e-Reader Tech + Trends

From Webbmedia Group's Knowledge Base

Summary: Whether or not the printed book will ever be fully replaced with an electronic version is up for (heated) debate. But either way, e-Books are definitely growing in popularity. Some publishers have launched their own e-Readers, and this fall/winter we should see a new crop of large-screen interactive products.

Corporate Explanation: There are a few obvious reasons why e-Books are growing in popularity. First and foremost, consumers are now eager to own more technology. They get Kindle recommendations from Oprah's book club. They see friends reading newspaper articles on their iPhones. Digital content has become portable and accessible - and consumer demand is growing, even in this sluggish economy.

Perhaps more obvious a reason: carrying a few books in a backpack or briefcase at one time may range from inconvenient to impossible. An e-Book reader can hold hundreds of books at once, and most readers currently on the market weigh less than two pounds. Many also provide support for file formats other than just e-Books themselves. For example, Sony's Reader device has built-in support for Adobe's PDF format - a perfect solution for a student who needs to take 10 or so 30-page research papers home each night, but doesn't want to have to physically carry 300 printed pages. Some readers also provide support for audio files (whether music or audiobooks) and other file formats, so depending on the storage capacity of your particular device, you can carry more than just e-Books with you in a relatively small package.

Quick Money Facts
- **30 million e-Readers will be sold** in 2013, according to market research firm In-Stat.
- Recent market research estimates **$2.3 billion in Kindle-related revenues** by 2014.
- Nearly half of Kindle revenue is projected to come from **high-margin content sales**.

The Readers
- **Sony** currently controls 30% of the electronic reader market, compared to **Amazon's** 45%.
- In early 2010, **Plastic Logic** will begin selling a wireless, touchscreen Kindle competitor for **Barnes & Noble**.
- Though not a true e-Reader, a Sept. 2009 issue of *Entertainment Weekly* will feature a **CBS** video advertisement with a two-inch video screen and embedded speaker.

How do e-Books and e-Readers Work?
There are two separate components to consider here: the "e-Books" themselves (files that are specifically formatted to contain a digital version of a book) and the hardware that can display those files for you. There are many, many different varieties of each. For publishers who are considering a model of their own, both the e-Book architecture and hardware often determine the level of user engagement.

Sony's e-Book reader, for example, can display several different e-Book formats, but if you want to *buy* "books" for your Sony Reader, you use the Sony Connect eBook store via your computer. These e-Book files are protected by Digital Rights Management (DRM), which limits the number of Reader devices on which they can be displayed, much like iTunes' original DRM limited the number of computers on which you could play a purchased song. Amazon's Kindle device is similar in that it supports many file formats, but if you want to purchase an e-Book specific to the Kindle, you must do so through the Amazon Kindle Store.

Conversely, if a content provider wants to offer something in an e-Book format, he or she must keep in mind that an Amazon-specific format won't be viewable by a Sony device, and so on. *Some* file formats are readable by nearly all devices--but if you want to provide content that's optimally displayed on each reader, you may need to offer it in multiple file formats.
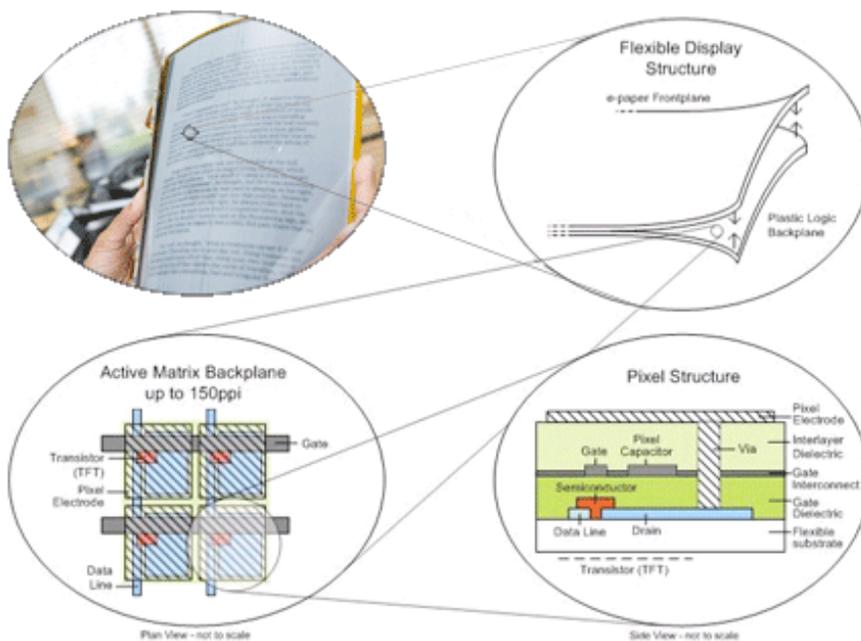
Plastic Logic's flexible backplane is combined with a frontplane material (electronic paper) to make a flexible display.

Image: Plastic Logic

What are some of the differences between reader brands and models?

The biggest difference between devices from different companies is support for various file formats. An e-Book specifically formatted for the Kindle, for example, in Amazon's proprietary "AZW" format, typically can't be read on a device from another manufacturer. There *is* currently a "Kindle for iPhone" app, but it was developed with Amazon's support, something that is unlikely to be given for other devices. If you plan to buy an e-Book reader that uses a proprietary file format, you should not plan on being able to read e-Book purchased for it on other devices: whenever DRM is involved, file format incompatibility comes into play.
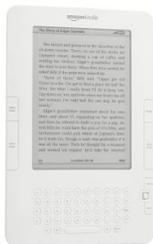
Sony, widely known for its insistence on proprietary audio, video and software formats, shocked many by announcing its move to the open ePub format. While books purchased at the Sony store will still be encoded with DRM, the e-Readers should be able to display books from other stores - including Amazon.

How are e-Books and other e-Content purchased, and will that change as new readers are announced?

The method of purchasing e-Books (or transferring e-Books or other content to a Reader) can also vary by device. Some systems require the use of a computer to first purchase e-Books before transferring them to the reader. Others, like the latest Kindle release, include wireless capability that lets you purchase content without the use of a computer, directly on the device. And as with most electronic devices, baseline tech specs can vary, including storage capacity, screen size, PC/Mac/Linux compatibility, and so on.

Currently, a storefront interface is necessary to purchase and download new content. Because the market is so new and because each current device uses proprietary language (this will change, as the ePub Sony reader is set to be released fall/winter 2009), there are limited ways in which content can be acquired. However, just as publishers must write several versions of their mobile content to accommodate BlackBerries, iPhones and other smart devices, they can similarly encode content to fit on most e-Readers.

What are some of the benefits of e-Books and other e-Content?
Digital versions of books have been available for years. Project Gutenberg, a website that currently offers a free collection of more than 30,000 books in different formats, first appeared in something resembling its current form in 1991. So "e-Books" were available for use on a standard computer or laptop far before the first Kindle ever hit the market.

But e-Book devices, unlike computers, are designed for one specific use: reading large sections of text. They're formatted in a similar fashion to printed books, in a Letter layout, unlike the Landscape layout of a typical computer screen, and are devoted to presenting text in an eye-friendly, easy-to-read manner. So while a computer *can* display an e-Book, an e-Book device was designed specifically *to* display an e-Book, and will typically provide a better reading experience.

As mentioned earlier, reader devices also let you carry hundreds, possibly even thousands, of "books" with you wherever you go. No bookmarks are required; you can set the device to remember where you left off in not just one e-Book, but as many as you want. You can search through your e-Books for specific words or phrases, instead of ineffectually flipping through printed pages and hoping to spot what you're looking for. And if you encounter a word or phrase that's unfamiliar, most readers offer you the ability to quickly search for a definition.

For content providers, e-Books also offer a way to near-instantly distribute content. A download of a full e-Book typically takes less than a minute, whereas obtaining a printed copy of a book requires either a trip to the bookstore or a few days of waiting for shipping after ordering one online. The same is true for magazines and newspapers.

In comparison with the cost of publishing a first run of a new novel--taking into account printing costs, distribution costs, and the possibility of having to dispose of thousands of copies that don't sell if the book isn't successful--the cost of creating an e-Book version of a text and offering it for sale is minimal.

What are some of the drawbacks of e-Content?
While the market certainly looks promising, several major challenges must be overcome for e-Books and e-Content to reach critical mass.

First, digital rights management is the source of most potential drawbacks. As mentioned earlier, the device you buy can tie you to a specific file format. That's fine as long as the titles you want are offered in the store of choice for your device, or available in another format supported by your device--and as long as you never decide to switch to a different reader. If you purchase 100 Kindle e-Books and later decide a Sony Reader is for you, there's no guarantee you'll be able to move those 100 e-Books

over to your new device. The same problem is possible if a company goes out of business: you buy the Acme e-Book reader and a collection of Acme-specific e-Books, and a year later Acme goes under. Once your reader dies, how are you going to access all of those e-Books? A device from a different company might not support them.

This should be especially noted by publishers considering their own readers and formats. Consumers are increasingly aware of content that is specifically tied to a device.

Yet another potential drawback for consumers is the question of how much control they have over purchased files. In July of 2009, Amazon was the subject of much grumbling after it remotely deleted copies of a George Orwell book from its customers' Kindle devices. All of the deleted e-Books had been purchased through the Kindle store; however, the publisher of the book apparently decided, after the book had already been offered for sale in the store, that it *hadn't* wanted to sell an electronic version. Amazon, trying to honor the publisher's wishes, deleted all of the purchased copies of the book from their customer's devices and refunded the purchase price. *New York Times* writer David Pogue quoted one of his reader as saying "It's like Barnes & Noble sneaking into our homes in the middle of the night, taking some books that we've been reading off our nightstands, and leaving us a check on the coffee table." (It probably didn't help that the book in question was Orwell's *1984*.)

Amazon has stated that it won't take this particular form of action again should a similar situation arise, but it's still a clear example of the ambiguity that arises in terms of "ownership" of digital files.

*While the entire industry is debating paid vs. free content now, offering content via e-Readers is a **reasonable way to charge for content again.***

*Publishers should start **creating strategies to deliver their content to e-Readers** that best suit their own content formats.*

And finally, perhaps one of the simplest drawbacks is one that's relevant any time a form of media previously only available in a physical format transitions to purely digital: If you have a printed copy of a book, you can loan it to a friend for him or her to enjoy, just as people used to do with CDs (or cassettes... or LPs... or eight-tracks). But you can't loan out a copy of an e-Book.

That's also a drawback for content providers: as much as a publisher would prefer that someone buy his or her own copy of a book, magazine or newspaper instead of just borrowing one from a friend, there is something to be said for word-of-mouth publicity. Maybe the friend who borrows a book will buy a copy of the next edition... but if she can't borrow the book (or e-Book) in the first place, she might never find out about it.

In addition, none of the current readers offer optimal user experiences. While the Kindle may be great for reading long books, its interface makes browsing through, say, the *Atlantic Monthly* an exercise in extreme patience. The same holds for daily newspapers. The Kindle architecture was built with books in mind first - magazines, newspapers and blogs (yes, blogs!) were added later. The current Sony readers require that users click on a variety of buttons, again - not intuitive for many - in order to access archived content. We believe that future iterations of these devises will likely correct for user interface and experience drawbacks.

Analysis: For Publishers
While the iPhone is not in ubiquitous use (*yet*), it has certainly impacted consumer expectation and device design throughout the communications industry. Users now assume that any new device will be multi-touch: rather than buttons, the device instead will have an easy-to-use interactive screen. Content will be accessible wirelessly and on-demand via a socially-networked store, where users can comment and share with friends.

While the entire industry is debating paid vs. free content on the web now, offering content via e-Readers is a reasonable way to charge for content again. Why? Most people are aware of the social contract they enter into when they purchase their gadgets. Some seek illegal downloads, but most users continue to visit content stores to purchase ringtones, games and books. Because people are used to paying for content delivered to their mobile devices--Kindles, iPhones, iPods--already via storefronts, they have acquiesced to the notion that, unlike the web, content for a device isn't necessarily free.

We argue that publishers should start creating strategies to deliver their content to e-Readers that best suit their own content formats. In some cases, it may make sense for

publishers to partner with others in the industry to create their own devices and content stores.

We strongly encourage publishers to first develop a storefront user experience that doesn't replicate the iTunes or Amazon Kindle store, but rather makes the most sense for their specific content. This planning should be part of an integrated mobile digital strategy that spans editorial, business and marketing departments.

What might the future hold for e-Content, e-Books and e-Readers?
For now, the "E ink" technology used by most e-Book readers isn't capable of displaying animation or video--but that could easily change in the near future, as several companies are already working on improvements and new approaches. It's possible that e-Book readers could eventually be used to display more than just static text, in which case the types of content available on e-Book devices will be limited only by the imaginations of content providers.

More Resources:

E-Book Reader Matrix (a comparison of the latest e-Book devices)
http://wiki.mobileread.com/wiki/E-book_Reader_Matrix

Project Gutenberg (free full-text copies of 30,000+ books in various formats)
http://www.gutenberg.org/

Plastic Logis Technical Explanation
http://www.plasticlogic.com/ereader/plastic-display.php

Press Release: Sony's Daily Edition Digital Reader (August 25, 2009)
http://news.sel.sony.com/en/press_room/consumer/computer_peripheral/e_book/release/41492.html

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For Additional Information:

Webbmedia Group, LLC
2336 Cambridge Walk, Ste 400
Baltimore, MD 21224
tel: 267.342.4300
info@webbmediagroup.com
http://www.webbmediagroup.com