

## **E-BOOK READER: A FUTURISTIC APPROACH TO READING**

**GURWINDER SINGH AND GURPREET SINGH**

Librarian, Anand College of Engineering & Management, Kapurthala, Punjab , India  
Library Assistant, Panjab University Ext. Library, Ludhiana, Punjab , India

---

### **Abstract**

*New technologies provide improved reading environment for many people. A plenty of changes came in the field of e-books and e-book readers/devices and the changes in habits of users by the introduction of e-devices into reading environments. Due to the rapid pace of development and innovation in information technology, the dedicated electronic book (e-book) reader has become a new trend in reading.*

*In this paper we have tried to explain the transition from printed books to e-books, what is e-book reader, evolution of the e-devices: how it is beneficial for the users, what is the status of the e-book reader in the global market and what is the future of e-book reader furthermore tried to know how it can be more important or convenient for the new generation.*

*This paper also provides guidance on the usability of e-book readers and provides insights into the future of e-book reading devices. It will be benefited for the information professionals seeking to utilize e-book reading devices.*

---

### **KEYWORDS :**

Electronic Reading Device, ICT, Digital Content, e-Book reader

### **INTRODUCTION:**

#### **1. Transition from Printed to E-books**

The book is a storage and presentation tool that can be used to support a wide variety of information. The fundamental structure of the book, and the way it is used, is broadly unchanged since the invention of the codex in the 3rd century BC. Refinements to the codex have undoubtedly been helpful. The movement from papyrus (or wax tablets) to paper, the introduction of moveable-type printing, and the adoption of the index and the table of contents have all improved accessibility and usability to a significant, but not transformational degree. The latest stages of this evolutionary refinement in the electronic era have included making the books visible on an electronic screen, making the text searchable and embedding multimedia.

Books which are visible on an electronic screen are called electronic books, or e-books. These can be read on an electronic book reader, a computer, or other device that is compatible to read them. E-books began to become popular in the early 2000's. Surfing the web, and reading book is now easier than ever, and there is no need to worry about bringing more than one book along for a journey. Thousandsofe-Books can be stored on an e-book reader. These are becoming more and more popular so publishers choose to make books available in both printed and electronic form to appeal to a broader range of

readers.  
“Microsoft has declared that by 2020, 90% of reading material will be delivered in electronic form” (Rao, 2004, p.36.)

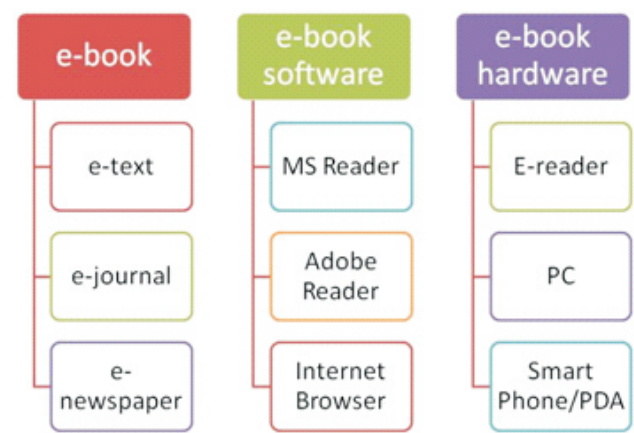


Fig. 1: E-book terminology

The above figure shows which software or hardware is required to read an electronic book. Technology in the 21st century is growing day by day; there are so many devices that are available in the market to read an e- book. Now according to the title of this paper we will discuss the e-book reader.

1.Know about e-book reader

In order to access an e-book, a piece of software called an e-book Reader is necessary. An e-book reader is a portable electronic device for reading digital books and periodicals, better known as e-books. The e-book reader is normally designed to operate over long hours by consuming minimal power. Most e-book readers rely on the e-ink technology for their displays. E Ink is a bi-stable display technology that creates a near-paper-like reading experience and requires minimal battery power. E Ink, which was acquired in 2009 by e-paper manufacturer Prime View Technologies, is helping to push dedicated hardware devices for leisure reading (e.g. the Amazon Kindle and the Sony Reader) into the commercial mainstream. Currently, most e-book readers only offer E Ink in varying levels of greyscale, but colour devices are starting to appear.

E-books are gaining momentum worldwide, are useless without a reader. There are a few on the market, such as kindle, wink, pie and few others. These are mentioned because they incorporate a technology called e-ink, which resembles paper very closely, and eliminates most eye-strain issues.

2.Evolution of e-device

2.1Historical Background

The primary ones appeared in the midst of the 1980s, and had been offered on floppy disks, and later on CDs. They were a fascinating form for books, however they by no means offered sufficient to make a lot of a dent in the market. It was simply harder to read these e-books than it was to read a normal paperback. The first dedicated e-book readers appeared in the late nineteen Nineties, and the technology has been rising since then.

At the time of the present study, a third generation of e-book readers is available that addresses the issue of legibility by offering enhanced screen resolutions. This latest generation of e-book readers is characterized by three types of devices: dedicated reading devices, multipurpose reading devices such as smart phones and most recently, games consoles. While multipurpose devices give users additional functionality (e.g. a phone, a camera, an MP3 player, gaming functionality, etc) and offer enhanced screen resolutions, only the dedicated e-book readers currently use Electronic Ink (E Ink).

2.2How it is beneficial for users

Electronic book readers are quickly becoming a popular gift item and a highly coveted electronic gadget. Since its inception, there is a continuous increase in number of users of e-books reader. Every

year, users are purchasing e-book readers and getting benefits. It is important to know here what is special in e-book reader.



**Fig. 2: Feature Mash-up of e-reader**

The above picture shows many a features of an e-reader, which are not available in the others electronic devices like tablet, desktop and Smartphone etc. There are so many other features which are given below;

- Portability and efficiency: There is one of the best/useful benefits of e-book reader is inbuilt in its portability and efficiency. With this device anybody can get access to vast store of e-books and online digital text over internet.
- User friendly: An e-reader remembers the page till which you read the file. You can bookmark, go to first and last pages and go to specific pages and catalogue eBooks automatically. It is also possible to move easily between chapters in an e-reader. In PCs, tablets and smart phones, only some of these features are available, that too only in PDF format.
- Large Storage of e-books: With the latest e-book reader. It is easy to maintain a rich library of books of anyone's interest.
- Easy to Read: Reading a PC, tablet or a smart phone for a long time can cause eye-damage. However, e-readers don't damage your eyesight. Most of the high quality e-readers use a technology called e-ink technology which avoids backlight. It makes reading comfortable just as you are reading from a book.
- Zero cost of maintenance: digital books do not demand maintenance like printed books for their bindings and conditions of prints and pages. E-books not get physically old and hence save cost maintenance. This is fact that e-books collection much cheaper than printed books.
- Braille E-book reader: Really a big revolution has come in the field of reading or books or e-books. Many companies are in the market that makes these kinds of devices which help user to read electronics/digital books. Braille e-book reader is a portable electronic device which will help visually impaired/blind people to read books. This device converts the text of the book into speech.

### **1. Market Overview**

E-Readers are set to have one of the shortest growth life cycles in device history. Between 2009-2011 the average annual sales of dedicated e-Reading devices in the US grew by more than 100%. In 2012, US dedicated e-Reader sales growth will be negative. The decline of the e-Reader is driven by the availability and affordability of tablets, with global tablet sales in 2012 set to reach more than 120 million.

#### **1.1 Which device is for the users/readers**

Competition among brands is becoming fierce, and some consumers are finding it difficult to discern the best E-reader for their individual needs. One piece of good news, though, is that most E-

readers are pretty similar in terms of design and function, but there are still slight differences that should know about before buying.

First we will discuss of some popular e-devices and then a brief comparison of the top three E-readers on the market today; the apple I pad, the Amazon Kindle and Barnes and Noble NOOK.

- Wink: A Bangalore based company named EC Media Pvt. Ltd. brings a new e-book reader which is very much similar with the other e-devices. This device is fully optimized to support as many as 15 different languages along with some good usable aspects. Wink is an e-book reader made in India running on Linux operating system. It runs on a 400 MHz ARM9 processor with 2GB in-built memory and expandable memory slot(16 GB). It has a 6 inch screen and 3.5 mm headphone jack. A fully charged 1500 mAh battery will give you 300 Hrs reading time. It weighs 260 gram. It has a querty keyboard and GPRS connectivity. You can read pdf, doc or text documents and also support media files like audio, video and text.

- Infibeam (Pi): Infibeam is an e-commerce company headquartered in Ahmadabad, India. It is an online retailer for books, electronics, and automobiles in India. Started in 2007, infibeam launched an e-book reader, Infibeam Pi, its successor Pi2, and a media device, Infibeam Phi.

i. Pi 1: In February 2010, Infibeam launched Pi, an e-book reader that uses E Ink electronic paper technology. Pi has a six inch screen with eight level grey scale non-backlit display. The device has the capability to play music files, read word documents and supports 13 Indian Languages. It has an internal memory of 512MB, that can store 300 books and supports external memory up to 4GB. The device, which is less than 10 mm thick, weighs 180 gm.

ii. Pi 2: In 2011, Infibeam launched the second version of its eBook readers and named it Pi2. Pi2 is a touchscreen device and has wireless connectivity. It has 2GB of internal memory and expandable upto 32GB through external SD card slot. The battery power is claimed to last upto 8000 page reads.

- Amazon Kindle: Amazon has started selling its Kindle range of e-book readers and tablets in India today. Kindle launched so many e-book reader and latest released of kindle e-device is kindle paperwhite. The Kindle Paperwhite was released on October 1, 2012 in the United States. It has a 6", 212 ppi display (an almost-XGA resolution of 758×1024) with built-in light, and has 2GB of storage (1.25GB usable). The light is one of the main features of the Paperwhite, however the light level must be adjusted manually. Battery life is advertised at up to 8 weeks of reading with half an hour per day with wireless off and constant light usage; this usage equals 28 hours. It includes the experimental web browsing with the same restrictions as the Kindle Touch. The official leather cover for the Paperwhite utilizes the hall effect sensor in the device which detects when the cover is closed and opened to turn the screen off/on respectively. This device was the first Kindle to track one's reading speed to estimate when one will finish a chapter or book.

- Barnes & Noble NOOK: The Barnes & Noble Nook is a brand of e-reader developed by American book retailer Barnes & Noble, based on the Android platform. In June 2011 by a second-generation E-paper device marketed as the Nook Simple Touch having 6 to 7 inches screen. It has internal memory of 2GB to 8 GB. The NOOK is drawing in more readers every day, because it has the most available books for purchase (2.5 million). Barnes & Noble also provides free in-store tech support (no appointment necessary). The NOOK Simple Touch and the NOOK Simple Touch with GlowLight both feature the no-glare, E ink display (the Glow Light allows for bedtime reading in the dark). All NOOK models use touchscreen technology.

## 1.2 Comparison

Popularity is rising for digital books. Whether you are reading for leisure, for work or for education, E-readers are an easy way to open the door to a plethora of knowledge from any location with internet access. Below is a brief comparison of the top three E-readers on the market today; the Infibeam Pi2, the Kindle paperwhite and the Barnes & Noble NOOK.

Compared Features	Infibeam Pi2	Kindle Paperwhite	Bernes& Noble Nook
Screen Size	6?	6?	6?
Resolution	800x600 pixels	1,024x768-pixel	800x600 pixels
Weight	235 gm	212.62 grams	212 grams
Dimensions	18” X 11.8” X 1”	6.8? x 4.7? x 0.40?	6.5" x 5" x 0.47"
Storage	2 GB upto 32GB	2GB on device for 1,400 books	2 GB on device for 1,000 books
Connectivity	WiFi Available (802.11 b/g)	Wi-Fi (Wi-Fi + 3G available)	Wi-Fi 802.11 b/g/n, USB
Operating System	Linux2.6.28	Linux 5.3.6	Android 2.1
Display	E Ink (R) display	E-Ink Pearl	E-Ink Pearl
Available content	Own content delivery network	Millions of books, newspapers, magazines, games and docs	2.5 Million
Interface	Touch	Multitouch	Touch
Web Browser	Yes	Limited	No
Text to speech	yes	Yes	No
Book formats	PDF, EPUB, HTML, TXT, RTF, MOBI, PRC, DOC	PDF, EPUB, HTML, TXT, RTF, MOBI, PRC, DOC	EPUB , PDF, JPEG, GIF, PNG, and BMP

1.Future of e-book reader in 21st century

There's no doubt that e-book readers are a growing trend. Many people used the devices like phones, lap-tops and tablet PCs as mobile e-book readers, the dedicated e-Reader has a whole host of advantages when you have the space for two gadgets, and a desire to read. As we have already discussed in the above that how printed books shifted to e-books, like that e-book reader/device has changed according to the need or requirement of the users.



---

**Color eBook Readers**

Many companies has been launched their color e-book reader. For future color e-readers are more suited for reading magazines, newspapers, children's books, comics, and web content than dedicated e-book readers with monochrome screens.

**Touch-Screen e-Readers**

There is one more important feature seems to be a touch screen. A touch screen tends to be very intuitive and saves space as no keyboard or mouse is required, which also tends to make for easier hand eye coordination than a mouse or keyboard. Touch is something that has already been incorporated into several big name e-book readers.

**Wireless E-book Readers**

With this feature users allow to download new books wirelessly directly to the device, without needing to bother switching on your PC, wireless connectivity has become increasingly the norm. Pretty soon we expect all dedicated e-book reader will offer you stand alone book shopping with no need to ever switch your computer on at home again.

**SUMMARY**

Ebook readers are here to stay and there is no doubt they offer benefits, such as large storage capacity and portability, easy to read by the e-ink facility etc. However, as with any technology, whether evolutionary or revolutionary, there is always room for improvement. Study shows that how development came in the field of printed books and after that in reading devices.

The findings also suggest that which e-device is better for reading ebooks with better facilities. New research shows ebook reader have the potential to facilitate readers desire to share, recommend and rate the books they read.

In the modern era big paradigm shift came in the reading that advent of the World Wide Web has enabled screen based readers to move effortlessly between digital documents via hyperlinks. So we can so that the technology in the field of reading devices growing day by day that is beneficial for the book reading lover.

**REFERENCE**

- 1.O'Grady, Michael (May 16, 2013). Europe will be the largest e-book market by 2017, worth \$19 billion.  
[http://blogs.forrester.com/michael\\_ogrady/13-01-22-europe\\_will\\_be\\_the\\_largest\\_ebook\\_market\\_by\\_2017\\_worth\\_19\\_billion](http://blogs.forrester.com/michael_ogrady/13-01-22-europe_will_be_the_largest_ebook_market_by_2017_worth_19_billion)
- 2.Caroline, Connell (2012). Effect of e-book readers and tablet computers on reading comprehension. International journal of instructional media. 39(2).
3. Wikipedia the free encyclopedia. (18 August 2013). Infibeam.  
<http://en.wikipedia.org/wiki/Infibeam>
- 4.Nathan (2010). The wink e-book reader from india. The e-book reader.com.  
<http://blog.the-ebook-reader.com/2010/08/19/the-wink-ebook-reader-from-india/>
- 5.Aggarwal, Rajat (2013). Amazon starts selling kindle e-book readers and tablets in india from today. BGR: your mobile life.  
<http://www.bgr.in/news/amazon-starts-selling-kindle-ebook-readers-and-tablets-in-india-from-today/>
- 6.Best e-book reader (). Development of the e-book reader.  
<http://buyebookreader.info/development-of-the-ebook-reader.html>
- 7.Jessica (2012). Comparing e-readers: which one is the right one? A book lover galary.  
<http://www.abookloversdiary.com/2012/07/comparing-e-readers-which-one-is-right.html#more>
- 8.Moore, Lisa Mary (2009). At your leisure: assessing e-book reader functionality and interactivity. Project report: Human computer interaction with Ergonomics in the faculty of life sciences, University College London.