

# **XSL FO 2.0**

## **For Users and Implementers**

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**Menteith**  
**C O N S U L T I N G**



# XSL FO 2.0

## For Users and Implementers

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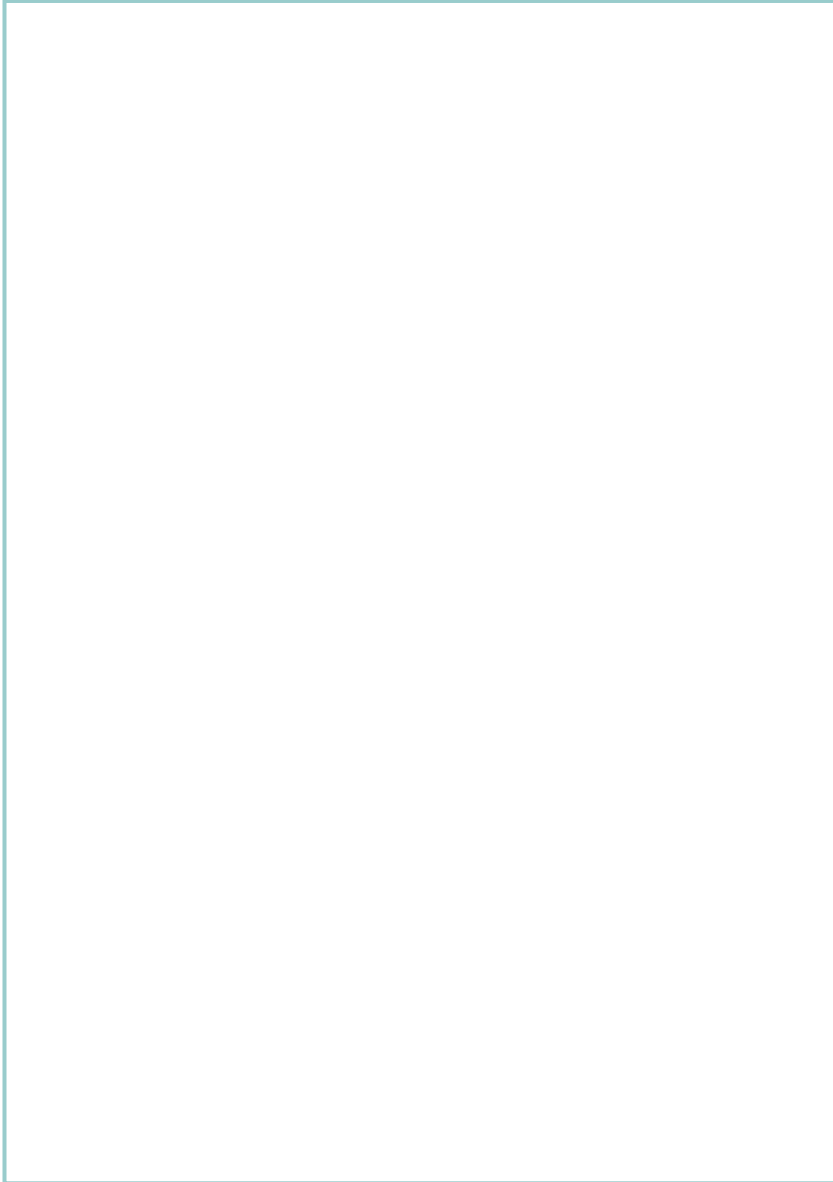
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# History

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## TEXT

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## RECTO AND VERSO

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## INLINE FOS AND PROPERTIES

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## GRAPHICS, TABLES, COLUMNS

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## CHANGE BARS, TABLE MARKERS

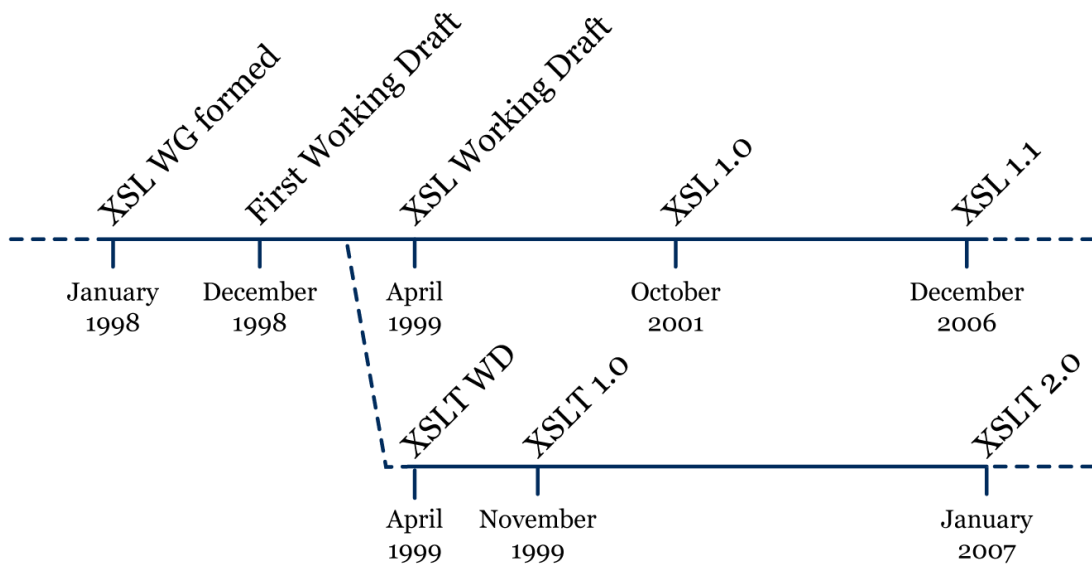
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## Time Lines

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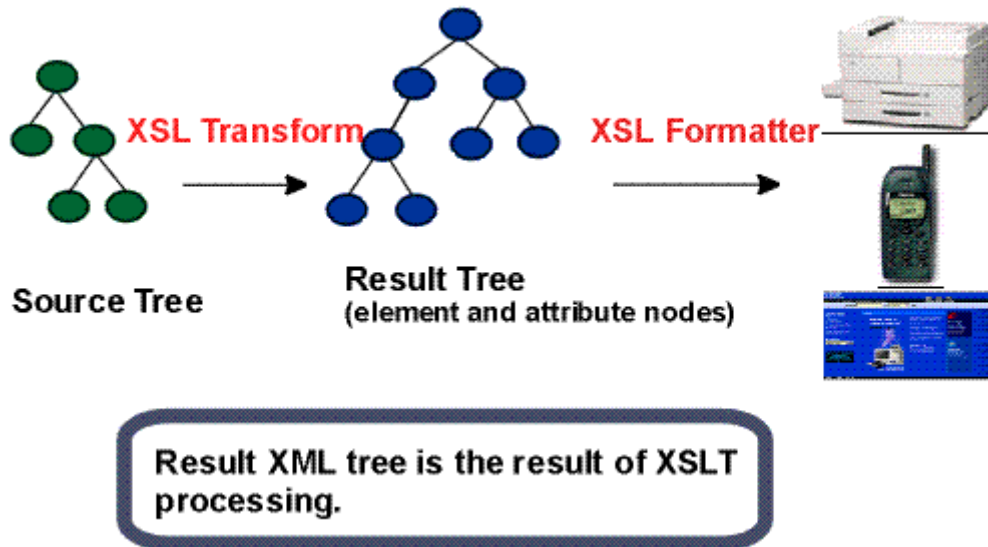
### TIME LINE TO XSL 1.1



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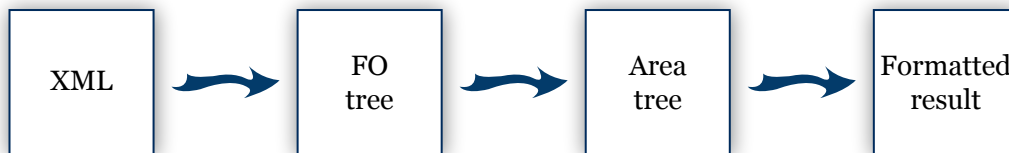
### XSL IS TRANSFORMATION AND FORMATTING

Format the result of a XSLT transformation



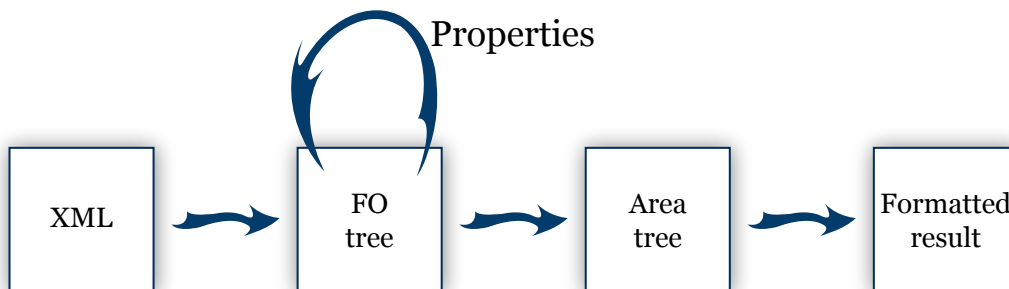
## BLOCK DIAGRAM

- ¶ Markup becomes formatting objects (FOs) with properties
- ¶ Properties evaluated, shorthands expanded, etc.
- ¶ FOs (mostly) generate areas
- ¶ Areas placed in area tree
- ¶ Render areas as paper, PDF, etc.



## PROPERTIES IN FO TREE

- ¶ Inherited properties – Descendant FOs inherit value
- ¶ inherit keyword – Even with non-inherited properties
- ¶ from-parent() – Used in property value expressions
- ¶ from-nearest-specified-value() – In expressions
- ¶ from-page-master-region() – New in XSL 1.1
- ¶ from-table-column – In tables only



## CURRENT WIDTH AND HEIGHT

- ¶ Properties expressed as percentage of current width and height
  - § Current inline-progression-dimension and block-progression-direction



## XSL TODAY

15

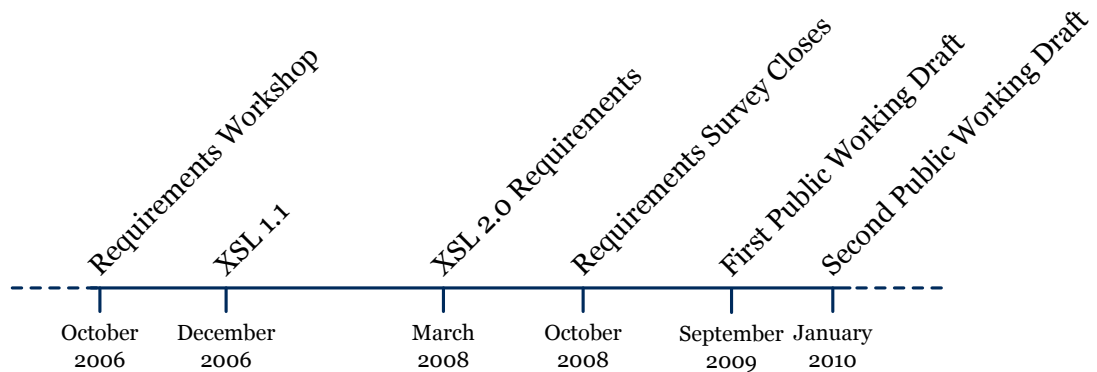
Many, varied uses:

- ¶ Laws
- ¶ O'Reilly Safari Print-on-demand
- ¶ Invoices
- ¶ Bank statements
- ¶ Linguistics
- ¶ Journals
- ¶ Student record system
- ¶ Exam results
- ¶ Manuals
- ¶ Catalogues
- ¶ Health insurance forms
- ¶ Textbooks
- ¶ Aircraft manuals
- ¶ Customs forms

## XSL FO 2.0

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### XSL FO 2.0 TIMELINE



## REQUIREMENTS HIGHLIGHTS

- ¶ Pagination and layout
- ¶ Columns
- ¶ Footnotes
- ¶ Floats
- ¶ Marginalia
- ¶ Vertical positioning
- ¶ Tables and lists
- ¶ Side-by-side
- ¶ Improved non-Western language support
- ¶ Numbering
- ¶ Cross-references
- ¶ Markers
- ¶ Text before/after break
- ¶ Columns
- ¶ Spreads
- ¶ Bleeds
- ¶ Feedback from pagination stage
- ¶ Document collections
- ¶ Fonts
- ¶ Hanging punctuation
- ¶ Tabs and tab stops
- ¶ Rotated images
- ¶ Color/Colour
- ¶ Metadata
- ¶ Schema for XSL FO
- ¶ Closer collaboration with SVG

## DESIGN NOTES FOR EXTENSIBLE STYLESHEET LANGUAGE (XSL) 2.0

- ¶ Currently *just* new features
  - § Easier to see than if in full spec
- ¶ Will be updated regularly
- ¶ Full updated XSL FO spec will follow
- ¶ Issues in W3C Bugzilla
  - § Easier to track than email messages
- ¶ *Feedback please!*

## What's New and Different?

### SOME NEW FEATURES

19

- ¶ Non-rectangular shapes
- ¶ Closer collaboration with SVG
- ¶ Spreads
- ¶ Background Content
- ¶ Bleeds
- ¶ Initial capitals
- ¶ Columns
- ¶ Document collections
- ¶ Feedback from pagination stage
- ¶ Japanese layout

20

### NON-RECTANGULAR SHAPES

- ¶ Regions and block containers
- ¶ Intrude on each other
- ¶ Z-index determines what's in front
- ¶ Sized to contain text



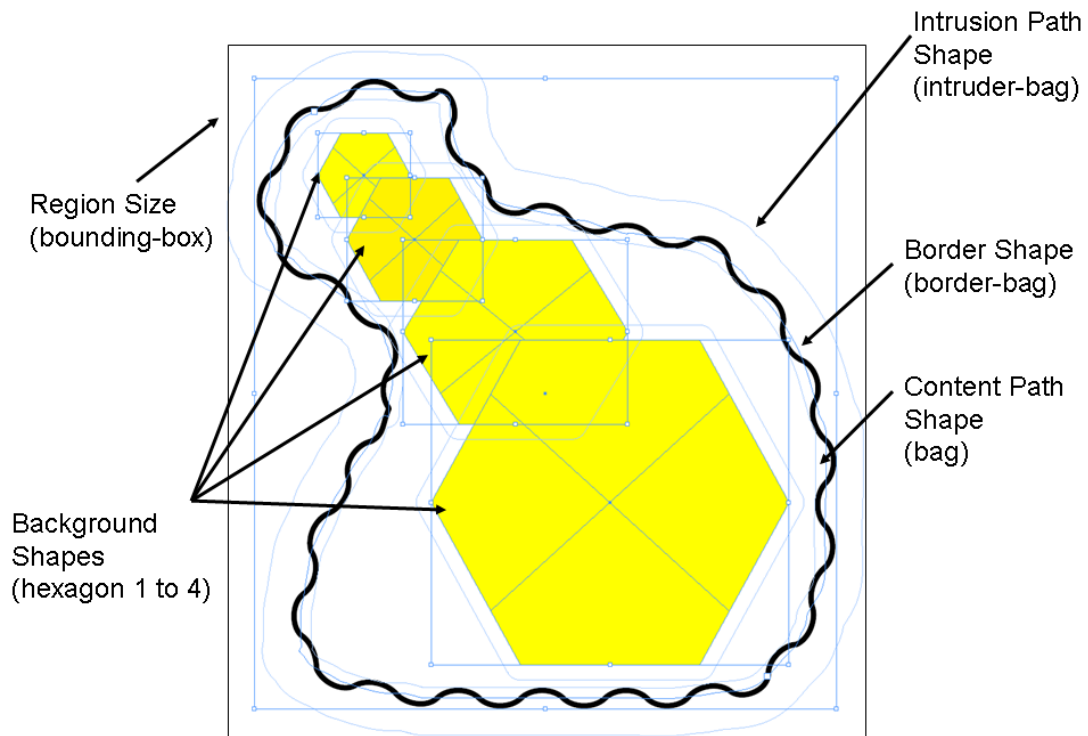
21

### CLOSER COLLABORATION WITH SVG

- ¶ Non-rectangular region shapes
- ¶ Common color functions
- ¶ Embed SVG in FO and FO in SVG

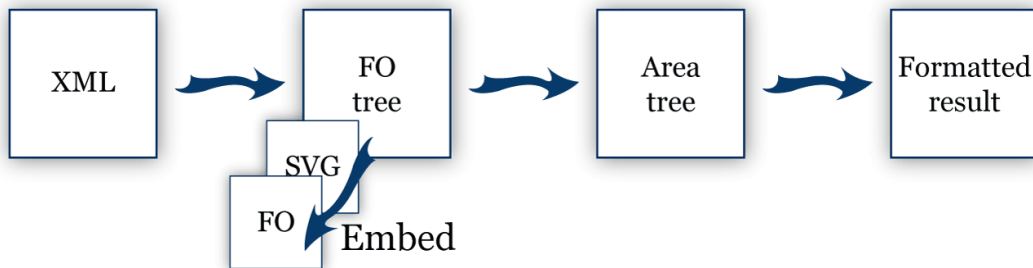


## PATHS IN SVG



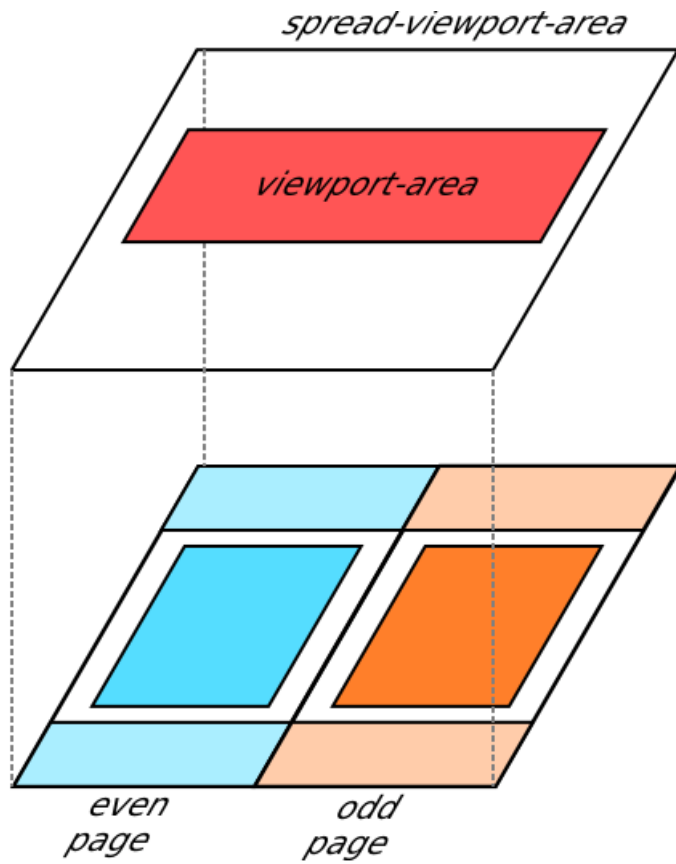
## EMBED SVG IN FO AND FO IN SVG

¶ Define how to inherit properties between the two



## SPREADS

- ¶ Two pages formatted as a unit



## BACKGROUND CONTENT

### XSL 1.1

fo:region-\* are empty  
Content in fo:static-content

### XSL FO 2.0

Allow figures, etc. in regions



## BLEEDS

- ¶ Content extends beyond page edges
- ¶ Trimming to paper size shows no whitespace at bleed



27

## INITIAL CAPITALS

- ¶ Larger initial letter (or letters) in block
- ¶ Raised or dropped (or both)
- ¶ Dropped capital baseline aligns with other lines
- ¶ May extend into margins

**L**orem ipsum dolor si  
 amet, consectetu  
 adipiscing elit. Done  
 ipsum justo, auctor u

28

## COLUMNS

- ¶ Spans of fewer than all columns
- ¶ Column-wide footnotes and floats
- ¶ Column balancing
- ¶ Non-uniform column widths
- ¶ Columns in `fo:block-container`

Aliquam suscipit, isque neque. Viva-

|       |    |    |    |
|-------|----|----|----|
| Donec | 12 | 12 | 14 |
| Morbi | 12 | 24 | 83 |

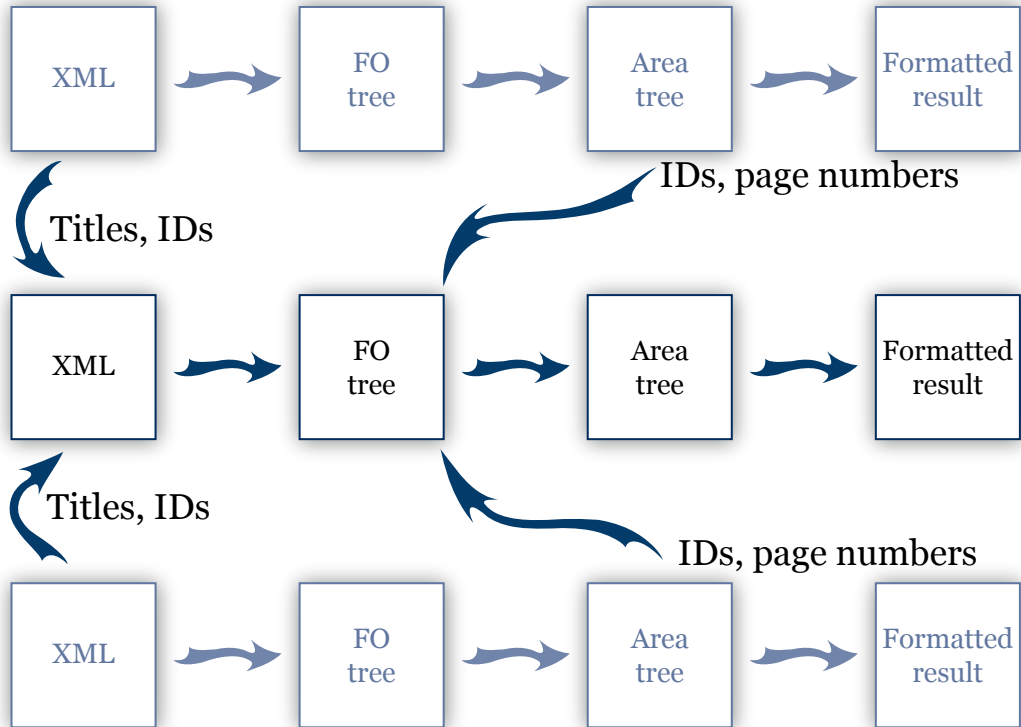
metus sit amet mus non nisl nec  
 dignissim ultrices, quam fermentum  
 arcu nibh vestibul- ultricies.  
 lum dui, a eleifend M a e c e n a s

vestibulum vulpu-  
 tate. Nam gravida  
 cursus<sup>1</sup> faucibus.  
 Fusce libero libero,  
 mattis at accum-  
 san at, molestie in

1. Cras accumsan mi  
 interdum orci vestibul-

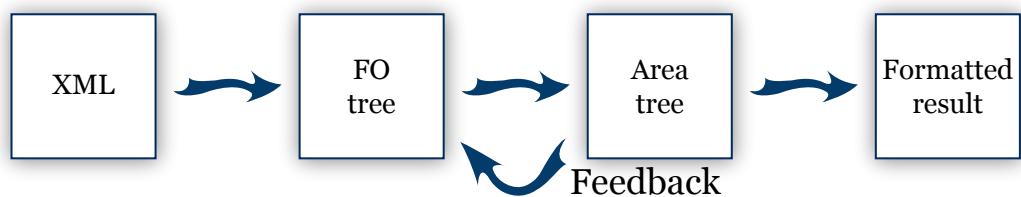
## DOCUMENT COLLECTIONS

- ¶ Master indexes, cross-document references
- ¶ Information from source XML and area trees of other documents



## FEEDBACK FROM PAGINATION STAGE

- ¶ Footnotes inheriting font size from region
- ¶ Numbering lines on a page
- ¶ Restarting footnote numbering on each page



JAPANESE LAYOUT

- ¶ XSL 1.1 handles vertical text, etc.
- ¶ Missing finer points of line layout, page design
- ¶ W3C Japanese Layout Task Force defining requirements
  - § Japanese experts, and
  - § Representatives of Internationalization Core, CSS, SVG and XSL Working Groups

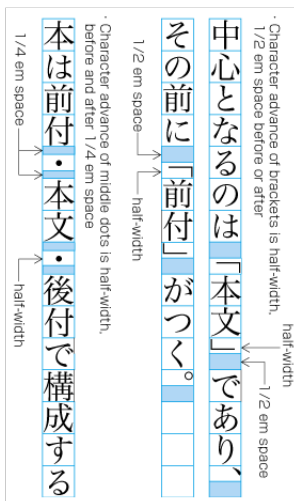
Interesting

# Fun!

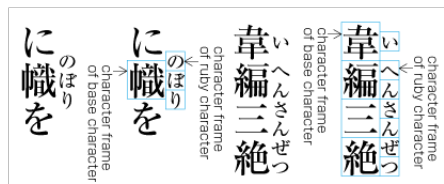
Useful

JAPANESE LAYOUT EXAMPLES

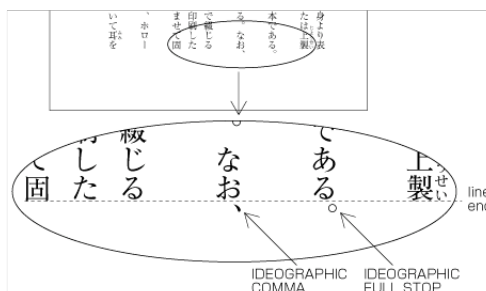
Line Building



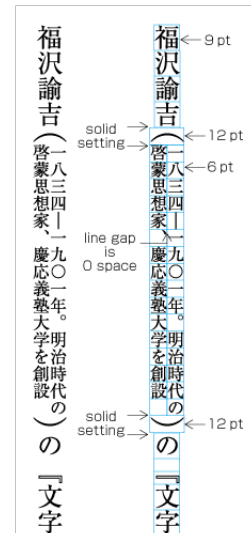
Ruby



Hanging Punctuation



Warichu

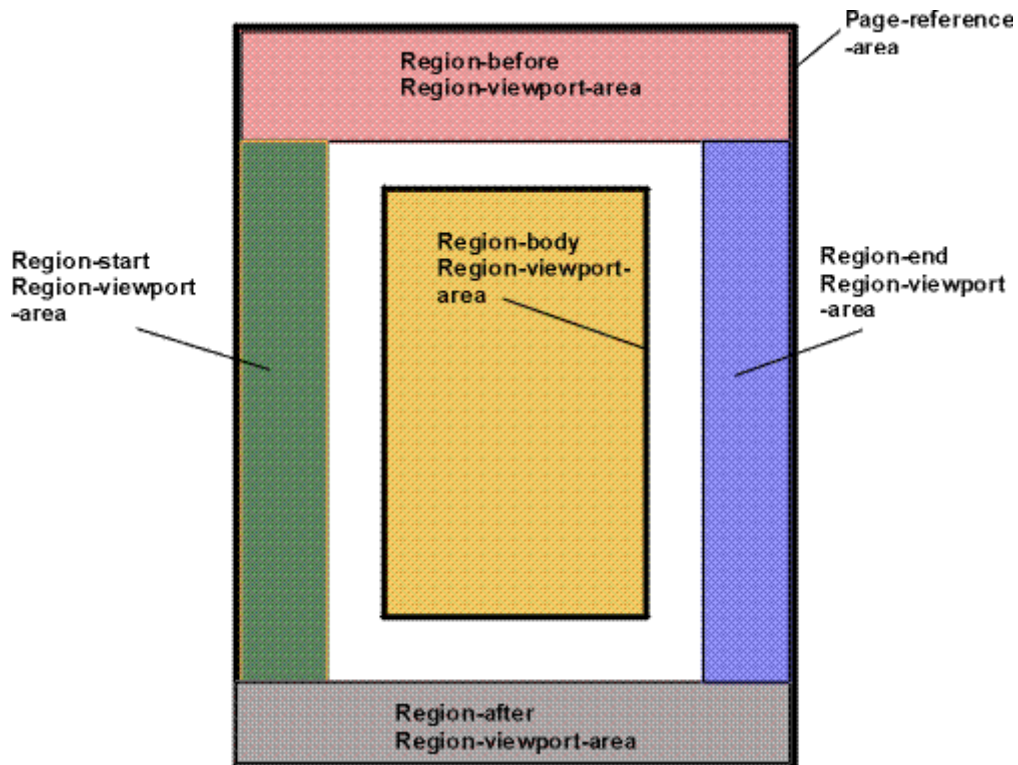


|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |    |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 33 | <b>COMPATIBILITY BETWEEN XSL 1.1 AND XSL 2.0</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |    |
|    | <ul style="list-style-type: none"> <li>¶ Compatibility is a requirement</li> <li>¶ No incompatibilities so far</li> <li>¶ No version indication in XSL 1.1</li> <li>¶ Requirements <i>may</i> force incompatibilities</li> <li>¶ Superseded formatting objects</li> <li>¶ Changes that couldn't be made as XSL 1.1 errata</li> </ul>                                                                                                                                                                                                                                                               |    |
|    | <b>NO VERSION INDICATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 34 |
|    | <ul style="list-style-type: none"> <li>¶ Not in XSL 1.1</li> <li>¶ Not a problem between XSL 1.0 and XSL 1.1</li> <li>¶ Tight coupling between stylesheet and formatter</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                 |    |
|    | <b>REQUIREMENTS FORCING INCOMPATIBILITIES?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 35 |
|    | <ul style="list-style-type: none"> <li>¶ None so far</li> <li>¶ border-collapse for “collapsing” adjacent borders: <ul style="list-style-type: none"> <li>§ Applies to <code>fo:table</code></li> <li>§ Affects <code>fo:table</code>, <code>fo:table-row</code>, <code>fo:table-cell</code>, etc.</li> <li>§ Requirement for similar for adjacent <code>fo:block</code></li> <li>§ <i>If</i> reuse border-collapse, could change results <ul style="list-style-type: none"> <li>• Collapse borders of <code>fo:block</code> inside <code>fo:table-cell</code>?</li> </ul> </li> </ul> </li> </ul> |    |

## XSL 1.1 fo:simple-page-master

36

The *fo:simple-page-master* is intended for systems that wish to provide a simple page layout facility. Future versions of this Recommendation may support more complex page layouts constructed using the *fo:page-master* formatting object.



## 37 SUPERSEDED FORMATTING OBJECTS

- ¶ XSL 1.1: *fo:simple-page-master*
  - § Rectangular *fo:region-body* and outer regions
- ¶ XSL 2.0: *fo:page-master*
  - § Non-rectangular regions
  - § No prescribed positions
- ¶ Still need to support *fo:simple-page-master*

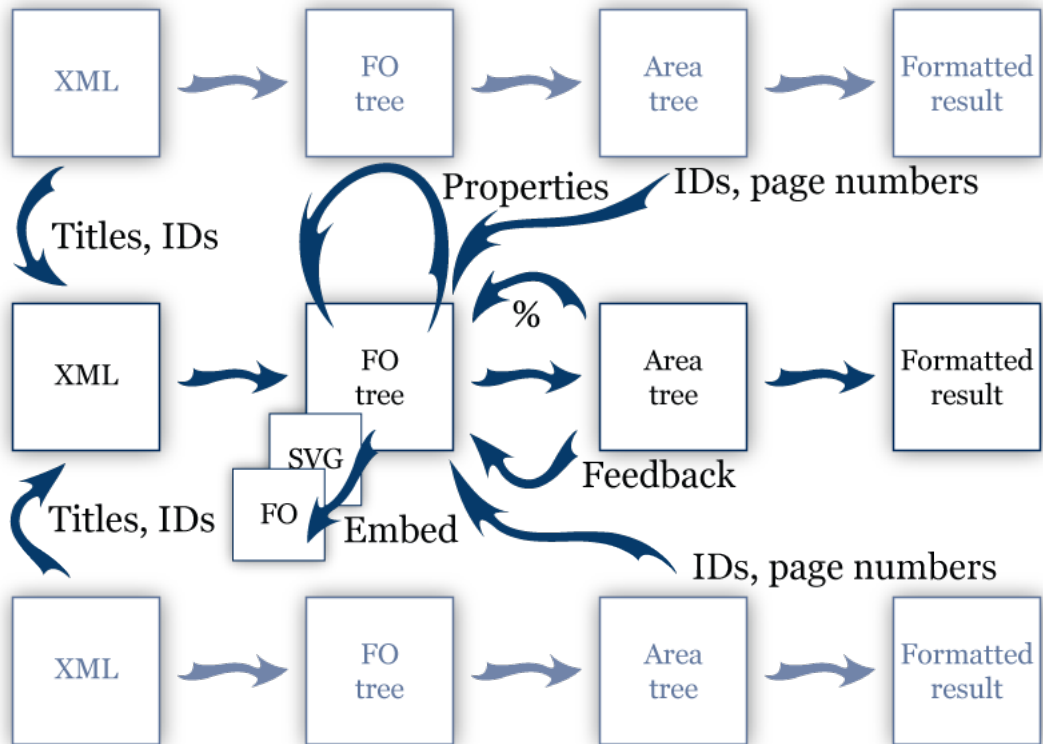
## 38 GREY AREAS IN XSL 1.1

- ¶ Users sent comments on XSL 1.1 to W3C
- ¶ Usually resolvable, maybe with clarifications to spec wording
- ¶ If more than clarification, couldn't change wording
- ¶ Couldn't make existing XSL 1.1 documents incompatible



# Conclusions

## BLOCK DIAGRAM



## XSL 2.0 Is Even More Fun!

**L**orem ipsum dolor sit amet, consectetur adipiscing elit. Donec ipsum justo, auctor ut euismod et, dignissim id arcu. Fusce sed odio urna, quis adipiscing justo. Aliquam sit amet magna augue. Morbi lectus neque, condimentum sit amet mattis vitae, euismod aliquet lectus. Donec semper nulla id ante venenatis. **Lo**rem laoreet. Nunc a quam **ipsum** ligula, id dapibus lectus. Curabitur turpis velit, **dolor** consequat et dictum vitae, **sit** adipiscing Lorem ipsum dolor sit amet sed lorem. **amet** Nam fringilla, lacus consequat eleifend elementum, purus leo venenatis neque, a scelerisque justo lorem vitae dolor. Suspendisse in odio ut

justo pulvinar congue vitae nec risus. Etiam ultricies eros non risus ultricies commodo. In vulputate, massa id pulvinar porta, mi metus ullamcorper libero, at lobortis felis libero et risus. Nullam id nisl turpis, quis rhoncus sapien.

Donec magna magna, tristique at porttitor non, dapibus vitae urna. Mauris laoreet tincidunt lectus, nec tincidunt orci vestibulum ut. Quisque varius ante id arcu congue tempus.

Donec at sodales diam. Etiam malesuada leo non felis congue sed porttitor augue aliquet. Proin cursus sollicitu-

Interesting  
Useful

**W3C** <sup>®</sup> **s e d e s t**

din nisl, ut accumsan lectus vehicula a. Pellentesque a leo tortor. Integer nascetur ridiculus mus. Proin mollis tempus dui non mollis. Aenean lorem turpis, tincidunt ut luctus at, dictum id ipsum. Duis aliquam lacus sapien, quis scelerisque neque. Vivamus non nisl nec quam fermentum ultricies.

**Ma e e n a s**

iaculis, tellus

|              |    |    |    |
|--------------|----|----|----|
| <b>Donec</b> | 12 | 12 | 14 |
| <b>Morbi</b> | 12 | 24 | 83 |

1. Cras accumsan mi interdum orci vestibulum vulputate. Nam gravida cursus.

2
3

- ¶ Review “Design Notes for Extensible Stylesheet Language (XSL) 2.0”
- ¶ Provide feedback on Bugzilla
  - § Open issues
  - § New issues that you find
- ¶ Ask your vendor for XSL FO 2.0 features
  - § Features must be implemented to be in final Recommendation
- ¶ Join the W3C XSL FO subgroup
- ¶ Implement XSL FO 2.0

## FURTHER INFORMATION

- ¶ **Design Notes for Extensible Stylesheet Language (XSL) 2.0**  
<http://www.w3.org/TR/xslfo20>
- ¶ **XSL FO Bugzilla instructions**  
<http://www.w3.org/XML/2008/01/xsl-fo-bugzilla.html>
- ¶ **Extensible Stylesheet Language (XSL) Requirements Version 2.0**  
<http://www.w3.org/TR/xslfo20-req/>
- ¶ **Heidelberg Workshop Report**  
<http://www.w3.org/Style/XSL/2006-Workshop/Report.html>
- ¶ **XSL Working Group**  
<http://www.w3.org/Style/XSL/>
- ¶ **Requirements for Japanese Text Layout**  
<http://www.w3.org/TR/jlreq/>
- ¶ **Summary of Japanese Layout Note**  
<http://www.tcworld.info/index.php?id=64>

**Menteith**  
**C O N S U L T I N G**