Responsive EPUB: Really?

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Introduction

- Scott Prentice, President of Leximation, Inc.

- Specializing in FrameMaker plugin development as well as structured FrameMaker conversions, consulting, and development. FrameMaker user/developer since 1991.

- Developed DITA-FMx, a FrameMaker plugin for efficient DITA authoring and publishing.

- Consulting for custom Help systems, creative/functional web applications, and EPUB solutions.

What is EPUB?

- Ebook format usable on almost every device and platform

- Requires a "reader" application or dedicated device

- XHTML, XML, CSS, and media files in a "zip" archive

- Defines the content, navigation, and formatting

Brief history of EPUB

EPUB specification is maintained by IDPF

Initial EPUB format approved in 2007, superseding Open eBook standard

EPUB 2.0.1 approved 2010

EPUB 3 approved October 2011

EPUB 3.0.1 approved June 2014 (includes FXL and Indexes)

EPUB 3 extensions ongoing

ePUB

EPUB 3 features

- HTML 5 and CSS 3 (yes, media queries too)

- JavaScript (and libraries)

- Video, audio, read-aloud (SMIL)

- Text orientation

- Unicode support

- MathML, SVG, ...

- EPUB really is a "website in a box"!

Why responsive?

- EPUB is theoretically "responsive" by default

- Reader apps allow user-customization of display

- Simple content may not need special handling

- Many publishing tools "break" the default responsiveness

- So many screens and orientations

- It really depends on your content

Many "screens"

- Desktop / laptop - any size or "orientation"

- Tablet - various sizes and orientations

- Phone - various sizes and orientations

- Watch - hmm

- Then there's Kindle and ...

Effort? It depends...

Simple content - minimal

Tables or images - minimal or more

Interactive - considerable

Implementation options

Default - one EPUB for all readers (in theory)

Fixed layout (FXL) - one EPUB for all readers (maybe)

Reader-specific - EPUBs customized for each reader (yikes)

Responsive - one EPUB for all readers

EPUB Help - experimental...

Responsive techniques

Media queries

— CSS changes the layout and formatting based on different reader conditions

JavaScript

— Adjust the HTML structure

— Modifies the layout and formatting through events and interactions with the user

Media queries

- Images - move or resize
  - Shrink on small screens, float right on wide
- Tables - change properties
  - Scroll on small screens, full width on others
- Reformat lists
- Hide content on smaller screens

Viewport dimensions

CSS properties applied based on viewport dimensions

```
@media (min-width: 400px) and
       (min-height: 600px)
{
  /* if at least 400px wide and 600px tall */
}
```

Orientation

CSS properties applied based on device orientation

```
@media (orientation: landscape)
{
   /* if horizontal */
}


@media (orientation: portrait)
{
   /* if vertical */
}
```

Kindle versions

CSS properties applied based on device type

```css
@media (amzn-mobi)
{
  /* suppress complex tables */
}


@media (amzn-kf8)
{
  /* show complex tables */
}
```

Monochrome or color

CSS properties applied based on display features

```css
@media (monochrome)
{
   /* for monochrome devices */
}


@media (color)
{
   /* for color devices */
}
```

JavaScript

- Perform structural changes to HTML
- Handle click events and gestures
- Take advantage of existing libraries like jQuery
- Make topics vertically scrolling (EPUB Help)

Creating EPUBs

- Techcomm publishing tools
  - FrameMaker or RoboHelp
  - Flare or DocToHelp
  - DITA-OT + DITA for Publishers
- Hand coding
- Both!

Publishing tool limitations

- True EPUB 3 support is minimal

- Only support "basic" layout

- Responsive or interactive features must be hand-coded

- Most tools create invalid EPUBs

So, how do you do it?

- After export from tool, cleanup typically needed

- Use Oxygen XML Editor
  - Strip @style attributes
  - Add new @class attributes
  - Other cleanup based on tool
  - Update CSS to render properly
  - Add/update metadata

Why Oxygen?

- Open EPUB to make edits

- Changes are saved back to EPUB

- Validate (epubcheck) then easily locate and fix errors

- Perform global (regex-based) search/replace

- Easily update bad or missing metadata

EPUB tools and utilities

- EPUB 3 editors
  - Oxygen XML editor
  - BlueGriffon EPUB Edition
- epubcheck - validator
- kindlegen - converts EPUB 3 to KF8
- Calibre - multi-purpose tool

Useful EPUB 3 readers

Desktop
- AZARDI (Mac, Linux, Windows)
- Chrome + Readium (Mac, Linux, Windows)
- Apple iBooks (Mac)

Mobile
- Apple iBooks (iOS)
- Gitden Reader (Android, iOS)

DEMO!

Live demo of ..

- Sample "responsive" EPUB (tables and images)

- Fixed layout EPUB

- "EPUB Help"

Resources

- EPUB 3.0.1 specification - idpf.org/epub/301

- CSS 3 Module Info - www.css3.info/modules

- W3C Media Queries - http://www.w3.org/TR/css3-mediaqueries

- Responsive Ebook Design: A Primer – https://medium.com/@sandersk/responsive-ebook-design-a-primer-8bba01328219

- EPUB Resources – www.epubtest.com/resources.php

- Follow #eprdctn on Twitter

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