XML Technologies:

W3C XSLT Functionality in OpenOffice.org

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About the Speaker

- OOo/StarOffice developer in Hamburg since 1999
- Main focus:
  - *Conversion Web Service of Sun ONE Webtop*
  - *Automated Testing*
  - *Sample XSLT filter*
- Currently working on the Microsoft SpreadsheetML export filter
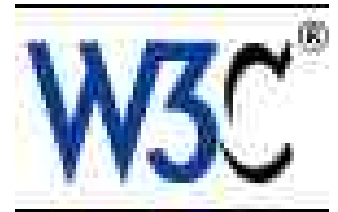
Agenda

- Basics for XML and XSLT
- Usage of XML and XSLT in OOo
- Demonstration of filter examples
- Basics of OOo XSLT filter development
- Ideas of improvement
- How can I partizipate?
- Q & A

Basics for XML and XSLT

- Extensible Markup Language (XML)
  - *Simplified Meta Language for the Web*
  - *Human-readable and reasonably clear*
  - *Formal design and easy processable*
  - *XML1.0: W3C Recommendation – Feb. 1998*

- Extensible Stylesheet Language (>XSLT)
  - *Transformation part of XSL family (XPath, XSL-FO)*
  - *XML language for transforming XML documents*
  - *XSLT1.0: W3C Recommendation – Nov. 1999*

Usage of XML and XSLT in OOo

- XML file format for all applications (OOo XML)
  - *Human-readable (Transparency)*
  - *Easy processable via XSLT (Interoperability)*

- XSLT for filter of OOo XML
  - *Using common third party XSLT tools (Apache)*
  - *Offering a set of sample XSLT filters*

Usage of XML and XSLT in OOo

- XML configuration file format (.xcu / .xcs)
  - *Human-readable (Transparency)*
  - *Easy Processable via XSLT (Portability)*
  - *Hierarchical XML data instead of .ini files*

- XSLT during build process of configuration
  - *removing redundant content*
    config files similar to diffs suffix '.xcu' (XML Configuration Update)
  - *Validation across multiple data files*
  - *Usage of XSLTlib or Java XSLT processor*

User Interface in OOo for XSLT Filter

- XSLT filter support by "XML Filter Settings" dialog
  - *Customize pre-installed sample XSLT filter*
  - *Create and customize own XSLT filter*
  - *Validation against a DTD (issue 34496)*
  - *Save and load of XSLT filters including configuration*
  - *Setting default OOo styles for an import by a template*

Basics of OOo XSLT Filter Development

- What do I need to know to create an own XSLT filter?
    - *Basic XSLT programming knowledge*
    - *Know that OOo works internally with one XML stream (flat XML, e.g. fsxc suffix for Calc)*

    How to get this internal flat XML stream?
    - *By the c++ Flat filter (SDK example)*
    - *By simple XSLT filter added to the Office*
    - *Possibly by a stand-alone XSL transformation*

Basics of OOo XSLT Filter Development

meta.xml

```
office:document-meta (
        office:meta?)
```

flat XML

```
office:document (
    office:meta?,
    office:settings?,
    office:script?,
    office:font-decls?,
    office:styles?,
    office:automatic-styles?,
    office:master-styles?,
    office:body )
```

settings.xml

```
office:document-settings
(office:settings?)
```

content.xml

```
office:document-content (
    office:script?,
    office:font-decls?,
    office:automatic-styles?,
    office:body )
```
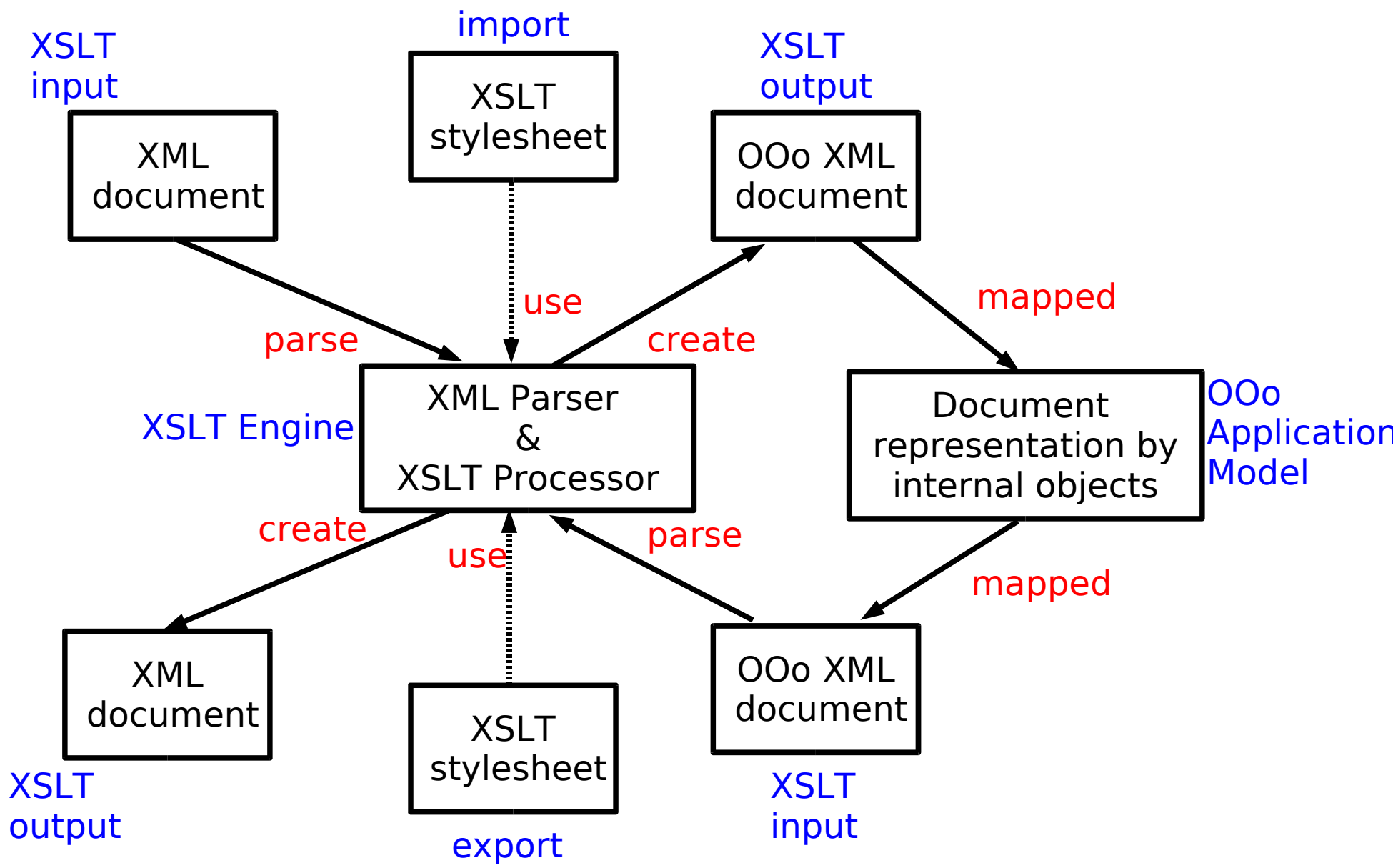
styles.xml

```
office:document-styles (
    office:font-decls?,
    office:styles?,
    office:automatic-styles?,
    office:master-styles? )
```

Basics of OOo XSLT Filter Development

- Further advice: Try stylesheet first via command line without OOo
  - *Faster turn around, as stylesheet once loaded are cached*
  - *Second transformation / mapping involved*
- How can it happen?
  - *Stylesheets used via commandline on OOo test document looked fine in 3rdParty Application*
  - *Same stylesheets and test document via Office export had issues*

Basics of OOo XSLT Filter Development

XSLT
input

import

XSLT
output

XML
document

XSLT
stylesheet

OOo XML
document

parse

use

create

mapped

XSLT Engine

XML Parser
&
XSLT Processor

Document
representation by
internal objects

OOo
Application
Model

create

use

parse

mapped

XML
document

XSLT
stylesheet

OOo XML
document

XSLT
output

export

XSLT
input

Basics of OOo XSLT Filter Development

- API support for XML based filter
  - *One generic filter for all given XSLT filters (XML Filter Adapter)*
  - *'XML Filter Adapter' choose XSLT filter by given parameters (issue 34457)*
  - *Further information in the 'SDK Developers Guide' ("XML Based Filter Development")*

Ideas of Improvement

- 'XML Filter Settings' dialog:
  - *Selection of multiple OOo applications for one XSLT filter*
  - *Flat OOo XML template feature for XSLT*
  - *Validation against more than a DTD (RelaxNG, etc.)*
  - *Easier debug possibilities, for now set:*
    -DXSLTransformer.statsfile=<LOG_FILE_PATH>
    in Java.ini
  - *Compatibility of saved filters (zips) to various versions*

Ideas of Improvement

- XSLT design pattern library
  - *Mapping style hierarchy to flattened styles*
  - *Chapter numbers (e.g. XHTML for the SDK Developers Guide)*

- Using parts of OOo documents as Components for XSLT
  - *Helpful would be a 'style-protected' feature*

How can I partizipate?

- Take part on discussions on mailinglists, e.g. dev@xml.openoffice.org
- Propose changes on the specification: http://ui.openoffice.org/proposals/XMLFilterSpec
- Stay tuned: participation process will improve with OOo 2.0

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- Questions & Answers