



# eBooks and eReaders in Public and Academic Libraries

May 2011



# Joint eBooks Reader Committee Report

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# Executive Summary

## Key findings

- This report is a snapshot in time. The eBook and eReader market is in rapid and constant change, and even the experts say they have trouble keeping up.
- Academic and public libraries face different challenges with eBooks and eReaders in terms of available content.
- Academic and Public Libraries face similar challenges in terms of devices and Digital Rights Management (DRM)

## Key recommendations

- Despite the rate of change, the time is now to invest time, effort and funds in three major areas:
  - Education for stakeholders (staff, community, patrons, students, deans, etc.)
  - Targeted technological investments (but limit risk)
  - Advocacy (access, changes to DRM, etc.)
  - Continued partnership and study

# Introduction

If sales figures are any indication, this past holiday season the general public became increasingly aware of what many in the publishing world have not only known, but have been planning for several years: books no longer come in physical form only.

Bookseller Barnes and Noble (which also manufactures an eReader device called the Nook) reported that online holiday sales of electronic books outstripped online sales of physical books. Early in 2011, online retailer Amazon.com said online sales of eBooks for its Kindle eReader device outsold its online sales of physical paperback books.

Earlier in 2010, Apple's introduction of its popular iPad computer, which includes eReader capability, set the stage for a multi-function device that also offers users access to music, video, computer programs called "Apps" and other functionality. In many ways, picking up an iPad is almost like having a library in the palms of one's hands.

## ***What is an eBook or an eReader? Why is either of these things important to libraries?***

Simply put, an eBook is a digital file containing the content of a book – mostly, that means text (sometimes very simple text) but can also include illustrations, specific layout, and other things we're accustomed to seeing when we think "book."

An eReader is a device that can display an eBook. While many eBooks can be displayed on a computer screen, there is a new breed of portable device called an eReader that is either fully or partially devoted to accessing and displaying eBooks. Some of these devices are compact and lightweight, and can hold hundreds of digital books.

This issue is important because it fundamentally impacts the primary role of the library – to connect people and information. Historically, this role has been performed by purchasing physical materials and loaning them to patrons. These new electronic books are not always bought (instead, access to the materials is leased for a certain period of time), and in some cases are not available to libraries at all.

It is also relevant because it presents a new marriage of form and content. The format of a print book is stable, and as a technology will probably never become obsolete. In the world of ePublishing, there are many devices available to read eBooks, and there are many more to come – and they all have an obsolescence cycle. An investment in hardware that is sure to be out of date in only several years is not a trivial issue for most libraries.

In a partnership between ColoradoStateUniversity and Poudre River Public Library District, Director Patrick Burns of CSU and Poudre Libraries Executive Director Holly Carroll formed a team to look at the current state of the eBook and eReader Market and make recommendations for next steps for each institutions.

CSU Metadata Librarian Nancy Chaffin Hunter of CSU and Carson Block, IT Director for Poudre Libraries, co-chaired the committee.

The committee was comprised of a smart, talented and hard-working group from ColoradoStateUniversity, The Poudre River Public Library District, and Front RangeCommunity College. The team dived right into these uncharted (and sometimes murky waters) to assemble data and bring an informed perspective to this report.

**Committee members:**

Colorado State University:

Nancy Chaffin Hunter (co-chair), Marla Roll (Director, Assistive Technology Resource Center), Jesse Hausler (Coordinator, Assistive Technology Resource Center), Michelle Wilde (Physical Sciences Librarian), Patricia Smith (Coordinator, Collections and Contracts), Diana Wess, (Help Desk), Margaret Gearhart (Assistant Director, Books, CSU Bookstore)

Poudre River Public Library District:

Carson Block (co-chair), Becky Sheller (collections); Peggy Shaughnessy (web developer); Kristin Draper (Harmony Library librarian), Amy Holzworth (Council Tree Library librarian)

Front Range Community College Library:

Annie Fox (FRCC librarian)

## **The Challenge of eBooks in Libraries**

### **Academic Library Perspective**

Academic libraries have been early adopters of scholarly eBooks. This is partially due to CSU Libraries' early adoption of e-journals, which has been wildly successful. However, the adoption of eBookshas been slower than it was for e-journals. Journals can be easily read from computer screens; even if print is desired, printing an individual article of 5-20 pages is not an obstacle. However, a 300 page book is another story.

Scholarly monographs from respected publishing houses have only recently delved into the eBook market, and it is clear they are terrified that their content will be 'stolen' or 'redistributed' with no further compensation to the publisher and author. This is understandable; fifteen years ago, when e-journals were in their infancy, those publishers experienced the same angst, resulting in complex, and even counterproductive models of subscriptions and rights management. In fact, the eBook publishers who seem most able to 'get it' from a library perspective are publishers such as Springer and Wiley who have had experience with e-journals.

Although textbooks are not normally collected by academic libraries, they are offered by university bookstores. In discussions with textbook publishers, the CSU Bookstore found that some publishers would rather sell directly to the student, and market directly to the professor, any e-textbooks they have. In other words, they bypass bookstores altogether and only deal with the bookstore when there is a physical distribution process that is handled more efficiently through the bookstore than mailing physical copies to each student. There are also mixed messages from student groups across the country; while not having to lug multiple books around is a convenience, students also want the flexibility to highlight text, bookmark pages, and make notes. In some cases, they may want multiple semesters' access to the textbook, or even to keep it forever (the equivalent of not selling it back to the bookstore). Students around the country are complaining and even demonstrating against the cost of textbooks, but the e-textbook doesn't

seem to assuage their concerns. Plus, one must have a device to use an e-textbook, and not all textbooks are available in an e-version.<sup>1</sup>

CSU Libraries have been acquiring eBooks in a variety of formats since the late 1990s. Early eBooks were designed to be read on a computer, but recent advances in technology have made eBooks readable on numerous other portable devices, including dedicated eBook readers (Barnes and Noble Nook, Sony Reader, etc.), mobile devices (iPod Touch, smart phones, etc.), and tablet PCs (iPad, Samsung Galaxy, etc.). The eBooks purchased by the libraries are device-neutral and can be read on any device that can accommodate the software requirements of the eBook. Formats for eBooks range from simple PDF files to the standard EPUB, and in some cases digital rights management technology may be required to download or electronically “borrow” a book. CSU affiliates may access eBooks remotely, and onsite access to eBooks is available in the library’s Information Commons and via ~200 laptops that can be checked out by CSU students.

In the early 2000s, CSU Libraries, in cooperation with other Colorado Alliance libraries, began experimenting with patron-driven selection of NetLibrary eBooks. This project made the entire NetLibrary catalog of scholarly eBooks available via the CSU library catalog, and the Alliance only purchased the titles used by library patrons. The Libraries also became supporters of Alexander Street Press, a publisher of full text primary sources. At the time eBooks were an emerging technology that had not been widely adopted by library users, and although the NetLibrary project was not renewed, that experiment and the Alexander Street Press acquisitions marked the CSU Libraries’ first foray into the world of electronic books.

As the decade progressed, many non-profit and governmental organizations made electronic versions of their books freely available online. The Libraries began loading records for electronically available versions of government documents and free scholarly eBooks from prominent academic publishers such as National Academies Press and University of California Press into the library catalog. At the same time, the Libraries began investing in the growing commercial eBook market. The Libraries moved reference works online when availability and funding permitted, adding significant collections in the sciences and engineering (Knovel, Access Science) and social sciences and humanities (Gale Virtual Reference Library, Oxford English Dictionary).

In 2009, the CSU Library/IT Task Force reaffirmed the CSU Libraries’ commitment to expanding access to eBooks, recommending that the Libraries “Embark aggressively upon digital initiatives, to ‘leap frog’ emerging trends,” and specifically “Pursue the exploration of electronic books, in all aspects.” Since then CSU Libraries has accelerated the acquisition of eBooks in all disciplines. CSU Libraries’ purchase plan has been modified to prefer the electronic version of books when available, and a patron-driven eBook selection process has been implemented in conjunction with the eBook vendor Ebooks Corporation (EBL). Books published by Springer are now provided exclusively online, and the Libraries have added additional eBooks, such as the Morgan & Claypool science and engineering collections.

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1 <http://www.butifandthat.com/bisg/> (Accessed 2/11/11/11 and 3/21/11)

As of January 2011, the Libraries catalog contained records for 364,020 eBooks, including 127,179 eBooks from a variety of publishers and 236,841 electronic government documents, (from both free and fee-based sources) and the Libraries anticipate that access to eBooks will continue to rapidly expand.

## Public Library Perspective

If it's fair to say that Academic Libraries already have an ocean of electronic content available, then public libraries are more akin to a desert. Acres of physical materials are available for public libraries, but when it comes to electronic materials, only two vendors currently serve public libraries with content that is "licensed to loan" to patrons (Overdrive and NetLibrary on EbscoHost), and they only represent a smattering of publishers.

Amazon.com (through its physical Kindle eReader and software versions of the Kindle for other devices) offers easy and inexpensive access to materials it sells, but a careful review of the licensing agreement indicates that typical library use – i.e. loaning the device to library users – is in violation of the Company's terms of service. That hasn't stopped a number of libraries from purchasing Kindles, loading the devices with books, and loaning the devices to patrons. To date, Amazon has remained silent in terms of enforcing its terms of service for the use of physical Kindles in libraries, but in late April 2011 announced an agreement with library e-materials vendor Overdrive that would allow subscribing library users to borrow Amazon content on their personal Kindles. The service is slated to be available from Overdrive sometime in 2011, with more details to come.

There are "free" materials too (items – mostly classic texts – where the original copyright has expired), through Internet sources such as Project Gutenberg and Archive.org. These titles are not in widespread use in libraries – perhaps because the technical process of accessing them does not integrate well with library circulation systems. There are early signs of movement in offering these materials to library patrons. Vendors who sell their eBooks directly to the public have incorporated these free materials in their content stores. One library vendor, Overdrive, has also made Gutenberg titles available. In early 2011, Douglas County Libraries partnered with the Colorado Library Consortium (CLiC) to provide MARC records for select content on Project Gutenberg (a large collection of copyright-cleared books in several formats), with direct links from the library's catalog to downloadable eBooks and audio recordings.

The responses of public libraries to eBooks and eReaders range from excitement for the potentials, to great concern over the details of licensing and access. Spanning both extremes leads to an understandable confusion as to how it all works – as our committee discovered, eBook Readers are different from one another, and different vendors have different ways of making content available to customers. As discussed at an eBook session at ALA midwinter in January of 2011, as well as in conversations with colleagues and vendors, there has been much discussion but little concrete action. It's as if many of us want to move forward, but are not sure even where to begin.

As of the writing of this report, there is a grass roots movement called Library Renewal (<http://libraryrenewal.org>) that seems targeted at raising awareness – first among librarians – about the issues public libraries face with eBooks and other new formats. The site home page says "Our goal is to find new econtent solutions for libraries, while staying true to their larger mission."



The group seems to be in a “gathering” phase – seeking the names and contact information of librarians who want to get involved in learning more, or advocating for library needs.

In Colorado, there are several interesting efforts addressing the state of eBooks and eMedia. The Douglas County Libraries and Red Rocks Community College have teamed up to create a new system to provide libraries with access to electronic works from members of the Colorado Independent Publishers Association. The system would allow access to these works through the library’s regular circulation system, and would also allow patrons to “click through” to purchase items if they wish. The system is slated to go live in mid-2011.

As well, a new cross-institution committee called “eFrontier” was announced on the Libnet discussion list on March 23, 2011. The aim of the group is to help Colorado library staff keep up with—and maybe even get ahead of—issues involving eBooks and electronic resources in libraries. The group’s other aim is to help foster collaboration and avoid duplication of effort on this topic in the state. The group has started a blog at <http://efrontiercoloradolibraries.blogspot.com>.

Despite the challenges, there are opportunities now for public libraries to dive in. It’s likely that there will be twists and turns as events progress, but if public libraries don’t start experimenting in this space they will have little opportunity to influence its direction in a way that preserves the public good served by libraries. Specifically, please refer to the recommendations section of this document.

# Current State of the Market

## Devices

EReader devices are certainly hot right now, but for how long? Some tech-centric web sites are predicting that dedicated eReaders (that is, those that primarily are designed to read books) will be a short-lived technology. Others point to the folly of making such predictions – noting that some technologies fit needs so well that they die hard – one example being the compact disc.

Another factor in considering eReaders is that no two are alike – no doubt as a strategy to win market share.

It's also important to note that as well as the functions eReaders provide to users, they also provide a very important function for vendors – essentially, providing a virtual storefront to sell content directly to end users.

*Please see Appendix C for our subcommittee report on devices, including a comparison of units currently available for purchase.*

## DRM

DRM (Digital Rights Management, or what at least one advocacy group calls Digital Restrictions Management) are access control technologies embedded within electronic documents to restrict copying, printing, and/or sharing of digital resources, protecting the rights of the copyright holder to control the distribution of the resource, and usually require users to license or purchase the resource. These rights are designed to protect the copyright holder's financial compensation for the intellectual or artistic property created.

With digital media (whether eBooks, mp3 files, digital video, etc.) comes unprecedented potential for making loss-less copies and the repackaging for sale or free distribution copyright-protected content. Thirty years ago, when the 1976 copyright law was enacted, a book or journal article could be copied via photocopy; the process was neither cheap nor high quality. It would never substitute for the original. Likewise sound recordings copied from phonograph albums to audio tape or from one tape to another degraded with each copy made. Not so with digital media. Making copies does not degrade the content, and it is fast and cheap to make multiple copies and distribute them – hence the need for DRM. However, DRM systems may negate any and all fair use provisions of the Copyright Act of 1976. For example, the doctrine of first sale allows ownership of a lawfully acquired work to be transferred; DRM systems prevent this, unless the entire device holding the digital work changes hands. eBooks in particular are licensed, and license terms trump fair use. DRM systems will not allow Interlibrary Loan, and most will not allow printing of more than a small section of the eBook.

There are several DRM systems available to publishers. Some are device specific, such as Apple's FairPlay DRM, which can only be read by Apple's iBooks app on iOS devices; others are more common among different devices, such as Adobe Digital Rights.

At present, the best way to address DRM issues is to advocate for the restrictions to become more 'library-friendly' to allow Interlibrary Loan, multiple users to access the same resource simultaneously, and whatever else is necessary to allow us to continue to provide services to our constituencies.

*Please see Appendix D for our subcommittee report on DRM.*

## Formats and Standards

Going to most sources of free eBooks on the web (such as the Project Gutenberg site) shows that there is more than one way to receive the data that comprises an eBook. Users are generally presented with an array of choices, including plain text, Adobe formats such as PDF, and EPUB (adopted as the official standard of the International Digital Publishing Forum), DAISY, and even full scans of original documents.

There is no one way to deliver eBooks, but after analyzing the pros and cons of the different methods, our Formats and Standards subcommittee recommends that our libraries focus on EPUB and PDF formats.

*Please see Appendix E for our subcommittee report on formats and standards.*

## Accessibility

As with many popular and emerging technologies, the needs of users with disabilities are not always represented in proportion as features are designed for users without impairments in hearing, sight, cognition and other areas. No one device currently meets all needs. Some devices offer increased flexibility though – especially those with a “desktop computer” type lineage such as Apple’s iPad.

*Please see Appendix F for our subcommittee report on accessibility.*

## Services

Unlike some technologies, eReaders are not always intuitive. Our subcommittee investigated and recommended a number of support roles our institutions could serve individually or in collaboration with each other. Specifically the subcommittee considered that staff from both institutions should be trained in the use of eReaders and how to help patrons as a continuing education activity and that institution-specific help guides should be developed for the patrons at each institution. Several areas of cooperation between the two institutions were identified, including informational sources on eReader technical specifications, publicity for eBook collections, cosponsor eReader interest groups, programs or discussions on the future of eReaders, and investigation of joint purchases, as theoretically most CSU affiliates at the Fort Collins campus qualify for Poudre River Public Library District library cards.

*Please see Appendix G for our subcommittee report on services around eReaders.*

## Recommendations

After studying and evaluating the current state of eBooks and eReaders, we make the following recommendations to our respective institutions. Immediately, we should:

- ⤴ Provide education for stakeholders (staff, community, patrons, students, deans, etc.)
- ⤴ Make targeted technological investments (but limit risk)
- ⤴ Pursue opportunities for advocacy (access, changes to DRM, etc.)
- ⤴ Continue the committee in an informal fashion

Provide education for stakeholders (staff, community, patrons, students, deans, etc.)

- ⤴ There is a demand for education in this the area of eBooks and eReaders for all levels of libraries, including patrons, staff, administration, and trustees.
- ⤴ Each institution should work with appropriate internal staff to develop informational presentations covering the state of eBooks and eReaders, and outline each institution's response.
- ⤴ The public library should pursue the Sony eReader Program—provide distribution of Sony eReaders to staff.
- ⤴ The development of educational tools could be an area for collaboration between the libraries, as we share a number of constituents.

Make targeted technological investments (but limit risk)

- ⤴ Investing in any physical devices right now carries a degree of risk, mainly from the perspective of managing the obsolescence cycle and meeting the individual needs of users. Regardless, we recommend targeted investments in devices now to begin serving users as well as gaining a better understanding of devices.
- ⤴ We recommend the CSU Libraries purchase i-Pad 2 tablets with student funding and determine the use to which students put the devices. The content purchased by the Libraries can be viewed via the i-Pads as opposed to dedicated e-readers such as the Nook or the Kindle.

Although the i-Pad 2 was not reviewed by the Devices Subcommittee, it is the next generation of the i-Pad, which was viewed as the leading tablet device. Consider longer check-out periods than currently exist for the Libraries' laptops, perhaps up to a week? This would allow students to take the i-Pad home with them.

Let students know that any applications loaded (free or purchased by the student) will be uninstalled when the device is returned to the Libraries by reverting the i-Pad 2 back to its default settings.

Require the students to fill out a brief survey to determine how they used the i-Pad 2. This survey will need to be constructed in a non-threatening way, so that all uses can be recorded.

- ⤴ We recommend the Poudre River Public Library pilot an eReader program by purchasing and circulating to the public two sets of eReader devices – one with e-ink technology, the other with a color screen. The readers would be pre-loaded with eBooks selected by the library and the content, like the books on the shelves, would be managed by the library.
  1. Only consider devices that support library-preferred standards such as EPUB.
  2. Only consider devices that support current methods of borrowing electronic library materials (i.e. compatible with Overdrive).
  3. Since licensing remains problematic, purchases should be made to maximize the investment in terms of the “rule of six” (typically, the DRM software “Adobe Editions” can be registered on six different devices – allowing content purchased once to reside on six units).
  4. The pilot phase of program would be for six months.
  5. Programs should be design to meet institutional budgets, materials selection, and policies concerning the loaning of physical devices.
  6. Programs should be designed to measure and report useful statics to gauge use, popularity and effectiveness of program.
- ⤴ The libraries should make a shared pilot investment in a small group of physical devices that would best meet accessibility needs of patrons.

A specific group of users with accessibility needs should be identified to assist and evaluate the pilot.

The program should be designed and implemented as with the general eReader pilot – with the program designed to meet institutional budgets, materials selection, and policies concerning the loaning of physical devices.

The program should be designed to measure and report useful statics to gauge use, popularity and effectiveness of program.

- ⤵ The public library should work with existing and new vendors to increase the availability of eContent.
- ⤵ The libraries should create a collections and technology budget strategy to meet what is anticipated as a growth in the area of electronic materials.

Pursue opportunities for advocacy (access, changes to DRM, etc.)

- ⤵ It's clear that the issue of eBooks, eReaders and libraries is very much in a state of flux.
- ⤵ We recommend library staff actively seek areas of involvement and advocacy in any available areas on the local and national levels.
- ⤵ Activities would include exploration of [libraryrenewal.org](http://libraryrenewal.org); E-Frontier, personal conversations with local and national publishers, aggregators, and resellers; and involvement with professional organizations pursuing this issue on behalf of libraries.

Continue the committee in an informal fashion

- ⤵ The committee has succeeded in raising institutional and staff awareness of the current state of eBooks and eReaders, inspiring formal and informal gatherings and conversations in both institutions.
- ⤵ The teamwork between the two staff groups (academic and public) has proven to be enriching and productive.
- ⤵ The committee, in an informal fashion (perhaps through regular communications between the co-chairs) should be continued and sustained to promote information sharing and other activities of mutual benefit.



# Appendices

## Appendix A Charge to the Joint 'eBook Reader' Committee

Patrick J. Burns, Interim Dean, CSU Libraries, and Holly Carroll, Executive Director,  
Poudre River Public Library District

October 1, 2010 Whereas CSU Libraries, the Poudre River Public Library District, and Front Range Community College Library (collectively 'The Libraries') currently provide access to significant digital content, whereas the strategic directions of both Libraries align with providing additional access to digital content, whereas electronic content is emerging at an accelerating rate, whereas a variety of IT platforms and services for access to electronic content, including electronic books, is emerging, whereas many of our constituents need advice on devices and formats, we now therefore and hereby constitute the ad hoc eBook Reader Committee (the 'Committee) to explore this area of activity in depth, and recommend to The Libraries a plan and budget for moving forward in this area.

The Committee membership shall be:

Chairs: Nancy Chaffin Hunter (Metadata Librarian, Colorado State University Libraries) and Carson Block (IT Director, Poudre River Public Library District)

Committee members:

Colorado State University:

Marla Roll (Director, Assistive Technology Resource Center), Jesse Hausler (Coordinator, Assistive Technology Resource Center), Michelle Wilde (Physical Sciences Librarian), Patricia Smith (Coordinator, Collections and Contracts), Diana Wess, (Help Desk), Margaret Gearhart (Assistant Director, Books, CSU Bookstore)

Poudre River Public Library District:

Becky Sheller (collections); Kathie Young de Herrera (Council Tree librarian); Alice Jorgensen (Technical Services); Peggy Shaughnessy (web developer); Kristin Draper (Harmony librarian), Amy Holzworth (Council Tree librarian)

Front Range Community College Library

Annie Fox (FRCC librarian)

The Committee is charged with the following activities:

1. Assemble a representative team from Colorado State University Libraries and the Poudre River Public Library District.
2. Committee Objectives – by January 31, 2011, the committee will:
  - a. Investigate and report on issues surrounding licensing and Digital Rights Management (DRM) pertinent to content on eBook readers, and impacts to library materials in academic and public environments
  - b. Investigate and report on available digital content (and any restrictions) accessible digitally on portable devices

- c. Investigate and report on the state of end-user devices; and
  - d. Create a report that recommends next steps for CSU, PRPLD, and FRCC
3. The scope of investigation will cover currently available content in the following categories: academic books, academic textbooks, popular reading, media files (audio and video), accessibility (including navigation and text to speech)., a--
  4. The scope of investigation will define currently known requirements for delivering eBook services for each library. Requirements may include impacts to information infrastructure, IT infrastructure, usability, performance under a variety of circumstances in a variety of environments, accessibility, and other pertinent factors.
  5. The scope of investigation will identify and categorize current standards and formats for electronic files and services. Where possible, trends and opportunities will be identified.
  6. The scope of investigation will explore pertinent aspects of Digital Rights Management, Digital Asset Management, and accessibility.
  7. The scope of investigation will identify and categorize currently available consumer products and/or services for accessing available digital content. and seek sources of evaluation for devices that include such aspects as form factor, type of display, readability of content, ease of use, battery life, power consumption, connectivity, input mechanisms, and for services additional features such as integration with existing devices, user interface, ability to browse the web, transfer files, and others. As part of discovery, the committee may purchase and/or obtain appropriate devices, services, and content to test, pending availability of funds.
  8. The scope of investigation will consider integration of new e-media and e-book devices with extant infrastructure and services of The Libraries, including subscriptions to electronic book and media services, integration of devices into services, and other areas as may be identified by the Committee.
  9. The committee will obtain feedback from appropriate constituents, including The Libraries faculty and staff, students at CSU and FRCC, and others as deemed appropriate.
  10. The committee will recommend a communications strategy to inform and educate primary stakeholders about issues involved in eBook, e-readers and/or Digital Rights Management and the impacts to library users, library management, and library staff. Primary stakeholders include CSU Libraries Deans and the Executive Director of the Poudre River Library District, Library District Board of Trustees, Libraries staff, members of the public, students, faculty, and others as identified by the committee. Education may take the form of public forums,
  11. The committee will recommend a “next steps” approach to the Libraries including recommendations for staff training and engagement and an estimated budget which includes estimates for content and equipment.
  12. The Committee will report progress frequently via an electronic means such as a wiki.



## Appendix B Web Resources

Link to Sue Polenska's blog site - "No Shelf Required"

<http://www.libraries.wright.edu/noshelfrequired/>

Link to archived sessions of 2-day web conference on eBooks.

- Session 1: <https://alapublishing.webex.com/alapublishing/lsr.php?AT=pb&SP=EC&rID=3146752&rKey=117809794e1a6087>
- Session 2: <https://alapublishing.webex.com/alapublishing/lsr.php?AT=pb&SP=EC&rID=3170592&rKey=fe4273550ff37c52>

COSLA (The Chief Officers of State Library Agencies) published a report in 2010 examining many eBook issues. The report is available at [http://www.cosla.org/documents/COSLA2270\\_Report\\_Final1.pdf](http://www.cosla.org/documents/COSLA2270_Report_Final1.pdf)

# Appendix C

## eBooks Committee - Devices Summary

The world of electronic reading is evolving at an astonishing rate. In the third quarter of 2010, e-readers and media tablets saw a 40 percent and 45 percent growth rate, respectively, and are projected to exceed this rate of growth in 2011. Our subcommittee has been charged with reviewing the current devices and applications used for electronic reading. This executive summary and the accompanying chart describe the various dedicated e-readers, multi-use devices and applications.

### Reviewed Devices

After a careful review of the current e-reader market, the subcommittee identified the most advanced and commonly used devices for closer evaluation. Among dedicated e-readers (devices primarily used for reading digital books), we selected the Sony Reader, the Amazon Kindle, and the Barnes & Noble Nook, all of which our libraries purchased for review. The Kobo from Borders was also selected, although the e-reader itself was not purchased by the libraries. All of these devices have access to their own eBook stores, as well as free eBooks, and all use E ink technology. The Kindle holds roughly 41 percent of the dedicated e-reader market; the Nook holds 15 percent; and the Sony Reader holds 8 percent. All but the Kindle support EPUB, the file format required for library e-lending.

For multi-use devices the committee reviewed the Apple iPad, the Barnes & Noble Color Nook, and the Samsung Galaxy. Both the iPad and the Color Nook were purchased by the libraries for review. All of these devices are color LED, backlit, touch-screen computers with software for reading electronic books as well as searching the web, reading e-mail, and playing games. All can download applications that support the EPUB format, along with free books, and all have access to at least one eBook store. Both the Color Nook and the Galaxy use the Android platform while the iPad uses iOS. Currently, iPad owns 87 percent of the market. The Samsung Galaxy was released the first quarter of 2011, and the Color Nook was introduced in the fourth quarter of 2010, so market share information is not yet available for these devices.

E-reader applications abound, so the committee identified those that seem to be the most popular and freely available (there is little to no information about market share for e-reader applications). The Kindle and Nook applications can all be accessed on smart phones, iPads, Android platforms, Blackberry devices, Macs, PCs, and iPhones. The Kindle application can also be accessed on the new WindowsPhone7. Blio is only accessible on PC; Bluefire is only accessible on the iPhone, iPad and iTouch, but it supports EPUB and Adobe eBook DRM (and can therefore be used with EPUB books downloaded from the library).

### Best Devices

In general, there is no one device or application that wins top marks in all categories. Due to the very different user populations at PRPLD, CSU and FRCC, the subcommittee's selections often vary based on where the device or application will be used.

Dedicated e-readers: In this category, the top devices include the Barnes & Noble Nook (in particular for the public libraries) and the Amazon Kindle.

Many key elements of the Kindle and the Nook are similar. The price is comparable. Each has a long battery life (10 days), is lightweight, uses E ink, is Wi-Fi and/or 3G compatible, and can

store thousands of books. The Kindle and the Nook both allow users to bookmark, search within a book, take notes and use a built-in dictionary. File formats that are supported on both devices include PDF, GIF, JPEG, PNG, BMP and MP3, allowing the user to listen to audio through headphone jacks. Both the Kindle and the Nook can be synchronized with other devices (such as smart phones or PCs) with the corresponding application, and can lend books to other accounts for 14 days.

When looking into the possibility of our libraries “circulating” e-reader devices, questions about content arose. How can the libraries send out one device that has all of the purchased eBooks on it? Fortunately, the Kindle and the Nook allow up to 6 devices on a single account, giving access to all 6 devices along with the ability to read every book on that account simultaneously. The Nook has the added feature of allowing all subscription materials to be accessed simultaneously on all 6 devices, which the Kindle currently does not allow.

What makes these e-readers different? The Kindle offers an experimental feature called text-to-speech, where the user can ask the Kindle to “read” the text from books (where allowed by the rights holder), newspapers, magazines, blogs, and personal documents. This may help address accessibility concerns, including the provision of service to those who are vision impaired. The Nook (unlike the Kindle) supports the EPUB file format, including Non and Adobe DRM. For libraries, this means the Nook, but not the Kindle, is able to access and support library eBooks from our eBooks catalogs.

Multi-use Devices: With 87 percent of the market share, the Apple iPad seems to be the clear choice in this category, although the Color Nook and the Samsung Galaxy do provide the iPad with good competition at a much cheaper price.

All three devices have beautiful backlit touchscreens, display books and magazines in vivid color, can surf the web, and can play movies, games, music and audiobooks. Battery life is much less than their E ink counterparts, ranging from 8-10 hours.

The Color Nook has access to the Barnes & Noble book store, offering more than 2 million books, and supports EPUB, which allows access to library eBooks from Overdrive. The Nook Color can do everything a Nook can do, but with the added benefit of color. Additional features on the Nook Color include the “Read to Me” feature on children’s books. At \$249, it is the cheapest of the three, but also has the least amount of flexibility. An Android platform allows for growth, and an app store is on the way from B&N to support movies and other applications.

The Samsung Galaxy, also on an Android platform, is a bit more expensive, but also more flexible. Starting at \$299 (with a 2 year contract ranging from \$29 to \$59 a month) the Galaxy is both Wi-Fi and 3G enabled. Apps can be purchased through the Android apps store, and it comes preloaded with the Kindle e-reader application. Many other e-reader apps such as Nook can be loaded onto the Galaxy, giving the tablet access to both the Amazon and Barnes & Noble bookstores. Access to Adobe and the Nook application allows for public library e-lending.

The Apple iPad clearly dominates the tablet computer market. Yet despite the benefits of access to Apple’s app store with twice the number of applications than are available for Android devices, and the larger 9” color screen, the iPad is not without its downsides. Most notably, the iPad does

not support Adobe products, including Flash and Digital Editions, and it carries the highest price tag. Starting at \$450 and going up to \$700, both academic and public libraries may find the iPad cost-prohibitive if their intention is to circulate large numbers of these devices.

Due to the fact that all multi-use devices are backlit, eye strain may be a factor when reading for long periods of time. When looking at multi-use devices as e-readers, it's really the e-reader applications that count. Currently, the Color Nook only allows the Nook e-reader application (unless you root the machine, therefore voiding the warranty), and the Galaxy and the iPad have the Kindle and iBooks preloaded onto theirs, respectively. However, both the Galaxy and the iPad allow other e-reader applications to be downloaded, including some that allow e-lending from libraries, such as the Barnes & Noble Nook application.

E-reader Applications: Again, the e-reader applications we reviewed are the ones that are the most popular and easiest to get for nearly all devices. Our winners come down to the Nook and Kindle for PC, Mac, smart phones, iPads, Android devices, iPhone, and Blackberry. These applications allow access to millions of books through the bookstores at Barnes & Noble and Amazon. Both will sync with all the above devices listed on the account, so you can leave one device and travel to another without ever losing your place in your eBook. Bluefire, an e-reader app from the small company Bluefire Productions, is making a name for itself. Bluefire only operates on iPhone, iPad and iTouch (iOS), yet supports Adobe eBook DRM. In other words, the Bluefire e-reader app allows Apple products to read eBooks downloaded from libraries, something other e-reader applications are unable to do at this point.

All three e-reader applications allow bookmarking and note taking, as well as the ability to change fonts, text size, margins, backgrounds, etc.

### **Criteria for Selecting Devices in Libraries**

- Easy access to eBooks from the library catalogs
- Access to electronic journals
- Access to material in the Reserve Room (FRCC) and on reserve at CSU
- Access to the CSU Libraries Digital Repository
- Supports file formats for viewing library materials, especially ePub and PDF
- User friendly navigation
- Accessibility for vision impaired
- Extra features including web browsing and email

### **Looking Ahead**

The e-reader market is constantly evolving. Dedicated e-reader devices can now be found everywhere from bookstores to Wal-Mart, with many options priced at less than \$200. In 2011 we expect to see the first color E ink e-readers, the first e-reader using Marisol's reflective screen technology, a smaller 7" iPad, a Wi-Fi only Galaxy, and several more Android tablet computers. Throughout all this change, one thing seems certain. Electronic reading, whether on dedicated e-readers, computers, tablets or smart phones, is definitely here to stay.

## Glossary

**Dedicated e-reader** - An eBook reader, also called an eBook device or e-reader, is an electronic device that is designed primarily for the purpose of reading digital books and periodicals and uses E ink technology to display content to readers

**Multi-use devices** (media tablets, tablet computers) - platform for audio-visual media including books, periodicals, movies, music, games, and web content.

**e-Reader applications** – software that can be put on any device (computer, smartphone, tablet computer, etc.) that allows the user to read eBooks on that device

**Projected features/devices** – devices that will be available in the following year which support reading eBooks (tablet computers, e-readers, smartphones, etc.)

**Copy** – The number of copies of an eBook that can be on various devices or applications from the same account. There may be limits on the number of devices (usually six) that can simultaneously use a single eBook, periodical, or newspaper. (Kindle subscriptions to newspapers or periodicals cannot be shared on multiple devices.)

**Lending** – Taken from the Barnes & Noble and Amazon website, respectively. NOOK's exclusive LendMe™ technology lets you share favorite books with friends. LendMe™ books can be lent for up to 14 days. Just choose the book you want to share and send it to your friend's NOOK, computer, or handheld device enabled with NOOK software. Eligible Kindle books can be loaned once for a period of 14 days. The borrower does not need to own a Kindle -- Kindle books can also be read using our free Kindle reading applications for PC, Mac, iPad, iPhone, BlackBerry, and Android devices. Not all books are lendable – it is up to the publisher or rights holder to determine which titles are eligible for lending.

Cloud computing – is location independent computing, whereby shared servers provide resources, software, and data to computers and other devices on demand, as with the electricity grid. More simply, it is remote computing.

**DRM** (Digital Rights Management) – is a term for access control technologies that can be used by hardware manufacturers, publishers, copyright holders and individuals to limit the use of digital content and devices. The term is used to describe any technology that inhibits uses of digital content not desired or intended by the content provider. The purpose of DRM technology is to control access to, track and limit uses of digital works.

**EPUB** (Electronic PUBLISHing) – An open standard for electronic books and Web publishing from the International Digital Publishing Forum ([www.idpf.org](http://www.idpf.org)). Introduced in 2007 as the successor to the Open eBook format, EPUB documents are marked up in XHTML or Digital Talking Book

**E ink**– is a specific proprietary type of electronic paper manufactured by E Ink Corporation, founded in 1997 based on research started at the MIT Media Lab. It is currently available commercially in grayscale and (very soon) color and is commonly used in mobile devices such as e-readers and, to a lesser extent, mobile phones and watches.

<b>Digital Book Readers</b>				
<b>I. Dedicated E-Readers</b>				
<b>General</b>	<b>Sony Reader Daily Edition</b>	<b>Amazon Kindle</b>	<b>B &amp; N Nook, Black/White</b>	<b>BordersKOBLO</b>
Cost	\$299	\$139 / \$189 / \$379	\$149 / \$199	\$139
Platform	Linux	Linux	Android	Linux
Screen	7" e-Ink Pearl technology; anti-glare; 16 grayscale	6" / 9.7" (\$379); No glare e-Ink Pearl technology; 16 grayscale	6"; e-Ink Vizplex; 16 grayscale	6"; e-Ink; 16 grayscale
Resolution	600 x 1024	600 x 800; 825 x 1200 (\$379);	600 x 800	600 x 800
Battery Life	10 days with wireless on; 22 days with wireless off;			
charge time 2.5 hrs.	3 weeks wireless on; 1 month with wireless off; varies with model; charge time 4.5 hrs.	10 days with wireless off; charge time 3.5 hrs	2 weeks; charge time 2-3 hrs	
Weight	9.6 oz	8.5 / 8.7 / 18.9 oz	11.6 / 12.1 oz	7.8 oz
Connectivity				
WiFi and free 3G wireless	WiFi (\$139) / WiFi + free 3G; Web browser (experimental)	WiFi / WiFi + 3G; Basic Web Browser	WiFi; Limited Bluetooth; no web browser	
Portrait / Landscape	Yes, through Options button	Yes	Portrait	Portrait
Color Books	No	No	No	No
Storage	2 GB-1200 books; expand 32GB	3GB, 3,500 books	2 GB-1500 books; expand 16GB	1GB-1000 books; expand 32GB
eBooks from– Vendor, Free ebook websites	Directly Sony Reader Store Unknown and 1,000,000 (public domain); Other bookstores/sites from PC/Mac transfer via USB	Directly Amazon 800,000 + audio books + 1.8 million (public domain); Other sites e-books in supported formats via USB	Directly B&N 2,000,000 (includes 1,000,000 public domain); Other sites e-books supported formats via USB	Directly Borders 1,000,000; Preloaded with 100 Public Domain books
eBooksfrom – local Library	Indirect - Library Reader Store, Poudre River Public Libraries; CSU Library; PC/MAC transfer supported file formats via USB	Indirect can transfer supported file formats to the device from PC / Mac via USB	Indirect can transfer supported file formats to the device from PC / Mac via USB	Indirect can transfer supported file formats to the device from PC / Mac via USB
Copy / Lend / Cloud / DRM	Unknown	Lend (14 days) / DRM	Lend (14 days) / DRM	Unknown
Navigation (buttons / touch)	Touch screen / buttons; Have to Press slightly, includes a stylus	Buttons; No touch screen	Touch screen; 3.5" Color Touch screen for navigation; Side keys	4 way soft directional pad with select button; No touch screen
3D Page Turning	No	No	No	No
Supports Flash	No	No	No	No
Supported formats	BBEB (Sony), ePub/ACS, DOC, PDF, RTF, TXT, Connection with Adobe Digital Editions	AZW (Kindle), PDF, TXT, HTML, DOC, unprotected MOBI	ePub (including Non or Adobe DRM), PDB, PDF	ePub, PDF, Adobe DRM
Email	No	Limited, documents only-via Whispernetfor a fee	Yes	No
Password protection	Yes, to get into store	Yes	Yes	No
Connect Multiple Devices	No	Download content simultaneous use on up to 6 devices	Up to 6 devices on one account	No

Other Features	Headphone jack	Headphone jack; Built in Twitter and Facebook integration; Backup purchases at Amazon can re-download anytime	Headphone jack; Backup purchases at B & N	
Comments	Slow navigation/page turning, have to press slightly	Navigation awkward; small Keyboard		
<b>Text Views</b>				
<b>One Page / Two pages</b>	Both, through Options button	One page only	One page only	One page only
<b>Multimedia</b>				
Video / Images	Black/White only images; BMP, GIF, JPG, PNG; no video	B/ W images: BMP, GIF, JPG, PNG, PRC natively; no video	Images: JPG, GIF, PNG, BMP	No
Audio	MP3, AAC	MP3, Audible (AA, AAX)	MP3	No
<b>Study Tools</b>				
Book Marks	Yes, can dog-ear a page, under Options/Create Edit notes	Yes + Whispersync, syncs last page read across many devices, iPhone, iPad, PC, Mac, Android	Yes + Sync across multiple devices, iPad, iPhone, Android	Yes
Dictionary	2 English; 10 Translation	Yes, Also access to Wikipedia	Yes	Yes
File Management	No	Yes, press "Home/Menu"	Yes, under "My Shelves"	No
Handwriting	Yes	No	No	No
Highlighting	Yes, also underlining / erasing	Yes	Yes	No
Search within Book	Yes	Yes	No	No
Notes	Yes	Yes	Yes	No
Accessibility				
Adjustable Brightness	No	No	Yes	No
Font Size	6 sizes	8 sizes; 3 styles	6 sizes	5 sizes
Text to Speech	No	Yes, press Shift/Sym; Activate Voice Guide for menu navigation	No	No

<b>II. Multi-use Devices</b>				
<b>General</b>	<b>Barnes and Noble Color Nook</b>	<b>Samsung Galaxy</b>	<b>Apple iPad</b>	
Cost	\$249	\$499-\$629 depending on 3G carrier; Sprint offering for \$299 w/2 year contract starting 1/17/11	\$499-\$699 with WiFi \$629 - \$829 with WiFi + 3G	
Platform	Android	Android	iOS	
Screen	7" Vivid view backlit; 16 million colors	7" WSVGA backlit	9.7"; LED backlit	
Resolution	1024 x 600	1024 x 600	1024x768	
Battery Life	8 hrs wireless off; charge 3 hrs	7 hrs movie play / 13 hrs non video	10 hrs; charge time 2 hrs	
Weight	15.8 oz	13.6 oz	1.5 lbs	
Connectivity	WiFi	WiFi (3G based on carrier)	WiFi with optional 3G	
Portrait / Landscape	Yes, by rotating device	Yes	Yes, by rotating device	
Color Books	Yes	Yes	Yes	
Storage	8GB, 6000 books; expand to 32GB	16GB, expand to 32GB	16GB – 64GB	
eBooks available – Vendor, Free ebooks websites	Directly from B & N 2,000,000 (includes 1,000,000 public domain); Other websites supported file formats	Depends on e-reader app used, Kindle, Kobo, Nook, etc.	iBooks – 150,000; or other Bookstores via reader apps and free book websites, ex., Google, LibriVox (audio)	
eBooks available - Library	Yes, View online / download supported file formats to device; or transfer supported formats from PC/ MAC via USB		Yes, view online / download supported file formats to device; or transfer files via USB	
Copy / Lend / Cloud / DRM	Lend (14 days) / DRM		DRM	
Navigation (buttons / touch)	Touch Screen	Touch Screen / zoom	Multi-Touch: Zoom	
3D Page Turning	No	Depends on e-reader application	Depends on e-reader application	
Supports Flash	No	Yes	No	
Supported Formats	ePub (including Non or Adobe DRM), PDF, XLS, DOC, PPT, PPS, TXT, DOCM, XLSM, PPTM, PPSX, PPSM, DOCX, XLX, PPTX	depends on e-reader application in use (Kindle, Nook, Kobo...) does not support iBook formats, compatible with MS Office	ePub, ePub/DRM (iBook format),PDF, TXT, DOC, DOCX, PPT, PPTX, RTF, VCF, XLS, XLSX, Numbers, Pages; also Kindle & B&N with e-reader app	
Email	Yes	Gmail and MS exchange integrated	Yes	
Password protection	Yes		When purchasing books	
Connect Multiple Devices	Up to 6 devices on one account			
Other Features	Headphone jack; Games; Pandora Internet radio; Media Gallery; QuickOffice software for viewing MS Office files; Access Social Media applications; Back up purchases at B & N	Hp jack and speaker, full HD video player, video recorder, swipe, Samsung apps, think-free document viewer, 2 digital cameras rear and front, Bluetooth enable, Kindle app preloaded	Printing; Calendar; Headphone jack; Built in microphone; Keyboard support for many languages; Dictionary support for many languages; Multitasking	
Comments	Touch screen fast; Color Screen crisp		Page turning / navigation fast	



<b>Text Views</b>				
One Page / Two Pages	Yes, 2 page in landscape		Both	
<b>Multimedia</b>				
Video / Images	MP4 / Jpeg, GIF, PNG, BMP	Full HD (1080p)H.263, MPEG – 4, XviD, H.264, DivX	.m4v, .mp4, .mov, MPEG-4, HD Movies, TV shows, Netflix, Podcasts, YouTube and more / JPG, TIFF, GIF	
Audio	MP3, AAC	MP3, AAC, OGG, WMA, AMR-NB?WB, FLAC, WAV, AC#, MIDI< RTT-TL/RTX, OTA, iMelody, SP-MIDI	HE-AAC (V1), AAC,Protected AAC (from iTunes Store), MP3, MP3 VBR, Audible (formats 2, 3, and 4), Apple Lossless, AIFF, and WAV' Can also store music	
<b>Study Tools</b>				
Book Marks	Yes; also Sync across multiple devices, iPad, iPhone, Android device	Depends on which e-reader app you are using	Yes, across devices so can pick up where you left off on your iPhone or iPod touch; Depends on e-reader app using	
Dictionary	Yes	Depends on which e-reader app using	Yes	
File Management	Yes, under library	Yes	No	
Handwriting	No		No	
Highlighting	Yes		Yes	
Search within Book	Yes		Yes	
Notes	Yes		Yes	
Accessibility				
Adjust Brightness				
Yes, can also adjust background color		Yes, Also can switch to white on black display		
Font Size	6 sizes		10 sizes	
Text to Speech	No	Yes	Yes, has built in accessibility; Also has VoiceOver to navigate the desktop and applications	
Closed Captioning			Subtitles/Closed Captioning; Mono Audio	

### III. E-Reader Applications for Laptop / Desktop / Tablets

There are many free e-reader apps with versions for a variety of platforms available for reading purchased or free e-books on your computer. In addition to the four selected for review, Bluefire and Kobo are also popular e-reader apps. Features may vary slightly depending on the app and which platform version you are using.

General	Blio Window XP version	Stanza iPad	B & N Nook XP version	Amazon Kindle XP version
Cost	Free	Free	Free	Free
Versions available	Vista / Windows 7 / Windows XP	iPod Touch, iPhone, iPad, Mac / PC (beta)	iPad, iPhone, Android, PC	Window 7, XP, Vista; iPhone, iPad, Mac, Android, Blackberry, WindowsPhone7
Color Books	Yes	Yes	Yes	Yes
Books available	1,000,000 free; Partnered with Baker & Taylor to purchase	From LexCycle built in online catalog of 100,000 books; Other websites and vendors in the supported formats	Directly from B & N 2,000,000 (includes 1,000,000 public domain); Other websites supported file formats	Directly from Amazon 800,000 + 1.8 million books in public domain
Portrait / Landscape		Yes		
Navigation (buttons / touch / mouse)	Depends on device	Depends on device	Depends on device	Depends on device
3d Page Turning	Yes	No	No	No
Move to desired page	Yes, scroll bar	Yes, slider	Yes, scroll bar	Can jump to location by entering page number
Supported formats	XPS, ePub			
Other Features	Read Logic – zooms into a portion of the page	Can change background / foreground colors		Can change background color to sepia or white text on black
Views				
One Page	Yes	Yes	Seems to depend on font size	Yes
Two Pages	Yes	No	Seems to depend on font size	Yes
3D	Yes		No	No
Thumbnails	Yes		No	No
Table of Contents	Yes		Yes	Yes
Study Tools				
Bookmarks	Yes, opens to last page read	Yes, Bookmarks page last read; also can place bookmarks (dog-ear) throughout if wish to bookmark particular sections	Yes, Bookmarks last page read; also can place bookmarks throughout	Yes, Sync to last page read; Also can place bookmarks throughout
Dictionary	Yes	Yes		Yes
Highlighting	Yes		Yes	Yes
Organize	Sort by Title, Author, Recently read	Sort by title or author, or create custom collections to create reading lists and keep track of all your books	Sort by Title, Author, or Recently Read	Sort by Recent, Author, Title, Length
Search within Book	No	Yes	Yes	Yes

Notes / Annotations	Yes, Can add images and hyperlinks to notes	Yes	Yes	Yes
Accessibility				
Adjust Brightness	Yes	Yes, Can also switch from Nighttime and Day-time mode	No	Yes
Font size	Depending on which view you are in has 5 font sizes; or use the Zoom feature	Yes, can also change margins	Yes, 21 sizes; Can also change margins	Yes, Zoom; Also can change margins (words per line)
Text to Speech	Yes	No	No	No

#### IV. Projected Features / Devices

- A. Color e-Ink: In May of this year, Hanvon is expected to debut the first color e-Ink e-Reader. With a price tag of \$530 the 9.7 “screen will have a resolution of 1200 x 1600. A color filter is applied to a regular e-Ink screen, making the colors muted or washed out. Initial reviews of this model report that the refresh rate is slow, and the touch screen is of the resistive type so a stylus is needed to navigate.
- B. Mirasol Color Display Technology:Qualquamm’sMirasol technology, designed after the iridescence of a butterfly’s wing, uses a translucent film and reflective surface that creates different colors by modulating the distance between the reflective layer and film. It is more energy efficient than current e-Ink screens, does not flicker, is readable in sunlight, and can play videos. Although an e-Reader prototype has been made by Foxlink, no word on when an e-Reader with this display technology may be available.
- C. Transflective LCD Dual Mode Screen Technology – ThePixel Qi’s LCD display can be toggled to a high contrast black and white mode which looks like an e-Ink display or to a fully saturated color display. The display can be read indoors or outdoors and in the black and white mode has a low power consumption. A limited number of the Adam tablet, which employs this technology, were available in December of 2010. The official release date for the Adam tablet is January 24, 2011. There are others devices in development or nearing production.
- D. Android Devices – An open source platform, currently used on mobile devices and starting to be used on tablets like the Nook and Samsung Galaxy. The advantage of the Android platform is that as an open source system it can be customized.
- E. Apple Retina Display – Already on the iPod Touch and iPhone, this high density pixel displayhas four times the number of pixels as the same size screen of earlier models. Graphics and text are crisp and sharp. The Retina display will be added to the next generation of iPads.
- F. Rumor: Apple is working on a 7” iPad model for release sometime in 2011. The 9.7” model is due to be upgraded with a faster new ARM Cortex-A9-based processor.



# Appendix D

## Digital Rights Management (DRM) Subcommittee Final Report

DRM (Digital Rights Management, or what at least one advocacy group calls Digital Restrictions Management) are access control technologies embedded within digital objects to restrict the copying, printing, and sharing of digital resources. This protects the rights of the copyright holder to control the distribution of the resource, usually to require users to license or purchase the resource. These rights are designed to protect the copyright holder's financial compensation for the intellectual or artistic property created.

With digital media (whether e-books, mp3 files, digital video, etc.) comes unprecedented potential for making loss-less copies and the repackaging for sale or free distribution copyright-protected content. Thirty years ago, when the 1976 copyright law was enacted, while a book or journal article could be copied via photocopy, the process was neither cheap nor high quality. It would never substitute for the original. Likewise sound recordings copied from phonograph albums to audio tape or from one tape to another degraded with each copy made. Not so with digital media. Making copies does not degrade the content. And it is fast and cheap to make multiple copies and distribute them; hence the need for DRM. However, DRM systems negate any and all fair use provisions of the Copyright Act of 1976. For example, the doctrine of first sale allows ownership of a lawfully acquired work to be transferred; DRM systems prevent this, unless the entire device holding the digital work changes hands. E-books in particular are licensed, and license terms trump fair use. DRM systems will not allow interlibrary loan, and most will not allow printing of more than a small section of the e-book.

There are several DRM systems available to publishers. Some are device specific, such as Apple's FairPlay DRM can only be read by Apple's iBooks app on iOS devices; others are more common among different devices, such as Adobe Digital Editions. Adobe Digital Editions is the most commonly applied DRM, especially for materials that have been licensed by Poudre River Public Library District and CSU Libraries.

DRM has led to some newsworthy activity by publishers and book distributors:

In 2009, in a decidedly and ironically Orwellian fashion, Amazon deleted certain digital editions of George Orwell's 1984 and Animal Farm from the Kindles of readers who had purchased them from Amazon, after issuing refunds for the purchases. The readers were understandably outraged, and the irony related to the particular works affected was lost on no one. It turns out that the publisher who had supplied Amazon with these specific e-versions of the works, which are still under copyright, did not have permission to provide digital versions of the works in question. When Amazon was informed by the rights holder of this violation, Amazon removed the books. Most of the customers affected had no idea that Amazon could do that. "Amazon effectively acknowledged that the deletions were a bad idea. "We are changing our systems so that in the future we will not remove books from customers' devices in these circumstances," Mr. Herdener [an Amazon spokesperson] said.

In a similarly draconian action, in 2011 the Library Journal reported that HarperCollins “announced that new titles licensed from library eBook vendors will be able to circulate only 26 times before the license expires”. Justification by HarperCollins: “Josh Marwell, President, Sales for HarperCollins, told LJ that the 26 circulation limit was arrived at after considering a number of factors, including the average lifespan of a print book, and wear and tear on circulating copies.” Such models based on the print environment carried over to the e-book environment show an incomplete misunderstanding of the nature of e-books, and demonstrates the inability of some publishers to accept that the publishing business should be examining new models rather than basing their business models of older technology.

As it stands, libraries of all types must lobby for changes to these models. That has been successfully done in the e-journal environment; libraries have been successful in changing early practices such as requiring print subscriptions in order to access online journals, subscriptions to e-journals that are valid only for the duration of the subscription (i.e., no perpetual access), relying on the journal to be the archive for past e-issues, etc. Libraries must continue to advocate for changes in DRM policies that protect the copyright holder but also that allow libraries to continue to serve their constituencies.

Joint E-Book Reader Committee  
Digital Rights Management (DRM) Subcommittee  
Nancy Hunter  
Patricia Smith

Stone, Brad, “Amazon erases Orwell books from Kindle”, New York Times, July 17, 2009. [http://www.nytimes.com/2009/07/18/technology/companies/18amazon.html?\\_r=1](http://www.nytimes.com/2009/07/18/technology/companies/18amazon.html?_r=1) (accessed 2/10/11 and 3/21/11)

Hadro, Josh, “HarperCollins puts 26 loan cap on ebook circulations”, Library Journal, Feb. 25, 2011. [http://www.library-journal.com/lj/home/889452-264/harpercollins\\_puts\\_26\\_loan\\_cap.html.csp](http://www.library-journal.com/lj/home/889452-264/harpercollins_puts_26_loan_cap.html.csp) (accessed 2/25/11 and 3/21/11)

# Appendix E

## Executive Summary for eBook Formats and Standards

### **This subcommittee explored:**

- 1) What formats are available for eBooks?
- 2) Are there any emerging standards for eBook formats?

We found that there are both proprietary and open eBook formats for digital content.

Proprietary Formats are popular because they often deliver a very effective user experience when purchasing and using eBooks. However, customers are not always able to control access to their purchased content or to obtain content on other platforms. They are also not always able to read the content in proprietary format on other devices.

Open standards allow users to obtain, read and control content on many eBook devices:

EPUB is the official standard of the International Digital Publishing Forum and is designed for reflowable content, meaning that the text display can be optimized for the particular display device used by the reader of the EPUB-formatted book. EPUB is able to use Adobe DRM but does not need to. Recommended for text-centric books, EPUB may be unsuitable for publications that require precise layout or specialized formatting.

DAISY is an open standard maintained by the DAISY Consortium for people with print disabilities. DAISY is already aligned with the EPUB open standard, and is expected to fully converge with the forthcoming EPUB3 revision.

PDF was officially released as an open standard on July 1, 2008, and is published by the International Organization for Standardization. A PDF file is often a combination of graphics and text. It can also contain links, forms, annotations and other embedded content enabled by plugins.

PDF files can look the same as the original format. If you scan a paper into PDF, it will look exactly the same as the paper version. It is very suitable for publications that require precise layout or specialized formatting.

The readability of PDF is not always good. Opening a PDF document on mobile devices and zooming in for better reading will have your text go outside your screen. You have to scroll in order to read the entire text. Tagged PDF files can be created specifically to be accessible for people with disabilities, but problems remain with adding tags to older PDFs and those that are generated from scanned documents.

### **Recommendations:**

This committee recommends the adoption of both EPUB and PDF formats. Both are supported on all popular eBook devices except the Amazon Kindle. PDF is supported in later versions of the Kindle. For accessibility we encourage the use of content presented in both EPUB3 and tagged PDF formats.

## Formats Available for eBooks

This is a short list of popular formats. A more complete list can be found at:  
[http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_formats](http://en.wikipedia.org/wiki/Comparison_of_e-book_formats)

### Plain text files

Format: text  
Published as: .txt

E-books in plain text exist and are very small in size. For example, the Bible, an 800,000-word book, is only about 4 MB. The ASCII standard allows ASCII-only text files (unlike most other file types) to be interchanged and readable on Unix, Macintosh, Microsoft Windows, DOS, and other systems. These differ in their preferred line ending convention and their interpretation of values outside the ASCII range (their character encoding).

### Hypertext Markup Language

Format: Hypertext  
Published as: .htm; .html

HTML is the markup language used for most web pages. E-books using HTML can be read using a Web browser. The specifications for the format are available without charge from the W3C.

HTML adds specially marked meta-elements to otherwise plain text encoded using character sets like ASCII or UTF-8. As such, suitably formatted files can be, and sometimes are, generated by hand using a plain text editor or programmer's editor. Many HTML generator applications exist to ease this process and often require less intricate knowledge of the format details involved.

HTML on its own is not a particularly efficient format to store information, requiring more storage space for a given work than many other formats. However, several e-Book formats including the Amazon Kindle, Open eBook, Compressed HM, Mobipocket and EPUB use one HTML file for each book chapter and then Zip compress the files, along with images, metadata and style sheets into one file.

HTML files encompass a wide range of standards and displaying HTML files correctly can be complicated. Additionally many of the features supported, such as forms, are not relevant to e-books.

### Amazon Kindle

Format: Kindle  
Published as: .azw

With the launch of the Kindle eBook reader, Amazon.com created the proprietary format, AZW. It is based on the Mobipocket standard, with a slightly different serial number scheme (it uses an asterisk instead of a dollar sign) and its own DRM formatting. Because the eBooks bought on the Kindle are delivered over its wireless system called Whispernet, the user does not see the AZW files during the download process. The Kindle format is now available on a variety of platforms.



## Portable Document Format

Format: Adobe Portable Document Format

Published as: .pdf

A file format created by Adobe Systems, initially to provide a standard form for storing and editing printed publishable documents. The format derives from PostScript, but without language features like loops, and with added support for features like compression and passwords. Because PDF documents can easily be viewed and printed by users on a variety of computer platforms, they are very common on the World Wide Web. The specification of the format is available without charge from Adobe.

PDF files typically contain brochures, product manuals, magazine articles — up to entire books, as they can embed fonts, images, and other documents. A PDF file contains one or more zoomable page images.

Since the format is designed to reproduce page images, the text traditionally could not be re-flowed to fit the screen width or size. As a result PDF files designed for printing on standard paper sizes are less easily viewed on screens with limited size or resolution, such as those found on mobile phones and PDAs. Adobe has addressed this by adding a re-flow facility to its Acrobat Reader software, but for this to work the document must be marked for re-flowing at creation, which means that existing PDF documents will not benefit unless they are tagged and resaved. The Windows Mobile (aka Pocket PC) version of Adobe Acrobat will automatically attempt to tag a PDF for reflow during the synchronization process using an installed plugin to Active Sync. However, this tagging process will not work on most locked or password protected PDF documents. It also doesn't work at present (2009–10) on the Windows Mobile Device Center (the successor to Active Sync) as found in Windows Vista and Windows 7. This limits automatic tagging support during synchronization to Windows XP/2000.

Multiple products support creating and tagging PDF files, such as Adobe Acrobat, PDFCreator, OpenOffice.org, iText, and FOP, and several programming libraries. Adobe Reader (formerly called Acrobat Reader) is Adobe's product used to view PDF files; third party viewers such as xpdf are also available. Mac OS X has built-in PDF support, both for creation as part of the printing system and for display using the built-in Preview application.

Later versions of the specification add support for forms, comments, hypertext links, and even interactive elements such as buttons for forms entry and for triggering sound and video. Such features may not be supported by older or third-party viewers and some are not transferable to print.

PDF files are supported on the following e-book readers: Mobipocket, iRex iLiad, iRex DR1000, Sony Reader, Bookeen Cybook, Foxit eSlick, Amazon Kindle (1, 2, International & DX), Barnes & Noble Nook, the iPad, PocketBook Reader, Bebook Neo and the Kobo eReader.

## Mobipocket

Format: Mobipocket

Published as: .prc; .mobi

The Mobipocket e-book format based on the Open eBook standard using XHTML and can include

JavaScript and frames. It also supports native SQL queries to be used with embedded databases. There is a corresponding e-book reader. A free e-book of the German Wikipedia has been published in Mobipocket format.

The Mobipocket Reader has a home page library. Readers can add blank pages in any part of a book and add free-hand drawings. Annotations — highlights, bookmarks, corrections, notes, and drawings — can be applied, organized, and recalled from a single location. Images are converted to GIF format and have a maximum size of 64K, sufficient for mobile phones with small screens, but rather restrictive for newer gadgets. Mobipocket Reader has electronic bookmarks, and a built-in dictionary.

The reader has a full screen mode for reading and support for many PDAs, Communicators, and Smartphones. Mobipocket products support most Windows, Symbian, BlackBerry and Palm operating systems. Using WINE, the reader works under Linux or Mac OS X. Third-party applications like Okular and FBReader can also be used under Linux or Mac OS X, but they work only with unencrypted files.

The Amazon Kindle's AZW format is basically just the Mobipocket format with a slightly different serial number scheme (it uses an asterisk instead of a Dollar sign), and .prc publications can be read directly on the Kindle.

Mobipocket has developed an .epub to .mobi converter called KindleGen (supports IDPF 1.0 and IDPF 2.0 epub format, according to the company). Notably, Eastern European letters with diacritical marks are not supported.

## **EPUB**

Main article: EPUB

Format: IDPF/EPUB

Published as: .epub

The .epub or OEBPS format is an open standard for e-books created by the International Digital Publishing Forum (IDPF). It combines three IDPF open standards:

- Open Publication Structure (OPS) 2.0, which describes the content markup (either XHTML or Daisy DTBook)
- Open Packaging Format (OPF) 2.0, which describes the structure of an .epub in XML
- OEBPS Container Format (OCF) 1.0, which bundles files together (as a renamed ZIP file)

Currently, the format can be read by the Kobo eReader, Apple iBooks, Barnes and Noble Nook, Sony Reader, BeBook, Bookeen Cybook Gen3 (with firmware v. 2 and up), COOL-ER, Adobe Digital Editions, Lexcycle Stanza, BookGlutton, AZARDI, Aldiko and WordPlayer on Android and the Mozilla Firefox add-on EPUBReader. Several other reader software programs are currently implementing support for the format, such as dotReader, FBReader, Mobipocket, uBook and Okular. Another software .epub reader, Lucidor, is in beta.

Adobe Digital Edition uses .epub format for its e-books, with DRM protection provided through their proprietary ADEPT mechanism. The recently developed INEPT framework and scripts have been reverse-engineered to circumvent this DRM system.

DSLlibris, a Sourceforge.net project, is able to decode e-books in .epub and .xht format for reading on Nintendo DS systems.

ANSI/NISO Z39.86 (DAISY)

Format: DAISY

Published as:

The Digital Accessible Information SYstem (DAISY) is an XML-based open standard maintained by the DAISY Consortium for people with print disabilities. DAISY has wide international support with features for multimedia, navigation and synchronization. A subset of the DAISY format has been adopted by law in the United States as the National Instructional Material Accessibility Standard (NIMAS), and K-12 textbooks and instructional materials are now required to be provided to students with disabilities.

DAISY is already aligned with the EPUB open standard, and is expected to fully converge with its forthcoming EPUB3 revision.

## Emerging Open Standards for eBooks

### EPUB

EPUB became an official standard of the International Digital Publishing Forum (IDPF) in September 2007, superseding the older Open eBook standard.

EPUB is designed for reflowable content, meaning that the text display can be optimized for the particular display device used by the reader of the EPUB-formatted book.

An EPUB file can optionally contain DRM as an additional layer, but it is not required by the specifications. In addition, the specification does not name any particular DRM system to use, so publishers can choose a DRM scheme to their liking. However, future versions of EPUB (specifically OCF) may specify a format for DRM.

When present, DRMed EPUB files must contain a file called rights.xml within the META-INF directory at the root level of the ZIP container.

One criticism of EPUB is that, while good for text-centric books, it may be unsuitable for publications that require precise layout or specialized formatting, such as a comic book.

The EPUB specification does not enforce or suggest a particular DRM scheme. This could affect the level of support for various DRM systems on devices and the portability of purchased e-books. Consequently, such DRM incompatibility may segment the EPUB format along the lines of DRM systems, negating the advantages of a single standard format and confusing the consumer.

Another criticism of EPUB revolves around the specification's lack of detail on linking into, between, or within an EPUB book, as well as its lack of a specification for annotation. Such linking is hindered by the use of a ZIP file as the container for EPUB. Furthermore, it is unclear if it would be better to link by using EPUB's internal structural markup or directly to files through the ZIP's file structure. The lack of a standardized way to annotate EPUB books could lead to difficulty sharing and transferring annotations and therefore limit the use scenarios of EPUB, particularly in educational settings, because it can't provide a level of interactivity comparable to the web.

## ACCESSIBILITY

DAISY is already aligned with the EPUB open standard, and is expected to fully converge with its forthcoming EPUB3 revision.

Details: <http://en.wikipedia.org/wiki/EPUB>

## PDF

Portable Document Format (PDF) is an open standard for document exchange. Originally a proprietary format, PDF was officially released as an open standard on July 1, 2008, and published by the International Organization for Standardization.

A PDF file is often a combination of vector graphics, text, and raster graphics.

In later PDF revisions, a PDF document can also support links (inside document or web page), forms, JavaScript, or any other types of embedded contents that can be handled using plug-ins.

PDF 1.6 supports interactive 3D documents embedded in the PDF - 3D drawings can be embedded using U3D or PRC and various other data formats.

## ANNOTATIONS

Adobe Acrobat is one example of proprietary software that allows the user to annotate, highlight, add notes to already created PDF files. One UNIX application available as free software (under the GNU General Public License) is PDFedit. Another GPL-licensed application native to the Linux environment is Xournal. Xournal allows for annotating in different fonts and colours, as well as a rule for quickly underlining and highlighting lines of text or paragraphs. Xournal also has a shape recognition tool for squares, rectangles and circles. In Xournal annotations may be moved, copied and pasted. The freeware Foxit Reader allows annotating but adds a watermark on each annotated page. The commercial version of the package does not have this limitation. Tracker Software's PDF-XChange Viewer allows annotations and markups without restrictions in its freeware alternative. Apple's Mac OS X's integrated PDF viewer, Preview, does also enable annotations. For mobile annotation, iAnnotate PDF for the iPad and Aji Annotate for the iPhone, both produced by Aji, allow annotation of PDFs as well as exporting summaries of the annotations.

## ACCESSIBILITY

PDF files can be created specifically to be accessible for people with disabilities. Current PDF file formats can include tags (XML), text equivalents, captions, audio descriptions, et cetera. Some software can automatically produce tagged PDFs, however this feature is not always enabled by default. Leading screen readers, including JAWS, Window-Eyes, Hal, and Kurzweil 1000 and 3000 can read tagged PDFs; current versions of the Acrobat and Acrobat Reader programs can also read PDFs aloud. Moreover, tagged PDFs can be re-flowed and magnified for readers with visual impairments.

Problems remain with adding tags to older PDFs and those that are generated from scanned documents. In these cases, accessibility tags and re-flowing are unavailable, and must be created either manually or with OCR techniques. These processes are inaccessible to some people with disabilities. PDF/UA, the PDF/Universal Accessibility Committee, an activity of AIIM, is working on a specification for PDF accessibility based on ISO 32000.

Regardless of the application used to create them, PDF files can look the same as the original format. If you scan a paper into PDF, it will look exactly the same like the paper. On PC or Mac OS, PDF is perfect for readers. However, the readability of PDF is not always good. Opening a PDF document on mobile devices and zooming in for better reading will have your text go outside your screen. You have to scroll in order to read the entire text.

Details: <http://en.wikipedia.org/wiki/PDF>

Chart comparing Features of eBook Formats

[http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_formats#Features](http://en.wikipedia.org/wiki/Comparison_of_e-book_formats#Features)

### Comparison tables

#### Features

Format	Filename extension	DRM support	Image support	Table support	Sound support	Interactivity support	Word wrap support	Open standard	Embedded annotation support	Book-marking
Plain text	.txt	No	No	No	No	No	Yes	Yes	No	No
HTML	.html	No	Yes	Yes	No	No	Yes	Yes	No	No
PostScript	.ps	No	Yes	?	No	No	No	Yes	?	?
Portable Document Format	.pdf	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
DjVu	.djvu	?	Yes	Yes	No	No	No	Yes	Yes	Yes
EPUB (IDPF)	.epub	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FictionBook	.fb2	Yes	Yes	?	No	No	Yes	Yes	Yes	?
Mobipocket	.prc, .mobi	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Kindle	.azw	Yes	Yes	Yes <sup>[1][18]</sup>	Yes <sup>[2][19]</sup>	No	Yes	No	Yes	Yes
eReader	.pdb	Yes	Yes	?	No	No	Yes	No	Yes	Yes
TealDoc	.pdb	Yes	Yes	?	No	No	Yes	Yes	?	Yes
Broadband eBook	.lrf, .lrx	Yes	Yes	?	No	No	Yes	No	?	?
WOLF <sup>[disambiguation needed]</sup>	.wol	Yes	Yes	?	No	No	No	No	?	?
Tome Raider	.tr2, .tr3	Yes	Yes	?	No	No	Yes	No	?	?
ArghosReader	.aeh	Yes	Yes	?	No	No	Yes	No	?	Yes
Microsoft Reader	.lit	Yes	Yes	?	No	No	Yes	No	?	Yes
Multimedia EBook	.exe	Yes	Yes	?	Yes	Yes	No	Yes	Yes	Yes
Repligo	.rgo	?	Yes	Yes	No	No	Yes	No	No	No



# Supported File Formats

[http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_readers#Supported\\_File\\_Formats](http://en.wikipedia.org/wiki/Comparison_of_e-book_readers#Supported_File_Formats)

See Comparison of e-book formats for details on the file formats.

Manufacturer	Model	Total Formats	arg	acw	afw	epub	html	br	lit	mobl	arg3	opf	pdf	pdg	pdf	pr3	prf	prk
			g	w	f	b	l	r	l	l	3	f	f	f	f	3	f	k
Amazon	Kindle 2 (Wi-Fi & 3G)	12+	No	Yes	No	No	Yes	No	No	Partial (no DRM)	Yes	No	No	No	Yes	Yes	Yes	No
Amazon	Kindle DX	12	No	Yes	No	No	Yes	No	No	Partial (no DRM)	Yes	No	No	No	Yes	Yes	Yes	No
Amazon	Kindle 2	12	No	Yes	No	No	Yes	No	No	Partial (no DRM)	Yes	No	No	No	Yes	Yes	Yes	No
Amazon	Kindle	7	No	Yes	No	No	Yes	No	No	Partial (no DRM)	Yes	No	No	No	No	No	Yes	No
Barnes & Noble	Nook Color (PDF)	10+	No	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
Barnes & Noble	nook (PDF)	4	No	No	No	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No	No
Velocity Micro	Crux Reader	10+	No	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
Velocity Micro	Crux Tablet T100	10+	No	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
Velocity Micro	Crux Tablet T301	10+	No	Yes	No	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	No	Yes	No
BOE TECHNOLOGY	Apexbook-6	12	No	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	No	Yes	No
Kogan Technologies	Kogan eBook Reader	10 (PDF)	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No
Spring Design	Alio eBook Reader	8	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Robo	Robo eBook Reader	3	No	No	No	Yes	No	No	No	No	No	No	No	No	Yes	No	Yes	No
Sony International Enterprise (S. for Amazon)	ES000 (PDF)	8	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Sony International	ES000 (PDF)	14	No	No	Yes	Yes	Yes	No	No	Partial (no DRM)	Yes	?	No	?	Yes	?	Yes	?
Plasma Inc.	Plasma 6 (PDF)	7	?	?	?	Yes	?	?	?	?	?	?	?	?	Yes	?	?	?
Power Electronics	Power-3 (PDF)	14	No	No	No	Yes	Yes	No	No	Partial (no DRM)	Yes	?	No	?	Yes	?	Yes	?
Conair Technology Associates	eReader KEO (PDF)	16	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Conair Technology Associates	eReader Touch (PDF)	8	No	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Black Ocean	Paperback T.D. 6 (PDF)	6 (PDF)	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
Sony	Reader Daily Edition PRS-200 (PDF)	11	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Kindle	Kindle	?	No	No	Yes	Yes	Yes	Yes	No	?	Yes	?	?	?	Yes	?	Yes	?
Sony	Reader Touch Edition PRS-400 (PDF)	12	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Harman	V9EReader 801 (PDF)	7	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Harman	V9EReader 801 (PDF)	7	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Harman	V9EReader 802 (PDF)	7	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Harman	V9EReader 802 (PDF)	7	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
PreziBook	PreziBook Pro 802	15	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
Sony	Reader Pocket Edition PRS-300 (PDF)	6	No	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No
Bookman	Libbook 3 (PDF)	6	No	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes	No	Yes	No
Elmore	eBook	?	?	?	?	Yes	Yes	?	?	?	?	?	?	?	Yes	?	Yes	?
<b>Manufacturer</b>	<b>Model</b>	<b>Total Formats</b>	<b>arg</b>	<b>acw</b>	<b>afw</b>	<b>epub</b>	<b>html</b>	<b>br</b>	<b>lit</b>	<b>mobl</b>	<b>arg3</b>	<b>opf</b>	<b>pdf</b>	<b>pdg</b>	<b>pdf</b>	<b>pr3</b>	<b>prf</b>	<b>prk</b>
Dobson Glass	Reflex Mini (Hardy V3 clone) (PDF)	23	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No
Dobson Glass	Reflex One (Hardy V3 clone) (PDF)	23	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No
Harman	COOL-88	?	?	?	?	Yes	Yes	?	?	?	Yes	?	?	?	Yes	?	Yes	?
Samsung	Paperstar	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
Font Software	eBook	?	?	?	?	Yes	?	?	?	?	Yes	?	Yes	?	Yes	?	Yes	?
Sony	Reader PRS-700	?	?	?	?	Yes	?	?	?	?	Yes	?	?	?	Yes	?	Yes	?
Sony	Reader PRS-505	?	?	?	?	Yes	?	?	?	?	Yes	?	?	?	Yes	?	Yes	?
Flex Technologies	Digital Reader 800	?	?	?	?	Yes	?	?	?	?	?	?	?	?	Yes	?	Yes	?
Flex Technologies	Digital Reader 1000	?	?	?	?	Yes	Yes	?	?	?	?	?	?	?	Yes	?	Yes	?
John	Harsh V5	?	?	?	?	Yes	Yes	Yes	?	Yes	Yes	Yes	?	?	?	?	?	?
Bookman	Cybook Sen3 (PDF)	6	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No
John	Harsh V3	19	?	?	?	Yes	Yes	Yes	?	Yes	Yes	Yes	?	?	?	?	?	?
Sony	Reader PRS-600 (PDF)	8	No	No	No	Yes	?	No	No	No	Yes	No	No	No	Yes	No	Yes	No
John	Harsh V2	?	?	?	?	Yes	Yes	Yes	?	Yes	Yes	Yes	?	?	?	?	?	?
Flex Technologies	Lit2	?	?	?	?	Yes	?	?	?	?	?	?	?	?	Yes	?	Yes	?
Sony	Libri6	?	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	No
Polycoder	eCite	?	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
<b>Manufacturer</b>	<b>Model</b>	<b>Total Formats</b>	<b>arg</b>	<b>acw</b>	<b>afw</b>	<b>epub</b>	<b>html</b>	<b>br</b>	<b>lit</b>	<b>mobl</b>	<b>arg3</b>	<b>opf</b>	<b>pdf</b>	<b>pdg</b>	<b>pdf</b>	<b>pr3</b>	<b>prf</b>	<b>prk</b>

This list is missing many of the 1st and 2nd generation E reader devices from the 1990s to 2005.

## Supporting Hardware

[http://en.wikipedia.org/wiki/Comparison\\_of\\_e-book\\_formats#Supporting\\_Hardware](http://en.wikipedia.org/wiki/Comparison_of_e-book_formats#Supporting_Hardware)

### Supporting Hardware

Hardware Reader	Plain text	PDF	ePub	HTML	Mobi-Pocket	Fiction-Book (Fb2)	DjVu	Broadband eBook (BBEB)	eReader	Kindle	WOLF	Tome Raider	Open eBook
Amazon Kindle 1	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No	No
Amazon Kindle 2, DX	Yes	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No
Amazon Kindle 3	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	No	No	No
Android Devices	Yes	Yes	Yes	Yes	Yes <sup>[h 3][20]</sup>	Yes	Yes <sup>[h 3][21]</sup>	No	Yes <sup>[h 3][22]</sup>	Yes	No	Yes <sup>[h 3][4]</sup>	Yes <sup>[h 3][23]</sup>
Apple iOS Devices	Yes	Yes	Yes	Yes	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>
Azbooka WISEreader	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Barnes & Noble Nook	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No
Bookeen Cybook Gen3, Opus	Yes	Yes	Yes <sup>[h 4]</sup>	Yes	Yes <sup>[h 4]</sup>	Yes <sup>[h 5]</sup>	No	No	No	No	No	No	Yes
COOL-ER Classic	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Foxit eSlick	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No
Hanlin e-Reader V3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No
Hanvon WISEreader	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
iRex iLiad	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No	No
Iriver Story	Yes	Yes	Yes	No	No	Yes <sup>[h 3]</sup>	Yes <sup>[h 3]</sup>	No	No	No	No	No	No
Kobo eReader	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
Nokia N900	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
NUUTbook 2	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
OLPC XO, Sugar	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No	No
Onyx Boox 60	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Windows PC	Yes	Yes	Yes	Yes	Yes	?	?	?	Yes	Yes <sup>[h 6]</sup>	?	?	Yes
Pocketbook 301 Plus, 302, 360°	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Sony Reader	Yes	Yes	Yes	No	No	No	No	Yes	No	No	No	No	No
Viewsonic VEB612	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No

1. <sup>A</sup><sup>B</sup><sup>C</sup><sup>D</sup><sup>E</sup> Proprietary format
2. <sup>A</sup> Predecessor of ePub
3. <sup>A</sup><sup>B</sup><sup>C</sup><sup>D</sup><sup>E</sup><sup>F</sup><sup>G</sup><sup>H</sup><sup>I</sup><sup>J</sup><sup>K</sup><sup>L</sup><sup>M</sup><sup>N</sup> Requires latest firmware
4. <sup>A</sup><sup>B</sup> Versions support either ePub or MobiPocket
5. <sup>A</sup> Only ePub version and with FW 2.0+
6. <sup>A</sup> Only free publications are supported

LAB TESTS

## Kindle tops our e-reader Ratings

Amazon's Kindle e-readers are still the best choice for mass consumers, despite improved performance from Neil Barnes & Noble's Kindle e-reader and the arrival of Apple's iPad tablet computer, which offers e-reader capability for our comprehensive tests. The **A1 Kindle**, \$260, and its upsized sibling, the **B1 Kindle**, \$490, had crisp, more readable type than any other e-reader in the Ratings and better than the iPad's (see sidebar). The Kindles were also fastest at refreshing pages. Page turns took about 1 second, compared with as long as 1.5 seconds on others, a noticeable difference. Considering its lighter weight and smaller size, the lower-priced Kindle would be better than the iPad for most users, unless you need the web's real estate for, say, reading e-textbooks.

Sluggish page turns were a big drawback on the **A4 Nook**, \$250, until a software update last night before we completed our tests. The book is now among the faster models at turning pages, though it's still a tad slower than the Kindle. Also, the Nook's type wasn't as crisp as the Kindle's, and it weighs more, even though its screen is the same 6-inch size. And while the Kindle's controls are simple and fairly easy to master, navigating its content on the Nook requires using a second LCD screen with responsive touch controls.

The two Sony readers (**A2** and **A3**) are solid performers whose main appeal is their versatility, especially the pricier **A3**. They easily accept a variety of file types, and they can be used as digital notepads for text or even drawings. But if a touch screen on both somewhat compromises type crispness. Also, the Daily Edition, \$400, is expensive and heavy. The Touch Edition, \$280, is among the few tested models that don't come with unlimited free access to a 3G wireless data network. So you might not be able to download a book to the device whenever and wherever you want.

The readers from two lesser-known brands, the **A5 BeBook** and **B2 iRex**, were unimpressive at best.



## Ratings

In performance order, with types (Table designated A and B.)

Excellent Very good Good Fair Poor

Brand & model	Screen size (in.)	Price	Overall score	Test results	Features
<b>A1</b>	6.0	\$260	95	Excellent	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>A2</b>	6.0	\$280	85	Very good	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>A3</b>	6.0	\$400	80	Very good	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>A4</b>	6.0	\$250	75	Good	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>A5</b>	6.0	\$300	65	Fair	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>B1</b>	6.0	\$490	85	Very good	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score
<b>B2</b>	6.0	\$300	65	Fair	Best readability, page turn, refresh rate, versatility, navigation, weight, size, score

### A 6- TO 7-INCH SCREEN

1	Amazon Kindle	6.0	\$260	95	Excellent	10	A1
2	Sony Reader Daily Edition	6.0	\$280	85	Very good	10	A2
3	Sony Reader Touch Edition	6.0	\$400	80	Very good	10	A3
4	Barnes & Noble Nook	6.0	\$250	75	Good	10	A4
5	BeBook A5	6.0	\$300	65	Fair	10	A5

### B 8- TO 10-INCH SCREEN

1	Amazon Kindle DX	9.6	\$490	85	Very good	10	B1
2	iRex DR 8000C	8.0	\$300	65	Fair	10	B2

## The iPad as an e-book reader

We didn't include Apple's iPad in the Ratings because it's a computer with e-book capabilities, not a dedicated e-book reader.

As an e-reader it has pros and cons. Its iBooks app offers fast page turns, with a dazzling virtual image of one page curling back to reveal another, and the full-color screen is more eye-catching than the monochrome displays on the e-readers. Type on its LCD touch screen is fine, though it's less crisp than that of the best e-readers.

With a 9.7-inch screen, the iPad is also big and fairly heavy (at 28 ounces, it weighs even more than the Kindle DX), making it tiring to hold for chapter after chapter. And the iPad will probably need a recharge more often than the stand-alone readers, which use energy-frugal e-ink. Also, at \$500 and up, the iPad costs more than any of the e-readers we tested, even the Kindle DX.

**Bottom line.** Buy the iPad for e-books only if you're willing to compromise to get a multifunction device.





## Resources

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# Appendix F

## Accessibility of eBook Readers

### Summary

The charge to this subcommittee was to determine which or to what degree the various eBook readers are ADA compliant. The committee compared 5 devices: the Apple iPad, Barnes & Noble Nook, Nook Color, Amazon Kindle 3, and the Sony Reader. Questions considered:

- 1) What options does a person with a disability need to successfully use an eBook reader?
- 2) Which options that disabled users need are available on various eBook devices?
- 3) If existing devices do not meet accessibility standards, what alternatives exist to eBook readers that provide a similar service?

The committee found that no one device met all needs for all users with disabilities. It was also found that some devices are best for a user with a print disability while other, different devices may be better for someone with a physical or cognitive disability.

#### **Nook, Color Nook, and Sony Reader**

Given that there is no text-to-speech functionality, these devices are not the best option for users who are blind, have low-vision with a need for audio files, or who have learning disabilities. However, users with mobility impairments may benefit from the touch screen display. People with cognitive disabilities may benefit from the simple, intuitive interfaces.

#### **Amazon Kindle**

The ability to enlarge fonts, change the typeface, change the line spacing and words per line make the Kindle a useful, cheap choice for people with low-vision. The weight of the device (very light) is helpful for a person with physical disabilities. The text-to-speech feature is good. Unfortunately it only works with native Kindle formats and will not work for all books, making those items inaccessible to the blind individual or others who may benefit from audio files. Navigating the Kindle interface is less intuitive than other devices.

#### **Apple iPad**

The iPad has been highly praised for accessibility and meets the most needs for users with disabilities. Interacting with a book in iBooks with the VoiceOver application is simple and intuitive. The brightness of the screen, color contrast, and the size of the text of a book in iBooks can be easily adjusted which is helpful for low-vision users. The simple interface is useful for those with cognitive disabilities.

The iPad is bigger. People with motor control problems may be able to use this device more easily than the smaller ones, as less very fine motor control is needed for many tasks. Users with physical disabilities are able to use custom styluses with an iPad. Voice commands are possible if you 'jailbreak' the device.

The iPad is heavier than other eBook readers. That makes it more difficult for users to hold for extended periods of time and a poor choice for some with physical disabilities.

## **Alternatives to eBook Readers**

Standard eBook readers do not provide the features and functions required to have a successful reading experience for everyone. For example, none of the tested devices offered text-tracking which is essential for some people with learning or cognitive disabilities. Though cost-prohibitive, alternatives do need to be made available to people with specific disabilities.

## **eBook Reader Needs for People with Disabilities**

Extra consideration should be taken when acquiring an eBook reader for a person with a disability. This section will discuss four main disability types and their manifestations. Also discussed will be the features and functions a person with each type of disability will need to successfully enjoy the benefits of an eBook reader.

### **Deaf and Hearing Impairments**

#### **Definition and Manifestations**

The term deaf refers to those who are unable to hear well enough to rely on their hearing and use it as a means of processing information.

Hearing Impairments and Hard of Hearing refer to those who have some hearing, are able to use it for communication purposes, and who feel reasonably comfortable doing so.

A person who is deaf or has a hearing impairment may experience low or no comprehension of auditory-based modes of communication.

#### **eBook Reader Needs:**

A person who is deaf or has a hearing impairment would need a visual representation for all audio-based information. Features that assist with navigation, selection, error messages, and other informational alerts would need to be made available visually. For instance, a beep to signify low battery power, or to confirm cancellation of a book purchase would need to be complimented with an on-screen message.

### **Cognitive Disabilities**

#### **Definition and Manifestations**

Cognitive disability is a broad term used to encompass many different types of brain related disabilities including learning disabilities, autism spectrum disorders, psychological disabilities, and traumatic brain injuries. The manifestation of these disabilities can vary widely, but may include any of the following:

- A lack of close attention to detail resulting in mistakes or error
- Inability to follow instructions when completing a task
- Avoidance or dislike of activities that require a large amount of mental effort
- A lack of ability to build ideas and images from memory
- Difficulty comparing what is being read to what is already known
- Impaired memory, retrieval of information or comprehension
- Difficulty concentrating, organizing thoughts, solving problems, making decisions, or processing new information
- Fear of failure
- Indecisiveness

## **eBook Reader Needs**

A person with a cognitive disability will benefit the most from a simple and straight forward user interface on their eBook reader. Menu choices should be clear and concise, using the language with which a user is most familiar. The ability to undo an error is key since many users with cognitive disabilities may make a wrong selection will need to go back without concern, or may even fear breaking their device.

The use of recognition over recall when making a selection, such as book title, page location, font size, etc will improve a user's chance of success. The image of a book along with its title, will give users several cues when selecting a book to read.

The Kindle's placement of the web browser under the "Experimental" menu is an example of poor labeling and placement of a menu item.

## **Mobility Impairments**

### **Definition and Manifestations**

Mobility impairment refers to the inability of a person to use one or more of his/her extremities, or a lack of strength to walk, grasp, or lift objects. Mobility impairment may be caused by a number of factors, such as disease, an accident, or a congenital disorder and may be the result from neuromuscular and orthopedic impairments.

Impaired strength, speed, endurance, coordination, manual dexterity; may result in need for alternative methods for access to academic tasks such as reading, writing, note taking, test taking and computing.

Impaired range of motion and control of limbs; may result in need for alternative methods for access to academic tasks.

### **eBook Reader Needs**

Although needs will differ from person to person, someone with a mobility impairment will benefit from features that assist them in navigating the device. For some users, a touch screen interface would be preferred over using arrow keys to make a selection. For others, the reverse may be true. Here are some features that may help users with mobility impairments:

- Large, easy to press buttons for navigation and page turning would be preferable over swiping motions
- The ability to add an external keyboard or pointing device
- The ability to use a custom stylus for interacting with the touch screen or for pressing buttons
- Ability for the reader to act on voice commands

## **Vision Impairments**

### **Definition and Manifestations**

Blindness is defined as the loss of useful sight. A person is blind if his or her vision, with the use of a correcting lens, is 20/200 or less in the better eye. A person who has tunnel vision of 20 degrees or less in the better eye is also considered blind.

Those with blindness will have difficulty accessing instructional materials, difficulty navigating in new environments (both physical and electronic), as well as difficulty identifying items and distinguishing between similar items.

Low vision is a term that denotes a level of vision that is 20/70 or worse and cannot be fully corrected with conventional glasses. Low vision differs from blindness in that a person with low vision has some useful sight as opposed to no sight.

Those with low vision will have difficulty recognizing objects from a distance or up close; this includes an inability or low level of ability in differentiating between colors or labels. They may experience trouble seeing screens and slower navigation of newer environments.

### **eBook Reader Needs**

A user with blindness or low vision will benefit from many of the following features:

- Ability to adjust font size and typeface
- Ability to adjust screen brightness
- Ability to adjust color contrast
- Text-to-Speech when reading a book
- Talking menus for navigation of the device. Focus will need to be announced and updated as the user navigates through the device.
- Physical buttons will have to be marked or mapped appropriately, so that users who cannot see them will understand what buttons they are pressing.
- Audible feedback when pressing a button will greatly help when using a device.
- Undo features will allow mistakes to be undone without penalty, for instance when purchasing a book.
- Audio based cues for important information, such as low battery power, existence or loss of WiFi service, error messages, and so on.

### **Accessibility Options Available on eBook Devices**

Findings: Some devices are best for a user with a print disability while other, different devices may be better for someone with a physical or learning disability. No one device met all needs for all users with disabilities. No device tested was able to utilize text tracking.

#### **Nook, Color Nook, and Sony Reader**

Given that there is no text-to-speech functionality, these devices are not the best option for students who are blind, have low-vision with a need for audio files, or who have learning disabilities. However, users with mobility impairments may benefit from the touch screen display. People with cognitive disabilities may benefit from the simple, intuitive interfaces.

#### **Amazon Kindle 3**

The Kindle 3 delivers a cheap reading solution best suited for people with low vision and users who need a lightweight device that is easy to hold and carry.

#### **Print Disabilities**

In June 2009, the National Federation of the Blind and the American Council of the Blind sued Arizona State University for using the Kindle DX because it is inaccessible to blind students. Since that suit, Amazon has released the 3rd generation of the Kindle.

The features that make Kindle 3 a good choice for blind readers are:

1. Text to Speech feature called Read to Me - This reads out books to you unless disabled by Publishers. You can also have all your personal documents read to you - that includes text files. PDFs cannot yet be read out
2. Accessible Menus feature called Voice Guide - Kindle 3 will read out Menus to you, it'll read out the books listed on your Kindle 3 home page, and it'll read out book descriptions.
3. Super Size Fonts - Kindle 3 has 8 font sizes with the two largest ones of particular interest to blind and low vision readers as they correspond to font sizes 30 and 40 respectively. Plus the ability to change the typeface, change the line spacing and words per line make the Kindle a useful choice for people with low vision.
4. High Contrast eInk Pearl Screen – There were concerns last year that the Kindle 2's screen does not have enough contrast for low vision readers. The Kindle 3 screen has 50% better contrast and choosing the graphite Kindle 3 ensures the contrast is brought out more.

Improvements needed:

1. Bumps on the page turn, home, and menu buttons – different for different keys.
2. A keyboard that people can feel through the keys; perhaps a carved alphabet.
3. An audible time function.
4. An audible status indicator for battery life and the wireless connection.
5. More speed options in the Read To Me feature.
6. Improved voices in the Read To Me.

#### Physical Disabilities

The Kindle 3 is only 8.7 ounces and even one-handed reading won't tire your hands. It's very compact and easy to hold and carry. Pages are turned with the click buttons on either side of the screen making reading from a flat surface, such as a table, very convenient.

The device always remembers where you are in all books you are reading. There is no need to worry about a bookmark because whenever you power on the device, you are always on whatever page you left off at.

#### Learning Disabilities

There is anecdotal evidence that since users can have the text read aloud the Kindle can help children with dyslexia learn to read. People with dyslexia can 'hear' and see the book and thus access books at a higher level than they can read. Larger font sizes and more spacing between words MIGHT help children with dyslexia read better. However, the Kindle does not track text, and the interface is not as intuitive as other eBook reading devices.

#### Apple iPad

The Apple iPad has been highly praised for accessibility and comes the closest to meeting multiple needs for users with disabilities.

#### Print Disabilities

Dr. Marc Maurer, President of the National Federation of the Blind, said: "The National Federation of the Blind commends Apple for including the VoiceOver screen access application... Blind consumers, like our sighted friends and colleagues, will be able to share in the experience of using this new device from the moment we take it out of the box. By integrating accessibility into its

products, Apple is setting an example that we believe the rest of the electronics industry should follow. Furthermore, the fact that Apple has successfully integrated a screen access solution with its touch-screen technology demonstrates that touch screens need not be a barrier to the use of electronic devices by the blind.”

Interacting with a book in iBooks with VoiceOver is incredibly intuitive. Double tapping a page causes VoiceOver to read it. Three-finger swipes left or right turn the pages of the book. The VoiceOver gesture for continuous reading, a two-finger flick downward, reads continuously and automatically turns pages as needed.

One of the most useful features is the ability to run your finger down a page and have VoiceOver skim from line to line. VoiceOver will start reading each line as you touch it, giving a visually impaired user much the same experience as a sighted person skimming down a page for a particular piece of information. This is extremely efficient when searching for a specific item or location in the text.

Most epub titles, (the format used by iBooks), include a table of contents which allows you to tap on the title of a chapter or section and jump right to it. This works perfectly with VoiceOver. Additionally, a search feature will allow you to search the entire text of a book for a word or phrase, present you with results including the context of the match, and allow you to tap the desired entry to move to that section of the book. Again, this works flawlessly with VoiceOver.

Illustrations included in texts can be, and often are, captioned for accessibility. For example, the “Winnie-the-Pooh” title included with iBooks includes descriptions of all the classic illustrations, which VoiceOver reads when you come to them.

For low-vision users, the brightness of the screen and the size of the text can be easily adjusted.

Touching and holding a word provides an option to look up a word’s definition for non-VoiceOver users, but appears to be impossible to accomplish with VoiceOver activated.

Overall, iBooks is one of the iPad’s greatest strengths. Unlike Amazon with its Kindle device, it appears that Apple has not given publishers an “opt out” for accessibility, largely because the reading of the text is tied to the VoiceOver screen reader, and therefore unlikely to be used by the general public. Mainstream ebooks are available and accessible out of the box.

### Physical Disabilities

The iPad is bigger. This is obvious, but the implications are that people with motor control problems such as cerebral palsy may be able to use this device more easily than the smaller ones, as less very fine motor control is needed for many tasks.

The gesture interface is powerful. You can use several fingers at once, including fingers from both hands in orchestrated ways to re-size, rotate, and otherwise control your applications, and the duration of some presses will alter what function you’re performing. Assuming you have, and can use your fingers. Without carefully designed alternative input, a sophisticated gesture interface may pose a serious barrier to people who are missing fingers, have difficulty controlling them, or

who have trouble understanding the gesture scheme.

The iPad is heavier than other eBook readers. That makes it more difficult for users to hold for extended periods of time and a poor choice for some with physical disabilities.

It is possible to enable basic voice commands on an iPad but to do this you must hack or 'jail-break' the iPad which negates the warranty.

### Cognitive Disabilities

The touchscreen interface is cognitively simpler than a regular computer: you touch a program to start, and if you want to activate a control you touch it. This is much simpler in mental terms than the "one step removed" system of using a mouse or keyboard where you move the mouse or press a key to make something happen on the screen.

## **eBook Reader Alternatives**

For users with certain disabilities, standard eBook readers will not provide the features and functions required to have a successful reading experience. There are several book readers that are designed specifically with the needs in mind of people with disabilities.

### Humanware Victor Reader Stream

[http://www.humanware.com/en-usa/products/blindness/dtb\\_players/compact\\_models/\\_details/id\\_81/victorreader\\_stream\\_daisy\\_mp3.html](http://www.humanware.com/en-usa/products/blindness/dtb_players/compact_models/_details/id_81/victorreader_stream_daisy_mp3.html)

The Victor Reader Stream is an audio-only book reader that lets users read and navigate through books using their many navigation features. This device is marketed towards users who are blind and supports many audio book formats as well as audio files. Users can also take audio notes with the Stream.

#### Formats

- DAISY 2.x, DAISY NISO, RFB&D AudioPlus, Bookshare, NIMAS, Audible (.aa)
- MP3, Wav, Ogg Vorbis, WMA, FLAC, SPX
- Text, RTF, HTML, XML, Duxbury Braille brf

### PlexTalk Pocket PTP1

<http://www.plextalk.com/in/ptp1/index.html>

The PlexTalk Pocket is a small pocket-sized audio-only book reader. It also offers music playback and audio recording features. This device is marketed towards users who are blind, as it supports many formats of audio books, and allows for volume, speed, and tone adjustment.

#### Formats

- DAISY 2.0, 2.02, 3.0
- MP3, WMA, AMR-WB+, Ogg Vorbis, Wav
- .aa (Audible)
- HTML, Text, MSWord

### Humanware ClassMate Reader

[http://www.humanware.com/en-usa/products/learning\\_disabilities/\\_details/id\\_107/classmate\\_reader.html](http://www.humanware.com/en-usa/products/learning_disabilities/_details/id_107/classmate_reader.html)

The ClassMate Reader is a digital audio book player that helps individuals increase their reading speed, comprehension and vocabulary. The ClassMate reads aloud and simultaneously displays



and highlights text on a full color screen. The onscreen interface can be configured to the user's specific needs including font type, size, color, line spacing, etc.

#### Formats

- DAISY 2.x, DAISY NISO, NIMAS
- MP3, Wav, Ogg Vorbis, WMA
- Text, RTF, HTML, XML

#### Resources

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“NOOK Tech Specs - Barnes & Noble,” n.d. <http://www.barnesandnoble.com/nook/features/tech-specs/index.asp>.

“PLEXTALK PTP1 | Top,” n.d. <http://www.plextalk.com/in/ptp1/index.html>.

“Portable Document Format - Wikipedia, the free encyclopedia,” n.d. <http://en.wikipedia.org/wiki/Pdf>.

“PRS-700BC | Reader Digital Book | Sony | SonyStyle USA,” n.d. <http://www.sonymstyle.com/webapp/wcs/stores/servlet/ProductDisplay?storeId=10151&catalogId=10551&langId=-1&productId=8198552921665562069#specifications>.

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# Appendix G

## Services Surrounding e-Readers and Areas of Collaboration: Final Report

Charge: Investigate what reader services (training, help guides, outreach) will be required or recommended around eBook readers in support of equal access and lifelong learning.

Goal: Determine how the two organizations (CSU and PRPLD) might support the charge, with suggestions for collaboration.

### Summary of Existing eBook Collections:

- Poudre River Public Library District
  - o 780 eBooks via Overdrive
  - o Gale Virtual Reference Library
- Colorado State University Libraries (as of 01/25/11)
  - o 364,020 Total Books and growing
    - 127,179 eBooks from a variety of publishers, including netLibrary, EBL, Springer, Gale Virtual Reference Library, & other publishers
    - 236,841 Electronic Government Documents, including both free and fee-based sources
  - o All CSU's eBooks are device neutral and should be readable on any computer or electronic device. In some cases, DRM software may be required on personal devices. Some eReaders, most notably the Kindle, are unable to accommodate eBooks that require a DRM.

### To Do:

- Investigate how eReaders might integrate into Collection Development policies.
- Determine where collaboration can occur.
- Explore the future of collections.
- Explore the future of services.
- Determine what is necessary for staff training and communication.
- Explore the purchasing criteria for eBooks.

### Staff Instruction/Considerations:

- Vendor supplied
- Internally by trained staff
- eReader club – bring your own device to brown bag lunch discussion (Carson)
- Learn the places to find free content
- Waiver release – not responsible for effect on device
- Collection development policy
- Purchasing criteria needs to be established
- Establish payment methods
- Cataloging them has its own issues (245 field for “reader” and 505 field for content notes to show titles on the reader)

#### Patron Instruction:

- Quick Start guides on webpages
- Virtual tutorials
- Handouts
- Written and video instructions saying the same thing
- Programs where customers bring their eReaders
- Instruct customers on where to find free content

#### Future:

- eReader stations (petting zoo)
- Limited checkout of readers (loaded with content?)
- Load with free books
- Read current literature on how eReaders affect reading habits
- Micro-SD cards might be good for swapping out content
- Digital divide becomes larger in this format
- Lack of multiple language capabilities

#### Areas of cooperation:

Although the adoption of ebooks varies greatly between academic and public libraries, there are some areas in which Colorado State University Libraries and Poudre River Public Libraries could easily cooperate.

- Summary webpage of eBook reader specs, including directions for using library eBooks on the readers.
- Cooperative publicity for eBook collections and eReader website for the Fort Collins community.
- Co-sponsor eReader interest groups or petting zoo nights when members of both communities could meet to discuss the pros and cons of eReaders and experiment with eReaders in a non-commercial environment.
- Host cooperative programming and/or discussions about the future of eBooks and how people would read them. This would also be a good opportunity to include local bookstores.
- Cooperate on eBook purchasing of popular materials. Theoretically many CSU affiliates at the Fort Collins campus could also qualify for public library cards, so there may be some synchronicities in providing eBook collections of popular titles.

#### References:

Blog: Ebooks in Libraries. Available at <http://ebooksinlibraries.blogspot.com/>.

- E-reader classes in libraries: Sara Weissman at Morris City Library does e-reader classes. The workshop was a little overwhelming to participants. Besides the novelty of e-reading devices, many patrons did not know about the library's Overdrive collection. In the future she has decided to offer two classes that will cover audiobooks and e-books.
- Nice list of free content: <http://ebooksinlibraries.blogspot.com/2010/03/free-content-for-nooks-and-kindles.html>.
- List Ebook lending libraries: [http://wiki.mobileread.com/wiki/EBook\\_Lending\\_Libraries](http://wiki.mobileread.com/wiki/EBook_Lending_Libraries)

Gibbons, S. (January 01, 2001). Ebooks: Some Concerns and Surprises. Portal: Libraries and the Academy, 1, 1, 71-75. Available at <http://www.lib.rochester.edu/main/EBOOKS/studies/1.1gibbons.pdf>.

Summary: Results of an LSTA grant for studying use of eReaders in academic, school, and public libraries. Staff tested readers first, each library received 5 readers, each library created their own circulation policies and procedures, focus groups were created, staff completed a survey. Conclusion was “individuals, NOT INSTITUTIONS, are the intended users of these devices”. Challenge with payment method. Also, oversight of publishers to see the library market has created challenges for both – they lack understanding about libraries and their societal role.

Griffey, J. (2010). *Gadgets and gizmos: Personal electronics and the library*. Chicago, IL: ALA TechSource. Chapter 2: Electronic Book Readers. Amy has .pdf to share.

Summary:

- Future considerations will be DRM prevents one of the most common habits of readers – that of lending the book (p.8).
- Libraries should take advantage of **LOADING FREE CONTENT**
- Believes book publishers will follow the same path as music (not deal with illegally obtained content).
- Won't be able to change platforms and take the books with you that you have previously purchased.
- Collection development librarians need to know exactly what they are buying.
- Text to speech issues and potential
- Work only in English
- Can't lend book to friend
- Battery life, environmental damage – see p. 13
- Micro-SD cards – swap content out

Levine-Clark, Michael. “Electronic Book Usage: A Survey at the University of Denver.” portal: Libraries and the Academy 6.3 (2006): 285-299. Project MUSE. Need passcode to access.

Summary: Most respondents read only small portions of e-books, suggesting that print volumes are a better alternative for immersion in text. 60% of respondents in the survey indicate a degree of flexibility between print and electronic and 80% go between both.

Thomas, Susan E. (2007). *Another Side of the E-Book Puzzle*. *Indiana Libraries*, 26, 1. Available at <http://tinyurl.com/ebookpuzzle>.

Summary: Textbooks preferred purchase, students end up printing out the portions of eBooks that they want to study further, suggests that sustained reading on eReaders is strenuous and not relaxing, undergrads find online text more difficult to understand, less interesting, and the authors less credible, **CREATES A LARGER DIGITAL DIVIDE**, dual task of reading and figuring out eReader functionality is strenuous over time. One reference she uses said “As long as proprietary or competing, incompatible standards exist, e-books will remain a small market”.

Behar, Patrick. (2010) *Publishing in the digital age*  
[http://www.bain.com/bainweb/publications/publications\\_detail.asp?id=28123&menu\\_url=publications\\_results.asp](http://www.bain.com/bainweb/publications/publications_detail.asp?id=28123&menu_url=publications_results.asp)

Summary: With 15 percent to 25 percent of book sales shifting to digital format by 2015, the book industry is heading into wholly new territory. Authors, publishers, distributors and retailers all will need to rethink their business models and their relationships with one another. They will have to address several critical challenges: pricing policies that secure the industry's changing profit pools, redefined distribution networks that preserve format diversity and the reallocation of value among industry participants.

An addendum to the report (11/30/10) states that: Early adopters of e-readers such as the Kindle tend to be males in their 20s and 30s, but readers who are thinking of buying such devices in the near future are mostly women and are over the age of 35, according to a Bain & Company survey of almost 3,000 consumers in six developed countries. E-books don't seem likely to obliterate traditional books completely: Even younger readers born in the digital age report an attachment to paper books.

EBook Summit: Our EBook Challenge by the staff of Library Journal

[http://www.libraryjournal.com/lj/ljinprintcurrentissue/887220-403/ebook\\_summit\\_our\\_ebook\\_challenge.html.csp](http://www.libraryjournal.com/lj/ljinprintcurrentissue/887220-403/ebook_summit_our_ebook_challenge.html.csp)

Summary: A number of Poudre River Public Library staff members, and two librarians from Front Range Community College, attended this webinar in September 29, 2010. This article provides the eleven top takeaways from the Virtual EBook Summit. It's an excellent overview of the challenges public libraries face as we explore the rapid adoption of digital content. Some staff members split off to watch the webinar sponsored by School Library Journal that looked at digital content for children.

SLJ First Virtual EBook Summit is a Big Hit

[http://www.schoollibraryjournal.com/slj/home/887041-312/slj\\_ljs\\_first\\_virtual\\_ebook.html.csp](http://www.schoollibraryjournal.com/slj/home/887041-312/slj_ljs_first_virtual_ebook.html.csp)

Rapp, David. EBook Summit kicks off with Library Survey EBook Results

[http://www.libraryjournal.com/lj/home/887020-264/ebook\\_summit\\_kicks\\_off\\_with.html.csp](http://www.libraryjournal.com/lj/home/887020-264/ebook_summit_kicks_off_with.html.csp)

Summary: "The Growing Importance of Ebooks in U.S. Library Collections," reveals the inroads ebooks are making at libraries nationwide. It had a total of 1,842 respondents, with 781 from public libraries, 364 from academic libraries, and 697 from school libraries. We can purchase the results of the public library survey for \$750 or the report on all three types of libraries for \$1,500.

Comments found on public libnet.org and AskColorado librarian listserv:

CHANDRA JONES | Experience Expert

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We advise customers, never do anything for them. It's a great way to help customers become comfortable with their technology.

Staff never actually touches a device, leaving the experience and the liability literally in the customer's hands.

Jaclyn Kuusinen  
Yampavalley.info Project Coordinator  
Associate Reference Librarian  
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We are currently running a “download free media” series where patrons can book an hour for one-on-one help from library staff with setting up their computers and devices to download free titles through the library. We have a verbal disclaimer to the effect: “I am not an IT expert but I will do everything I can to help you but I can’t promise I won’t make it worse.” We had discussed having patrons sign a waiver or disclaimer but decided that was very unfriendly and cold and the technology involved with overdrive titles is frustrating enough we want the community to see us as indispensable. We often talk patrons through steps while they type and click but we sometimes take over - we do not have a never touch a patron’s computer policy. I hope this helps and please let me know if you have any questions.

Here is a link to the event on our website:

<http://www.steamboatlibrary.org/Events.html>

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Our Library is hoping to offer our non-techy adult patrons general help with their various new devices - e-readers, iPods, iPads, etc. We have a couple tech-savvy teens from our local high school who are willing to volunteer some hours each week. They can offer help with downloading ebooks and audiobooks from our Overdrive collection and also general help with other issues. Our major concern is with liability. We are wondering if any other libraries are offering this service, and if so, do you have agreements in place that the device owner signs about waiving liability?

Denver Public Library has a Technology Waiver – we can ask permission to share with our committee. The waiver basically says the customer releases DPL from any liability regarding assistance with their device.