely consumers. But newsbooks also may appeal to newspaper and magazine readers who would prefer reading a timely series or long special report in a more convenient book-like package. ■

More information about the Reynolds Journalism Institute, the Digital Publishing Alliance, the Digital Newsbook Publishing Project, and e-readers can be found at: www.rjionline.org.