

# EDUPUB Overview and Initiative Status

**Digital Publishing and Learning Technology  
Convergence Fair**

KINTEX

November 8, 2014

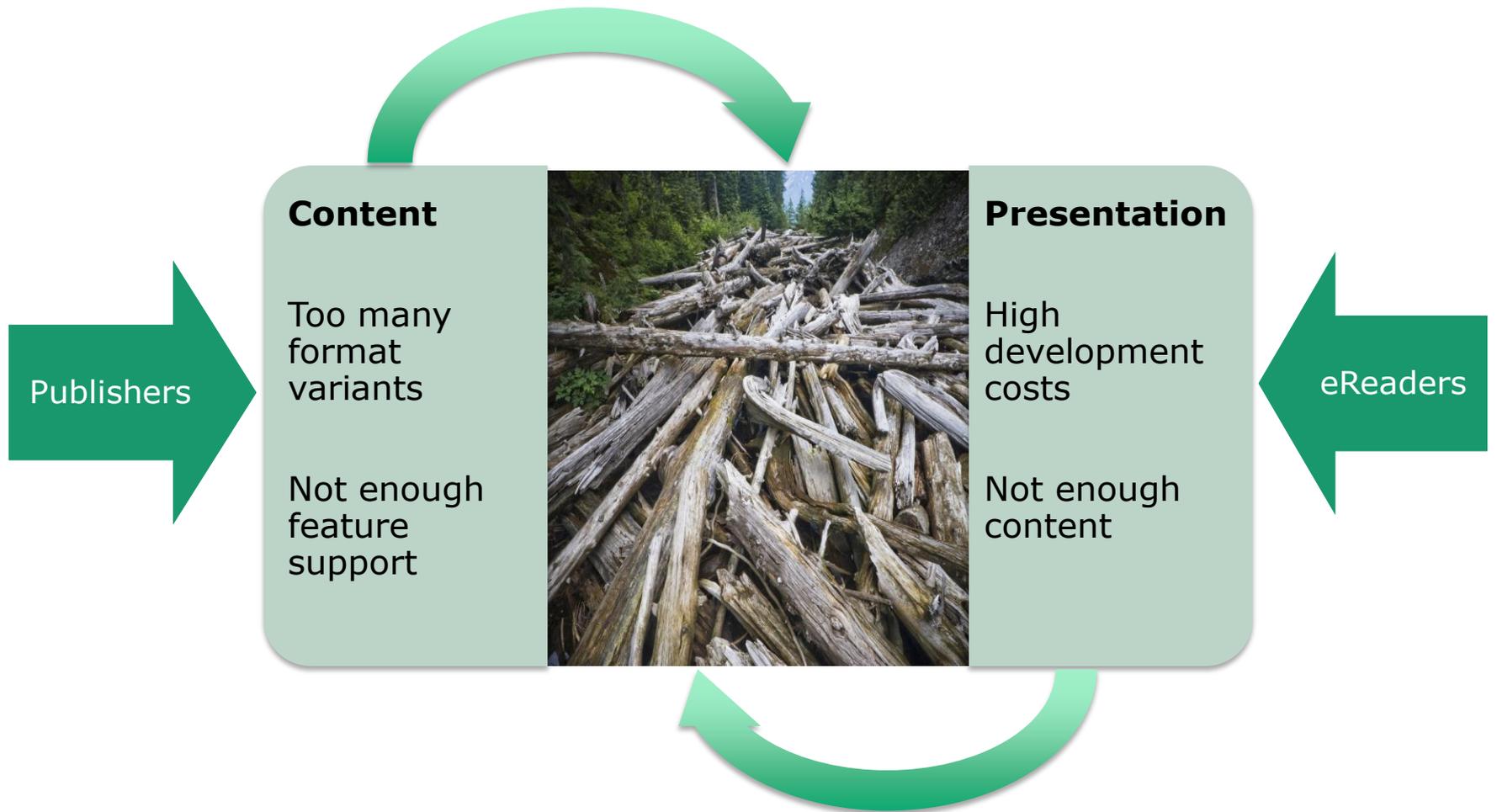


# What is EDUPUB?

The Emerging Standard for  
Education Publishing



# The Problem



# Benefits of next-generation learning content

## The Publisher

- Achieve **economies-of-scale** in:
  - design
  - development
  - distribution
- Greater **sourcing flexibility**
- Enable **consistency of presentation** and **functionality**
- Ensure **highest quality** across **multiple platforms** and devices
- **Avoid overhead** from needless output variants
- Drive **product/service innovation**



# Benefits of next-generation learning content

## The Platform Provider

- Develop features and support based on a **known, consistent content format**
- **Increased volume** of educational content from publishers
- High quality products **expand markets** for eBooks and other learning content



# Benefits of next-generation learning content

## The Educator

- Content is easily:
  - **integrated with LMS** and other services:
    - assessments, outcomes
    - teacher-student, peer exchanges (annotations)
    - analytics
  - **trackable** through metadata-driven services to enable adaptive learning, efficacy reporting
  - **repurposed** by teachers
- Proprietary vendor solutions are avoided:
  - Content is **easily retrieved** from multiple sources
  - Content can be **seamlessly deployed** on multiple devices and platforms
- **Affordable**



# Benefits of next-generation learning content

## The Learner

- **Responsive** to the Learners:
  - learning style
  - personal preferences
  - ability/disability
- **Richer** learning experiences (rich media, interactivity)
- Adaptability and accessibility improving **learning outcomes**
- Faster subject mastery and increased retention
- **Flexible:** use in both classroom/off-campus and online/offline environments, on mobile devices and PCs
- **Affordable**



# What is the EDUPUB Alliance?

- A global community for focused coordination of ongoing work among multiple standards organizations and their stakeholders (currently IDPF, IMS Global, W3C)
- Not YASO (Yet Another Standards Organization) creating EMFF (Even More File Formats)
- A lightweight superstructure to help ensure that existing widely-adopted standards mesh and meet requirements of next-generation learning content
- **EDUPUB = Open Web Standards (inc. next-gen Portable Documents) + Educational Connectivity**



# The **EDUPUB 2014** deliverable

*a comprehensive model for the interchange and deployment of educational content*

*based on the Open Web Platform*

*expressed as an integrated set of specifications including EPUB 3 (IDPF), LTI, QTI, Caliper (IMS) and other emerging standards*



# EPUB-centric Lens on EDUPUB

## **Equip EPUB 3 with everything needed for EDU content:**

- Integrate existing IMS standards (QTI, LTI, Caliper)
- Deliver general EPUB capabilities needed for EDU (annotations, widget API, discrete entities)
- Develop EDU-semantic-enhanced profile of EPUB 3
- Facilitate rapid implementation (Readium open source)

## **EPUB adopters in general benefit:**

- **EDU content pushes the envelope of required capabilities**
  - Interactivity
  - Connectivity
  - Complex information design,
  - A11Y requirements



# Global Utility is Essential

**IDPF motto: *a11y and i18n = non-negotiable***

Different regions/stakeholders have different needs:

- Learning paradigms/styles
- Layout and Styling requirements
  - Reflowable vs Fixed Layout
  - Horizontal vs Vertical Layout
- Broad LMS integration supported (but not required)

***EDUPUB must embrace and support these variances***



# Modus Operandi

## Workshops

- Boston, September 2013
- Salt Lake City, February 2014
- Oslo, June 2014
- Tokyo, September 2014
- *Phoenix 26-27, February 2015*

## IDPF WG Meetings

- Subgroup of IDPF EPUB 3 WG
  - Weekly, 90 minutes

## Additional Collaborations

- W3C DPIG
- BISG EDUPUB Work Group



# EDUPUB 2014: progress report

# EDUPUB Alliance 2014 Deliverables: cheat sheet

| Content  | Context            |
|--|--------------------|
| Structured profile of HTML5<br>(Reflowable & Fixed Layout) | Assessments        |
| Package-level metadata<br>(edu, a11y)                      | Outcomes services  |
| EDU structural semantics vocabulary                        | Analytics services |
| Discrete Entities (Markup & Packaging)                     |                    |
| Widgets (Markup, API & Packaging)                          |                    |
| Annotations (W3C OA adaption)                              |                    |
| Multiple Renditions (Dependency)                           |                    |

## Implementation

Open Source PoC based on Radium JS



# Public Drafts Available Now:

- EPUB 3 EDUPUB Profile public draft 2 released Sep 8  
<http://idpf.org/epub/profiles/edu/spec/>
  - Community feedback is encouraged
  - Spec will continue to develop through iterations
- “Satellite Specs” referenced in EDUPUB Profile:
  - Open Annotation in EPUB <http://idpf.org/epub/oa/>
  - EPUB Discrete Objects <http://idpf.org/epub/do/>
  - EPUB Widgets Packaging and Integration
    - <http://idpf.org/epub/widgets/>
    - Widgets markup spec draft targeted for Autumn 2014
- And from IMS: Using Caliper Analytics, QTI and LTI with EPUB 3: EDUPUB Best Practices: <http://www.imsglobal.org/edupub/index.html>



# 1. Structured Profile of EPUB3/HTML5

1. Content Model for sectioning & headings
  - *predictability & repurposability*
2. Extended Structural Semantics Vocabulary
  - *richness and accessibility*

```
<section epub:type="glossary">
<h1>Glossary of Key Terms and Acronyms</h1>
<dl>
<dt><dfn>ADA</dfn></dt>
<dd>Americans with Disabilities Act.</dd>
<dt><dfn>Affirm</dfn></dt>
<dd>When a higher court upholds the opinion of a lower court in an appeal.</dd>
...
```

<http://idpf.org/epub/profiles/edu/spec/>



# Reflowable and Fixed Layout

Currently, EDUPUB primarily defines semantics and content model for reflowable EPUB...

... and requires supply of 2<sup>nd</sup> accessible rendition if primary Fixed-Layout rendition is image-based or does not have logical reading order.

*"Guidelines for the production of Fixed-Layout Publications will be considered in a future version of the profile."*

*a11y and i18n = non-negotiable*

<http://idpf.org/epub/profiles/edu/spec/>



## 2. Package-level Metadata

- EDUPUB Content uniquely identifiable as such in package file
- schema.org educational & accessibility metadata

```
<dc:type>edupub</dc:type>  
<meta property="schema:typicalAgeRange">18+ </meta  
<meta property="schema:accessibilityFeature">alternativeText</meta>  
<meta property="schema:accessibilityFeature">printPageNumbers</meta>  
<meta property="schema:accessibilityFeature">readingOrder</meta>  
<meta property="schema:accessibilityFeature">structuralNavigation</meta>  
<meta property="schema:accessibilityFeature">tableOfContents</meta>
```

[Schema.org Metadata Integration Guide for EPUB 3](#)

<http://idpf.org/epub/profiles/edu/spec/>



# 3. Widgets

*Problems: connectivity, security, pagination, accessibility...*

1. Markup and API specification
2. Packaging and Interchange specification

<http://www.idpf.org/epub/widgets/>

<https://github.com/IDPF/widgets>



## 4. Discrete Entities

*waterfall vs cyclic view of content: repurposing*

EPUB Distributable Objects defines...

- How to identify autonomous entities within a publication
- How to associate rights with those entities
- How to transport the entities from origin to destination

<http://www.idpf.org/epub/do/>



## 5. Annotations

personal | student ↔ □ student | student ↔ □ teacher | parent ↔ □ teacher...

- Core missing piece: format for interchange
- EPUB Adaption of W3C Open Annotation  
(<http://www.openannotation.org/spec/core/>)
- The adaption also allows bundling of collections of annotations
- ... and specifying target audience (teacher, age range, etc)
- Required support in EDUPUB-compliant RS

<http://www.idpf.org/epub/oa/>



# Notes on EDUPUB Accessibility support

## omnipresent

Well-tempered, semantically rich markup/structure (HTML5 profile)

Logical Reading Order

ARIA

Package-level schema.org a11y metadata

## optionally/conditionally present

Media Overlays (synced hybrid text/audio, full or partial)

TTS enhancements (PLS, SSML)

Multiple Renditions (forthcoming)

<http://www.idpf.org/accessibility/guidelines/>



# EDUPUB Alliance: Roadmap ahead

## EDUPUB 2014

Finalize current specification deliverables

Work on OSS implementations (Radium, other)

## EDUPUB 2015...

*Gather input from community on EDUPUB 2014 feature set*

*Identify critical next steps & who needs to be involved*

*EDUPUB Implementation Workshop: Phoenix Feb 26-27 2015*



# Thank You

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<http://idpf.org/ongoing>

