

E-Readers Now, E-Readers Forever!



Figure 3.1
Kindle family

Abstract

While a tablet is a sort of “magic window” that becomes whatever you want via apps, the e-reader is a device almost entirely dedicated to a single function, that of reading long-form text. E-readers such as the Kindle and the Nook do this job very, very well and deserve their own attention, separate from their do-anything tablet brethren.

In 2010, e-readers using E Ink screen technology were at the height of their hype, and there were dozens of models in the production pipeline. The big three that I focused on in 2010 are still the industry leaders:

Amazon, Barnes and Noble, and Sony. That order is also their U.S. market share, with Amazon and its various Kindle models being the leaders among the general public for e-reader adoption.¹ Barnes and Noble and the Nook family are holding on and appear to be a clear second place as far as sales go. The Sony Reader line is a distant, distant third, and anyone else that’s still competing in the market (Kobo and a few others) are distantly behind them.

In my previous “Gadgets and Gizmos” report, I went into detail about how E Ink works and the pros and cons of that generation of e-readers. Most of the pros and cons stay the same, but the lineup is quite

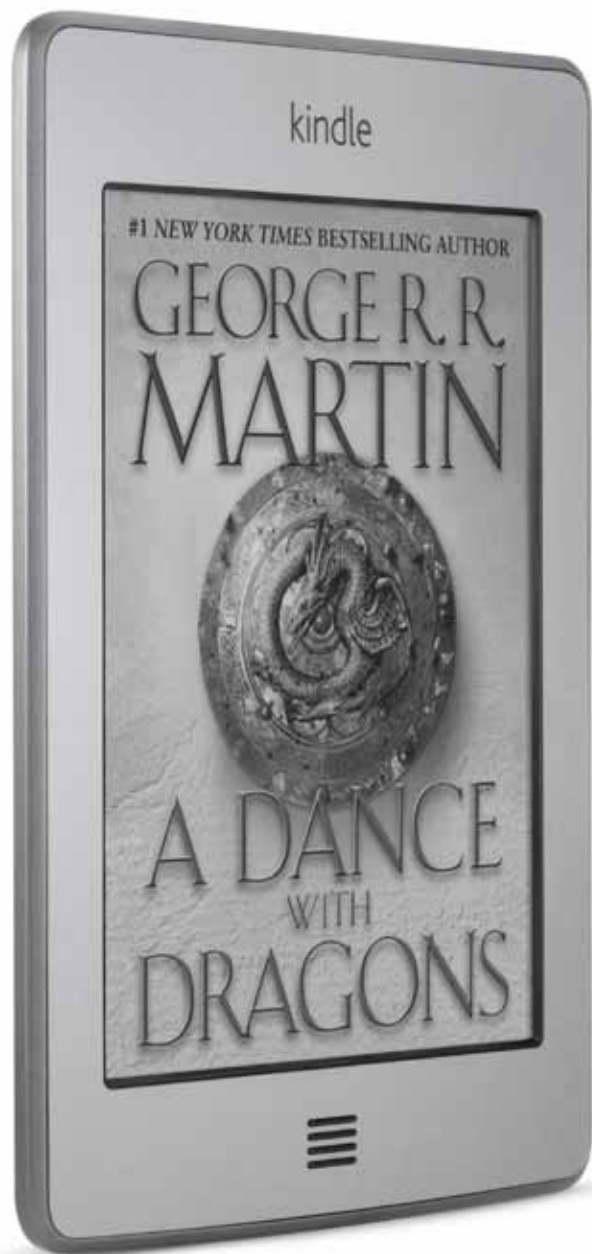


Figure 3.2
Kindle Touch

different. Most different of all are the prices. In early 2010, you could expect to pay more than \$200 for any model of e-reader, while now you can purchase a Kindle from Amazon for \$79. A Nook will run you just \$20 more, at \$99.² Here's a quick summary of the e-readers I would recommend now, in early 2012.

Amazon Kindle

The Amazon Kindle, the base model of Kindle (figure 3.1), operates with mechanical buttons for page turning

and doesn't include a keyboard, instead relying on a five-way switch and an on-screen keyboard that you must click through in order to type. However, if you don't do a lot of note taking while reading and you buy most books online and have them delivered to your Kindle, this is by far the cheapest way to get into the Amazon ecosystem at \$79 (with ads) or \$109 (without ads).³

Amazon Kindle Touch and Barnes and Noble Nook Touch

Amazon's Kindle Touch (figure 3.2) and Barnes and Noble's Nook Touch are such nearly identical pieces of hardware that the only real decision is which ecosystem you prefer. Both use the same screen and the same technology to make the screen respond to touch; around the bezel of the screen are a series of infrared sensors that are activated when something physical interrupts the beam. Since this isn't reliant on capacitive touch in the same way that the typical tablet screen is (where the screen relies on sensing an electrical sign caused by the capacitance of your skin), you can use this form of touchscreen with gloves, with a stylus, or really anything that can touch the screen. This is good and bad, since anything touching the screen (a sleeve, a blanket, etc.) can cause the page of the book you're reading to turn.

There is no physical keyboard for either, but the touch-based keyboard is responsive and easy to use. The keyboard just appears when you need it and disappears when you don't. It's certainly not as fast as a physical keyboard, but some of this is just a result of the lag of the E Ink screen updates. These screens are enormously better than the models of Kindle and Nook from 2010 in nearly every way, but E Ink simply isn't capable of the instantaneous response you get from an LCD screen.

With the Kindle Touch, there are a few decisions to be made as to the right model for your needs. There are, in effect, four distinct types of Kindle Touch (see table 3.1).

The choices come down to how the device connects to the Internet and Amazon's "Special Offers," better known as "advertisements." On the Kindles with advertisements, there are ads delivered by Amazon in the place of a screensaver and to the lower part of the screen when you are browsing the home screen. There are never ads during the reading process or inside the text of a book. When you have purchased a Kindle with "Special Offers," you can elect to pay the difference in price directly on the Kindle or at a later date to turn off the ads.

For personal purchases, the advertisements probably aren't terribly intrusive, but for a library planning to circulate Kindles, I can't imagine circulating them with advertisements that the library can't control. If you are

	With "Special Offers"	Without "Special Offers"
Wi-Fi Only	\$99	\$139
Wi-Fi + 3G	\$149	\$189

Table 3.1

Prices of different types of Kindle Touch. Sources: "Kindle Touch," Amazon.com, accessed February 17, 2012, www.amazon.com/Kindle-Touch-e-Reader-Touch-Screen-Wi-Fi-Special-Offers/dp/B005890G8Y/1ERW8Y; "Kindle Touch 3G," Amazon.com, accessed February 17, 2012, www.amazon.com/Kindle-Touch-e-Reader-Touch-Screen-3G-Special-Offers/dp/B005890G8O.

buying for your library, plan on paying the "No Special Offers" premium if you're buying a Kindle. The Barnes and Noble Nook doesn't have ads at all, which makes that \$99 price point a little more attractive as compared to the \$139 Kindle with the same specs.

The other choice is the one of connectivity. Here the decision is just between a Kindle that can connect to only 802.11x Wi-Fi or one that has a built-in cellular modem that will connect to 3G signals when out of range of Wi-Fi. What will likely drive your choice here is the infrastructure of where you live and the service you offer to your patrons. If you are checking out the device to patrons and they are downloading their own books onto it, and if you are in an area of the country with very low broadband penetration rates, you'll probably want to give patrons a 3G Kindle to increase their likelihood of being able to connect to Amazon. If you don't expect patrons to be able to download books themselves, connectivity after you check it out is less important, so you can almost certainly get by with the Wi-Fi-only model.

Getting Library Content onto the Kindle

Amazon just recently announced a tool specifically for moving local, private files onto the Kindle, including the Kindle app, called Send to Kindle.⁴ Currently only for Windows PCs (but with Mac support forthcoming), it is a seamless way to deliver files from a PC to any Kindle device or app. It acts as a right-click option in Windows Explorer, letting you right-click on any of the supported file types and choose Send to Kindle, and it delivers the file to the device via Amazon's servers. The supported file types are

- Microsoft Word (.doc, .docx)
- HTML (.html, .htm)
- RTF (.rtf)
- JPG (.jpeg, .jpg)
- Kindle Format (.mobi, .azw)

- GIF (.gif)
- PNG (.png)
- BMP (.bmp)
- PDF (.pdf)

This Send to Kindle option could be a very useful one for certain workflows in libraries. Any situation where we're loading library content onto Kindles could be enhanced by this functionality. There are numerous other ways to get content onto a Kindle, ranging from direct loading via USB to the e-mail gateway that every Kindle gets when it's registered.

For the ideal reading experience, content that is moved to a Kindle should be in MOBI format. Most versions of the Kindle will handle PDFs well, with the exception that the screen is often smaller than ideal for display, and zooming and panning are less convenient on an E Ink screen than on an LCD. Most library content won't be in MOBI format natively, but where possible, there are tools that can do the conversion for you. The most popular of these is the e-book management tool Calibre, which will convert to and from almost any e-book format.

Calibre

<http://calibre-ebook.com>

This is ignoring the most popular way to get library content onto a Kindle: that is, via the OverDrive e-book service that integrates directly with Amazon. As that's the easy way to do it and is vendor-supported, I assume most libraries that are using OverDrive are comfortable with this solution.

E-Reader to Tablet

Both Amazon and Barnes and Noble have moved past the E Ink readers to make e-reader models that have traditional LCD screens. These products, the Barnes and Noble Nook Color and Nook Tablet (figure 3.3) and the Amazon Kindle Fire (figure 3.4) blur the line between e-reader and tablet, with some functionality from each. These three devices are all Android-based tablets with nearly every aspect of the interface altered in order to produce the experience that each wants.

In Amazon's case, the Kindle Fire is optimized for media consumption via Amazon's various channels; books from the Kindle Store, movies and television from the Amazon Instant Video service, and music from Amazon Cloud Player. With the LCD screen and Wi-Fi connectivity, you can purchase and stream media directly from Amazon anywhere you can get online. The Fire is also a window into the Amazon storefront, allowing you to shop and purchase smoothly from the



Figure 3.3
Nook Color and original Nook

device, and has a web browser and access to the Amazon App Store, a curated subset of Android apps that run on the Fire.

The Nook Color and Nook Tablet are both LCD-based e-readers, based on Android, with yet another App Store experience and curated apps to choose from. The Nook Color has been around for over a year at this point, and the Nook Tablet could have easily been called the Nook Color II. It's very, very close to the same device with enhanced specs: a faster processor and more memory, mainly. The Nook Tablet was released as a sort of replacement for the Nook Color, but Barnes and Noble is continuing to sell both for the time being, giving them two different price points: the Nook Color at \$199 and the Nook Tablet for \$249.⁵

However, none of these devices should be mistaken for tablets, at least not out of the box. While they do all run some version of Android, all of them (Amazon Fire, Nook Color, and Nook Tablet) are skinned with customized user interfaces that obscure the fact that Android is running the show. Each company has, by default, some limitations on the apps that you can download

and install onto the device in question. In the case of the Fire, Amazon restricts the loading of apps to its own App Store, going so far as to redirect Web queries to the Google Android Market back to the Amazon App Store automatically. This means that you can't, by default, get a lot of the value-loaded apps that come on a certified Android device, mostly those provided by Google directly: Google Maps, Gmail, Google+, and so on. Without these baseline apps, these tablets feel far less like something I'd want to work on and far more like the glorified e-reader that I think you should understand them as.

As readers, these all work very, very well. The benefits of the LCD screens are readily apparent in their responsiveness, ease of typing, and color display. Books that rely heavily on photographs or illustrations (cookbooks, children's books, etc.) and magazines look phenomenal on them. These also open the door to video as a media consumable, with the Fire and the Tablet both able to play back HD videos without any problems. Earlier E Ink devices from both Amazon and Barnes and Noble would play audio



Figure 3.4
Kindle Fire

files, although these devices certainly make it a lot easier and more attractive.

Amazon is doing some very interesting cross-promotional access to media that might sway the individual who is trying to make a purchasing decision among these e-reader tablets. The first is that while the Fire draws its video access from the Amazon video store (where you can digitally purchase a large number of videos for sale), Amazon offers free streaming from its Instant Video collection (a subset of its larger video collection) to members of Amazon Prime. Amazon Prime is a \$79-per-year sort of Amazon fan club,⁶ where the original perk was that, as a Prime member, you received free two-day shipping with any order from Amazon—any order at all, so that meant that if you were a Prime member, ordering anything from Amazon just became a default position. You paid \$79, but you can order a can of tuna and have it delivered for free. Or, as in my case, a television set or a mattress.

The reason I mention Amazon Prime in this context is that Amazon is sweetening the Prime membership with bonus access to its Instant Video collection for members. Prime members with a Kindle Fire get free streaming access to over 100,000 televisions and movies.⁷ What should directly concern libraries is that Amazon recently added access to what they are calling the Kindle Owners' Lending Library, which is just exactly what it sounds like: access to lendable books, for free, from Amazon.⁸ Amazon has about 50,000 titles in the Lending Library so far and is adding more and more over time. These titles are also available to Prime members at no additional cost. It seems clear that Amazon is happy to incentivize the purchase of Prime by subsidizing via content deals for media to be delivered to the Kindle Fire (and, one assumes, any future tablet they may release).

These perks of Amazon Prime membership aren't available to, and don't really matter for, libraries that wish to deal with the Kindle Fire. But for individual librarians and patrons, these may be huge drivers for making a purchasing decision. And it's the area of significant difference between the Kindle Fire and the Barnes and Noble Nook. The Nook Color and Tablet are solid color LCD-screen based e-readers and even work reasonably as an Android tablet. But they do not have the weighty infrastructure behind them that the Fire does. On the other hand, the Nook Color and Nook Tablet have one advantage that separates them from any of Amazon's Kindles. They read EPUB files. The next section will talk about some of the technical details that connect e-books, file type, and digital rights management.

File Types and DRM

There are two different things going on when someone tries to open an e-book file on an e-reader. One is file type: how the file itself is organized internally, how the information contained within is encoded. This is analogous to the difference between a Word file saved as a .doc file, a Word file saved as a .docx file, and a PowerPoint file (.ppt). All are different file types—the program involved in the creation, editing, and display of those files describes the information contained inside. Right now, there are two main file types being used to describe e-book files: the Amazon e-book standard, or AZW file, and the EPUB file (.epub) that is used by just about every other e-book vendor.

Amazon purchased Mobipocket (an early e-book vendor and distributor) way back in 2005⁹ and used Mobipocket's format as the basis for its own current proprietary .azw file type. EPUB, on the other hand, is an open, XML-based e-book standard and is used by a huge number of e-book vendors; indeed, it's easily the standard for current e-book publishing.

But file type is only half the battle. In addition to the way the file is organized and structured internally, there is also digital rights management (DRM) to deal with. Think of DRM on an e-book as a lock, with your e-reader having the key to open the lock and display the file. Without the key, the e-reader can't open the file at all—can't even see what it is. And if it has the key but can't read the file type, that's no good either; in that case, the e-reader can view the contents of the file but will have no idea how to render it on the screen properly.

Amazon, in addition to using a proprietary file type, also uses a proprietary DRM mechanism. This means in order to read an Amazon-purchased e-book, you have to have an e-reader with the right key as well as the right interpreter for the file. So far, that means that you have to be using a Kindle, or alternatively, using the Kindle software provided for any number of other devices (Windows, Mac, iOS, Android). This doesn't mean that's the way it has to be. Amazon could choose, tomorrow, to remove all DRM from its files. This would mean that you'd still need a program to interpret the AZW, but you wouldn't need the key anymore. Conversely, Amazon could license its DRM to other e-readers, in effect handing them the key—but it would still be up to the e-reader itself to be able to display the AZW file.

Vendors that use the EPUB format have chosen different sorts of DRM to lock up their content. Apple and its iBook app use the EPUB format but wrap it up with the Apple-specific FairPlay DRM. This means that while the file itself would be readable by any device that can interpret an EPUB file, without that particular key on its key ring, the e-reader can't do anything. Sony, Barnes and Noble, OverDrive, and other e-book vendors have chosen a shared DRM solution. They license their DRM from Adobe and run Adobe Content Servers that provide the keys to EPUB files that they sell. This means that if an e-reader has the key to one of those stores, it has the key to all of them; think of it as a shared master key for any Adobe DRM'd file.

This illustrates why, although both Apple and Barnes and Noble use EPUB as their file type, you can't buy a book from the Barnes and Noble store and then move it over to your iBook app on your iPad. Conversely, you can't buy something on the iBook store and then move it to your Nook: same file type, different lock.

OverDrive, in supporting Adobe DRM'd EPUB files, works with Sony eReaders as well as the Barnes and Noble Nook: same file type, same DRM key to unlock them. OverDrive has made a deal with Amazon to provide pass-through authentication to allow OverDrive customers to access Kindle-format files via the OverDrive interface. This doesn't mean that OverDrive is converting EPUBs or somehow magically making Adobe DRM work with the Kindle. The way that OverDrive provides Kindle files is a complete end run. OverDrive isn't in reality providing the files at all. It

is providing the authentication, and then Amazon is providing the files for the Kindle in question.

With all that said, any e-reader that will read a given file type will read said file type if the file doesn't have any DRM. So if you convert an existing document to an EPUB using software like Calibre, Sigil, or InDesign, that file will be readable on a Nook, Sony eReader, *and* the Apple iPad/iPhone/iPod Touch. If you have some text and you convert it to, say, a Mobipocket file (.mobi or .pdb), then it would be readable on the Kindle *and* the Apple iBooks app—but not on the Nook. For a complete list of e-readers and their corresponding file types, there is no better place than Wikipedia's article "Comparison of E-book Formats."

Calibre

<http://calibre-ebook.com>

Sigil

<http://code.google.com/p/sigil>

InDesign

www.adobe.com/products/indesign.html

Wikipedia: Comparison of E-book Formats

http://en.wikipedia.org/wiki/Comparison_of_e-book_formats

While a DRM-free e-book ecosystem would clearly be the best for the consumer (choice of device, free movement of files from device to device, etc.), the second-best option is an ecosystem where the DRM is ubiquitous and the patron doesn't even realize it's there. This was the case with Apple and the early battles for music sales on the 'net—it had the store and the distribution network (iTunes) as well as the device used to access the content (iPod). All of the content was originally DRM'd, but largely no one noticed since it was completely invisible for the average user.

The biggest issue with e-readers and library patrons is that this process isn't seamless. The content providers and their DRM servers are huge headaches for the average e-reader user. My hope is that publishing goes the same way that music did and we both find a common file type and lose the DRM. But it took digital music years and years to get there, so I'm not holding my breath.

Bonus Tip for Physical Management of Devices

There are a handful of companies that provide custom-printed, fitted-to-the-device skins, a form of mildly protective sticker that wraps the devices in a layer of

printed plastic. The one I recommend for quality and service is GelaSkins, as I've used it for years and never been disappointed in its product.

GelaSkins

www.gelaskins.com

The idea here is that you can create a custom image with your library in mind: logo, address, contact info, website, whatever you'd like. You can then apply the skin to your devices to help with identification as a library device and add a bit of protection to the device as well.

Notes

1. "Media Tablet and eReader Markets Beat Second Quarter Targets, Forecast Increased for 2011,"
2. "Kindle," Amazon.com, accessed February 17, 2012, www.amazon.com/Kindle-Wi-Fi-Ink-Display-Screen-savers/dp/B0051QVESA; "Compare NOOKs," Barnes and Noble, accessed February 17, 2012, www.barnesandnoble.com/u/Compare-NOOKs/379003181.
3. "Kindle."
4. "Using Send to Kindle for PC," Amazon.com, accessed February 17, 2012, www.amazon.com/gp/help/customer/display.html/ref=hp_s2kpcland_file?nodeId=200768460.
5. "Compare NOOKs."
6. "Amazon Prime," Amazon.com, accessed February 17, 2012, www.amazon.com/gp/prime.
7. Ibid.
8. Ibid.
9. "Franklin Sells Interest in Company, Retires Shares," Philadelphia Business Journal, March 31, 2005, <http://philadelphia.bizjournals.com/philadelphia/stories/2005/03/28/daily32.html>.