

USABILITY OF EBOOKS IN JAMK LIBRARY COLLECTION

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Abstract <p>Nowadays eBooks a play more important role and their functions keep increasing. EBook has taken a place between printed and digital information and its usability has been widely spread, for example in education. The technology which is used for the eBooks has created several new features for users, one of this being the mobile use of eBooks.</p> <p>In this thesis mobile devices and the operation of browsers were checked in 21 JAMK databases. The operations (connectivity, scalability, readability, scrolling) can be listed and assessed using three levels (good, medium, weak).</p> <p>In the first section of the thesis the testing environment as well as devices, browsers, and reader software are described and discussed. In the second part of the thesis the certain testing results of the databases points of view are shown. In the appendices the testing results of the browsers' perspectives are shown and analyzed in tables.</p>		
Keywords eBook, e-reader, JAMK eBooks, database, database test, mobile browser		
Miscellaneous		

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1 INTRODUCTION

The objective of this thesis was to test eBook devices in JAMK eBooks databases. These databases can be easily accessed from the library webpage on the Nelli portal by shortcuts. JAMK library has 36 eBook databases in different fields of education. There are also English and Finnish databases and some of them are available only by remote access. Nowadays eBooks play a more and more important role and their functions keep increasing. The eBooks have several advantages compared to traditional books and also there are disadvantages; however, it is up to the users to decide whether eBooks are convenient and appropriate for them, or not. In this report the objective is to show how these devices work and the focus is on the JAMK databases. The most important terms related to this report can be found below for better understanding of the subject. In the first section of the thesis the testing environment as well as devices, browsers, and reader software are shown. In the second part of the thesis the testing results are described and discussed and in the appendices the testing results are summarized in table.

2 TERMS

EBook is an electronic book readable by digital device or on computer usually cover via internet. The earliest eBooks were made by Project Guttenberg in 1971. The libraries began providing free eBooks to the public. There are some eBooks that are originally digital or they can be scanned to be digital.

Digital library collect digital contents, eBooks and other digital formats, e.g. visual, audio or multimedia formats.

E-readers: portable electronic devices to develop reading of books.

Electronic paper: a display technology that is appearance of ink on paper.

Touch screen technology refers to electronic visual display that can detect touch within the display area, it can be by finger, or by stylus. The first electronic touch

surface was made by Samuel C. Hurst in 1971. (en.wikipedia.org) Three main touch technologies known: resistive, capacitive and surface acoustic wave (see Figure 1).

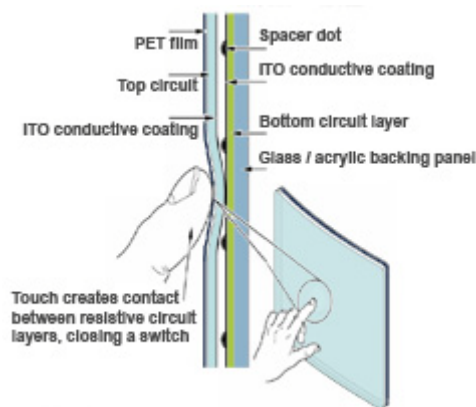


FIGURE 1 Touch screen technology

Databases store and retrieve amounts of data. Searching in database, each database has its own searching system. Usually it is started with a simple search and continued with advanced search. Boolean operators and wild cards can be used.

Digital Rights Management (DRM) is access control technology to limit to use of digital content or device, copy protection, which usually means copying without modifying the content on the same device. In case of eBooks this refers to limiting copying, printing and sharing. Different publishers have different DRM.

3 TESTING ENVIRONMENT

3.1 FORMATS

There are numerous eBook formats that are available and always developed; there is no one universal format. The publishers sometimes make their own formats that are readable only with a compatible device or eBook reader.

PDF (portable document format) was invented by Adobe System. It is a formal open standard known as ISO 32000. PDF files are viewable and printable on any

platform. More than 150 millions documents are presented publicly on the web. The files preserve text, drawings, multimedia, video, 3D, maps, full colour graphics, and photos. They can be digital signed or there are password protected PDFs. Text searching and metadata are available in the document.

(www.adobe.com)

ePub (electronic publication) is free and open eBook standard by International Digital Publishing Forum (IDPF). The text display can be optimized for the display device used by the reader. The features are reflowable, resizable text, inline raster and vector images, embedded metadata, DRM support, CSS styling. An ePub file optionally contains DRM. (idpf.org)

3.2 BROWSERS

Web browser: It is software which can be used to view internet content, web pages and can be used services via internet.

Safari is a platform and a graphical web browser by Apple Inc. and it fits Mac OS X operating system. It is the iPad default browser, inline PDF viewer and its engine is the WebKit. It is the world's fastest browser. Safari supports HTML5 video and audio tags, geolocation, and it allows a web-based application to store information on the hard drive. Its features are: full page zoom, multi-touch gestures, bookmarks, history view, built-in security, automatic updates, search, phishing protection, malware protection, customizable toolbar, and elegant user interface. (www.apple.com)

Atomic Web Browser (free version) is a browser for the iPad and iPhone with many advanced features: full screen mode, private mode, pass code lock, ad block filters, unlimited tabs, save page for offline viewing, long press to open a link in a new or background tab, editable search engine, in-page search, sharing page with Facebook or Twitter, identify browsers as IE. It can also adjust font size, and have rotation lock, themes, page source viewer, and URL suggestion, save image. (itunes.apple.com)

Android Browser supports Flash Player 10.1. Files can be downloaded via download manager and reached from the File menu. The browser available in Android is on the open source WebKit engine. It is pre-installed on the Android devices; it includes CS3 and HTML5 features and allows multiple windows at the same time. (en.wikipedia.org)

Dolphin Browser contains free downloading, running Android 2.0 and up. It supports tabbed browsing (up to 8), bookmarks access, thumbnails flick menu, integrated YouTube downloader, storable bookmarking. It has multi touch zoom, save cache for SD card, support various design theme, flick based navigation, gesture launching. (home.dolphin-browser.com)

Internet Explorer is a graphic web browser developed by Microsoft and it is part of the Microsoft Windows. It is the most widely used web browser since 1999 and it has been designed to view a wide range of web pages. (windows.microsoft.com)

Google Chrome is a web browser developed by Google and uses the WebKit layout engine. The first released was in 2008. (www.google.com/chrome)

Mozilla Firefox is the free and open source web browser by Mozilla Application Suit. It is second most widely used browser. (www.mozilla.com)

3.3 READERS

Reader is software which can be display eBooks and other digital publications.

Adobe Reader is global software for electronic sharing. A PDF file viewer can read all PDFs, print, sign digitally, and contain drawings, email messages, spreadsheets, videos and other multimedia elements. Notes can be made or highlight tools used. Additionally, it has a security of the protected mode and it can directly access online services. There are 33 language versions. In the Internet Explorer PDF cannot be opened without Adobe Reader, but with Google Chrome can be opened on new pages. (get.adobe.com)

Adobe Digital Edition software allows viewing and managing eBooks and other digital publications. “It organizes the eBooks into a custom library and annotates pages, and manages digital publication across computers. It supports industry standards eBook formats including PDF, PDA and ePub; additionally it supports borrowing eBooks.” (www.adobe.com) It offers a clean interface to read digital publications. Bookmarks can be searched and used as well as and navigated easily. It can protect a file from illegal copying using Adobe content Server 4. It displays PDF in double page, single page or fitted into width view and the text size can be increased and decreased in ePub format.

ThinkFree PDF Viewer Mobile for Android allows viewing ThinkFree or Microsoft Office Words documents, spreadsheets and presentation files. Its features are to send a file as a supporting email attachment, an order by title, author, subject, keywords. Other features include, find text, multiple zoom, display mode or page view; it also, supports bookmarks, it has password protected PDFs and, offers multi languages. (product.thinkfree.com)

iBooks is an eBook application by Apple Inc. It receives an ePub format or PDF format. Books can be bought at the Apple store with only one tap. There are 200,000 books available and, enhanced books can also be found there with words, pictures, audio and video together. When the user open an ePub format a really nice reading environment can be observed as if reading a real book. The readers has various options, for modifying the brightness, font size, font type (Baskerville, Cochin, Georgia, Palatino, Times New Roma, Verdana), or changing into the sepia. Google and Wikipedia or within the books can be searched. Books can be ordered by titles, authors or categories. Books allows copying, making notes, zooming pictures, and sending documents, via email, changing landscape mode, or searching in a dictionary. IBooks store has also 30,000 free eBooks available from project Guttenberg. The publisher include: Penguin Books, HarperCollins, Simon & Schuster, Macmillan Publisher, Hachette Book Group USA (see Figure 2). (itunes.apple.com)



FIGURE 2 iBooks

BlueFire Reader is available at Apple store for reading ePub and PDF content. It supports Adobe eBook DRM, Adobe DRM allows to transfer their purchases between their devices. Get books can be used to search books online. Its features are changing the text size, the page size, brightness, and flips, locking orientation, night mode, formatting font face (Sans Serif, Serif, item's default, Garamond, Gill Sans), and choosing different text colour, background colour, themes. It has information about the books, such as format, added date; last reading, bookmarks, and permission (see Figure 3). (www.bluefirereader.com)

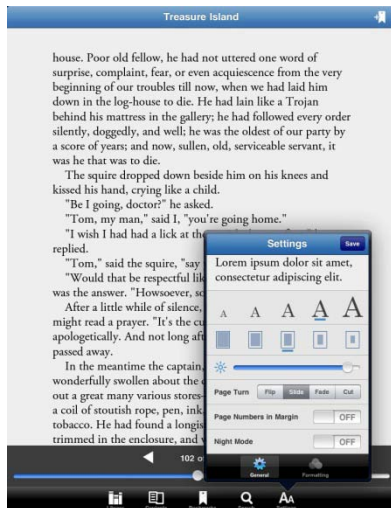


FIGURE 3 BlueFire Reader

Apps

Pocket Cloud: with it can remotely access the user's desktop, multimedia and applications on iPad or Android device. Its features are searching files, video streaming over 3G, zoom, secure and simple setup, multiple connections, keyboard auto activation, accessing to reach media sites, support Flash and Active X as well as, multifunction touch pointer. (www.wyse.com)

3.4 DEVICES

Samsung Galaxy Tab

Samsung Galaxy Tab is the world's thinnest tablet with Android. The portable device has internet access via Wi-Fi, multitasking, multi player, calendar, display 7 inch screen, and 380g. Its operating system is Android 2.2 which is able to download different applications, supporting email, camera, A-GPS, video player, video recorder, multi touch zoom, Google Maps, eBook readers. The device is pre-loaded with Readers Hub and Music Hub to access more than 2.2 million books, newspapers, magazines and 13 million songs. (www.samsung.com)

iPad

iPad is a handheld device, with which the user can search the web, watch videos, or read books. iPad is tablet computer designed by Apple Inc. To be used as a

platform for different media, such as books, magazines, newspapers, audio, video, web. The iPad uses the multi touch technology where fingers can be used to do everything. The iPad uses Wi-Fi data connection, has LCD screen, touch screen display 9.7, which is finger print resistant, and it supports screen rotation in all four orientations. The 3G model contains A-GPS, Bluetooth 2.1. The operating system is IOS 4, and the iPad can be synchronized with iTunes on the Windows PC. The iPad employs Digital Rights Management to control software and prevent transfer or use outside of Apple's platform. Major news organizations have recently released iPad application. The used browser is the Safari with the iTunes app downloading files from the internet. iPad mostly used by consumers and in the education but also in the business life. On the Apple homepage can be found the iPad developments environment for free download for developers. (www.apple.com)

Kindle (Kindle 2)

Kindle is developed by Amazon, its software is able to read eBooks and display digital data. There are four versions: Kindle, Kindle 2, Kindle 3 and Kindle DX. Its hardware is the so called e ink electronic paper, which is able to display 16 shades of grey. It uses Wi-Fi standard or Amazon 3G Whispernet network. Kindle 2 features include e.g. text to speech and with its 2 GB memory it can hold about 1500 non-illustrated books. The international version uses standard GSM which enables to use AT&T mobile network in 100 countries. Amazon released the "Kindle for PC" application. It is possible to transfer content from the computer via USB. It is forbidden to transfer Amazon eBooks to another user or a different type of device. The Kindle supports unprotected Mobipocket books (MOBI, PRC), plain text files (TXT), Topaz format books (TPZ), Amazon DRM restricted format (AZW). Portable Document Format (PDF) support has been added for Kindle 2. Amazon has an email based service what converts formats to AZW. To search on the web with this device can be somewhat difficult because of the screen technology that does not support any motion picture or flash. The shop can be reached in the Kindle store and books can be purchased or files downloaded from the net or transferred via USB from the computer. In the device books can

be ordered by title or author. Once the book has been opened users can search, add bookmarks, and add notes, annotations or highlights. Kindle also has a dictionary (Google, Wikipedia). It can jump to a cover, to a table of content, to beginning, or to a location. It can download free samples from the Kindle store. The device has a keyboard and a joystick. Mp3 format music can be played, audio books and books by text to speech listened. Books can be bought and book descriptions checked on the store by shortcut to see how it was converted, published when and by who, what its length and prices are, and the related items. There are some menu options to set the device for the web use to make a bookmark, to see history, use basic mode, enable display JavaScript and images, clear cache and cookies. Because of the technology the battery life is really long, enabling a continuous use for nearly a month. Readings can be customized with setting text size and screen rotation. Eight different text sizes can be chosen from. On every page there is a progress indicator by glancing which the readers know where they are in the book (see Figure 4). (www.amazon.com)



FIGURE 4 Kindle

BeBook Mini

It is an electronic reader device. The model has a paper link screen based technology on e ink technology which means that there is no backlight and flickering on the screen. It sets font and font size. The latest models have a Wi-Fi connection to direct download. It supports 23 file formats and Adobe DRM for

PDF and for ePub format. It has portable, long battery life and about 8,000 page turns. It weighs only 220 g, and is equipped with audio jack and USB port, with 16 levels of grey scale displays. Supported formats are as follows: PDF, Moby, prc, ePub, lit, txt, fb2, doc, html, rtf, djvu, wol, ppt, mbp, chm, bmp, jpg, png, gif, tif, rar, zip, mp3. It has many languages supports. Bookmarks can be added, pages zoomed, library ordered by title, file name or size. It has a keyboard with numbers from zero to nine, previous, next and home button to navigate in the device (see Figure 5). (mybebook.com)



FIGURE 5 BeBook

4 TESTING DATABASES

For this Bachelor's Thesis project four eBook devices and also browsers on the computer were tested with the focus on the settings, since different settings give different results. The result of the test on JAMK databases is shown from different points of view. Each time an eBook was opened the results were checked. There are different devices, browsers, readers and formats. The views from databases, devices and also browsers are shown in the thesis. These databases can be reached by using a shortcut on the JAMK library/Nelli portal/eBooks. As the

attachment the results are can be found via tables in this report.

(www.nelliportaali.fi)

Point of views

Connectivity refers to the way an eBook page can be connected to and how fast this process is.

Scalability means the ability and extent to scale on the page and the zooming in or out.

Readability refers to the font extension.

Scrolling means the ability to scroll or slide with or without flaps on the page.

Readers can be online readers on the page, the publisher's own readers, opening PDF with browser, or default readers on the device or on the computer. The tested reader were mentioned first or highlighted bold in the tables in cases where multiple options are possible.

Format: is the format of the document.

Levels are weak, medium, good.

4.1 AMS BOOKS ONLINE

The collection contains mathematical research and mathematical related books, browsing by title, by readers the AMS Books Online will be got, the menu of which contains AMS titles by author, home and AMS bookstore, the eBooks are in more individual chapters in PDF format. (www.ams.org)

TABLE 1 AMS books

AMS BOOKS	connectivity	scalability	readability	scrolling	reader
Safari	good	weak	good	medium	browser, default reader
Atomic Web Browser	good	medium	good	good	browser
Android browser	weak	good	medium	good	only default
Dolphin Browser	medium	good	medium	good	only default

When opened with Safari, the connectivity to the page is good, the specific title, however, opens slowly, the readability is good, and the scalability is weak, whereas scrolling is medium. It is possible to open eBook readers (see Table 1).

Opened with Atomic web Browser, the connectivity is good, when one chapter is opened the connectivity is slow, readability is good, scalability is medium and scrolling is good. Readers cannot be opened.

AMS Books opened with Android default browser produced following results: open a specific title, PDFs downloaded with download manager, can be reached from the File menu, connectivity is weak, a default reader enables reading, scalability is good, readability is medium and scrolling is good (default reader).

Samsung Galaxy Dolphin Browser: open a PDF format the browser saves it automatically, downloading is slow (82 MB), and connectivity is medium. Opened in the default reader the scalability is good, readability is medium and the scrolling is good.

AMS books opened with Internet Explorer and Google Chrome: free eBooks can be found in PDF format; online documents can be downloaded or read.

Opened with Mozilla Firefox the document opens slowly, it can be opened online with Adobe Reader. The user does not need to login to the database, it can be saved as a file to the computer.

4.2 DAWSONERA EBOOKS

First, some information about the database is needed: Dawson books supply academic professional and research institution. More than 200 years they have been handling books, they work with the leading academic publishers.

Dawsonera has a web based reader portal. The short term downloading of eBooks is possible. The users have to login with JAMK username and password, after they chose the institution where they belong. On the homepage is the eBook catalogue. Reading is possible only with Dawsonera readers and only for five minutes or reading those eBooks that are purchased by the user's library.

Reading requires Adobe Reader. The content is restricted only to personal use by Dawson books Ltd.'s copyright. Quick search or advanced search options can be used for searching. In advanced search it can be searched by publisher, by search term or subject. The search result can be downloaded. eBooks can be downloaded and opened in readers. In this catalogue there are 89 eBooks which are owned by JAMK. (www.dawsonera.com)

TABLE 2 Dawsonera books

DAWSONERA	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	weak	page own online reader, default reader
Atomic web browser	good	medium	medium	weak	page own online reader
Android browser	do not open				
Dolphin browser	do not open				

If the users open a specific title with Safari the connectivity is fast, scalability is good (fits to the page), readability is good, whereas scrolling is weak, and take place only with flaps (see Table 2).

Dawsonera has an online reader with a usable environment, on the left side there is a menu with menu options, where can be hide or display e.g. table of content, jump option, and searching for words. The iPad does not support download or Flash, therefore some features are not available such as zoom, making notes, copying and printing a limited page or listening eBooks. On the selected page on

copying there are watermarks, which show the publisher, the metadata and the copyrights.

It opened with Atomic Web Browser a specific title the connectivity is good, the scalability is medium, the readability is medium and the scrolling is weak (only with flaps).

On Dawsonera with Android default browser a specific title needs to be opened for reading online, the connectivity is weak, the page does not open.

With Samsung Galaxy Dolphin Browser a specific title can be opened, however it does not open the Dawsonera online reader.

Dawsonera opened with Internet Explorer enables reading if the users have Adobe Reader or reader on their computer. The documents are in PDF format. When opened with Google Chrome the documents open in Adobe Reader or Adobe Digital Edition, and can be downloaded.

Opened with Mozilla Firefox, the Dawsonera own online reader environment can be displayed properly, the user needs to login, the Reader Out Loud function can be used, the documents cannot be downloaded.

4.3 EBRARY EBOOKS

Ebrary eBooks is a platform. The JAMK library has access to the Academic Complete, which is a growing eBook collection containing all academic subject areas. There is a quick and flash guide for easy using. It is a digital library with more than 52,000 multidisciplinary titles by world renowned publishers. Additionally, it has the ability to integrate and distribute its own electronic collection. (site.ebrary.com)

SaaS (Software and Service) “technology turns static PDF files into dynamic database of documents that are fully searchable and can be cross referenced, it integrates with library ILS (integrated library system).”
(www.ebrary.com/corp/collateral/en/Brochure_web/ebrary_platform_libraries.pdf)

On the homepage My Setting can be set up to choose a quick view of Ebrary Reader, bibliographic information can be managed, citation format selected, accessibility mode chosen. Users can search by simple search or advanced search by subject area or by publisher. Searching by terms can refine their searching by fields or subject.

TABLE 3 Ebrary

EBRARY	connectivity	scalability	readability	scrolling	reader
Safari	medium	medium	weak	good	page own online reader
Atomic web browser	good	medium	weak	medium	Ebrary Reader
Android browser	good	good	weak	good	page own online reader
Dolphin browser	good	medium	weak	good	page own online reader

When the users open a specific title with Safari they have to bear in mind whether they want to use Ebrary Reader, in which case, they need to download it. By the tap on the table of content the title can be opened. The Ebrary Reader can be scrolled by touch finger gesture by cross direction; scalability works only on the table of content, connectivity is medium, and readability is weak, because when zooming the letters do not expand. In addition, the reading environment is user-friendly, there is a menu of Info Tools, and other features include copy, print, searching on the web (choosing by search engine), searching in news, searching video, creating note (need to login), jumping to Wikipedia, defining and explaining the chosen term by a dictionary. Using these tools the connectivity is medium (see Table 3).

Opening a specific title with Atomic Web browser it is important to notice that the page connectivity is good, the Ebrary Reader can be opened without download, scalability is medium (the size should not be held, only the table of content or the

status bar), scrolling is medium, but users can scroll by finger in cross direction, and readability is weak (the letters do not expand).

Ebrary opened with Android Default Browser containing the following features: the connectivity is good, scalability is good, readability is weak, and scrolling is good in any direction work well with Samsung Galaxy Tab. Additionally, the Info Tools worked well; however, the users need to sign in.

With Samsung Galaxy Dolphin Browser a specific title in the Ebrary Reader does not function, but users can reach the book from the table of content. Connectivity is good, scalability is medium, readability is weak, and scrolling is good.

Ebrary with Internet Explorer enables reading online free eBooks; however, it cannot download them, and there is no information about the format and need to login. The Ebrary Reader does not work with Google Chrome (need Active X).

Opened with Mozilla Firefox the users do not need to login; however, the Ebrary Reader cannot be installed because it is not compatible with Mozilla Firefox 4. The titles can be opened from the table of content, the documents cannot be downloaded.

4.4 ELLIBS EBOOKS

The database is an internet based service that allows borrowing and managing electronic books, as well as a login with the library card. eBooks can be downloaded to user's own computer, those are DRM protected PDF files, and eBook reader software is required. Adobe Digital Edition is recommended. The eBooks can be borrowed for four hours or for four days. eBooks can be returned before expiration date, the users can see the length of the time they have borrowed the eBooks for. The books can be bought at the Ellibs bookstore. The Ellibs platform provides different solutions for bookstores. The administrator has a right for the administrative service. (www.ellibs.com)

TABLE 4 Ellibs

ELLIBS	connectivity	scalability	readability	scrolling	reader
Safari	good	medium	good	medium	default reader
Atomic web browser	do not open				
Android browser	do not open				
Dolphin browser	do not open				

When opened with Safari users need to use BlueFire reader to read, connectivity is good, scalability is medium, scrolling is medium, and readability is good. The default reader worked well; however, the screen is sometimes frozen in PDF format (see Table 4).

When opening with Atomic Reader a specific title could not be opened.

With Android default browser a specific title could not be opened, and Adobe Digital Reader was needed.

With Samsung Galaxy Dolphin Browser the books cannot be loaned, the downloading does not start.

Ellibs with Internet Explorer can borrow the books for four hours or for four days for free. The books can be read with default browser, for example Adobe Digital Edition; the downloaded books cannot be opened with Adobe Reader. The files can be downloaded in Google Chrome and open automatically in Adobe Digital Edition. After the expiration date the documents cannot be opened, and they need to be borrowed again.

Opened with Mozilla Firefox the users need to login. The documents open in the default reader.

4.5 FREEBOOKS4DOCTORS

The database contains free PDF text eBooks in medical field, if have expertise they can sell books via Freebooks4Doctors. It provides free books, journals,

podcasts, and free medical information via Amadeo and Flying Publisher.

Podcast can be downloaded as mp3 format via iTunes. It can be searched by title and opened via other databases, for example EBSCO or PubMed.

(www.freebooks4doctors.com)

TABLE 5 FreeBooks4Doctors

Freebooks 4Doctors	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	good	good	good	browser, default reader
Android browser	good	good	good	good	default reader
Dolphin browser	good	good	good	good	default reader

Opening a specific title with Safari the connectivity is good, scalability is good, readability is good, and scrolling is good. The default readers can be opened. The documents format is ePub or PDF (see Table 5).

When opening with Atomic Web browser the connectivity is good, scalability is good, readability is good, and scrolling is good.

Specific title opened with Android default browser contains the following results: free PDF and ePub files can be downloaded, the downloads with download manager was slowly, the ePub format cannot be opened, and the PDF opened in default reader which worked properly.

Using the Samsung Galaxy Dolphin Browser free PDFs can be downloaded, in the default browser all points worked well, ePub formats cannot be downloaded.

When opening, Internet Explorer needed to login, PDF and mp3 formats can be downloaded, ePub format cannot be opened, for reading online Adobe Reader is needed. Books can be browsed online in HTML format.

When using Mozilla Firefox the documents can be open online with Adobe Reader and can be saved to the computer.

4.6 GOOGLE BOOKS

The Google Books is a full text databases any subject for free or for price. Google as a copyright holder has a right to provide digital content. “Google gives non-exclusive rights to download digital content to devices and display it unlimited number of times. The users may not sell, distribute, lease, rent and transfer the digital content or any portion. The Service and the digital content are provided to protect the security of digital information. Violation of security features may results in civil or criminal liability.” (Google Books term of Service) (books.google.com)

TABLE 6 Google Books

GOOGLE BOOKS	connectivity	scalability	readability	scrolling	reader
Safari	good	medium	weak	medium	page own online reader , Google Books online, default reader
Atomic web browser	good	image view medium, text view good	image view weak, text view good	image view medium, text view weak	page own online reader , Google Books online, default reader
Android browser	good	good	good	weak	page own online reader , Google Books online, default reader
Dolphin browser	good	good	good	weak	page own online reader , Google Books online, default reader

Using the Safari on the page can be found Help about the eBook which can be opened in iPad, on web, on Smartphone, or not and can be found information from the text of the document which can be flowing text or scanned page. The users can find reviews for the books, and related items. When a specific title opens the connectivity is good, scalability is medium (users need two fingers), readability is weak, and scrolling is medium. More views of the page can be chosen, the format of the text can be changed from image to text view. Users should use the text format in which the scalability is good, the scrolling takes place with flaps. PDF or ePub format can be downloaded (see Table 6).

Google Books offers a reader, Google Books Reader that is compatible with Android, iPhone, iPad touch. By trying a sample the Google Books Reader have been a proper reading environment with useful menus which have options, such as a table of content, adjust typeface, text size, line height, searching in the books, the book can be read in night reading mode, offline or online. The scalability does not work only take place the zoom however the scrolling is good (fingers or flaps) as well as. This reader is able to store 8,000 titles.

Opened with Atomic Web Browser in the image view the scrolling is medium (two fingers), scalability is medium (four fingers) and readability is weak. In the text view scalability is good; scrolling occurs with flaps, readability is good.

Using Android default browser the connectivity is good, PDF or ePub format can be downloaded, scalability is good, scrolling is weak (flaps).

If opened with Samsung Galaxy Dolphin Browser the following results were noticed: the connectivity is good, readability is good, scalability is good and scrolling is weak (flaps).

When opened with Internet Explorer two options can be chosen: Google Books Reader or on the page there is an online reading environment. Free PDF or ePub formats can be downloaded.

If the Mozilla Firefox have been used the documents cannot be downloaded. The users can create own library with the Google account.

4.7 IMMATERIAALIOIKEUDEN PERUSTEET

Opening with iPad is not possible have not permission to access. The homepage can be accessed with the following address: www.juridica.fi. The publisher is Talentum, also is available in English. PDF can be found on the Talentum's homepage and can be opened by readers. Opened with Safari the connectivity, scalability, scrolling and readability are also good. The terms of use are presented as follows: "reproduction, transfer, duplication, distribution or storage of part or all of the contents of Talentum's WWW pages in any form is prohibited

without the prior written consent of Talentum”.

(www.talentum.com/en/info/legal_note) (www.juridica.fi)

When using Android default readers have no permission to open the page.

When opened with Internet Explorer there is an only Finnish database, and users have to register for using more options. Talentum’s homepage need Adobe Reader to read online, opening with Google Chrome they have not permission to access. Opened with Mozilla Firefox a user does not need to login, but for displaying books users need to sign in.

4.8 JURIDIikkaONLINE EBOOKS

The database contains Finnish law eBooks, it is available only in Finnish language. (www.wsoypro.ezproxy.jamk.fi)

TABLE 7 Juridiikkaonline

JURIDIikka ONLINE	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	weak	page own online reader
Atomic web browser	good	good	good	weak	page own online reader
Android browser	good	good	good	weak	page own online reader
Dolphin browser	good	good	good	weak	page own online reader

Opened with Safari the titles can be reached by thesaurus or by free keywords. On the page there is an online reading environment. The publisher is the Finnish publishing company WSOY. The user can scroll by flaps however they cannot download files (see Table 7).

If using Android default browser the online “service” features as connectivity, scalability, readability is good and scrolling have been happened by flaps. The same results have been given using by Samsung Galaxy Dolphin Browser.

Opened with internet Explorer the users need to login with JAMK username and password. The users cannot download files. The database used by Mozilla Firefox the users do not need to login, it can be browsed online by the page's online 'service'.

4.9 KAUPPA- JA TEOLLISUUSMINISTERIÖN JULKAISUT

The database is the Ministry's own publication register, almost only with Finnish publications, the newest found in PDF format, there is an English description on the page, and it does not support the iPad. With Android default browser and Dolphin Galaxy web Browser the PDFS do not open. (ktm.elinar.fi)

Using Internet Explorer the free PDF cannot be opened, it is possible to open it with Google Chrome; however, Adobe Reader is needed. Documents can be downloaded. Opened with Mozilla Firefox the PDFs can be opened and downloaded.

4.10 LAIVAUSKÄSIKIRJA (FINPRO)

Finpro is an association founded by Finnish companies. Usually it can be browsed online in the press releases and in the news. (www.finpro.fi)

TABLE 8 Laivauskäsikirja (Finpro)

LAIVAUSKÄSIKIRJA	connectivity	scalability	readability	scrolling	reader
Safari	good	medium	good	good	browser, default reader
Atomic web browser	medium	medium	medium	medium	browser, default reader
Android browser	good	good	good	good	default reader
Dolphin browser	good	good	good	good	default reader

When opening a specific title with Safari the connectivity is good, scalability is medium, readability is good and scrolling is good. To watch a video needed Flash Player. They have magazines that can be downloaded in PDF or can be read

online on the issuu.com with its reader. The Issuu Reader allows full screen mode, its features are the following: connectivity is weak, scalability is medium, readability is medium and scrolling is weak (see Table 8).

When opening a specific title with Atomic Web Browser the testing results are medium. The Issuu Reader does not open.

Using the Android default reader and the Dolphin Galaxy Browser the PDFs directly downloaded via download manager and opened in the default reader.

Using the Internet Explorer some PDFs cannot be opened, with Google Chrome can be downloaded and opened the documents. Usually the users can browse online. Documents can be downloaded via prints mode in xps format.

Opened with Mozilla Firefox the page opened without login, the PDFs opened online, Adobe Reader was needed and Adobe Flash Player was needed to display some option.

4.11 LIIKENNE- JA VIESTINTÄMINISTERIÖN JULKAISUT

The ministry of transport and communication database has an English language mode. (www.lvm.fi)

TABLE 9 Liikenne- ja viestintäministeriön julkaisut

LIIKENNE- JA VIESTINTÄMINISTERIÖN	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	good	good	good	browser, default reader
Android browser	do not open				
Dolphin browser	do not open				

Using Safari and Atomic Web Browser the connectivity, readability, scalability and scrolling are good, the documents found are in PDF format, the users can open default readers (see Table 9).

Using the Android default browser and the Dolphin Galaxy Web browser the documents cannot be opened.

Opened a specific title in Internet Explorer, Mozilla Firefox and Google Chrome the free PDFs can be opened online with Adobe Reader, the users do not need to login. Press releases can be browsed online.

4.12 NATIONAL ACADEMIC PRESS EBOOKS

“The database publishes report issues by the National Academy of Science, the National Academy of Engineering, Institute of Medicine, and the National Research Council. There are books by Transportation Research Group and Joseph Henry Press. It offers many titles in electronic Adobe PDF format. Can be downloaded for free or purchase. The National Academies owns all rights to the electronic publications and the copyrights therein displayed on this website.”
(www.nap.edu/about.html) (www.nap.edu)

TABLE 10 National Academic Press eBooks

NAP	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	page own online reader, default reader
Atomic web browser	good	good	good	good	page own online reader, default reader
Android browser	good	good	good	weak	page own online reader
Dolphin browser	good	good	good	weak	page own online reader

Specific titles opened with Safari a valid email address is required to download a free PDF. The features, the connectivity, scalability, readability and scrolling are

good, the PDFs can be opened only in the default reader, or can be reached the books from the table of content (see Table 10).

The NAP offers some licenses to reuse eBooks, for example to buy copy or republish it in print. On the page have been found some title what is not able to download however can be read online. The users can download summaries, reports or podcasts, the press releases and the related titles can be checked easily, and on the page have been found research tools to search on the web or other database. The NAP offers a special collection which can be read with the NAP reader.

Opened a specific title with Atomic Web browser all features are work well.

When opening with Android default reader and with Dolphin web Browser the books can be reach from the table of content in part can be opened with the page online reader. The connectivity, the scalability and the readability is good, the scrolling is weak (flaps). With valid email address the titles can be downloaded but the download do not start.

Opened the Internet Explorer for PDF downloading have been needed the valid email address. The documents can be opened and read online with Adobe Reader. The Google Chrome have been downloaded and opened the PDF automatically, with the Mozilla Firefox the free PDFs can be downloaded and open in Internet Explorer.

4.13 O'REILLY OPEN BOOKS

O'Reilly founded in 1978. O'Reilly spread the knowledge through books, online services, magazines. They publish book on computer technologies for developer, administrator and user. The sites materials can be used under open source or public licences (such as Creative Common Licences). "The site and the site materials are property of O'Reilly and are protected by the laws including copyright and trademark laws. The site may not be copied, reproduced, republished, uploaded, transmitted, modified, indexed, catalogued, mirrored, or distributed in any way without written consent of O'Reilly." (Term of Service)

The books can be bought in different format, for example in print or in eBook. The follows eBook format can be found: APK (Android), ePub, Mobi (Kindle compatible), PDF and DAISY. The eBooks are enhanced with colour images, they are searchable can be copied, printed after purchase. The users can be updated the books with corrections. The apps are without DRM. More than 10,000 books and videos can be founded. Related books, videos and extra errata (list of errors and their corrections) can be found on the homepage. The O'Reilly publishes open copy right form; they are partner with Creative Common and Internet Archive. (oreilly.com)

TABLE 11 O'Reilly open books

O'REILLY	connectivity	scalability	readability	scrolling	reader
Safari	good	medium	weak	weak	page own online reader, Safari Books Online
Atomic web browser	good	medium	weak	weak	page own online reader, Safari Books Online
Android browser	good (adverb)	medium	weak	weak	page own online reader, Safari Books Online
Dolphin browser	weak (adverb)	weak	weak	weak	Safari Books Online

Opened the Safari the books can be readable online with Safari Books Online (O'Reilly's reader) (see Table 11).

O'Reilly books opened with Android default reader using the Safari books Online the connectivity is good, scalability is medium, readability is weak, scrolling is weak. Using this reader an adverb has been displayed on the pages. Part of the books can be downloaded after registration.

Opening with Samsung Galaxy Dolphin Browser free eBooks cannot be opened; Safari Books Online can be used but not working well.

Using Internet Explorer some free eBooks can be found and opened online in MHTML or in PDF format. Internet Explorer cannot be opened PDFs with Safari books online needed Adobe Flash Player. The eBooks format is Print eBook Safari books Online.

Using Mozilla Firefox the user can open free PDFs in Safari Books Online or parts of the books have been reachable from the table of content.

4.14 SOSIAALI- JA TERVEYSMINISTERIÖN JULKAISUT JA TIEDOTTEET

The database name in English is Ministry of Social Affairs and Health, on the page English and Swedish language mode were found. On the homepage the text or the graphic version of appearance can be changed. (www.stm.fi)

TABLE 12 Sosiaali- ja terveysministeriön julkaisut ja tiedotteet

SOSIAALI- JA TERVEYSMINISTERIÖN JULKAISUT	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	good	good	good	browser, default reader
Android browser	PDF cannot be downloaded				
Dolphin browser	PDF cannot be downloaded				

Opened with Safari and Atomic web Browser, specific title connectivity, readability and scalability are good, scrolling is easy, the publications' format is PDF, default reader can be opened (see Table 12).

Using the Android default reader and Samsung Galaxy Dolphin Browser the PDFs cannot be downloaded; some brochure can be found and opened.

The PDFs cannot be opened in Internet Explorer, but can be opened in Google Chrome and in Mozilla Firefox online with Adobe Reader.

4.15 SUOMEN KIELIOPPI

On homepage Finnish grammar can be found and browsed. Zip file cannot be downloaded by Safari or with Atomic Web Browser; however, the page can be browsed. (user.jyu.fi)

Using Android reader and Dolphin web browser the file in zip format can be downloaded or browsed online.

Using Internet Explorer, Google Chrome or Mozilla Firefox the grammar can be browsed and downloaded by the users.

4.16 SUOMEN TILASTOLLINEN VUOSIKIRJA / STATISTICAL YEARBOOK OF FINLAND

The organization was founded in 1865, and it has produced about 200 sets of statistic, over 600 new releases are made each year. This site belongs only to Finnish public authority. Statistical data can be found and opened in more different format, for example Excel files, text files, html, dbf, lotus and xml. (pxweb2.stat.fi.ezproxí.jamk.fi)

TABLE 13 Statistical yearbook of Finland

STATISTICAL YEARBOOK OF FINLAND	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	medium	good	good	good	browser, default reader
Android browser	good	medium	good	good	default reader
Dolphin browser	good	good	good	good	default reader

Opened with Safari, PDF files can be found and the following results can be given: connectivity, scalability, readability and scrolling are good. Opened with Atomic web browser the connectivity has been medium because of its slowness (see Table 13).

Opening with Android Browser the files have been downloaded via download manager, xml files can be opened via Think Free Cal and given the following: connectivity, readability and scrolling are good, scalability is medium. Using the Samsung Galaxy Dolphin browser the features are all good.

Used the Internet Explorer the user need to login with JAMK username and password, the PDFs opened slowly. Used Google Chrome and Mozilla Firefox the user do not need to login. In all three browsers the PDFs can be opened with Adobe Reader.

4.17 TENTTU TKKTUTKII

The database owner is the Aalto University Library (Otaniemi) contains publications of the field of technology. On the page English language mode is available. Electronic publications can be searched in the resource register by publication and by Theses Inssi (password required for the full text thesis). Html and PDF formats can be browsed. The publication can be searched by degree program, department, subject, publication type. Shortcuts can be found for different databases and digital libraries, e.g. Science Direct. (www.otalib.fi)

TABLE 14 TENTTU TKKTUTKI

TENTTU TKKTUTKII	connectivity	scalability	readability	scrolling	reader
Safari	good	weak	good	good	browser, default reader
Atomic web browser	good	medium	good	good	browser, default reader
Android browser	PDF cannot be opened				
Dolphin browser	PDF can be downloaded but not readable				default reader

Opened in Safari, specific title connectivity, readability, scrolling are good, scalability is weak and when the Atomic web browser was used the scalability is medium, default reader can be opened (see Table 14).

Using the Android browser the PDF cannot be opened. Using the Samsung Galaxy dolphin Browser the PDF can be downloaded and opened in the default reader but the letters of the document were not readable.

Using Internet Explorer, Google Chrome and Mozilla Firefox the documents can be browsed and opened in PDF, Adobe Reader is required.

4.18 TERVEYDEN JA HYVINVOINNIN LAITOKSEN JULKAISUT (THL)

Name of the database is National Institute for Health and Welfare. It is the research and development institute under the Finnish Ministry of social Affairs and Health. THL serve border society of scientific community. Research, reports, initiatives, themes, guide, guideline, recommendation, statistical report, publication series have been includes by THL. On the page text, graphical design and letter size can be changed. (www.thl.fi)

TABLE 15 Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)

THL	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	good	good	good	browser, default reader
Android browser	good	good	good	good	default reader
Dolphin browser	good	good	good	good	default reader

Opened with Safari, PDFs can be read online, the features are all good, and the default reader can be opened. PPT format can also be found but cannot be opened with Safari (see Table 15).

Opening with Android default and with dolphin browser the PDFs have been downloaded by downloader manager and opened in the default reader.

Using the browsers as IE, Google Chrome and Mozilla Firefox, the PDFs can be opened with Adobe Reader.

4.19 TERVEYSKIRJASTO

The database is only available in Finnish language; it is a free Finnish medical network service. The Health library is based on Duodecim Publishing Ltd. and its partners. All database content includes copyright and belongs to Duodecim Ltd. The users do not have a right to reproduce the database in any manner or form. The user may not translate, modify and adapt the database. The user has a right to take individual data from the database itself. (www.terveyskirjasto.fi)

TABLE 16 Terveyskirjasto

TERVEYSKIRJASTO	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	medium	good	good	browser, default reader
Android browser	web	web	web	web	browse online
Dolphin browser	web	web	web	web	browse online

Opened with Safari the PDFs the connectivity, scalability, readability and scrolling are good, default reader can be opened. Opened with the Atomic Web Browser the scalability is medium, other features are good (see Table 16).

Opening with Android browser and Dolphin browser the page can be browsed online.

Using browsers, Internet Explorer, Google Chrome and Mozilla Firefox, the PDF can be opened with Adobe Reader.

4.20 VTT:N JULKAISUREKISTERI AND VTT:N VERKKOJULKAISUT

The database is Business from Technology. The English language mode can be changed. VTT publishes high technology research in Finnish and international journals, technical journals, books, conference proceedings, patents and VTT own publications. VTT produces about 2.000 publications annually. (www.vtt.fi)

TABLE 17 VTT:n julkaisurekisteri and VTT:n verkkojulkaisut

VTT:N JULKAISUTR EKISTERI	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	good	browser, default reader
Atomic web browser	good	good	good	good	browser, default reader
Android browser	good	good	good	good	default reader
Dolphin browser	good	good	good	good	default reader

Opened with Safari and with Atomic web browser the connectivity, scalability, readability, scrolling are good, PDFs can be opened in the default reader (see Table 17).

Opening with Android browser and Dolphin browser the PDF were downloaded via a download manager, the documents were opened in the default reader.

Opening with IE, Google Chrome and Mozilla Firefox, the PDF can be opened online with Adobe Reader.

4.21 WSOYPRON VERKKOKIRJAT AND YRITYSONLINE

JAMK have 47 eBooks in this database. Only Finnish language is available. (www.wsoypr.exproxy.jamk.fi)

TABLE 18 WSOYpron verkkokirjat and Yritysonline

WSOYPRON VERKKOKIRJAT	connectivity	scalability	readability	scrolling	reader
Safari	good	good	good	weak	page own online reader , browser, default reader
Atomic web browser	good	good	good	weak	page own online reader , browser, default reader
Android browser	good	medium	good	weak	page own online reader , browser, default reader
Dolphin browser	good	medium	good	weak	page own online reader , browser, default reader

Opened with Safari and Atomic web browser, the documents can be opened online, on the page there is online reading environment, which works well; however, the scrolling is weak (flaps) (see Table 18).

Opening with Android and with Dolphin browser the document opens via the online reading environment, the connectivity is good, scalability is medium, readability is good, and scrolling is weak (flaps).

Opened with Internet Explorer, Mozilla Firefox and Google Chrome the user need to login with JAMK username and password. The document can be read online, PDFs can be opened online with Adobe Reader.

4.22 ANNI PORTAL

The users can connect to the Anni portal via Pocket Cloud using the iPad. More databases can be accessed via remote access. On the page the connectivity is good, scalability is medium, and readability is weak, scrolling is medium; however, the full page view can be set. Adobe Reader was needed to open this application.

The next databases can be used via Anni portal: IT2010 sopimusehdot, Metodologia-sarja, Mikosta mestariksi: baarityön käsikirja, e-kirja, Ornanet-opintomateriaalit Actions, Palkkahallinnon käsikirja, Perl e-kirja (Toolkit),

Projektitoiminnan opintomateriaalit, Prosessijohtamisen käsitteet, SFS 509
 Laadunhallinnan tietopaketti Standards, patents, SFS 510 Sähkökaavioiden
 piirrosmerkit Standards, patents, SFS Laadunhallinta ja ISO 9000-2000 360
 astetta Standards, patents

Online newspapers can also be read with iPad or with Samsung Galaxy Tab, for example Library Press display. Onilne reader can be found on this page. More options are available, pageing with flaps, listening streaming, full screen mode. Many publishers have made applications for iPad in their own design. (library.pressdisplay.com)

5 RESULTS IN OVERALL

Below can be seen the results summarized (see Table 19).

TABLE 19 Conclusion

good work in 21 database	connectivity	%	scalability	%	readability	%	scrolling	%
iPad Safari	18	85	12	57	16	76	12	57
Android default browser	13	61	10	47	11	52	9	42
Atomic web browser	16	76	11	52	14	66	11	52
Samsung Galaxy Dolphin browser	11	52	10	47	11	52	9	42

The operation of mobile devices and their browsers were checked in 21 JAMK databases. The operations (connectivity, scalability, readability, scrolling) can be assessed using three levels (good, medium, weak). The results were summarized and listed in tables, which can be found in the Appendices section. The good operational features were highlighted in this table. According to this table and based on the results the iPad Safari web browser performed the best work.

- The iPad Safari in 85 %, the Android default browser in 61 %, the Atomic web browser in 76 %, the Samsung Galaxy Dolphin browser in 52 % worked good consider the connectivity as feature in the 21 JAMK eBooks databases.
- The iPad Safari in 57 %, Android default browser in 47%, Atomic web browser in 52 %, Samsung Galaxy Dolphin browser in 47 % worked good consider the scalability as feature.
- The iPad Safari in 76%, the Android default browser in 52%, the Atomic web browser in 66 %, the Dolphin browser in 52 % worked good consider the readability as feature.
- The iPad Safari in 57 %, Android default browser in 42 %, Atomic web browser in 52 %, the Dolphin browser in 42 % worked good consider the scrolling as feature.

6 CONCLUSION

EBook has taken a place between printed and digital information. The use of eBooks has spread widely. The technology which is used for the eBooks has made several new features for the users. One of this is the mobile use. eBooks have been approachable in many different ways; for example, convenience, portability, materials (Hernon 2006), not to mention the reading behaviour. In the eBook case important advantages are the clear user interface and design as table of content, typographical style or searchable content, page turning, or scrolling.

In this report eBooks features were studied as for their accessibility (wider means the easiness to the access and the opening eBooks), readability (means the convenience of the reading), scalability (magnification on the page), and scrolling (usability of the scrolling of text) by using eBooks of JAMK databases. These features were tested in different devices, browsers and readers in different databases. It is hard to define the border in these levels. Generally can be said that JAMK databases work well and meet the expectation in these different

views. The technology can be used comfortably for learning objectives. The databases have been made for use in different devices and they work differently in the way in which the publications are concerned. They have a different system for example the loaning (Ellibs). JAMK eBooks publications can be used as learning tools considering the views that have been studied in this thesis.

The devices and their browsers operation has been checked and summarized (see Table 19). These results mean that these browsers' operation in 21 JAMK eBooks databases were checked, and were evaluated. It is important to notice that these results are summarized in view of the features, which means that some databases have been performing at 100% while others did not work well. It should be mentioned that these result have been dependent on many complex factors (e.g. updates) and the author has tried to test only one of these.

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www.ellibs.com. Referenced April 2011

www.finpro.fi. Referenced April 2011

www.freebooks4doctors.com. Referenced March 2011

www.google.com/chrome. Referenced March 2011

www.juridica.fi. Referenced April 2011

www.lvm.fi. Referenced April 2011

www.mozilla.com. Referenced May 2011

www.nap.edu. Referenced April 2011

www.nelliportaali.fi. Referenced March 2011

www.otalib.fi. Referenced April 2011

www.samsung.com. Referenced March 2011

www.stm.fi. Referenced April 2011

www.talentum.com/en/info/legal_note. Referenced April 2011

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www.thl.fi. Referenced April 2011

www.vtt.fi. Referenced April 2011

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www.wyse.com. Referenced April 2011

APPENDICES

Table 20 iPad Safari

Table 21 Android default browser

Table 22 Atomic web browser

Table 23 Samsung Galaxy Dolphin browser

Table 24 Internet Explorer and Google Chrome

Table 25 Mozilla Firefox

Table 26 Devices

TABLE 20 iPad Safari

	iPad Safari					
	readers	connectivity	scalability	readability	scrolling	format
AMS books Online	browser, default reader	good	weak	good	medium	PDF
Dawsonera	page own online reader(need AR), default reader	good	good	good	weak	PDF
Ebrary	page own online reader	medium	medium	weak	good	no info
Ellibs	default reader	good	medium	good	medium	
FreeBooks4Doctors	browser, default reader	good	good	good	good	PDF, ePub, html, mp3
Google Books	page own online reader , Google Books online, default reader	good	medium	weak	medium	PDF, ePub
Immateriaalioikeuden perusteet	do not open					PDF
Jurdiikkaonline	page own online reader	good	good	good	weak	web
Kauppateollisuusministeriön julkaisut ja	do not open					PDF
Laivauskäsikirja (Finpro)	browser, default reader	good	medium	good	good	PDF
Liikenneviestintäministeriön julkaisut ja	browser, default reader	good	good	good	good	PDF
National Academies Press	page online own reader , default reader	good	good	good	good	PDF
O'Reilly Open Books	Safari Books online	good	medium	weak	weak	PDF, APK, ePub, Mobi, DAISY
Sosiaali- ja terveysministeriön julkaisut ja tiedotteet	browser, default reader	good	good	good	good	PDF
Suomen kielioppi	browse online, cannot download the file	web	web	web	web	html
Suomen tilastollinen vuosikirja/Statistical Yearbook of Finland	browser, default reader	good	good	good	good	PDF,xls
TENTTU TKKTUTKII	browser, default reader	good	weak	good	good	PDF, txt, html
Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)	browser, default reader	good	good	good	good	PDF, ppt
Terveyskirjasto	browse online, browser , default reader	good	good	good	good	web, PDF
VTT:n julkaisurekisteli and VTT:N verkkojulkaisut	browser, default reader	good	good	good	good	PDF
WSOYpron verkkokirjat and Yritysonline	page own online reader , browser,default reader	good	good	good	weak	PDF

TABLE 21 Android default browser

	Android default browser					
	readers	connectivity	scalability	readability	scrolling	format
AMS books Online	default reader	weak	good	medium	good	PDF
Dawsonera	do not open					PDF
Ebrary	page own online reader	good	good	weak	good	.cab
Ellibs	do not open (need Adobe Digital Edition)					
FreeBooks4Doctors	default reader	good	good	good	good	PDF, ePub, html, mp3
Google Books	page own online reader , google books Reader, default reader	good	good	good	weak	PDF, ePub
Immateriaalioikeuden perusteet	do not open					
Jurdiikkaonline	page own online reader	good	good	good	weak	web
Kauppa- ja teollisuusministeriön julkaisut	do not open					PDF
Laivauskäsikirja (Finpro)	online browse	good	good	good	good	PDF
Liikenne- ja viestintäministeriön julkaisut	do not open					PDF
National Academies Press	page online own reader , PDF can not be downloaded	good	good	good	weak	PDF
O'Reilly Open Books	page own online reader, Safari Books Online	good	medium	weak	weak	PDF, APK, ePub, Mobi, DAISY
Sosiaali- ja terveysministeriön julkaisut ja tiedotteet	do not open, some brochure opened					PDF
Suomen kielioppi	browse online or download zip format	web	web	web	web	html, zip
Suomen tilastollinen vuosikirja/Statistical Yearbook of Finland	default reader	good	medium	good	good	PDF, xls
TenTTU TKKTUTKII	do not open					
Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)	default reader	good	good	good	good	PDF, ppt
Terveyskirjasto	browse online	web	web	web	web	html
VTT:n julkaisurekisteli and VTT:N verkkojulkaisut	default reader	good	good	good	good	PDF
WSOYpron verkkokirjat and Yritysonline (WSOY)	page own online reader , default reader	good	medium	good	weak	PDF

TABLE 22 Atomic web browser

	Atomic Web Browser (free version) on iPad					
	readers	connectivity	scalability	readability	scrolling	format
AMS books Online	browser	good	medium	good	good	PDF
Dawsonera	page own online reader	good	medium	medium	weak	PDF
Ebrary	Ebrary Reader	good	medium	weak	medium	no info
Ellibs	do not open					
FreeBooks4Doctors	browser, default reader	good	good	good	good	PDF, ePub, html, mp3
Google Books	page own online reader, Google Books Online, default reader	good	image view medium, text view good	image view weak, text view good	image view medium, text view weak	PDF, ePub
Immateriaalioikeuden perusteet	forbidden you need flash player					
Jurdiikkaonline	page own online reader	good	good	good	weak	web
Kauppa- teollisuusministeriön julkaisut	ja	do not open PDF				
Laivauskäsikirja (Finpro)	browser, default reader	medium	medium	medium	medium	PDF
Liikenne- viestintäministeriön julkaisut	ja browser, default reader	good	good	good	good	PDF
National Academies Press	page own online reader, default	good	good	good	good	PDF
O'Reilly Open Books	Safari Books online	good	medium	weak	weak	PDF, APK, ePub, Mobi, DAISY
Sosiaali- terveysministeriön julkaisut ja tiedotteet	ja browser and default	good	good	good	good	PDF
Suomen kielioppi	browse online, cannot download the document	web	web	web	web	html
Suomen tilastollinen vuosikirja/Statistical Yearbook of Finland	browser, default reader	medium	good	good	good	PDF, xls
TENTTU TKKTUTKII	browser, default reader	good	medium	good	good	PDF, html
Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)	browser, default reader	good	good	good	good	PDF, ppt
Terveyskirjasto	browse online, browser, default reader	good	medium	good	good	PDF, web
VTT:n julkaisurekisteli and VTT:N verkkojulkaisut	browser, default reader	good	good	good	good	PDF
WSOYpron verkkokirjat and Yritysonline (WSOY)	page own online reader, browser, default reader	good	good	good	weak	PDF

TABLE 23 Samsung Galaxy Dolphin Browser

	Samsung Galaxy Tab Dolphin Browser					
	reader	connectivity	scalability	readability	scrolling	format
AMS books Online	default reader	medium	good	medium	good	PDF
Dawsonera	do not open the Dawsonera online reader					PDF
Ebrary	page own online reader	good	medium	weak	good	
Ellibs	do not open					
FreeBooks4Doctors	default reader, do not open ePub	good	good	good	good	PDF, ePub, html, mp3
Google Books	page own online reader, default reader	good	good	good	weak	PDF, ePub
Imateriaalioikeuden perusteet	do not open					
Jurdiikkaonline	page own online reader	good	good	good	weak	web
Kauppa- teollisuusministeriön julkaisut	ja	do not open PDF				
Laivauskäsikirja (Finpro)	browser, default reader	good	good	good	good	PDF
Liikenne- viestintäministeriön julkaisut	ja	do not open the file				PDF
National Academies Press	page own online reader, PDF cannot be downloaded	good	good	good	weak	PDF
O'Reilly Open Books	Safari Books Online	weak	weak	weak	weak	PDF, APK, ePub, Mobi, DAISY
Sosiaali- terveysministeriön julkaisut ja tiedotteet	ja	do not open				PDF
Suomen kielioppi	browse online or download zip file	web	web	web	web	html, zip
Suomen tilastollinen vuosikirja/Statistical Yearbook of Finland	default reader	good	good	good	good	PDF, xls
TENTTU TKKTUTKII	default reader	PDF can be downloaded but letters are not readable				PDF, html
Terveystieteiden ja hyvinvoinnin laitoksen julkaisut (THL)	default reader	good	good	good	good	PDF, ppt
Terveyskirjasto	browse online	web	web	web	web	html
VTT:n julkaisurekisteri and VTT:n verkkojulkaisut	default reader	good	good	good	good	PDF
WSOYpron verkkokirjat and Yritysonline (WSOY)	page own online reader, default reader	good	medium	good	weak	PDF

TABLE 24 Internet Explorer and Google Chrome

	Internet Explorer				Google Chrome			
	reader	account	account type	format	reader	account	account type	format
AMS books Online	browser with AR	no		PDF	browser	no		PDF
Dawsonera	do not open	yes	Jamk username and password	PDF	page own online reader need AR	yes	Jamk username and password	PDF
Ebrary	page own online reader	yes	Jamk username and password	web	no			web
Ellibs	only with Adobe Digital Edition	yes	library card	web	only with Adobe Digital Edition	yes	library card	web
FreeBooks4Doctors	browser with AR	no		PDF, ePub, html, mp3	browser	no		PDF, ePub, html, mp3
Google Books	page own online reader, Google Books reader	no		PDF, ePub	page own online reader, Google Books Reader	no		PDF, ePub
immateriaalioikeuden perusteet	browse online	no		web	forbidden to open			
Jurdiikkaonline	page own online reader	yes	jamk username and password	web	page own online reader	yes	jamk username and password	web
Kauppateollisuusministeriön julkaisut	do not open PDF	no		PDF	browser	no		PDF
Laivauskäsikirja (Finpro)	do not open PDF	no		PDF	browser	no		PDF
Liikenneviestintäministeriön julkaisut	browser with AR	no		PDF	browser	no		PDF
National Academies Press	browser with AR	yes	valid emailaddresses to download PDF	PDF	default reader	yes	valid email address to download PDF	PDF
O'Reilly Open Books	do not open PDF	no		PDF, APK, ePub, Mobi, DAISY	page own online reader, Safari Books online	no		PDF, APK, ePub, Mobi, DAISY
Sosiaali-terveysministeriön julkaisut ja tiedotteet	do not open PDF	no		PDF	browser	no		PDF
Suomen kielioppi	browse online or download zip file	no		html, zip	browse online or download zip file	no		html, zip
Suomen tilastollinen vuosikirja/Statistical Yearbook of Finland	browser with AR	yes	Jamk username and password	PDF	browser	no		PDF
TenTTU TKKTUTKII	browser with AR	no	for thesis needed	PDF, html, txt	browser	no	for thesis needed	PDF, html, txt
Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)	browser with AR	no		PDF, ppt	browser	no		PDF, ppt
Terveyskirjasto	browse online, browser with AR	no		PDF, web	browse online, browser	no		PDF, web
VTT:n julkaisurekisteli and verkkojulkaisut VTT:N	browse online, browser with AR	no		PDF	browse online, browser	no		PDF
WSOYpron verkkokirjat and Yritysonline (WSOY)	page own online reader, browser with AR	yes	jamk username and password	PDF, web	page own online reader, browser	yes	jamk username and password	PDF, web

TABLE 25 Mozilla Firefox

	Mozilla Firefox			
	reader	account	account type	format
AMS books Online	browser with AR	no		PDF
Dawsonera	page own online reader	yes	JAMK username and password	PDF
Ebrary	page own online reader	no		web
Ellibs	default reader	yes	library card	web
FreeBooks4Doctors	browser, need Adobe Reader	no		PDF, ePub, mp3, web
Google Books	page own online reader, Google books reader	no		PDF, ePub
immateriaalioikeuden perusteet	browse online	no		web
Jurdiikkaonline	page own online reader	no		web
Kauppa- ja teollisuusministeriön julkaisut	browser with AR	no		PDF
Laivauskäsikirja (Finpro)	browser with AR	no		PDF
Liikenne- ja viestintäministeriön julkaisut	browser with AR	no		PDF
National Academies Press	browser with AR	no	valid email address to download	PDF
O'Reilly Open Books	page own online reader, safari books online	no		PDF, APK, ePub, Moby, DAISY
Sosiaali- ja terveysministeriön julkaisut ja tiedotteet	browser with AR	no		PDF
Suomen kielioppi	browse online	no		web
Suomen tilastollinen vuosikirja / Statistical Yearbook of Finland	browser with AR	no		PDF
TENTTU TKKTUTKII	browser with AR	no		PDF
Terveyden ja hyvinvoinnin laitoksen julkaisut (THL)	browser with AR	no		PDF
Terveyskirjasto	browse online, browser with AR	no		PDF
VTT:n julkaisurekisteli and VTT:N verkkojulkaisut	browse online, browser with AR	no		PDF
WSOYpron verkkokirjat and Yritysonline	page own online reader, browser with AR	no		web, PDF

TABLE 26 Devices

device	iPad (original)	Kindle 2	Samsung Galaxy Tab	BeBook Mini
developer	Apple	Amazon	Samsung	BeBook
intro year	2010	2009	2010	2009
size	24.3 x 19 x 1.3	20.3 x 13.5 x 0.91	19 x 12 x 1.1	15.1 x 10.5 x 1
screen	9.7 inches, LED	16 level grey scale electronic paper	7 inches LCD	5 inches electronic paper
weight	680 g	290 g	380 g	160 g
operating system	IOS 4	Linux 2.6	Android 2.2	Linux OS
touch screen	multi touch screen	no	multi touch zoom	no
wi-fi	yes 802.11	yes 802.11	yes 802.11	no
text-to- speech		yes		yes
storage	16, 32, 64 GB	2 GB	16, 32 GB	512 MB
battery life	10 hour	1 month	4000 mAh	700 page turns
web browser	Safari, Atomic Web browser	limited	Android browser, Samsung Galaxy Dolphin Browser	no