The Future of Books

Throughout history, people have created new tools or adapted old ones as the need has arisen. Today is no different, although some tools change more rapidly than others. Books have not changed much structurally since the paper was made of papyrus scrolls around 2400 BC. Even Guttenberg simply made books available to more people. But finally technology is rapidly changing both how we create and use books.

The changes so far include audio books, electronic books, and physical books of all shapes and sizes. Regarding physical ones, celluloid layovers are used for "Then and Now" books of places like Pompeii and Rome, or they can be cut in distinctive shapes such one on the Tower of Pisa that literally leans. Pop-up books are over a century old, but are now easily-produced and thus available to all children. Modern supplements, such as a CD-ROM in a software manual, tremendously enhance the printed word.

But technology has not been the only guiding factor in how books have changed. The future of books depends upon three factors: cost; convenience; and preference. A balance of the factors dictates how books will be used.

Mass Digitization of Books

Electronic books are not only the future, they are the present. People can access more texts online now than ever. The Internet remains the most accessible technology for the majority of people through free access via public libraries. Libraries and their patrons are seizing this opportunity. "The newest books in the New York Public Library don't take up any shelf space. They are electronic books - 3,000 titles' worth - and the library's 1.8 million cardholders can point and click through the collection." ("Libraries Reach Out, Online," by Tim Gnatek, *The New York Times*, Dec. 4, 2004, http://www.nytimes.com/2004/12/09/technology/circuits/09libr.html?ex=1260248400&en=bc31f3ce53fcf024&ei=5090&partner=rssuserland)

Publishers once reluctant to allow their books to be placed online are compromising and are finding a place for their market. In recent news: "The dusty world of book publishing has taken a step into cyberspace as Random House and HarperCollins letting customers browse books online." ("Publishers OK Online Book Browsing," *CNN.com*, Feb. 28, 2007, http://www.cnn.com/2007/TECH/internet/02/28/book.browsing.reut/index.html)

Google Book Search works with partners including libraries to make it easier for people to find the books they want. Books past copyright coverage are available full-text, and those still covered have excerpts and other relevant information available to help potential readers makes decisions. The intended result of Google Book Search is to view and download the book or find where the book can be bought or borrowed.

Amazon.com revolutionized book shopping online by making the books they offer electronically accessible to preview the first few pages of the book and the table of contents.

Readability

Technology ultimately catches up to use. Innovation means people who like to write in books and tab pages with sticky notes can even now do so with e-books. Books can be heard on iPods and read on phones and PDAs.

Nonetheless, a major drawback of online books remains readability. Sleek, flat LCD monitors were both a step forward and a step back. CRTs can become uncomfortable to stare at for long periods because of flicker that's so rapid as to not be consciously detectable but nonetheless registers on the brain. (When viewed on video or film, the flickering is quite obvious.) LCDs can eliminate that. But fat, clunky CRTs to this day provide a sharper image than LCDs, which in turn are sharper than plasma screens. Eventually, however, LCDs will eventually pass CRTs in this respect. Software efforts such as E-Ink™, which makes screen text more readable, are also developing. At this point, however, many people would prefer to print out long articles than read them on the screen and if that's their preference with articles it would surely be the case with books.

Portability is also a problem. It's relatively impractical to just pop a laptop computer into your handbag and flip it open anywhere you want to begin reading. In 2004 Sony launched a device called the Librie in Japan, but high prices and restrictions imposed on readers made it flop. At the Consumer Electronics Show in Las Vegas in January 2007 it introduced a superior model that uses an "electronic paper" screen that it claims makes text look as sharp as it is on a printed page. It has a six-inch black and white screen, making it about the size of a mass market paperback. The company has made deals with major publishers, including Penguin, Random House, and HarperCollins, to sell digital e-books through its Connect online store. But the claim of readability may be exaggerated and the initial price of $350 will be too steep for many buyers considering you can buy a nice desktop computer with monitor in that price range. Still, like everything in electronics, quality will continue to improve even as prices fall. Nor is Sony the only player in the field; indeed, other companies are working on screens so flexible they roll up. ("Sony Reader Targets Book Lovers, by Alfred Hermida, BBC News, Jan. 6, 2007, http://news.bbc.co.uk/go/pr/fr/-/1/hi/technology/4586800.stm; ("A Good Read," by Wade Roush, *Technology Review*, November 08, 2006, http://www.technologyreview.com/read_article.aspx?id=17766&ch=infotech)

E-books even facilitate reading for those who cannot – the blind. The number of audible books is severely limited. But text-to-speech software makes any e-book accessible to anyone who can hear.

Lowered Costs and Publishing the "Unpublishable"

Cost remains the primary factor in how and whether people obtain books. Even after Guttenberg, books remained unaffordable to most people. Many literate families owned nothing more than a Bible, while some among the wealthy could claim to own every single book in print – which is to say there simply weren't that many such books. Technology has lowered publishing costs and has now enabled Internet users to access free or extremely low-cost books. Opportunities abound for people to have access to out-of-print and hard-to-find books. Whether available electronically or in print, more books are accessible than ever before.

Countless books are now available for free full-text, online. Many of these have never seen mainstream publishing, and specialized audiences can visit collections of interest.

For the reading of works unavailable in print or perhaps merely a book a person is simply not inclined to physically obtain, the Internet makes book reading a snap.

Ordering books for one's personal collection has become extremely simple. People are more likely to physically own a book they want simply because they can order it from a web site and have it delivered. There is no traipsing to the local bookstore and hoping the volume in mind is on the shelf and ready for sale. College students, for instance, have been faced with rising costs of textbooks. (Although much of that cost is due to the monopolistic factor of being required to buy a specific book.) E-books have become a way of reducing costs and making books available that may otherwise be off the shelf or unavailable.

Not everyone is sold on reading online, however. Although campaigns have been used to make textbooks free, use of e-books for students has not risen dramatically for several reasons. An April 2006 *New York Times* article ("The Bottom Line on E-Textbooks," *The New York Times*, By Edward Wyatt, Apr. 23, 2006, http://www.nytimes.com/2006/04/23/education/edlife/innovate.html?ex=1172811600&en=d68b2341189033b6&ei=5070)
reported that students preferred e-books "typically 40 percent less than a new textbook and 20 percent less than a used one." The low price and flexibility were of limited value. Overdue library e-books can even instantly lock a user out, regardless of that mid-term due tomorrow morning. And sometimes students really do want to own the physical book.

A Place for All

Space is a considerable consideration for readers, whether students, librarians or just book lovers. Being able to access books electronically means no shelf space is required. For texts that are downloadable, storage is also no problem. About 14,000 average-sized books will fit on a $2.00 double-layer DVD and many times that on the newer blue laser DVDs. The next generation of removable memory, holographic DVDs that utilize two lasers, will allow the test (though not the images) of the entire Library of Congress (130 million items) to be stored on six disks. (“What is HDVD,” Tech-FAQ, http://www.tech-faq.com/hvd.shtml) Ultimately the entire LOC will fit in a space the size of a sugar cube. (And you won’t have to worry about a Congressman having checked out a book for his entire term, as is now allowed!) (“High Density, High Performance, Holographic Data Storage: Viable at last?” Paper presented the THIC Meeting at the Naval Surface Warfare Center,” by William L. Wilson, Oct. 3, 2000, http://www.thic.org/pdf/Oct00/lucent.wwilson.pdf)

Still, there will probably always be a perceived need to have some books in physical form to touch and admire with pride on the shelf. Online books and even those on a binary physical storage medium cannot replace that. Still, ordering physical books online means bookstores do not have to stock as much, and while this may be a business-buster for bookstores, it has been a cost-saving change for shoppers who can even price compare and go for the lowest price or fastest or cheapest delivery. Some books have become so cheap we can buy them during a long-layover at the airport and pitch them into the recycling bin at the end of the flight.

Print-on-demand, wherein books are not published until the order arrives, is another cost-saving measure for publishers and for readers. Pay-per-print is growing in popularity on the web. Readers pay for the books they want and are granted instant

access to save or print. Storage and distribution are no longer a worry.

Preserving the Past and the Less-Popular

Though a bit too late for the Royal Library of Alexandria, electronic preservation has been a treasure-saver for many libraries, museums and other institutions that have books of great cultural value. Often a book may be too delicate or valuable to be available to the public. E-books have allowed access for many of these collections, reducing acts of vandalism and theft. Security can be applied as needed to a physical book with barcodes that reveal more than a due date, so technology has been a great help in saving book collections.

The trend in preservation includes more hard-to-find collections being found online. Researchers are now delving into books once locked away due to their vulnerability. The Library of Congress was recently "awarded a $2 million grant to the world's largest library for a program to digitize thousands of works with a major focus on 'brittle books.'" ("Library of Congress to Digitize Brittle Books," CNN.com, http://www.cnn.com/2007/TECH/02/01/digital.books.ap/)

A Real Page-Turner

The way people read physical books is slowly being incorporated into electronic reading. (And for that matter, to some extent the reverse is happening; some magazines are now providing URLs within their text.) Innovation means people who like to write in books and tab pages with sticky notes can even now do so with e-books. Advances will make e-reading as pleasant an experience as with a book in your lap and in some ways far more so.

Visit Open Library on the web (http://www.openlibrary.org) and books can be read full-text online, with scrolling pages, illustrations, and even sound available. The experience is truly interactive. Imagine reading a biography of JFK and being able to hear his riveting inaugural address in his own voice. What child wouldn't love to read Beatrix Potter or have it read aloud to him and see a clip of Peter Rabbit bounding away from Mr. McGregor? Why just read about Pompeii when you can see a beautiful CGI image of the eruption? And the day is coming when it will seem absurd to read about the life of Mozart without being able to hear his music in the background or to read about Humphrey Bogart without seeing clips of The Maltese Falcon?

Further, online books allow access to an infinite amount of information through URLs to other sites. In this sense, the book will be completely transformed into a guided portal. All truly wonderful books eventually become annotated, but almost always by a single authority. Soon, though, we may have wiki-annotated books.

Merely getting to information in online books is much simpler than with print ones. The finest leather-bound books in the world still don't come with a search key!

From Origin

One of the most exciting developments in technology is that more people are able to write and publish books. E-books and books-on-demand are already revolutionizing publishing in that authors whose work is not deemed profitable by publishing houses can

now simply put their text up on their own website or that of others. They can make their work free or charge for downloads, although this would involve an honor system as once online text is available to anyone it can be then be transferred free-of-charge to anyone else. Copyright law can be difficult to enforce in these situations. Stephen King, in 2000, conducted an experiment in which readers would pay for each installment of a book as King put it online, but so many simply passed them on to friends that he abandoned the project. ("Wither 'The Plant," by M.J. Rose, Wired, Nov, 28, 2000. http://www.wired.com/news/culture/0,1284,40356,00.html)

That said, Amazon.com promotes an E-book service where anyone owning digital rights to a text can make the book available electronically through Amazon.com. Companies like Lulu.com specialize in publishing and printing from the web.

Often online documents can also enhance other components to a digital collection. Thus in the Paul Laurence Dunbar Digital Collection a visitor can browse the author's books, read his poetry, hear his poems read aloud, and view photos of the poet. Technology allows different resources to be compiled into a collection where visitors can access various related items of interest.

The Next Generation

It's possible many of the children growing up today not able to write in cursive will eventually not read paper books. Their "paper" will be pixels. But many will probably remain enraptured by book ownership. Somewhere between where paper meets people, a very personal transaction occurs. And technology has a vast distance to cover to bridge that gap.

What can we expect in books in the future? We will continue to closely grasp some to our chests even as we prefer to read others only electronically, essentially sharing them with the world. Paper books are about physically retaining what is valuable, and e-books are about distributing what we choose to share. The medium changes how people treat it; the book as entity remains sound and solid. Electronic books will be more of a complement than competition to physical books.

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