

Introduction to EPUB 3

Bill McCoy

Executive Director, IDPF

November 30, 2013



International Digital Publishing Forum

International Trade and Standards Organization
for the Digital Publishing Industry

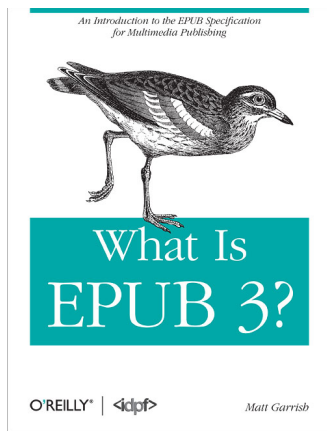


Background: standards-development forum, formed in 1999. 380 member organizations from 45 countries and all parts of the value chain
- 50 members from India (2nd to USA)

Mission: foster global adoption of an open, accessible digital publishing ecosystem



ePUB



<EPUB 3 in 5 bullets>

- *Open, industry-driven* digital publication format standard
- Builds on *Web Standards* (XML, HTML5, SVG, MathML ...)
- For e-books, digital magazines, digital comics, e-textbooks, ...
- Includes *rich layout, rich media* and *interactivity* features
- Has extensive *accessibility* support built-in

HTML



- HTML 5
- CSS 2.1
- CSS 3 Selectors
- CSS 3 Media Queries
- CSS 3 Text
- CSS 3 Backgrounds and Borders
- CSS 3 Colors
- CSS 3 2D Transformations
- CSS 3 3D Transformations
- CSS 3 Transitions
- CSS 3 Animations
- CSS 3 Multi-Columns
- CSS Namespaces
- SVG 1.1
- WAI-ARIA 1.0
- MathML 2.0
- ECMAScript 5
- 2D Context
- WebGL
- Web Storage
- Indexed Database
- Web Workers
- Web Sockets Protocol/API
- Geolocation
- Server-Sent Events
- Element Traversal
- DOM Level 3 Events
- Media Fragments
- XMLHttpRequest
- Selectors API
- CSSOM View Module
- Cross-Origin Resource Sharing
- File API
- RDFa
- Microdata
- WOFF
- HTTP 1.1 part 1 to part 7
- TLS 1.2 (updated)
- IRI (updated)
- ...

EPUB makes the Web Platform work for portable documents



- Structured
- Navigable
- Packaged
- Metadata
- Reliable

EPUB 3 Key Enhancements

- Styling & layout improvements for reflow content
- Fixed-layout content
- Interactivity and rich media
- Accessibility support
- Global Language support

THE SWANS.

"Ho! pretty swans,
Do you know, in our Zoo'
The swans of old England
Are just like you?"

"Don't tell me!"
Said a cross old bird;
"I know better,
The thing's quite absurd.

Their figures, I'm sure,
Are not worth a glance:
If you want to see style,
You *must* come to France."

With a scornful whisk
The swan turned tail,
Spread its wings to the breeze
And was off full-sail.

"Ho! pretty swan,
Do you know, in our Zoo'
The swans are not half
So conceited as you?"



THE SWANS.

"Ho! pretty swans,
Do you know, in our Zoo'
The swans of old England
Are just like you?"


"Don't tell me!"
Said a cross old bird;
"I know better,
The thing's quite absurd.
Their figures, I'm sure,

Are not worth a glance:
If you want to see style,
You *must* come to France."

With a scornful whisk
The swan turned tail,
Spread its wings to the breeze
And was off full-sail.

"Ho! pretty swan,
Do you know, in our Zoo'
The swans are not half
So conceited as you?"



A photograph of a light blue soup served in a silver bowl on a matching tray. Two champagne flutes filled with a light blue liquid are visible in the background. The scene is set against a dark, textured background.

Cette Soupe Angevine est une dame de la Loire, le dernier fleuve sauvage de France, mon berceau. Laissez-vous tenter par cette étonnante soupe apéritive, facile à réaliser, pratique à servir et idéale pour une réception réussie !

Soupe Angevine

POUR 8 À 10 FLÔTES À CHAMPAGNE

12 cl de sucre de canne • 12 cl de jus de citron jaune • 5 cl de liqueur de curaçao bleu • 15 cl de Cointreau • 1 bouteille de crémant de Loire • zestes de citron d'environ 1,5 cm de diamètre

Directement dans un saladier, versez le sucre de canne, le jus de citron jaune, la liqueur de curaçao bleu et le Cointreau. Remuez à l'aide d'une louche, puis complétez de crémant de Loire.

Servez au fur et à mesure les convives dans des flûtes à champagne.

Exprimez les zestes du citron au-dessus des verres pour accentuer les saveurs d'agrumes. Pour cela, pressez un zeste entre le pouce et l'index, l'écorce tournée vers le verre : les essences du zeste vont ainsi s'échapper !

Japanese writing mode
(written using a top-to-bottom inline direction with a
leftward (right-to-left) block flow direction)

Ruby
(typically used in East
Asian documents to
indicate pronunciation
or to provide a short
annotation)

portrait
of the
author

ebook
title

草枕



tate-cyu-yoko
(western
languages mixed
in Japanese)

夏目漱石

Author

夏目漱石 (Natsume Soseki) 慶
應 3 年 1 月 13 日 - 大正 15 年 12 月 9 日
は、日本の小説家、評論家、英文学
者。本名、夏目 金之助。『吾輩は
猫である』『こゝろ』などの作品
で広く知られる。江戸の牛込馬場下
横町出身。俳号は愚陀仏。

line-break
(line break never
occurs just before the
Japanese period - ".")

山路を登りながら、こう考えた。
智に働けば角が立つ。情に棹せば流される。意地を通
せば窮屈だ。とかくに人の世は住みにくい。
住みにくさが多ると、安い所へ引き越したくなる。どこ
へ越して住みにくいと悟った時、詩が生れて、画が出来
る。
人の世を作ったものは神でもなければ鬼でもない。やはり
向う三軒両隣りにちらちらするただの人である。ただの人
が作った人の世が住みにくいからとて、越す国はあるまい。
あれば人でなしの国へ行くばかりだ。人でなしの国は人の
世よりもなお住みにくかろう。
越す事のならぬ世が住みにくければ、住みにくい所をどれ
ほどか、寛容で、東の間の命を、東の間でも住みよくせねば
ならぬ。ここに詩人という天職が出来て、ここに画家という
使命が降る。あらゆる芸術の士は人の世を長閑にし、人の心
を豊かにするが故に尊とい。

住みにくき世から、住みにくき煩いを引き抜いて、あり
がたい世界をまのあたりに写すのが詩である、画である。あ
るは音楽と彫刻である。こまかに云えば写さないでもよい。
ただまのあたりに見れば、そこに詩も生き、歌も湧く。着想
を紙に落さぬとも、瑣細の音は胸裏に起る。丹青は画架に
向って塗抹せんでも五彩の絢爛は自から心眼に映る。ただ
おのが住む世を、かく観じ得て、意匠方針のカメラに

*An Introduction to the EPUB Specification
for Multimedia Publishing*



What Is EPUB 3?

O'REILLY® | <idpf>

Matt Garrish

<http://shop.oreilly.com/product/0636920022442.do>

<.epub File Structure>

- .ZIP-compatible archive containing:

```
mimetype
META-INF/
  container.xml
  [manifest.xml]
  [metadata.xml]
  [signatures.xml]
  [encryption.xml]
  [rights.xml]
content/
  Great_Expectations.opf
  cover.html
  chapters/
    chapter01.html
    chapter02.html
    ...
assets/
  style.css
  image1.jpg
  ...
```

<EPUB Samples>

- “Vetted” samples demonstrating every EPUB 3 feature
- Open source, content licensed under Creative Commons ShareAlike terms
- Project home:
<http://code.google.com/p/epub-samples/>

<Current Spec Development Activities>

- ISO-level Technical Specification
- EPUB 3.0.1 Update
- Indexes
- Advanced “Hybrid” Layouts (AHL)
- Dictionaries
- Annotations
- Widgets
- Education-publishing profile (EDUPUB)

Advanced “Hybrid” Layouts

<upcoming>

- Multiple Renditions
 - Multiple root files (package documents)
- Rendition selection
- Rendition mapping
 - Panel-by-panel navigation and hotspots

<Dictionaries, Indexes, Annotations >

<ongoing>

Dictionaries

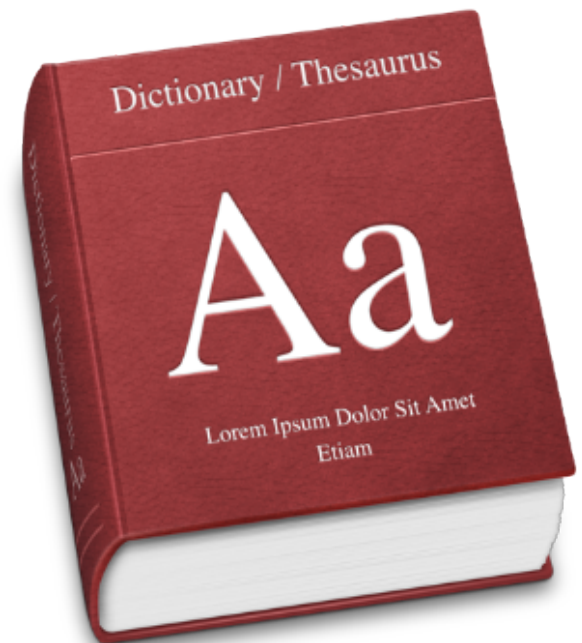
- Typical “system-level” dictionary not sufficient:
- Children and levels of reading/understanding
- Language learning
- Specialized fields (law, medicine, etc)

Indexes

- Indexes as advanced navigation feature

Annotations

- <http://www.openannotation.org/>
- W3C Open Annotation Community Group



Dear Jennifer,

Kindle is a revolutionary reading device, and we're

Aa Aa Aa Aa Aa Aa Aa Aa

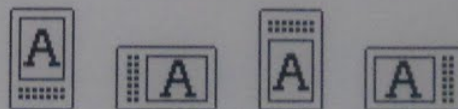
Typeface regular condensed sans serif

Line Spacing small medium large

Words per Line fewest fewer default

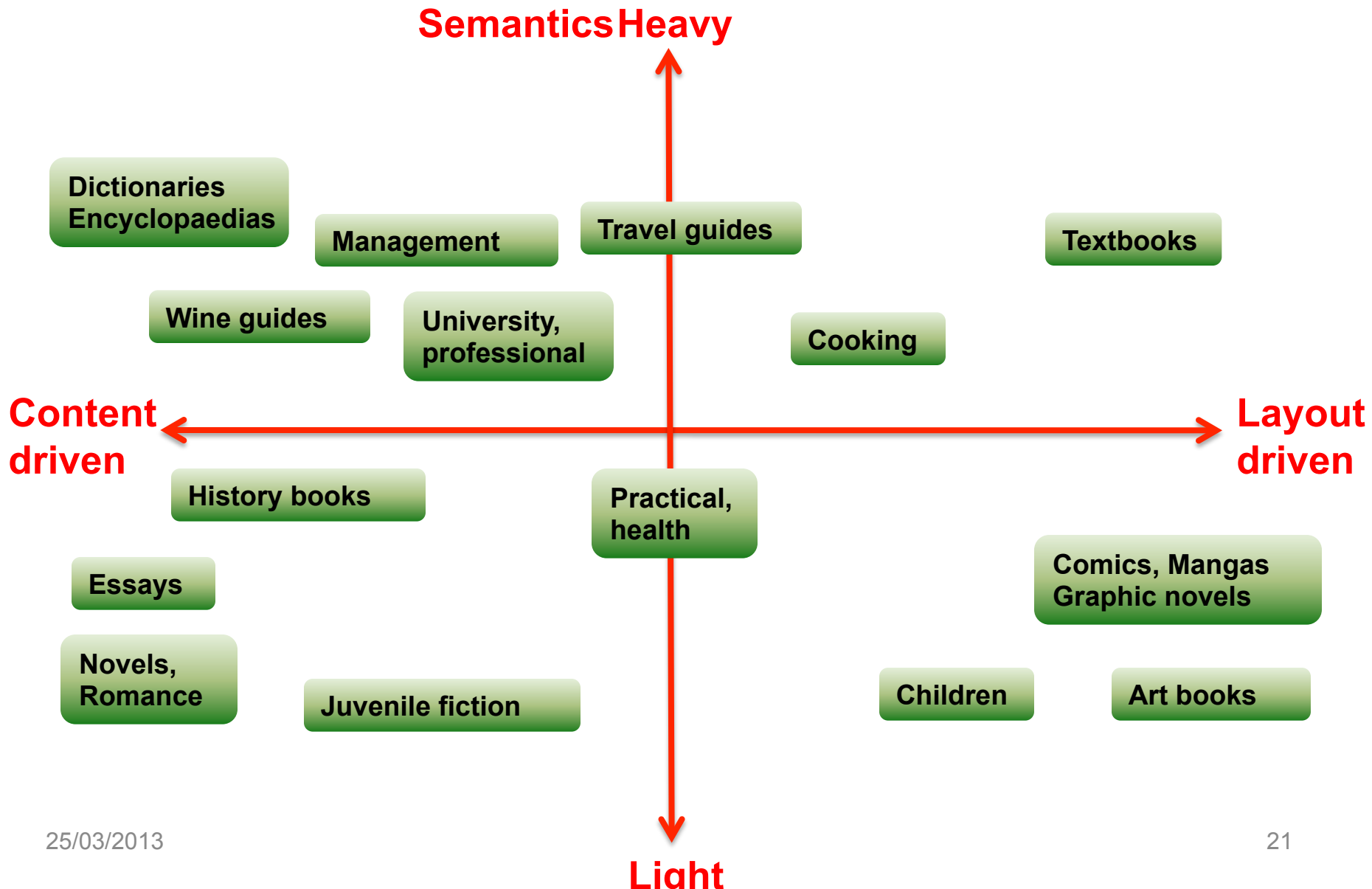
Text-to-Speech turn on

Screen Rotation

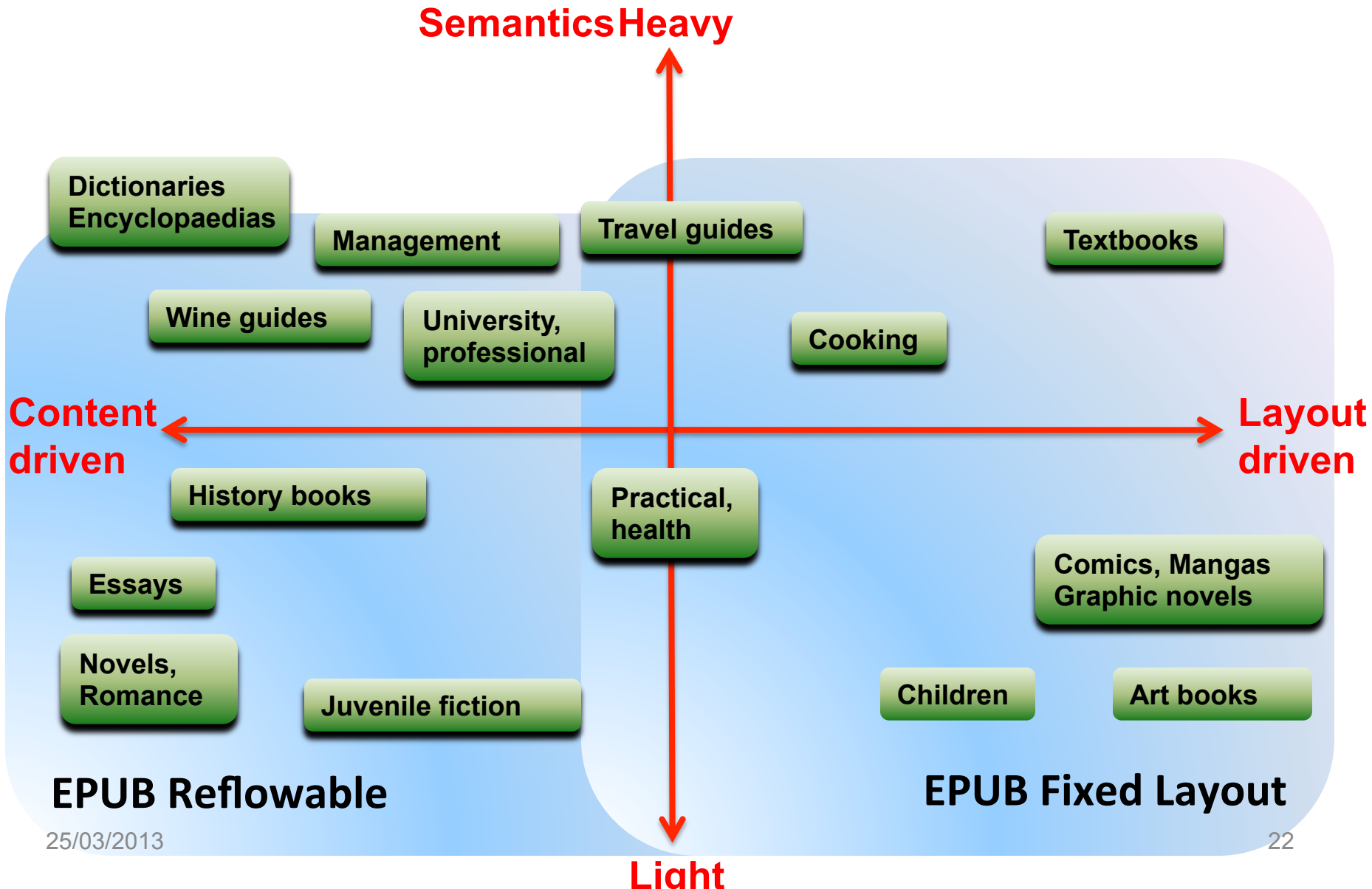




Books by page make-up strategies



Ebooks conversion strategies



Reflowable or Fixed Layout?

Reflowable

Pros :

- ⇒ automatic conversion from XML
- ⇒ accessible
- ⇒ delivery to all platform
- ⇒ immersive

Cons :

- ⇒ limited in layout possibilities

Fixed Layout

Pros :

- ⇒ aesthetic fidelity
- ⇒ only solution for layout driven books
- ⇒ low production cost

Cons :

- ⇒ semantic lost
- ⇒ less accessible
- ⇒ less platforms

From Structured Content to EPUB Reflowable

XML

```
<chap>
<n>Il</n>
<tit>Exception
française ? </tit>
<p>Existe-t-il au monde
d'autres radios<apnote
idref="N1"/> semblables
à ... ? </p>
<note id="N1">Le rôle
de la radio</note>
```

HTML5/EPUB3

```
<div class="chapn">Il</div>
<div
class="chaptit">Exception
française ?</div>
<div class="chapp">Existe-t-
il au monde d'autres
radios<span
epub:type="note" id="
N1">Le rôle de la radio</
note>
semblables à ... ? </div>
```

CSS

```
.chapn {
font-size:x-large;
text-align:center;
...
}

.chaptit {
font-size:x-large;
text-align:center;
...
}

.chapp {
font-size:small
text-align:justify;
...
}
```


From Complex Page Layouts to EPUB Fixed Layout

Layout driven

InDesign or PDF

- 2D page frame
- Export absolute positioning

HTML5/CSS

- Viewport
- CSS fixed positioning

SVG

- Viewbox
- 2D vector graphic objects

Images

- JPEG or PNG file

Should I worry about EPUB 3 if I'm only doing novels?

- Perhaps not yet...
 - EPUB 2 is sufficient for text-centric works in Latin-based languages
 - Reading System support of EPUB 3 not yet ubiquitous
 - EPUB 2 will get you to Kindle, other platforms more reliably for now
 - EPUB 3 Reading Systems must also handle EPUB 2
- But soon EPUB 3 will be preferred
 - Aligned with modern browsers and Web Standards
 - Typography & styling features for reflow content
 - Content & reading system conformance more tightly specified
 - TTS support, Media Overlays, and other accessibility features
 - MathML
 - Semantic markup
 - RTL support (manga)

EPUB 2 Reading Systems

Accept EPUB 3 files

With some compatibility effort in EPUB 3 production

- Add NCX navigation file
 - meta element to identify cover
 - Preserve the <guide> element
 - Do not use SVG or Bitmap directly in the <spine> element
 - Use fallback mechanisms
-
- But don't expect new EPUB 3 functions to work

EPUB 3 Global Adoption

- Association of American Publishers (AAP) kicked off EPUB 3 Implementation Project in September
 - Goal to be distributing EPUB 3 files to all channels within Q1 2014
- Japan has holistically adopted EPUB 3
 - Baseline profile for both fixed & reflowable content
 - EPUB being adopted for both trade eBooks and e-Manga
 - Amazon's market entry in Japan based on EPUB 3 ingestion
- Ditto for Taiwan, Korea
- Education industry rapidly converging on EPUB 3 for e-textbooks

Readium.org

- Independent open source consortium formed February 2013
 - Developing commercial-grade open source components to advance digital publishing for EPUB and the Open Web Platform
 - 30 organization members making substantial contributions
- Projects
 - **Readium SDK** (EPUB 3 support for native apps) – first adopting products by EOY
 - **ReadiumJS** (library for browser-based EPUB 3 viewing)
 - **Readium LCP** (lightweight vendor-independent DRM)
 - **Preflight & Accessibility Checker** (in planning phase)



Readium

Thank you.

bmccoy@idpf.org
@billmccoy



International Digital Publishing Forum