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# The EDUPUB Ecosystem

Real Workflows for Building and  
Distributing EDUPUB Content

**PEARSON**

Integrated Workflow

**inkling**

Authoring and Assembly

**BARNES & NOBLE**

Distribution

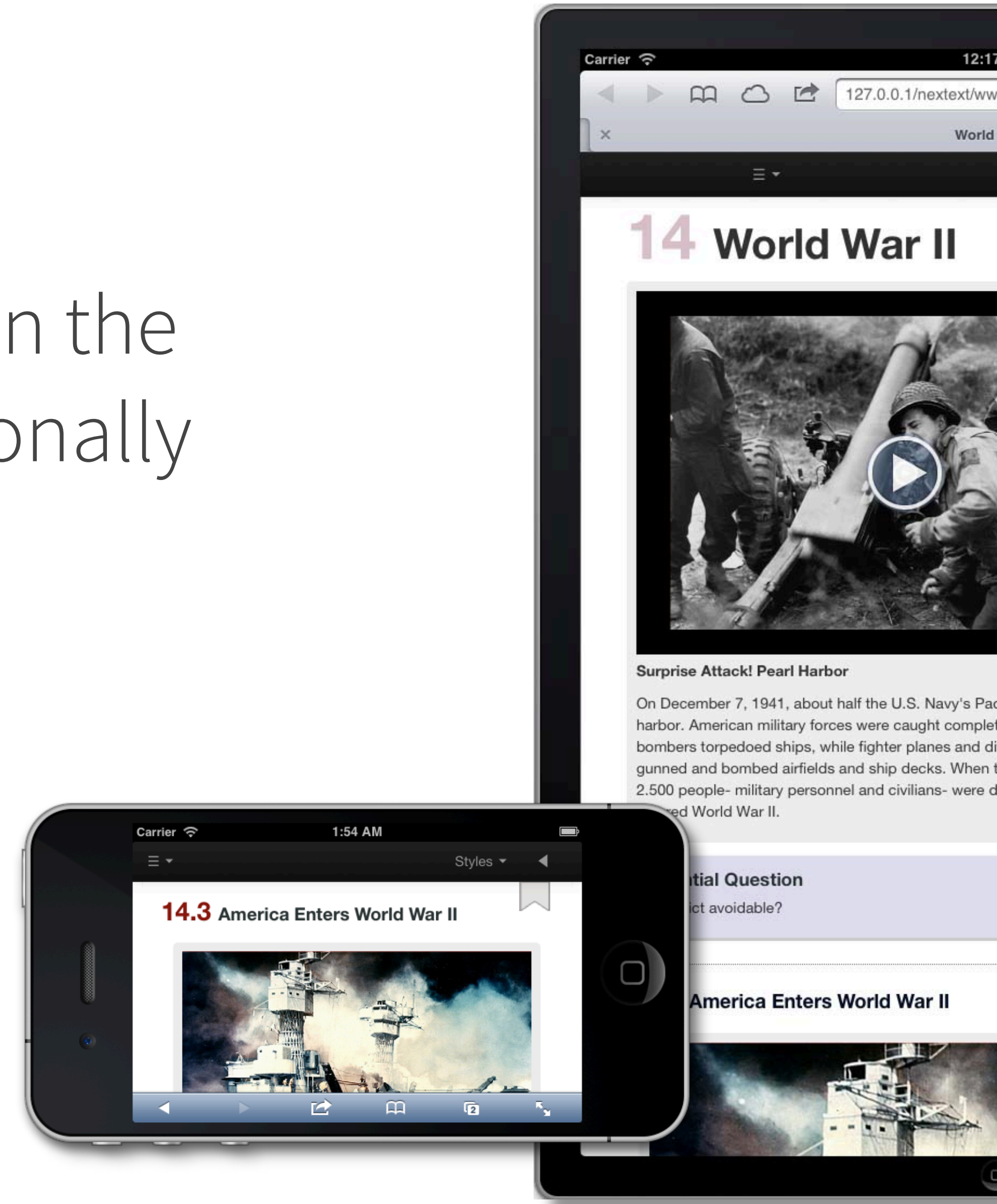
# Paul Belfanti

Pearson Education North America  
Director of Content Architecture

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# Why EDUPUB?

The goal of EDUPUB is to foster innovation in the creation of educationally relevant, instructionally effective content.



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# But first, a word about standards



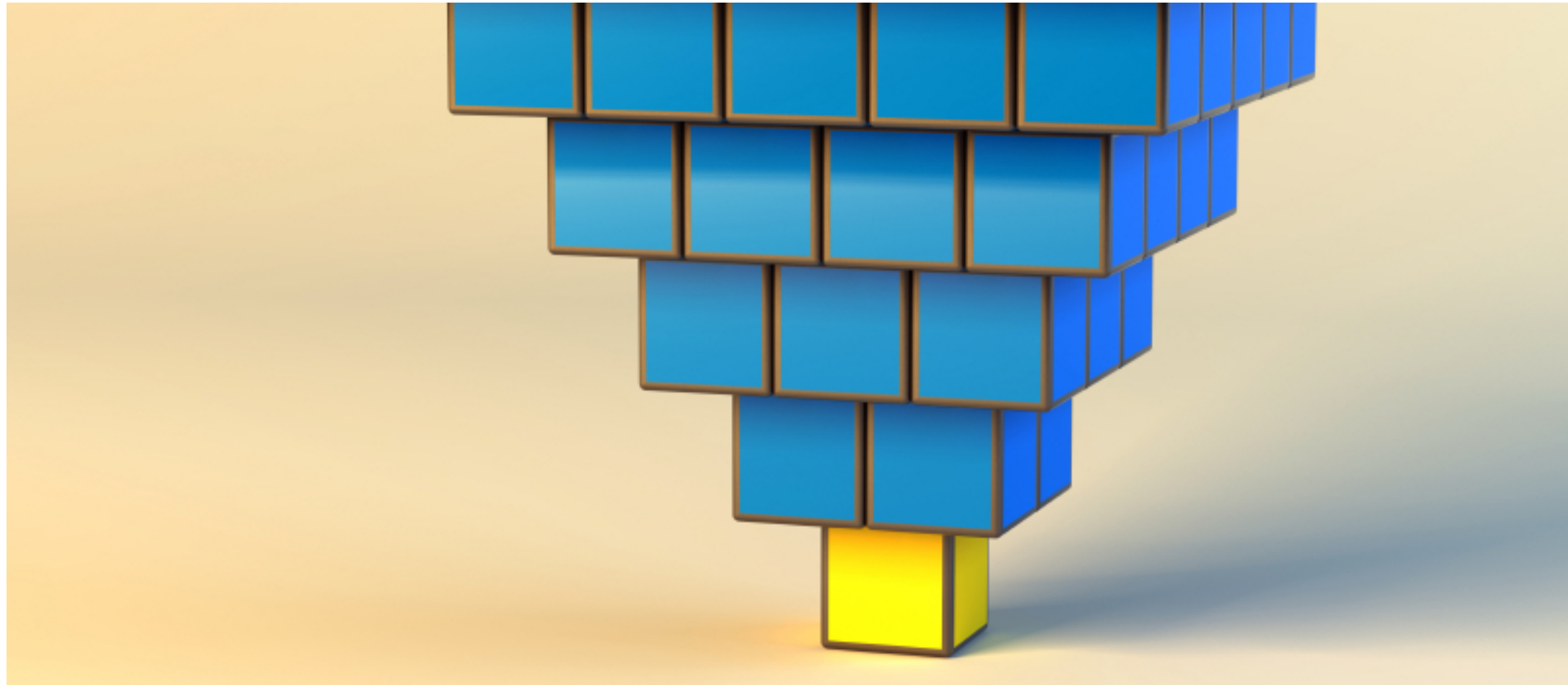


# Standards: What they are **not**



# Standards: What they **are**

A foundation for creativity and innovation



# Why Standards-Based Product Creation?

- Lead transformation to digital
- Enable global business strategies
- Enable media-independent publishing
- Support efficacy, analysis and reporting
- Enable a “build-it-once” approach for systems and tools
- Drive efficiency and lower costs



# Guiding Principles

- Lead or be fast followers on key industry/Open Source standards adoptions
- Collaborate with internal & external industry experts to ensure currency of content standards
- Emphasize **compact** standards and structures over intrusive policies
- Support & extend emerging standards where relevant
- Continue to evolve and/or create new standards as needed

# Digital Output Ready Content Markup

In 2012 Pearson developed a XHTML5/EPUB 3 schema as the standard for semantically tagging educationally relevant narrative text (and structures) in a single content stream for delivery to multiple products, formats, platforms and devices.



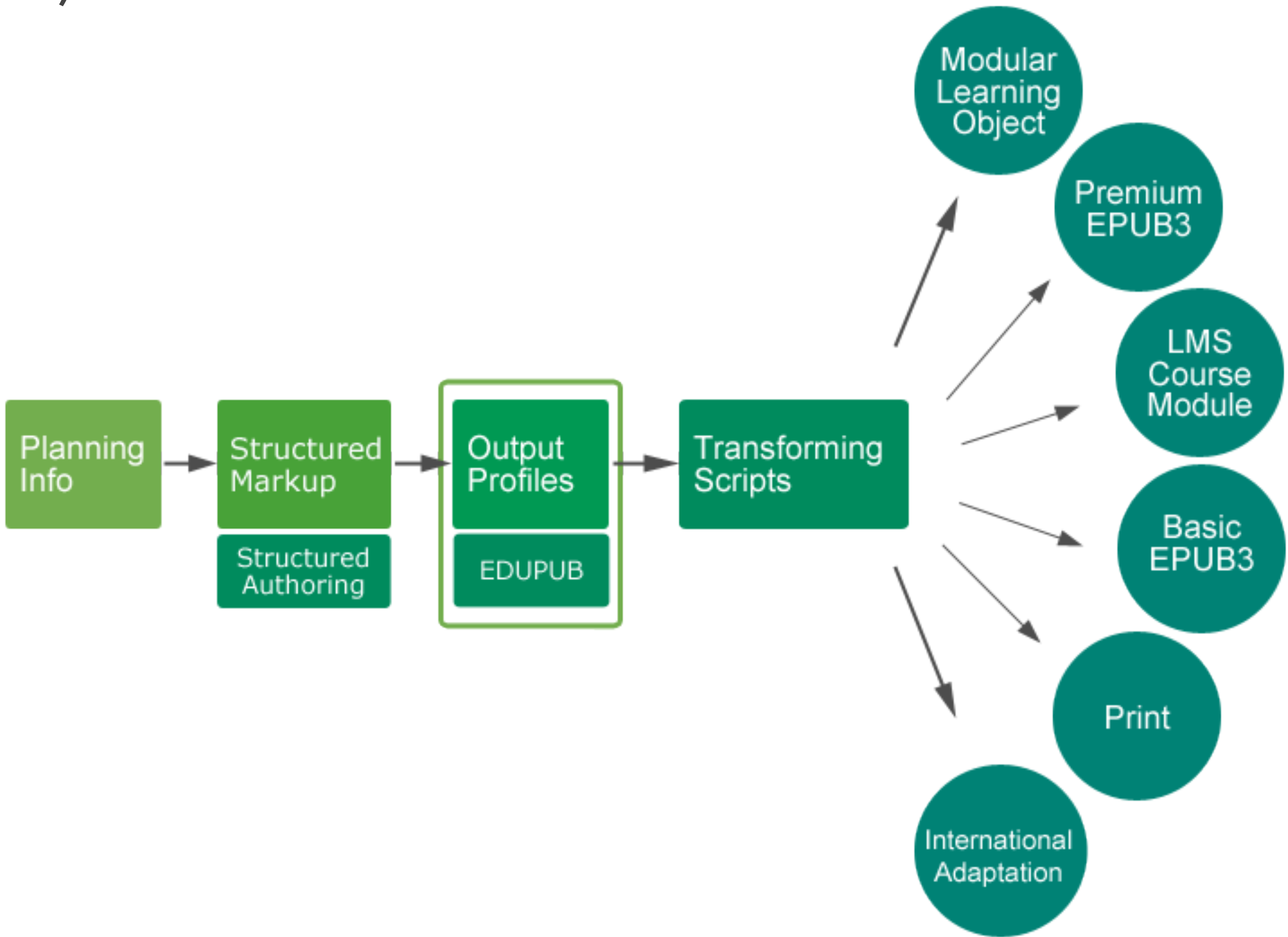
# Narrative Text Standard (PXE)

## Single Master Content Stream

- Eliminates redundancy
- Supports accessibility
- Supports both print & digital

## Profile Examples

- Target Audience (student, teacher)
- Product Type (eCourse, textbook)
- Form Factor (mobile, tablet, PC, print)



# Content Creation Workflow





# “Core” Systems, Tools and Processes



Ideate & Plan		Develop & Assemble		Publish & Deliver	
Innovation Lab	Program (Multi-Product) Planning	Content Creation & Collaboration	Project Creation & Collaboration	Delivery Platform & Channel Publishing	Learning Data & Feedback
Market Research Data Management	Products & Services	Content Creation	Object/Product Assembly	Learning Platforms	Usage Analytics
Experimentation	Resources & Vendors	Metadata Enrichment		eTexts	Rights Tracking
Learning Architecture		Collaborative Integrated Workflow		Modular Learning Objects	
Metadata & Content Standards		Preview & Approval		Print	
Curricular Standards		Content Search & Discovery			
Design & Content Planning		Repository Management & Asset Transformation			
Responsive Design & UX		Rights & Permissions Process, Review & Approvals			
Content Template Selection					

# David Stroup

Pearson Education North America  
Content Architect

A large blue rectangular box containing the word "PEARSON" in white, uppercase, sans-serif font.A small blue rectangular box containing the word "PEARSON" in white, uppercase, sans-serif font.The logo for Inkling, featuring the word "inkling" in a lowercase, sans-serif font. The "i" and "n" are green, and the "kling" is blue.The logo for Barnes & Noble, featuring the words "BARNES & NOBLE" in a bold, uppercase, sans-serif font. The "&" is in a smaller font size.

# What is the EDUPUB Profile?

The EDUPUB Profile is a standard way to deliver educational content in an EPUB 3 format which Pearson is releasing as the baseline for an open source standard.

# Thank You!

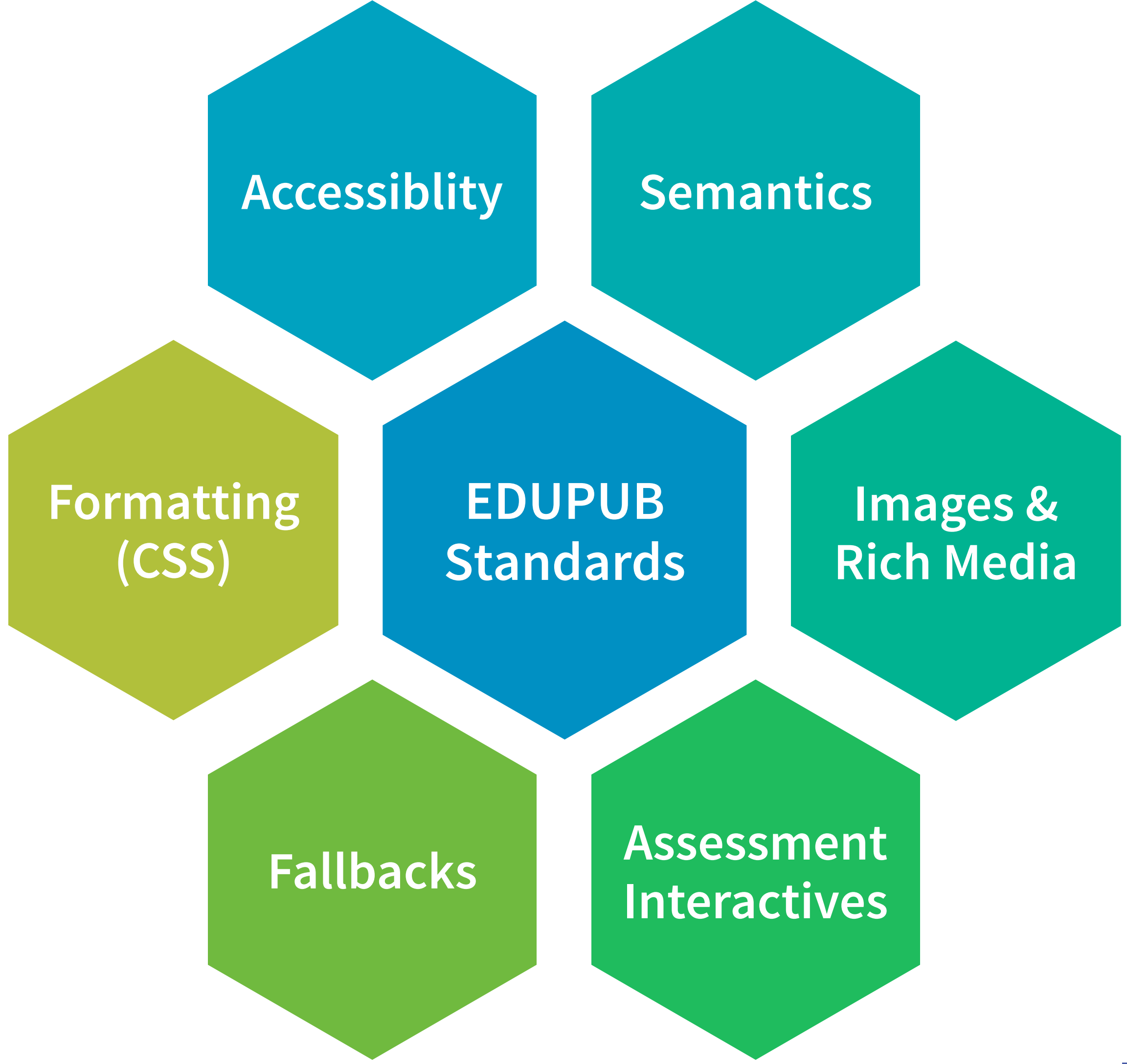
Contributing members so far...

- Apex – Bill Kasdorf
- Aptara – Jean Kaplanski
- Barnes & Noble
- Inking
- Ko & Kim
- Logictran
- Matt Garrish



# EDUPUB Makes EPUB3 More Suitable for Education

What's included in the EDUPUB profile...



# Benefits

- 1** One standard format for third-party content delivery  
Reduces the number of output format variations publishers, vendors, and distributors must maintain, track, and process
- 2** Streamlined, highly efficient production processes can be based on a known, consistent file format
- 3** Improved time to market
- 4** Reduced costs from content development through distribution
- 5** Increased ability to leverage content semantics to enable features/functionality across EPUB3 readers for educational content
- 6** Increased ability to mashup content

# What Does It Look Like?

```
<section class="chapter"
```

```
<span title="2" class="pagebreak" id="..." / >
```

```
<header><h1><span class="number">2</span> Learning, Cognition, and Memory</h1></header>
```

```
<figure class="opener" id="...">
```

```

```

```
<section class="objectiveset level1"
```

```
<header><h1><span class="label">Big Ideas to Master in this Chapter</span> </h1></header>
```

```
<ol class="objectivelist" id="...">
```

```
<a href="..." class="xref"><span class="number">2.1:</span> Much of human learning involves a process of actively constructing knowledge, rather than passively absorbing it.</a></p>
```

```
<li class="objective" id="...">
```

```
<p><a href="..." class="xref"><span class="number">2.2:</span> Knowing how the brain works is helpful, but some well-meaning educators have misinterpreted findings from brain research.</a></p></li>
```

```
<li class="objective" id="..."> <p><a href="..." class="xref"><span class="number">2.3:</span> Human memory is a complex, multifaceted information processing system that is, to a considerable degree, under learners' control.</a> </p></li>
```

# What Does It Look Like? cont'd

```
<section class="level1">
```

```
<head><h1>Learning as a Constructive Process</h1></head>
```

```
<p>A good general definition of learning is: a long-term change in mental representations or associations due to experience. Learning is a long-term change, in that ...</p>
```

```
<p>Psychologists have been studying the nature of learning for more than a century, and in the process they've taken a variety of theoretical perspectives. Table 2.1 Table 2
```

```
... their environment. Footnote 2 Explicit learning But as children grow, they increasingly engage in intentional, explicit learning. They consciously think about, interpret, and reconfigure what they see and hear in their environment. As a simple example, try the following exercise.</p>
```

```
<aside class="footnote">
```

```
<head><h2>Yourself Twelve Words</h2></head>
```

```
<p>Study the 12 words below. Then cover up the page, and write down the words in the order they come to mind.</p>
```

```
</p>
```

```
... </aside>
```

```
<aside id="e1334b..." class="footnote">
```

```
<p>Alexander, Schallert, & Reynolds, 2009; Kelly, Burton, Kato, & Akamatsu, 2001; & Siegel, 2012.</p></aside>
```



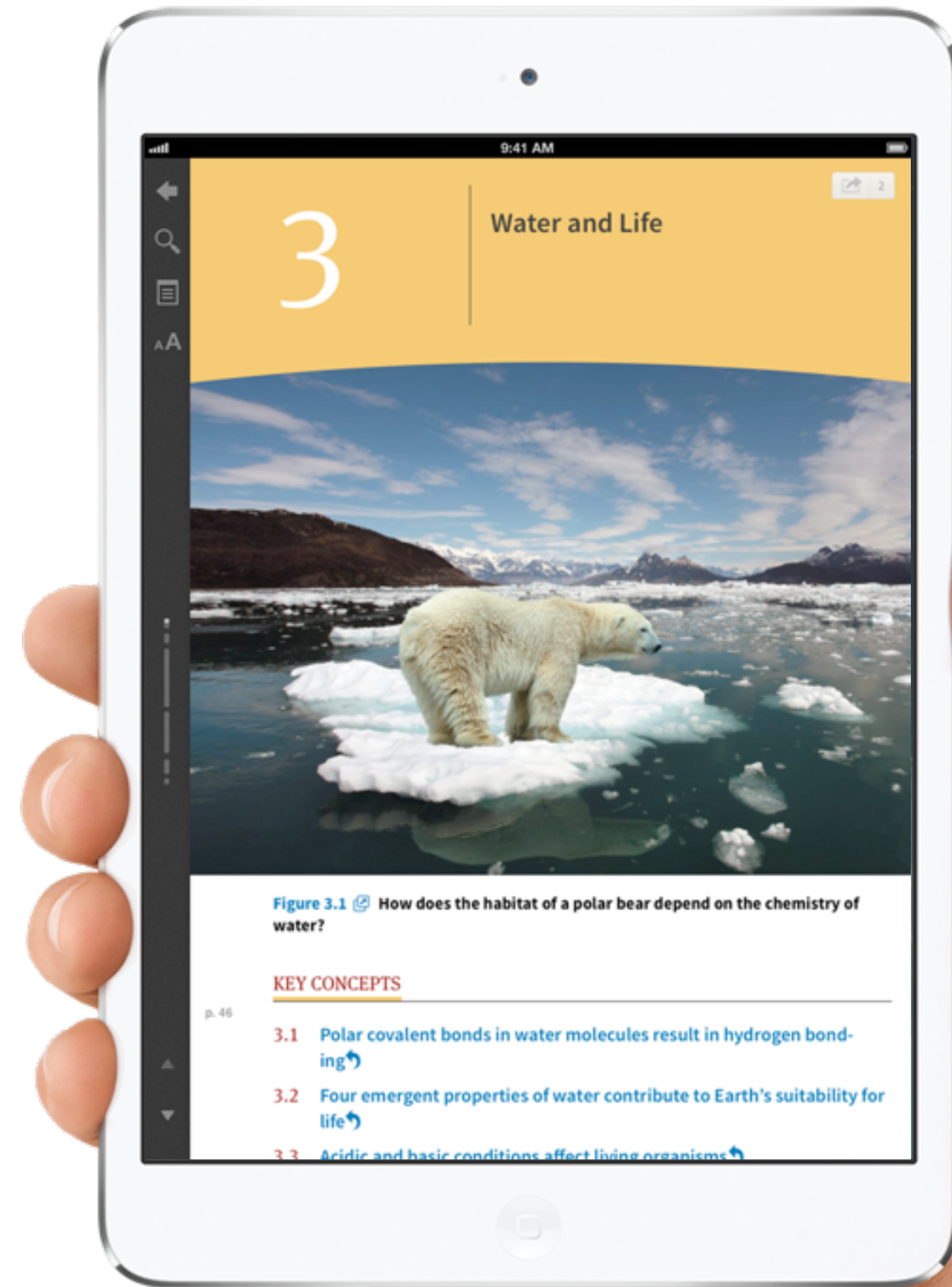
# What are we providing?

- 1 Baseline Spec
- 2 Detailed Content Model
- 3 EDUPUB Reference Implementation
- 4 EDUPUB Pattern Library

# Summary

By standardizing educational semantics and reducing the number of variable formats for similar content – publishers, vendors, and content distributors can devote more of their resources to improving content, authoring & assembly tools, services, and end user experience – and less on creating redundant output formats that provide no competitive advantage – truly a win-win for all involved!

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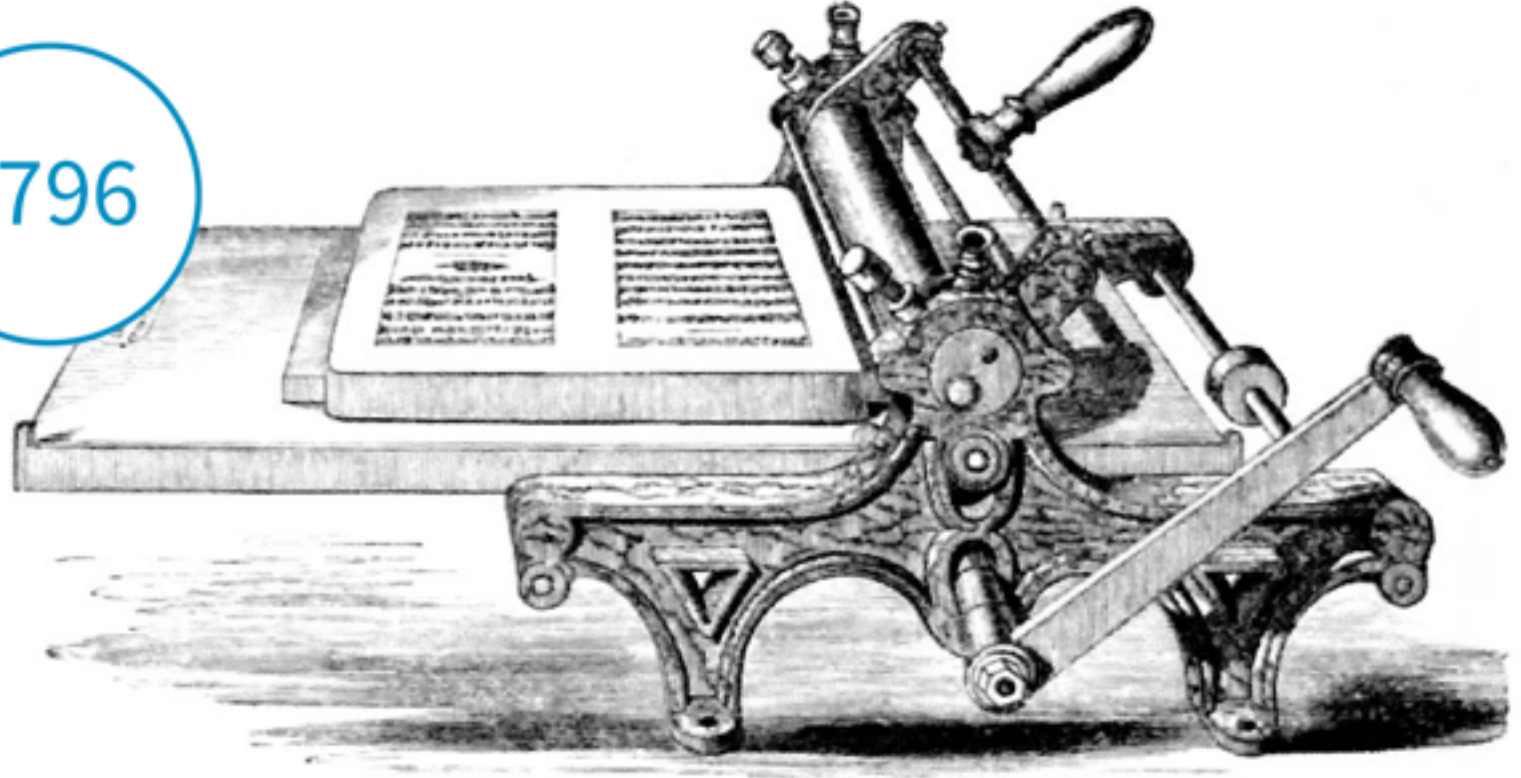


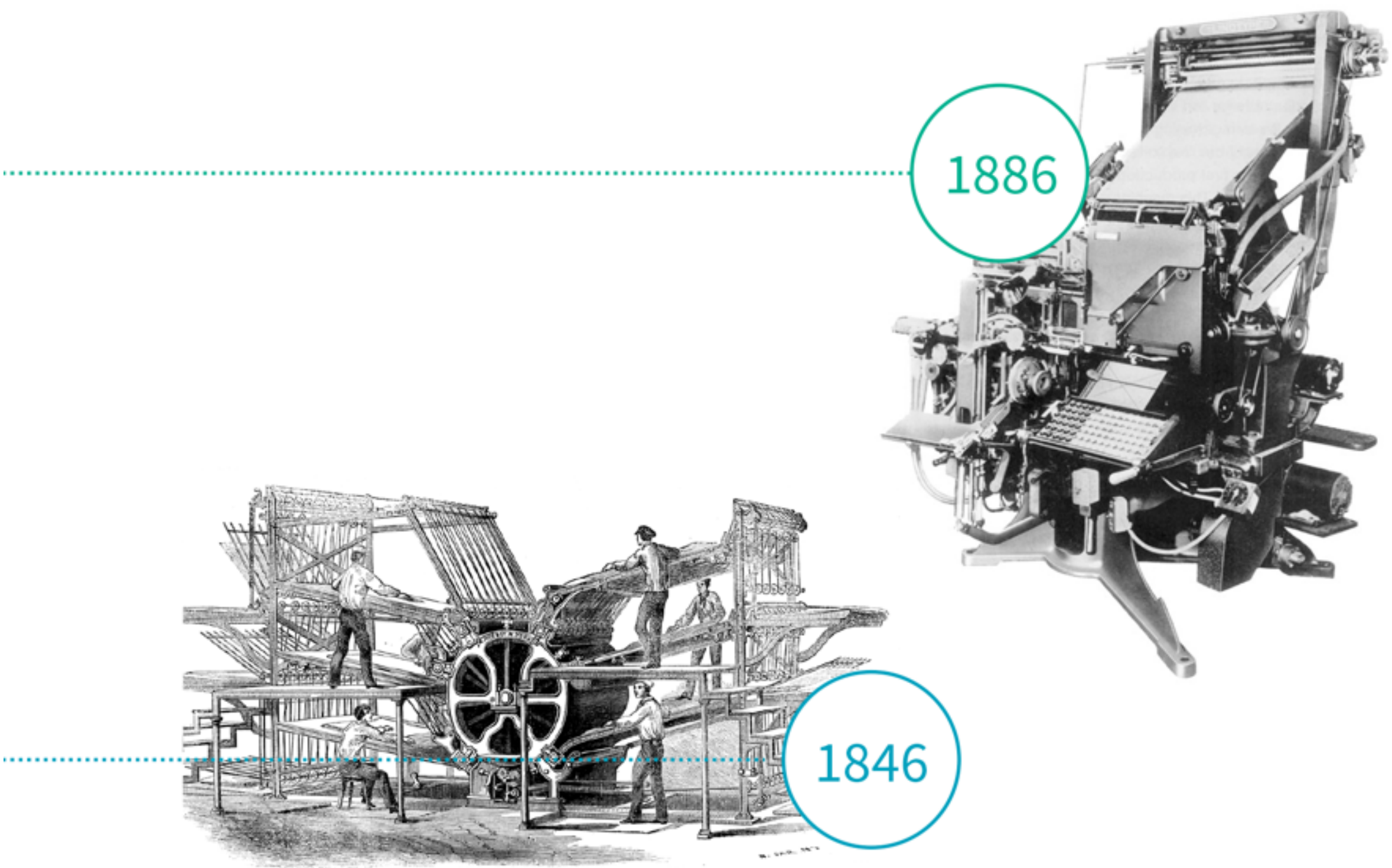


Platform



1796





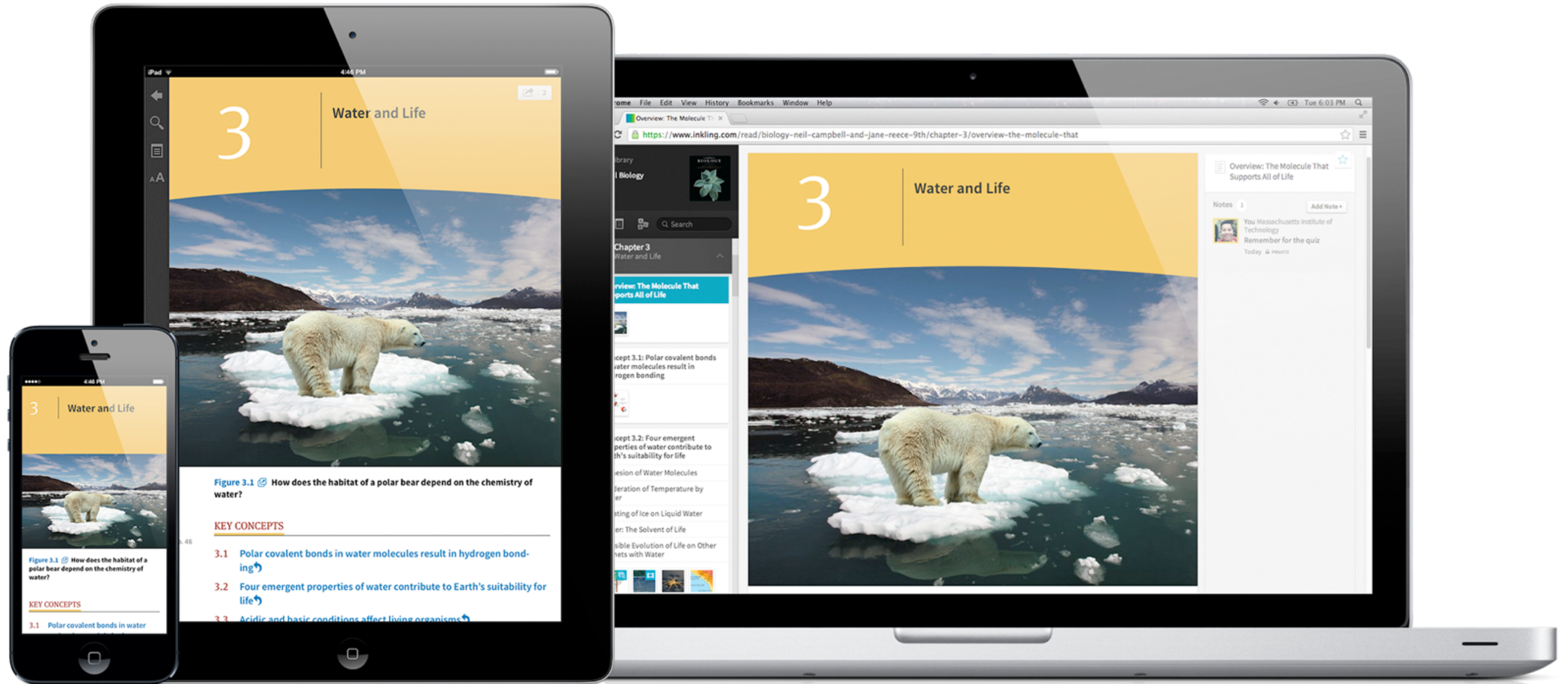


1980s



2013





# inkling habitat



6000

Users



450

Titles





*Plan Content*



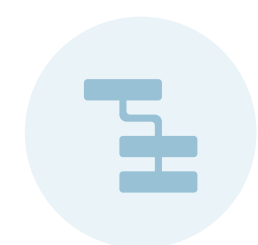
*Assemble Content*



*Distribute Content*



*Plan Content*



*Assemble Content*



*Distribute Content*





*Plan Content*

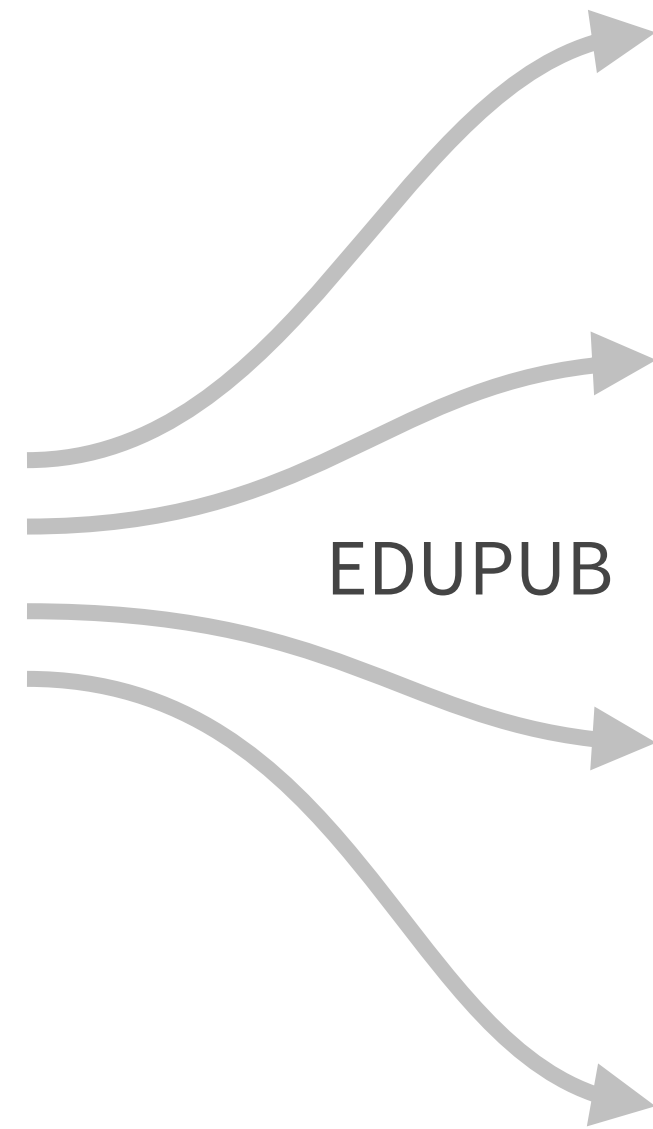


*Assemble Content*



*Distribute Content*

XML  
HTML  
Media Assets  
TOC



*Plan Content*



*Assemble Content*



*Distribute Content*





*Plan Content*



*Assemble Content*



*Distribute Content*

# inkling habitat

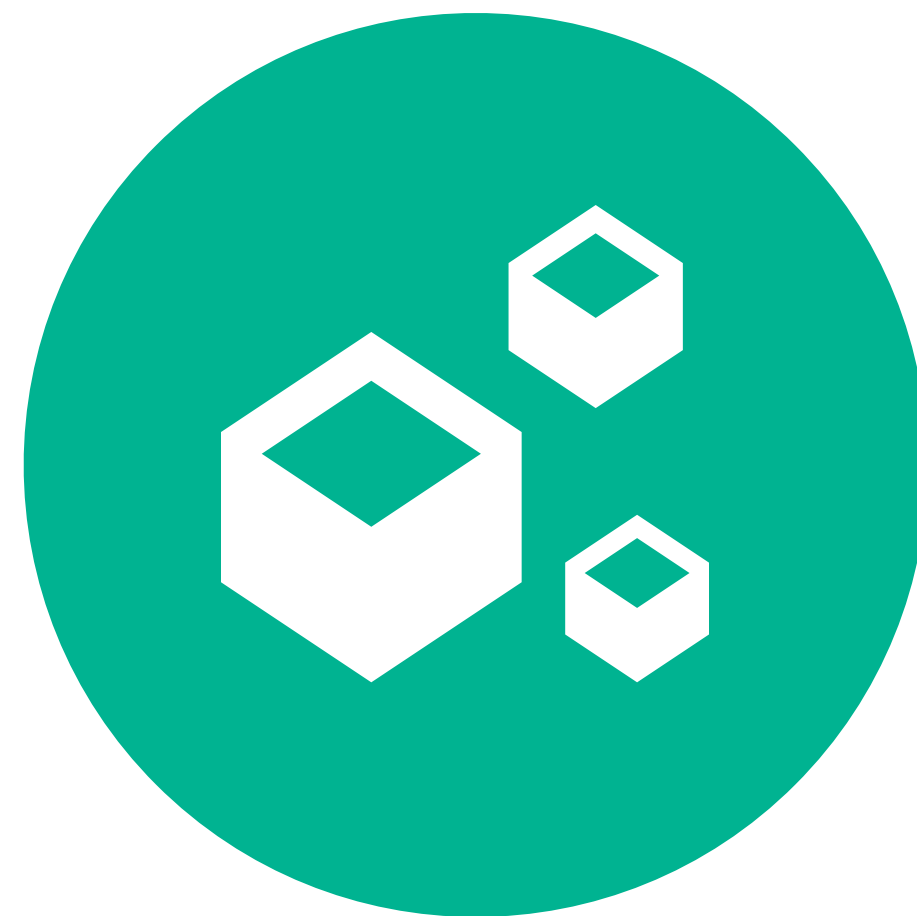
- Strictly structured content
- Realtime collaboration in the cloud
- Extensible and open

Demo





Collaborative



Extensible



Open

Inkling Habitat is the new standard  
for how structured learning  
content is built.

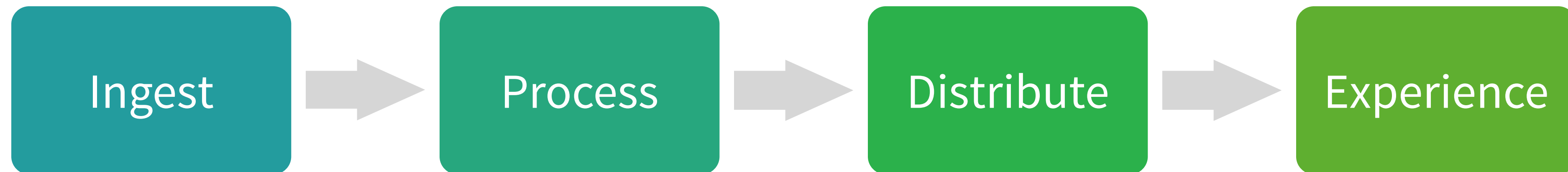
# inkling

@InklingHabitat

#edupub2013

# BARNES & NOBLE

## Nook Media



Will Manis

Director of Engineering, Seattle

Barnes and Noble College

# Ingest

## Publisher portal

- Receive EPUB
- Validate business meta-data
- Validate EPUB
  - Using EPUBCheck 4.0!
  - Validate publisher provided meta-data
  - Security check
- Provide publisher feedback



# Process & Distribute

- Process

- Add some “magic sauce”

- e.g. `epub:type="pagebreak" title="234"`

- DRM protect

- Distribute

- Authenticate user

- Purchase experience

- Deliver DRM protected content

# Experience

- Check license for capabilities
- End-users want to experience content their way...
  - Device
  - Orientation
  - Typographic/style choices
  - Online/offline
- Features
  - Footnotes
  - Video

Demo

# Start simple and keep moving forward...

- Many challenges lie ahead
  - HTML5/CSS/JavaScript platforms
  - Interfacing to existing systems
  - Handling interesting new types of content
- No one system will make everyone happy
- Goal should be lots of independent and well designed components that play well together
- EDUPUB profile is a great start