# Developments in e-book, and e-magazine reader technology

**2005 marks a key turning point in reader technology development**

By

Nick Hampshire

and

Guy Kewney

Published October 2004 by
AFAICS Research - Technology Forecasting for Business

# Contents

**Appendix 1 - A selection of current reader products on the market.**

Jinke-book
Amida Simputer
Argosy EB600 and EB683
Founder E10 and E312
Easyread Personal Digital Reader
Matsushita Sigma Ebook
Sony LIBRIe

# Report summary

**This report covers the future of e-books and e-publication. The time-scale is from now to 2008. It covers an epoch during which our analysis suggests that - finally! - part of the dream of the paperless world will start to happen. And, believe it or not, finally, paper will start to be eclipsed, although not replaced.**

**Curiously, many people who should be most aware of where e-publishing is going, are looking the other way. The dot-com boom raised unrealistic expectations. When they collapsed, many in publishing - wrongly - assumed that the threat to traditional print, broadcast and video had gone away. That, we conclude, was a bad, perhaps fatal mistake.**

## Paper is on the way out

"The one category that does have a limited lifespan is Amazon's traditional books business, within 10 years people will be reading them in electronic form, on small hand-held devices". Jeff Bezos, who makes his money selling books, believes that paper is on the way out.

*The $375 Sony LIBRIe*

Anybody involved in publishing - from the marcomms manager producing a summary of a seminar for resellers, right through to the financial report for an AGM, and including material from highly technical dissertations right through to pure entertainment, needs to understand where the market is going... and why.

Paper is popular today, because it is better technology than electronic devices. Paper documents are easy to read, light weight and portable. It is easy to move paper documents in order to avoid glare, or to bring the text to a better focal length, or shift to a more comfortable position. In contrast, most computer displays are stationary, so that readers must move themselves instead of the display and must then hold themselves in that single position for an unnaturally long time.

These factors mean that a successful e-publication reading appliance, such as that sought by Amazon's Jeff Bezos, must allow people to work on electronic documents much as they would on paper. It means that it also needs to be portable, which in turn means that it must be light weight, and small enough to easily slip into a pocket or briefcase.

Currently most people will read an e-publication from a PC, a laptop or a notebook, all of which are a long way from Jeff Bezos' "small hand-held devices".

On top of which the e-publication will most likely be in either PDF, or HTML format, and is unlikely to contain any multimedia or interactive content, in other words publications specifically created for the "browse or search and then print" model of reading online.

That's not the future.

## A pivotal period in publishing history starts now

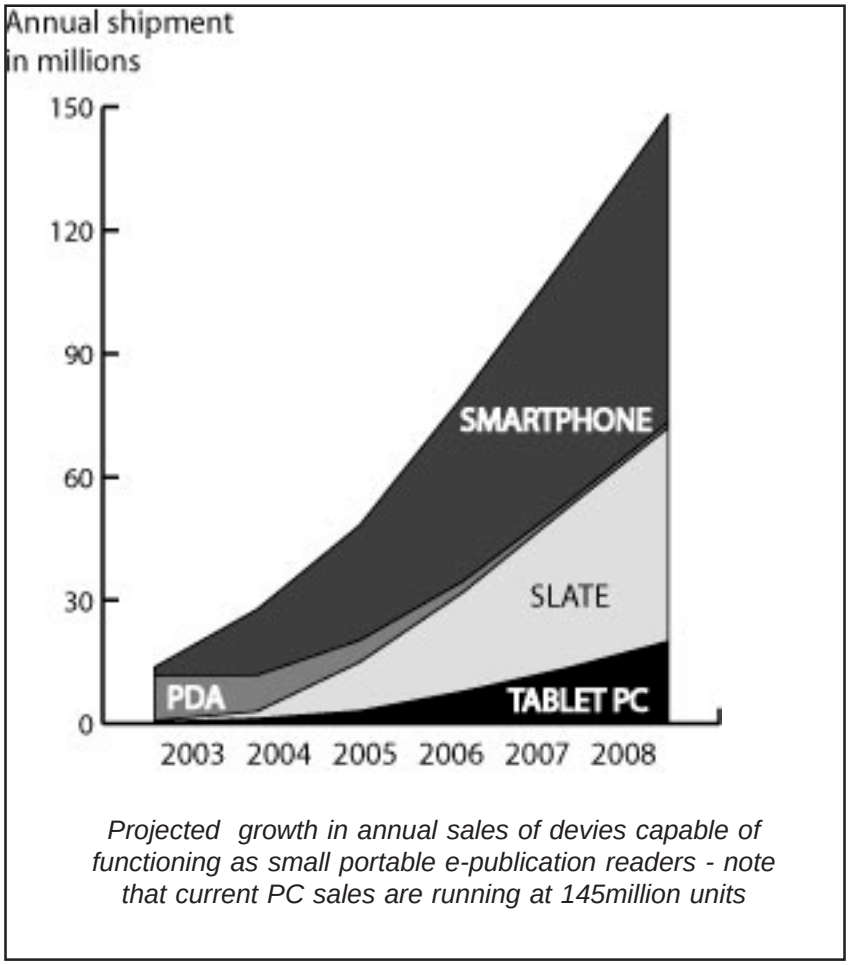
For the first time in thirty years it would now seem that the situation is changing. New technologies are coming onto the market that will allow construction of cheap, very light weight, low power consumption, readers with displays that give a paper like reading experience, and these technologies have emerged at a time when there is also a growing need for e-publications.

This growing need is founded both on simple economic grounds, such as the delivery of up to date text books to every one of China's 165million school and university students, and the need for new revenue sources, as is the case with the consumer electronics industry, or, crucially, the mobile phone companies.

The number of potential e-publication reader devices are suddenly proliferating. We have identified seven main categories of e-publication reader that are currently being marketed and used today, they are:

1. Desktop, notebook and laptop computers
2. Keyboard-less notebook PCs like the Tablet PC.
3. Web pads and Internet appliances.
4. Portable games machines
5. Slate format e-publication readers.
6. PDA and Pocket PC.
7. Data centric smartphones.

Each has advantages, and drawbacks, which this report analyses in some detail. Our analysis shows that only three of these categories have a viable long term future as e-publication readers, and each of these three will appeal to different types of user and be used for different types of publication.




*Projected growth in annual sales of devies capable of functioning as small portable e-publication readers - note that current PC sales are running at 145million units*

The report looks at how these devices will evolve over the next few years by examining developments in key areas of technology. Developments in mobile phones are giving us much of this new technology and at the same time are driving down prices of essential components.

The full report goes into much detail with the developments of critical new technology – including displays that will over the next

couple of years come close to the 300dpi and 20:1 contrast of a typical laser printed text.

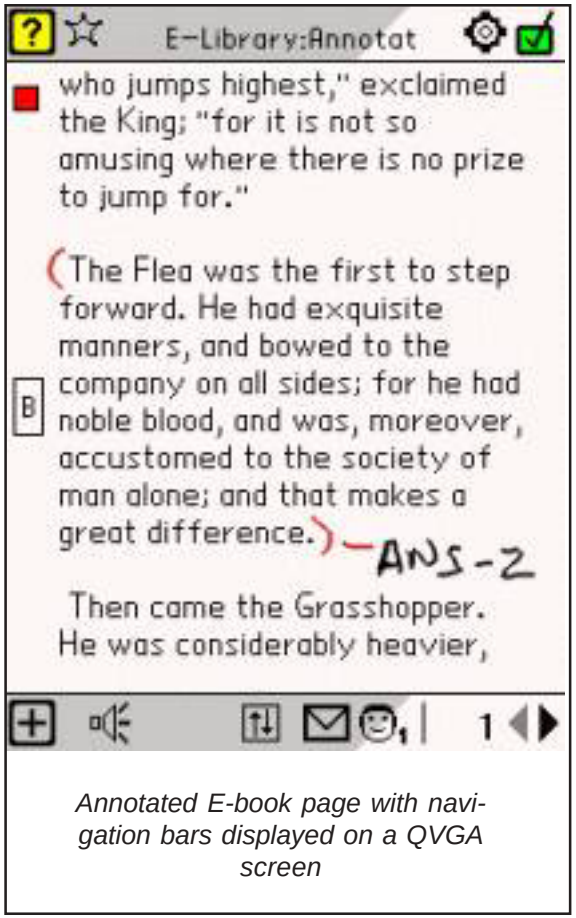
This report also covers how other technology developments will have an impact on the type of e-publication reader device that will be in use in five or ten years time. We look at ongoing developments in storage technology, processor design, communications, and content delivery are also detailed.

## Behind the hardware, is the software.

Already, it is possible to understand much of the new generation of operating software which will underpin e-books - and the list covered in this report is comprehensive - but the focus is moving towards standards: not of operating systems so much, as of format. And the killer development is going to be XML.

Old formatting technologies, HTML and PDF may linger - but we strongly believe that XML based formatting is preferable, not only does it permit sophisticated design, layout and typography, and allow the inclusion of interactive multimedia content. But most importantly XML allows content to be displayed, and where necessary automatically reformatted, on a very wide range of different reading devices.

Key to the analysis, however, is the realisation that there's more to an e-book than a book. The new technologies aren't going to be sold to people who are content to read text and admire diagrams. They will go beyond even the features of multimedia built into the latest Adobe Acrobat software.




*Annotated E-book page with navigation bars displayed on a QVGA screen*

## E-publishing – how to grow in it, and how not to grow

The e-publication market is already starting to grow rapidly in Asia, for a number of reasons, these are analysed. They include:

- The huge Chinese and Taiwanese project to use e-books in schools and colleges, and the development of cheap simple e-publication reader devices.
- The flourishing e-publishing market in Korea, and Japan where the comic book is already an electronic device.
- The development of mobile phone based reader devices, with large clear colour displays, plenty of data storage via plug in memory cards, plus full multimedia and Internet capability.

These are contrasted with developments in "Western" markets, illustrating how significantly behind the curve non-Asian publishers really have fallen. However, there are a few exceptions - like Pearson's "Safari" project, the many small e-book publishers, or the handful of digital magazine publishers.

If the European and US e-publishing market is to expand over the next couple of years - and our analysis shows that its potential for expansion is huge - then

content providers, software companies, and e-publication reader hardware manufacturers need to do a lot more to collectively encourage the market.

They must not only become actively involved in e-publishing but they must also:-

- Avoid use of proprietary formats that serve only to fragment to market and frustrate the user. The development of a universal XML based format is strongly recommended.
- Enable reader to easily move an e-publication between different reader devices
- Make it easy for new small publishers to enter the market, since such publishers will provide a lot of the content and a lot of the innovation.
- Not use rights management techniques that are too complex and that place too great a restriction upon the way that the purchaser of an e-publication can use it.
- Encourage the popular use of e-publications in a wide range of different applications and by a wide range of different users

Above all it should be remembered that an e-publication is not a replacement for the printed publication, it is an extension, a progression beyond the printed paper paradigm. It can convey information and be used in ways that are impossible with a printed work, and as such should not be seen by publishers as a replacement or competitor to the printed work, but as a new media form.

*A Chinese designed e-book reader for use by over 165 million students*

## A survey of some pioneering devices

The report also includes a survey of some of the devices already available. They include the Simputer, the Sony LIBRIe, Mitsubishi Sigma eBook, Culturecom EasyRead, the EB683 and the Jinke Ebook.

These are just foretastes of what will be available in the near future.