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The Future of Reading

Amazon's Jeff Bezos already built a better bookstore. Now he believes he can improve upon one of humankind's most divine creations: the book itself.

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"Technology," computer pioneer Alan Kay once said, "is anything that was invented after you were born." So it's not surprising, when making mental lists of the most whiz-bang technological creations in our lives, that we may overlook an object that is superbly designed, wickedly functional, infinitely useful and beloved more passionately than any gadget in a Best Buy: the book. It is a more reliable storage device than a hard disk drive, and it sports a killer user interface. (No instruction manual or "For Dummies" guide needed.) And, it is instant-on and requires no batteries. Many people think it is so perfect an invention that it can't be improved upon, and react with indignation at any implication to the contrary.

"The book," says Jeff Bezos, 43, the CEO of Internet commerce giant Amazon.com, "just turns out to be an incredible device." Then he uncorks one of his trademark laughs.

Books have been very good to Jeff Bezos. When he sought to make his mark in the nascent days of the Web, he chose to open an online store for books, a decision that led to billionaire status for him, dotcom glory for his company and countless hours wasted by authors checking their Amazon sales ratings. But as much as Bezos loves books professionally and personally—he's a big reader, and his wife is a novelist—he also understands that the surge of technology will engulf all media. "Books are the last bastion of analog," he says, in a conference room overlooking the Seattle skyline. We're in the former VA hospital that is the physical headquarters for the world's largest virtual store. "Music and video have been digital for a long time, and short-form reading has been digitized, beginning with the early Web. But long-form reading really hasn't." Yet. This week Bezos is releasing the Amazon Kindle, an electronic device that he hopes will leapfrog over previous attempts at e-readers and become the turning point in a transformation toward Book 2.0. That's shorthand for a revolution (already in progress) that will change the way readers read, writers write and publishers publish. The Kindle represents a milestone in a time of transition, when a challenged publishing industry is competing with television, Guitar Hero and time burned on the BlackBerry; literary critics are bemoaning a possible demise of print culture, and Norman Mailer's recent death underlined the dearth of novelists who cast giant shadows. On the other hand, there

are vibrant pockets of book lovers on the Internet who are waiting for a chance to refurbish the dusty halls of literacy.

As well placed as Amazon was to jump into this scrum and maybe move things forward, it was not something the company took lightly. After all, this is the *book* we're talking about. "If you're going to do something like this, you have to be as good as the book in a lot of respects," says Bezos. "But we also have to look for things that ordinary books can't do." Bounding to a whiteboard in the conference room, he ticks off a number of attributes that a book-reading device—yet another computer-powered gadget in an ever more crowded backpack full of them—must have. First, it must project an aura of *bookishness*; it should be less of a whizzy gizmo than an austere vessel of culture. Therefore the Kindle (named to evoke the crackling ignition of knowledge) has the dimensions of a paperback, with a tapering of its width that emulates the bulge toward a book's binding. It weighs but 10.3 ounces, and unlike a laptop computer it does not run hot or make intrusive beeps. A reading device must be sharp and durable, Bezos says, and with the use of E Ink, a breakthrough technology of several years ago that mimes the clarity of a printed book, the Kindle's six-inch screen posts readable pages. The battery has to last for a while, he adds, since there's nothing sadder than a book you can't read because of electile dysfunction. (The Kindle gets as many as 30 hours of reading on a charge, and recharges in two hours.) And, to soothe the anxieties of print-culture stalwarts, in sleep mode the Kindle displays retro images of ancient texts, early printing presses and beloved authors like Emily Dickinson and Jane Austen.

But then comes the features that your mom's copy of "Gone With the Wind" can't match. E-book devices like the Kindle allow you to change the font size: aging baby boomers will appreciate that every book can instantly be a large-type edition. The handheld device can also hold several shelves' worth of books: 200 of them onboard, hundreds more on a memory card and a limitless amount in virtual library stacks maintained by Amazon. Also, the Kindle allows you to search within the book for a phrase or name.

Some of those features have been available on previous e-book devices, notably the Sony Reader. The Kindle's real breakthrough springs from a feature that its predecessors never offered: wireless connectivity, via a system called Whispernet. (It's based on the EVDO broadband service offered by cell-phone carriers, allowing it to work anywhere, not just Wi-Fi hotspots.) As a result, says Bezos, "This isn't a device, it's a service."

Specifically, it's an extension of the familiar Amazon store (where, of course, Kindles will be sold). Amazon has designed the Kindle to operate totally independent of a computer: you can use it to go to the store, browse for books, check out your personalized recommendations, and read reader reviews and post new ones, tapping out the words on a thumb-friendly keyboard. Buying a book with a Kindle is a one-touch process. And once you buy, the Kindle does its neatest trick: it downloads the book and installs it in your library, ready to be devoured. "The vision is that you should be able to get any book—not just any book in print, but any book that's *ever* been in print—on this device in less than a minute," says Bezos.

Amazon has worked hard to get publishers to step up efforts to release digital versions of new books and backlists, and more than 88,000 will be on sale at the Kindle store on launch. (Though Bezos won't get terribly specific, Amazon itself is also involved in scanning books, many of which it captured as part of its groundbreaking Search Inside the Book program. But most are done by the publishers themselves, at a cost of about \$200 for each book converted to digital. New titles routinely go through the process, but many backlist titles are still waiting. "It's a real chokepoint," says Penguin CEO David Shanks.) Amazon prices Kindle editions of New York Times best sellers and new releases in hardback at \$9.99. The first chapter of almost any book is available as a free sample.

The Kindle is not just for books. Via the Amazon store, you can subscribe to newspapers (the Times, The Wall Street Journal, The Washington Post, Le Monde) and magazines (The Atlantic). When issues go to press, the virtual publications are automatically beamed into your Kindle. (It's much closer to a virtual newsboy tossing the publication on your doorstep than accessing the contents a piece at a time on the Web.) You can also subscribe to selected blogs, which cost either 99 cents or \$1.99 a month per blog.

In addition, the Kindle can venture out on the Web itself—to look up things in Wikipedia, search via Google or follow links from blogs and other Web pages. You can jot down a gloss on the page of the book you're reading, or capture passages with an electronic version of a highlight pen. And if you or a friend sends a word document or PDF file to your private Kindle e-mail address, it appears in your Kindle library, just as a book does. Though Bezos is reluctant to make the comparison, Amazon believes it has created the iPod of reading.

The Kindle, shipping as you read this, costs \$399. When Bezos announces that price at the launch this week, he will probably get the same raised-eyebrow reaction Steve Jobs got in October 2001, when he announced that Apple would charge that same price for its pocket-size digital music player. No way around it: it's pricey. But if all goes well for Amazon, several years from now we'll see revamped Kindles, equipped with color screens and other features, selling for much less. And physical bookstores, like the shuttered Tower Records of today, will be lonelier places, as digital reading thrusts us into an exciting—and jarring—post-Gutenberg era.

Will the Kindle and its kin really take on a technology that's shone for centuries and is considered the bedrock of our civilization? The death of the book—or, more broadly, the death of print—has been bandied about for well over a decade now. Sven Birkerts, in "The Gutenberg Elegies" (1994), took a peek at the future and concluded, "What the writer writes, how he writes and gets edited, printed and sold, and then read—all the old assumptions are under siege." Such pronouncements were invariably answered with protestations from hard-liners who insisted that nothing could supplant those seemingly perfect objects that perch on our night tables and furnish our rooms. Computers may have taken over every other stage of the process—the tools of research, composition and production—but that final mile of the process, where the reader mind-melds with the author in an exquisite asynchronous tango, would always be sacrosanct, said the

holdouts. In 1994, for instance, fiction writer Annie Proulx was quoted as saying, "Nobody is going to sit down and read a novel on a twitchy little screen. Ever."

Oh, Annie. In 2007, screens are ubiquitous (and less twitchy), and people have been reading *everything* on them—documents, newspaper stories, magazine articles, blogs—as well as, yes, novels. Not just on big screens, either. A company called DailyLit this year began sending out books—new ones licensed from publishers and classics from authors like Jane Austen—straight to your e-mail IN BOX, in 1000-work chunks. (I've been reading Boswell's "Life of Johnson" on my iPhone, a device that is expected to be a major outlet for e-books in the coming months.) And recently a columnist for the Chicago Tribune waxed rhapsodically about reading Jane Austen on his BlackBerry.

But taking on the tome directly is the challenge for handheld, dedicated reading devices, of which the Kindle is only the newest and most credible effort. An early contender was the 22-ounce Rocket eBook (its inventors went on to create the electric-powered Tesla roadster). There were also efforts to distribute e-books by way of CD-ROMs. But the big push for e-books in the early 2000s fizzled. "The hardware was not consumer-friendly and it was difficult to find, buy and read e-books," says Carolyn Reidy, the president of Simon & Schuster.

This decade's major breakthrough has been the introduction of E Ink, whose creators came out of the MIT Media Lab. Working sort of like an Etch A Sketch, it forms letters by rearranging chemicals under the surface of the screen, making a page that looks a lot like a printed one. The first major implementation of E Ink was the \$299 Sony Reader, launched in 2006 and heavily promoted. Sony won't divulge sales figures, but business director Bob Nell says the Reader has exceeded the company's expectations, and earlier this fall Sony introduced a sleeker second-generation model, the 505. (The Reader has no wireless—you must download on your computer and then move it to the device— and doesn't enable searching within a book.)

Now comes the Kindle, which Amazon began building in 2004, and Bezos understands that for all of its attributes, if one aspect of the physical book is not adequately duplicated, the entire effort will be for naught. "The key feature of a book is that *it disappears*," he says.

While those who take fetishlike pleasure in physical books may resist the notion, that vanishing act is what makes electronic reading devices into viable competitors to the printed page: a subsuming connection to the author that is really the basis of our book passion. "I've actually asked myself, 'Why do I love these physical objects?' " says Bezos. " 'Why do I love the smell of glue and ink?' The answer is that I associate that smell with all those worlds I have been transported to. What we love is the words and ideas."

Long before there was cyberspace, books led us to a magical nether-zone. "Books are all the dreams we would most like to have, and like dreams they have the power to change consciousness," wrote Victor Nell in a 1988 tome called "Lost in a Book." Nell coined a name for that trancelike state that heavy readers enter when consuming books for

pleasure—"ludic reading" (from the Latin *ludo*, meaning "I play"). Annie Proulx's claim was that an electronic device would never create that hypnotic state. But technologists are disproving that. Bill Hill, Microsoft's point person on e-reading, has delved deep into the mysteries of this lost zone, in an epic quest to best emulate the conditions on a computer. He attempted to frame a "General Theory of Readability," which would demystify the mysteries of ludic reading and why books could uniquely draw you into a rabbit hole of absorption.

"There's 550 years of technological development in the book, and it's all designed to work with the four to five inches from the front of the eye to the part of the brain that does the processing [of the symbols on the page]," says Hill, a boisterous man who wears a kilt to a seafood restaurant in Seattle where he stages an impromptu lecture on his theory. "*This* is a high-resolution scanning machine," he says, pointing to the front of his head. "It scans five targets a second, and moves between targets in only 20 milliseconds. And it does this repeatedly for hours and hours and hours." He outlines the centuries-long process of optimizing the book to accommodate this physiological marvel: the form factor, leading, fonts, justification ... "We have to take the same care for the screen as we've taken for print."

Hill insists—not surprisingly, considering his employer—that the ideal reading technology is not necessarily a dedicated e-reading device, but the screens we currently use, optimized for that function. (He's read six volumes of Gibbon's "The Decline and Fall of the Roman Empire" on a Dell Pocket PC.) "The Internet Explorer is not a browser—it's a reader," he says. "People spend about 20 percent of the time browsing for information and 80 percent reading or consuming it. The transition has already happened. And we haven't noticed."

But even Hill acknowledges that reading on a televisionlike screen a desktop away is not the ideal experience. Over the centuries, the sweet spot has been identified: something you hold in your hand, something you can curl up with in bed. Devices like the Kindle, with its 167 dot-per-inch E Ink display, with type set in a serif font called Caecilia, can subsume consciousness in the same way a physical book does. It can take you down the rabbit hole.

Though the Kindle is at heart a reading machine made by a bookseller—and works most impressively when you are buying a book or reading it—it is also something more: a perpetually connected Internet device. A few twitches of the fingers and that zoned-in connection between your mind and an author's machinations can be interrupted—or enhanced—by an avalanche of data. Therein lies the disruptive nature of the Amazon Kindle. It's the first "always-on" book.

What kinds of things will happen when books are persistently connected, and more-evolved successors of the Kindle become commonplace? First of all, it could transform the discovery process for readers. "The problem with books isn't print or writing," says Chris Anderson, author of "The Long Tail." "It's that not enough people are reading." (A 2004 National Endowment for the Arts study reported that only 57 percent of adults read

a book—any book—in a year. That was down from 61 percent a decade ago.) His hope is that connected books will either link to other books or allow communities of readers to suggest undiscovered gems.

The connectivity also affects the publishing business model, giving some hope to an industry that slogs along with single-digit revenue growth while videogame revenues are skyrocketing. "Stuff doesn't need to go out of print," says Bezos. "It could shorten publishing cycles." And it could alter pricing. Readers have long complained that new books cost too much; the \$9.99 charge for new releases and best sellers is Amazon's answer. (You can also get classics for a song: I downloaded "Bleak House" for \$1.99.) Bezos explains that it's only fair to charge less for e-books because you can't give them as gifts, and due to restrictive antipiracy software, you can't lend them out or resell them. (Libraries, though, have developed lending procedures for previous versions of e-books—like the tape in "Mission: Impossible," they evaporate after the loan period—and Bezos says that he's open to the idea of eventually doing that with the Kindle.)

Publishers are resisting the idea of charging less for e-books. "I'm not going along with it," says Penguin's David Shanks of Amazon's low price for best sellers. (He seemed startled when I told him that the Alan Greenspan book he publishes is for sale at that price, since he offered no special discount.) Amazon is clearly taking a loss on such books. But Bezos says that he can sustain this scheme indefinitely. "We have a lot of experience in low-margin and high-volume sale—you just have to make sure the mix [between discounted and higher-priced items] works." Nonetheless the major publishers (all of whom are on the Kindle bandwagon) should loosen up. If you're about to get on a plane, you may buy the new Eric Clapton biography on a whim for \$10—certainly for \$5!—but if it costs more than \$20, you may wind up scanning the magazine racks. For argument's sake, let's say cutting the price in half will double a book's sales—given that the royalty check would be the same, wouldn't an author prefer twice the number of readers? When I posed the question to best-selling novelist James Patterson, who was given an early look at the Kindle, he said that if the royalty fee were the same, he'd take the readers. (He's also a believer that the Kindle will succeed: "The baby boomers have a love affair with paper," he says. "But the next-gen people, in their 20s and below, do everything on a screen.")

The model other media use to keep prices down, of course, is advertising. Though this doesn't seem to be in Kindle's plans, in some dotcom quarters people are brainstorming advertiser-supported books. "Today it doesn't make sense to put ads in books, because of the unpredictable timing and readership," says Bill McCoy, Adobe's general manager of e-publishing. "That changes with digital distribution."

Another possible change: with connected books, the tether between the author and the book is still active after purchase. Errata can be corrected instantly. Updates, no problem—in fact, instead of buying a book in one discrete transaction, you could *subscribe* to a book, with the expectation that an author will continually add to it. This would be more suitable for nonfiction than novels, but it's also possible that a novelist might decide to rewrite an ending, or change something in the middle of the story. We

could return to the era of Dickens-style serializations. With an always-on book, it's conceivable that an author could not only rework the narrative for future buyers, but he or she could reach inside people's libraries and make the change. (Let's also hope Amazon security is strong, so that we don't find one day that someone has hacked "Harry Potter" or "Madame Bovary.")

Those are fairly tame developments, though, compared with the more profound changes that some are anticipating. In a connected book, the rabbit hole is no longer a one-way transmission from author to reader. For better or for worse, there's company coming.

Talk to people who have thought about the future of books and there's a phrase you hear again and again. *Readers will read in public. Writers will write in public.* Readers, of course, are already enjoying a more prominent role in the literary community, taking star turns in blogs, online forums and Amazon reviews. This will only increase in the era of connected reading devices. "Book clubs could meet inside of a book," says Bob Stein, a pioneer of digital media who now heads the Institute for the Future of the Book, a foundation-funded organization based in his Brooklyn, N.Y., town house. Eventually, the idea goes, the community becomes part of the process itself.

Stein sees larger implications for authors—some of them sobering for traditionalists. "Here's what I don't know," he says. "What happens to the idea of a writer going off to a quiet place, ingesting information and synthesizing that into 300 pages of content that's uniquely his?" His implication is that that intricate process may go the way of the leather bookmark, as the notion of author as authoritarian figure gives way to a Web 2.0 wisdom-of-the-crowds process. "The idea of authorship will change and become more of a process than a product," says Ben Vershbow, associate director of the institute.

This is already happening on the Web. Instead of retreating to a cork-lined room to do their work, authors like Chris Anderson, John Battelle ("The Search") and NYU professor Mitchell Stephens (a book about religious belief, in progress) have written their books with the benefit of feedback and contributions from a community centered on their blogs.

"The possibility of interaction will redefine authorship," says Peter Brantley, executive director of the Digital Library Federation, an association of libraries and institutions. Unlike some writing-in-public advocates, he doesn't spare the novelists. "Michael Chabon will have to rethink how he writes for this medium," he says. Brantley envisions wiki-style collaborations where the author, instead of being the sole authority, is a "superuser," the lead wolf of a creative pack. (Though it's hard to believe that lone storytellers won't always be toiling away in some Starbucks with the Wi-Fi turned off, emerging afterward with a narrative masterpiece.)

All this becomes even headier when you consider that as the e-book reader is coming of age, there are huge initiatives underway to digitize entire libraries. Amazon, of course, is part of that movement (its Search Inside the Book project broke ground by providing the first opportunity for people to get search results from a corpus of hundreds of thousands of tomes). But as an unabashed bookseller, its goals are different from those of other

players, such as Google—whose mission is collecting and organizing all the world's information—and that of the Open Content Alliance, a consortium that wants the world's books digitized in a totally nonproprietary manner. (The driving force behind the alliance, Brewster Kahle, made his fortune by selling his company to Amazon, but is unhappy with the digital-rights management on the Kindle: his choice of an e-book reader would be the dirt-cheap XO device designed by the One Laptop Per Child Foundation.) There are tricky, and potentially showstopping, legal hurdles to all this: notably a major copyright suit filed by a consortium of publishers, along with the Authors Guild, charging that Google is infringing by copying the contents of books it scans for its database. Nonetheless, the trend is definitely to create a back end of a massively connected library to supply future e-book devices with more content than a city full of libraries. As journalist Kevin Kelly wrote in a controversial *New York Times Magazine* article, the goal is to make "the entire works of humankind, from the beginning of recorded history, in all languages, available to all people, all the time."

Google has already scanned a million books from its partner libraries like the University of Michigan and the New York Public Library, and they are available in its database. (Last week my wife searched for information about the first English edition of the journals of Pehr Kalm, a Swedish naturalist traveling in Colonial America. In less than two seconds, Google delivered the full text of the book, as published in 1771.)

Paul LeClerc, CEO of the New York Public Library, says that he's involved in something called the Electronic Enlightenment, a scholarly project (born at the University of Oxford) to compile all the writings of and information about virtually every major figure of the Enlightenment. It includes all the annotated writings, correspondence and commentary about 3,800 18th-century writers like Jefferson, Voltaire and Rousseau, completely cross-linked and searchable—as if a small room in a library were compressed to a single living document. "How could you do that before?" he asks.

Now imagine that for *all* books. "Reading becomes a community activity," writes Kelly. "Bookmarks can be shared with fellow readers. Marginalia can be broadcast ... In a very curious way, the universal library becomes one very, very, large single text: the world's only book."

Google's people have thought about how this connectivity could actually affect how people read. Adam Smith, product director for Book Search, says the process is all about "getting rid of the idea that a book is a [closed] container." One of his colleagues, Dan Lansing, describes how it might work: "Say you are trying to learn more about the Middle East, and you start reading a book, which claims that something happened in a particular event in Lebanon in '81, where the author was using his view on what happened. But actually his view is not what [really] happened. There's newspaper clippings on the event, there are other people who have written about it who disagree with him, there are other perspectives. The fact that all of that is at your fingertips and you can connect it together completely changes the way you do scholarship, or deep investigation of a subject. You'll be able to get all the world's information, all the books that have been published, all the world's libraries."

Jim Gerber, Google's content-partnerships director, suggests that it might be an interesting idea, for example, for someone on the liberal side of the fence to annotate an Ann Coulter book, providing refuting links for every contention that the critic thought was an inaccurate representation. That commentary, perhaps bolstered and updated by anyone who wants to chime in, could be woven into the book itself, if you chose to include it. (This would probably make Ann Coulter very happy, because you'd need to buy her book in order to view the litany of objections.)

All these ideas are anathema to traditionalists. In May 2006, novelist John Updike, appalled at reading Kelly's article ("a pretty grisly scenario"), decided to speak for them. Addressing a convention of booksellers, he cited "the printed, bound and paid-for book" as an ideal, and worried that book readers and writers were "approaching the condition of holdouts, surly hermits who refuse to come out and play in the electric sunshine of the post-Gutenberg village." (Actually, studies show that heavy Internet users read many more books than do those not on the Net.) He declared that the "edges" of the traditional book should not be breached. In his view, the stiff boards that bound the pages were not just covers but ramparts, and like-minded people should "defend the fort."

That fort will stand, of course, for a very long time. The awesome technology of original books—and our love for them—will keep them vital for many years to come. But nothing is forever. Microsoft's Bill Hill has a riff where he runs through the energy-wasting, resource-draining process of how we make books now. We chop down trees, transport them to plants, mash them into pulp, move the pulp to another factory to press into sheets, ship the sheets to a plant to put dirty marks on them, then cut the sheets and bind them and ship the thing around the world. "Do you *really* believe that we'll be doing that in 50 years?" he asks.

The answer is probably not, and that's why the Kindle matters. "This is the most important thing we've ever done," says Jeff Bezos. "It's so ambitious to take something as highly evolved as the book and improve on it. And maybe even change the way people read." As long as the batteries are charged.

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