DAISY consortium

It's Time to Use the Modern Digital Publishing Format for Your Organization's Documents

Why You Can Produce Better Publications for Everyone with Born Accessible EPUB 3

A DAISY Consortium White Paper Publication www.daisy.org

benetech — TECHNOLOGY SERVING HUMANITY

Amnet — Energizing Relationships

Table of Contents

Executive Summary

There is a growing appreciation that laws and social commitment require documents, books and corporate publications that everyone can access, including persons with disabilities. The publishing industry has embraced EPUB 3 as their format of choice. [1] Now it is time for other corporations and organizations to do the same for their publications, unlocking benefits for themselves and their audiences. EPUB 3 provides the best digital reading experience for everybody on the devices we use today, for both online and offline reading. EPUB 3 can be produced using your existing document processes. EPUB 3 is better, less expensive, and faster.

This white paper is licensed under a creative commons license and we would be delighted to assist in the development and promotion of other versions, outside the United States, in other jurisdictions.

---

[1] The following companies are amongst those who are using EPUB 3: Penguin Random House, McGraw Hill, Hachette Livre, Pearson, Macmillan, Google, Apple Inc., Rakuten Kobo as well as many others.

The Business Case for Born Accessible EPUB 3

Time and Cost

Authoring EPUB 3 files is both a quicker and cheaper route for your organization to accessible content. By taking advantage of the built-in mechanisms within your authoring tools, your process will benefit from improved efficiency. Once the workflow is in place it becomes part of the building blocks of your digital content supply chain, allowing all readers to access content at the same time as everybody else – there is no remediation delay or cost in supplying accessible materials. Your content is Born Accessible with tools and solutions available to you (such as Ace by DAISY) to help you speed up the process and give you confidence.

Most companies that tag documents, to make them usable by persons with print disabilities, spend enormous amounts of time and money to do so. Many lack the internal resources to make this conversion internally and must incur the expense of a third-party vendor specializing in remediation.[2]

There is a Legal Requirement for your Business to Produce Accessible Documents

EPUB 3 is the most direct route to compliance with the requirements to produce accessible documents. EPUB 3 meets the legal requirements for accessibility which are explored in more detail in the section on Legal Requirements further on in this document. By embracing Born Accessible EPUB 3 for document output, organizations can gain comfort in the knowledge that they have complied with the law and provided one of the most accessible documents for their readers.

---

[2] The service bureaus who remediate PDFs charge between $1 and $10 per page, depending on its complexity and number of PDF files. These can take at least a few days to deliver and if subsequent edits are required then the whole process has to begin again. In the common case of legal proceedings, for example, a 20-page PDF is produced a dozen times a day from an MS Word template. Besides the delay, that agency will pay over $300,000 per year to remediate PDFs. They do that instead of automatically producing a Born Accessible EPUB 3 file, all because they just don't know

Increasing the Reach and Read-Through of Your Publications

The EPUB 3 format is the most popular and recommended format for the production of accessible publications, opening up a greater potential market for content and enabling access to a far greater number of readers. Today, people are reading on all kinds of devices and viewing some document formats on a smartphone can be torture. EPUB 3 improves the experience for everyone, and we explore this theme further on in the Reading Experience section of this whitepaper.

EPUB 3 is Flat Out a Better Reading Experience

A large number of publishers, reading app vendors, developers, and technology companies are supporting EPUB 3 which is gaining much demand and popularity. It offers:

- Better Readability: The reflowable nature of EPUB 3 adapts itself to different displays and sizes of various devices, including mobile phones and tablets.

- Flexibility and Adaptability: As people age, they are requiring a larger print size to comfortably read. Every reflowable EPUB 3 document can be, with a single click to increase the font size, available in large-print.

- Better Navigation: EPUB 3 offers excellent opportunities for high levels of navigation via the table of contents and direct page access.

- Better Engagement through Interactivity: EPUB 3 allows for the option of a richer reading experience with a wide variety of interactive features.

- EPUB 3 takes care of situational accessibility needs – allowing reading and hearing simultaneously.

EPUB 3 is Designed to be a Great Digital Reading Experience for Everybody

By its very nature EPUB 3 is designed to be a great reading experience for everybody, including persons with print disabilities. The digital publishing industry, exemplified by products and organizations such as Apple Books, Google Play Books, VitalSource, RedShelf, Macmillan Learning, John Wiley & Sons Inc. and Kogan Page are using EPUB 3 to enable wonderfully rich digital reading experiences for all their readers. Publishers producing digital books and journals have embraced EPUB 3 and many are delivering Born Accessible EPUB 3 files to their distribution outlets.

Based on technologies developed for the Open Web Platform that we use every day (such as HTML and CSS), EPUB 3 is designed to provide a rich digital reading experience on any size screen. When using a desktop display, laptop, tablet or a smart phone, an EPUB 3 file will adapt to any screen size, enabling the reader to personalize the experience by adjusting preferences for the font size, colors and much more.

> *Ever read a PDF on your smartphone? How did that go for you? PDF is designed to look identical everywhere which is why it works so well for print and other use-cases where you need to ensure perfect presentation. This is the exact opposite of EPUB 3, designed for the changing digital preferences of your audience.*

Readers with and without disabilities love the customizations that a modern well-designed EPUB 3 publication supports, by default. For example, by selecting a dyslexic-friendly font and reducing the line length, persons with dyslexia can read more easily. Increasing the font size and adjusting colors will help the low vision reader. The text available in the correct reading order means that persons who are blind can have Text-To-Speech (TTS) engines read content aloud to them. These are just a few examples of how well structured and correctly enabled files can significantly alter the reading experience, making it ultimately more accessible for a larger group of readers.

There are a wide range of EPUB 3 reading apps available and the reading app evaluation available at epubtest.org helps the reader make the correct choice for them giving them the best access to their downloaded documents. There is also a quick roundup of these results on Inclusive Publishing to help beginners get started.

Modern Word Processors Support EPUB 3 Export

Organizations just starting out with EPUB 3 will find that all modern word processors support EPUB export. Google Docs, Apple Pages and LibreOffice all have EPUB support built right in. And the WordToEPUB tool enables quick and straightforward document conversion from a Word document to EPUB 3.

The opportunities for making rich and highly complex content accessible are developing at a rapid pace with EPUB 3 and exciting tools and solutions are emerging. Clear standardized methodologies are being devised (e.g. for informative graphics, math and chemistry, music notations) which are making it easier to produce these types of Born Accessible EPUB 3 files. There is plenty of guidance to make this process easy. Content producers can rely on resources, tools and solutions to ensure that they comply with the EPUB 1.0 Accessibility specification.

Comparison of EPUB 3 and PDF

Many corporate documents are currently produced in PDF. These four tables explain the additional benefits gained by

offering EPUB 3 for your content which is read digitally.

Table 1 Comparison of Features of PDF & EPUB 3 Required by a Blind Reader

PDF	EPUB 3
Reading order needs to be tagged	No post-production tagging needed
Running heads and footers are read out at the bottom of each page, often mid-sentence	This is not an issue with EPUB. The screen reader experience is not interrupted in this way
Text is plain text, with no associated semantic markup, unless tagged	Semantics of text is provided, which helps comprehension when using TTS or braille
New user-interface keystrokes need to be learned to maximize the accessibility potential	User interface-reading keystrokes are the same as for reading web documents
Selecting and copying text with a screen reader is unreliable	Select and copy text works well for students using screen readers
Screen reader support varies across platforms	Good screen reader support across major operating systems
PDF offers bookmarks and the ability to navigate by headings	Option to skip repetitive content and navigate by landmarks, headings or other structures

Table 2 Comparison of Features of PDF & EPUB 3 Required by a Reader with Low Vision

PDF	EPUB 3
Fonts are chosen by the designer	Fonts can be personalized to the needs/preferences of the reader
Spacing between letters, words & lines and the size of the margins are fixed by the designer	Spacing & margins can be personalized to the needs/preferences of the reader
Very limited ability to customize colors	EPUBs and ebooks apps are built with reading in mind, so provide different display modes & some allow customization of many options
Some readers have a read aloud feature	Many reading apps have a read aloud feature, with visual highlighting
PDF will allow you to return to the page that was last seen, if you return to that particular PDF	Many reading systems/apps remember where you left off reading and return the reader to that location

Table 3 Comparison of Features of PDF & EPUB 3 Required by a Reader with Motor Impairment

PDF	EPUB 3
Above a certain paper size and/or magnification levels, the page needs to be panned back and forth to read each line of text. Adobe Reader has a reflow function, but this frequently works poorly in PDFs that people receive or download	"Scrolling behavior" is an option to the reader's preference

Table 4 Comparison of General Accessibility Features of PDF & EPUB 3

PDF	EPUB 3
Wide range of reading apps, including many free ones	Wide range of reading apps, including many free ones
"Go to page" is supported, but only for page breaks. Going to the tenth page in a PDF is supported, but this is not necessarily page 10 in the publication.	"Go to page" is fully supported and is tied to the number printed in the publication.
Bookmarks are sometimes included or can be inferred to mimic a table of contents	EPUB is built with ebooks in mind, so there is proper support for a table of contents in the standard and in reading apps
Technical ability to embed multi-media files, but is not much used, and has limited options for accessibility	Works well and supports many more options for accessibility with multi-media files
Links to PDF will normally launch in a default viewer	Links to an EPUB can be configured to open in an EPUB Reader (Windows requires installation of an EPUB Reader)
PDF does not have a document management system	Most EPUB reading apps include a library/bookshelf function for managing documents

The Legal Requirement for Accessible Documents and Publications

In the United States and other countries, the legal requirement to make documents accessible is well known. The Americans with Disabilities Act and Section 508 of the Rehabilitation Act are the two pieces of legislation that deal with this.

Americans with Disabilities Act

Titles II and III of the ADA, applicable to state and local governments (Title II), and places of public accommodation (Title III), require covered entities to engage in "equally effective communications." While that may sometimes require separate formats for people with print disabilities (e.g. large print or hard-copy braille), in most cases, equally effective communication will be accomplished by the use of EPUB 3. Implied in "equally effective," is timeliness. Having to wait even a single day to get an alternative format is always an inconvenience and most often injurious. The use of EPUB 3 helps the subject entity to meet its obligations under the ADA.

Section 508 of the Rehabilitation Act

While, strictly speaking, Section 508 applies only to the U.S. Government, many states and local governments also "follow 508". As was the intention of the statute, the reach of 508 extends well into the mainstream commercial market and affects that which is purchased in the United States from ICT vendors. Microsoft, for example, does not sell an accessible version of Word for the U.S. Federal government and a separate inaccessible version which they sell to the rest of the world. Microsoft has one version of Word which they sell world-wide, and they make that version as accessible as is practicable. With the 2017 Revised Section 508 Standards, accessibility is now explicitly required in all public facing documents and most internal-only communications. EPUB 3 is the most direct solution for those documents and electronic communications.

The World Wide Web Consortium (W3C) has created extensive and exhaustive Web Content Accessibility Guidelines (WCAG 2.0 and 2.1) to help organizations create accessible digital content for people with varying degrees and types of disability. These guidelines have made their way into accessibility regulations and form the basis for accessibility laws

across the United States (US) and the European Union (EU). EPUB 3 satisfies these requirements and, indeed, WCAG Level AA forms part of the EPUB 1.0 Accessibility specification.

Companies, Government Agencies, and Organizations Embracing EPUB 3

IBM was one of the first large companies to adopt EPUB 3 for all their publications. They participated in the development of the EPUB 3 standard, and management understood how it would help them provide better documentation to their customers and save them enormous amounts of time and money. Gone were the days of endless PDF remediation. As one high ranking IBM employee stated, "EPUB is marching to replace PDF."

Now that WordToEPUB is freely available and that GoogleDocs, Apple Pages, and Adobe InDesign support EPUB 3, we are encouraging the widespread adoption of Born Accessible EPUB 3 alongside or as a replacement for PDF.

Four Target groups are:

1. Government agencies, where publications are delivered to the public and used internally.

2. Companies for public-facing documents and for internal use, including product documentation.

3. Organizations and non-profits, where digital communications are a primary source of information; it would be wonderful to see essential health information be provided in Born Accessible EPUB 3!

4. Education, where professor-produced EPUB 3 content would immediately increase the university's accessibility ratings.

Conclusions

It is time for companies and organizations to consider adopting modern digital publishing standards for their document output. Reading documents digitally is the norm today, and it is taking place on smartphones, tablets, and on computers. It is true that PDF workflows may be well-established within organizations, delivering *printed* content with success. Wonderful for printing and ubiquitous, PDF can only be made accessible to persons with disabilities after time-consuming, expensive remediation has been completed. Companies may decide to keep the delivery of PDF in place and elect to provide a Born Accessible EPUB 3 file alongside, which would meet their legal obligations for accessibility and give their customers a choice in how they read.

Many companies have a communications and document production division, but smaller organizations may leave this up to individuals. However, no matter how small or large your organization is, the strategic and business decision regarding digital communications must be made. The publishing industry along with the tech sector made the pivotal decision years ago to deliver the EPUB format to all their distribution outlets. Now, companies and institutions need to make another strategic decision; do you want to adapt to the changing user preferences of reading on different devices, and learn to embrace the free and open, modern, digital publishing format, Born Accessible EPUB 3?

References

Inclusive Publishing

WordToEPUB Tool

Ace by DAISY, Accessibility Checker

DAISY Ace SMART

EPUB 3.2 Specification documents

EPUB 1.0 Accessibility Specification

EPUB Accessibility Techniques

DAISY Webinar Series: Recommended sessions include:

- Publishers Faceoff to Prove the Accessibility of their Titles
- Create EPUB Publications with a Simple Tool Anyone Can Use
- WordToEPUB Extended Tutorial

EPUB 3: Marching to Replace PDF as the Standard for Accessible Published Materials

Acknowledgements

We would like to thank the following people who contributed to the development of this document:

- Anthony Adams, Access2Online

- Bruce Bailey

- Crystal Carson, Access2Online

- Daniel Goldstein

- Sarah Hilderley, The DAISY Consortium, Editor

- Michael Johnson, Benetech, a full member of The DAISY Consortium

- George Kerscher, The DAISY Consortium, Lead Author

- Richard Orme, The DAISY Consortium

- John Purcell, Amnet Systems, a DAISY Consortium Inclusive Publishing Partner and active contributor of this white paper project

- Peter Shikli, Access2Online

- Avneesh Singh, The DAISY Consortium

Creative Commons License

This document is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

This license allows re-users to distribute, remix, adapt, and build upon the material in any medium or format for noncommercial purposes only, and only so long as attribution is given to the creator. If you remix, adapt, or build upon the material, you must license the modified material under identical terms.

CC BY-NC-SA includes the following elements:

- Credit must be given to the creator

- Only non-commercial uses of the work are permitted

- Adaptations must be shared under the same terms

Full details of this license can be accessed at the following website:

https://creativecommons.org/licenses/by-nc-sa/4.0/

The original version of this publication can be found at:

https://daisy.org/MDPWhitepaper