

ODF Interoperability: The Price of Success

Robert Weir
Software Architect
IBM Software Group
robert_weir@us.ibm.com
<http://www.robweir.com/blog>

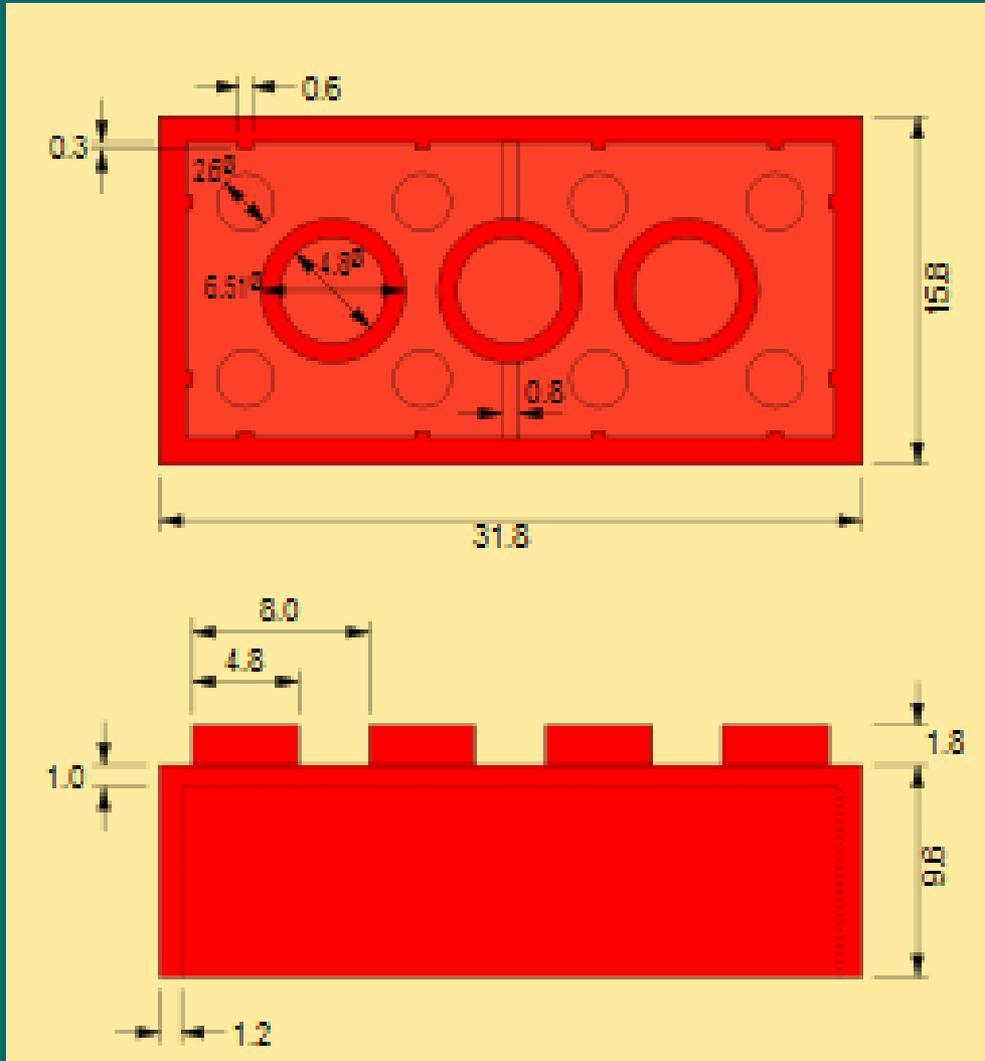
What is Interoperability?

“Interoperability means the ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable the sharing of information and knowledge.”

IDABC's “European Interoperability Framework”
<http://ec.europa.eu/idabc/servlets/Doc?id=19529>



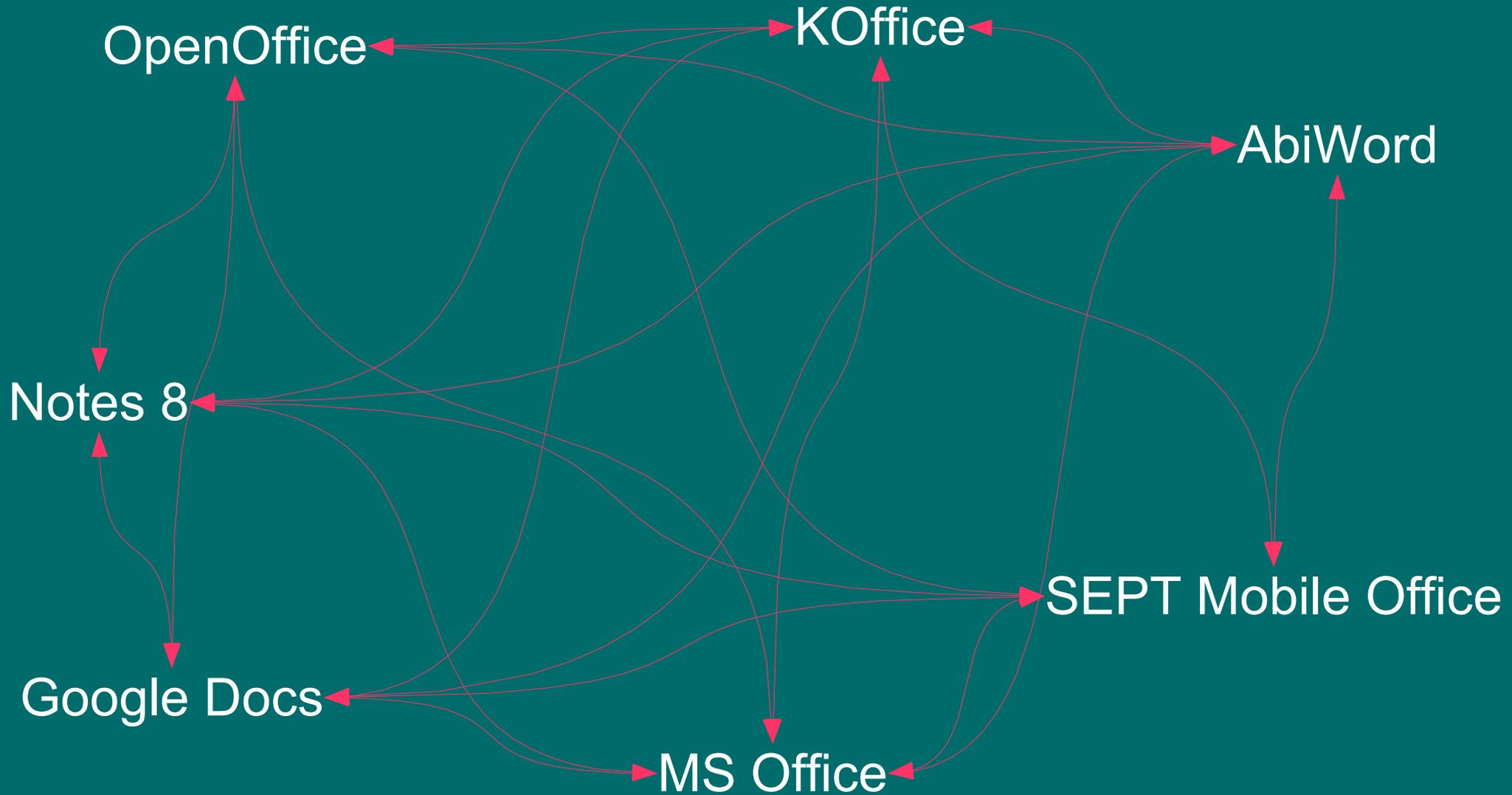
Legos – the intuitive example



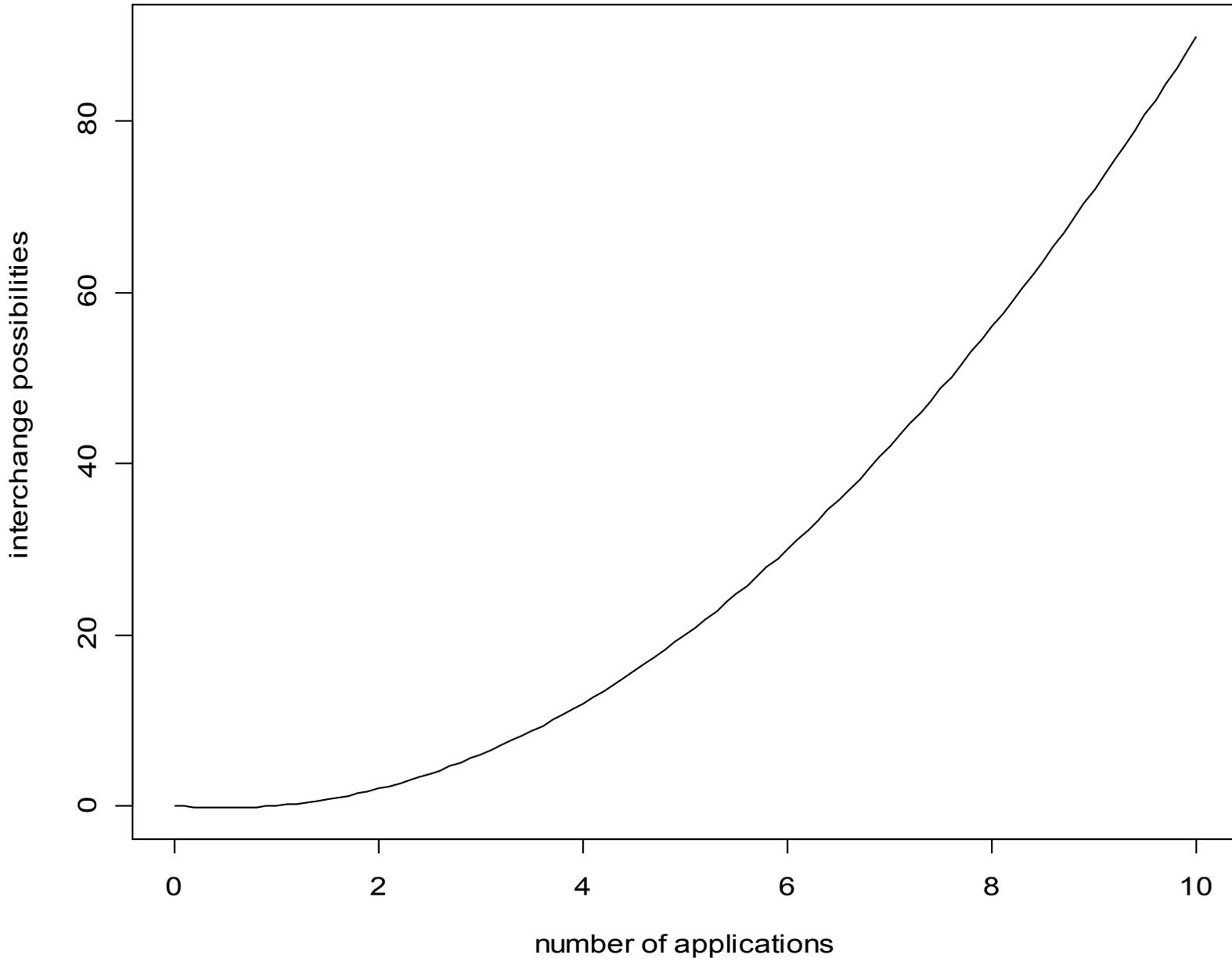
Interoperable since 1958.

0.002mm tolerances.

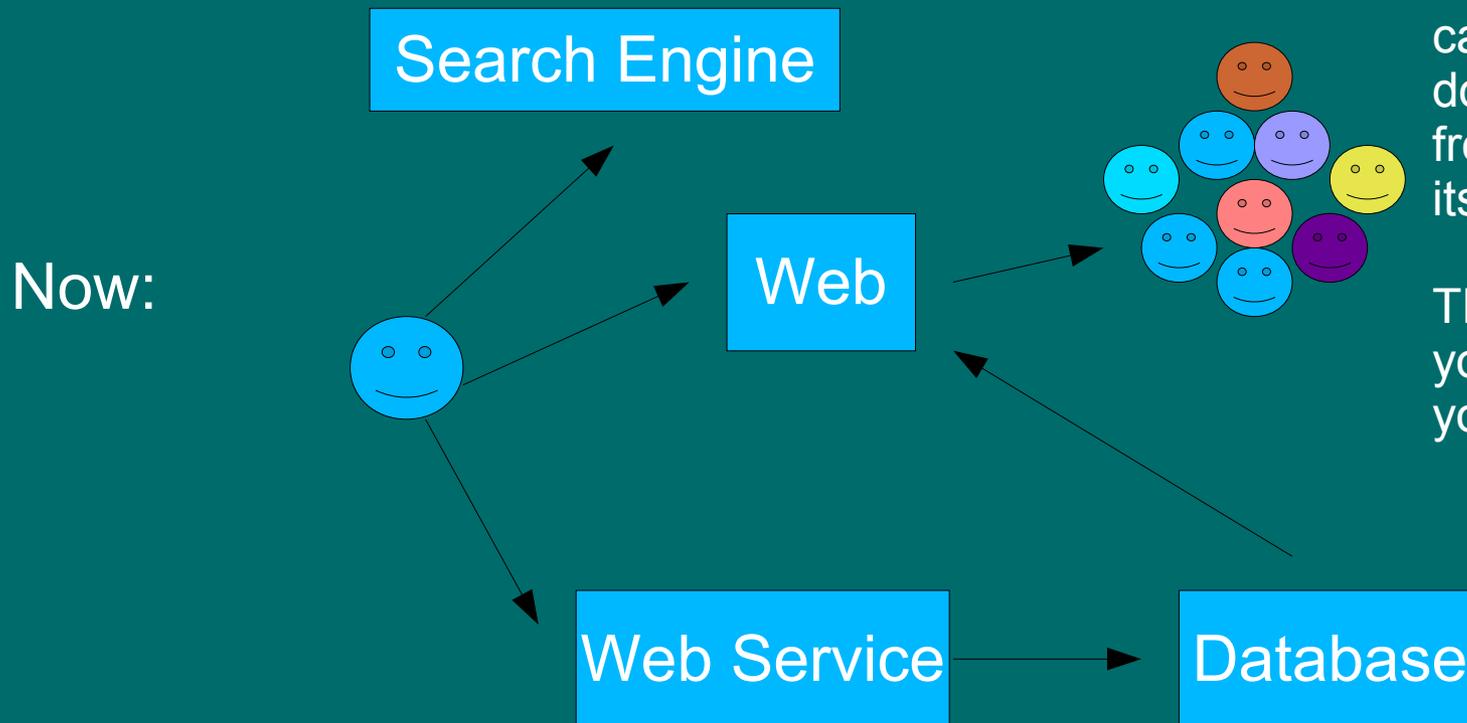
Many ODF Implementations



With N editors, there are $N*(N-1)$ interoperability paths: 2, 6, 12, 20, 30, 42, 56, 72, 90



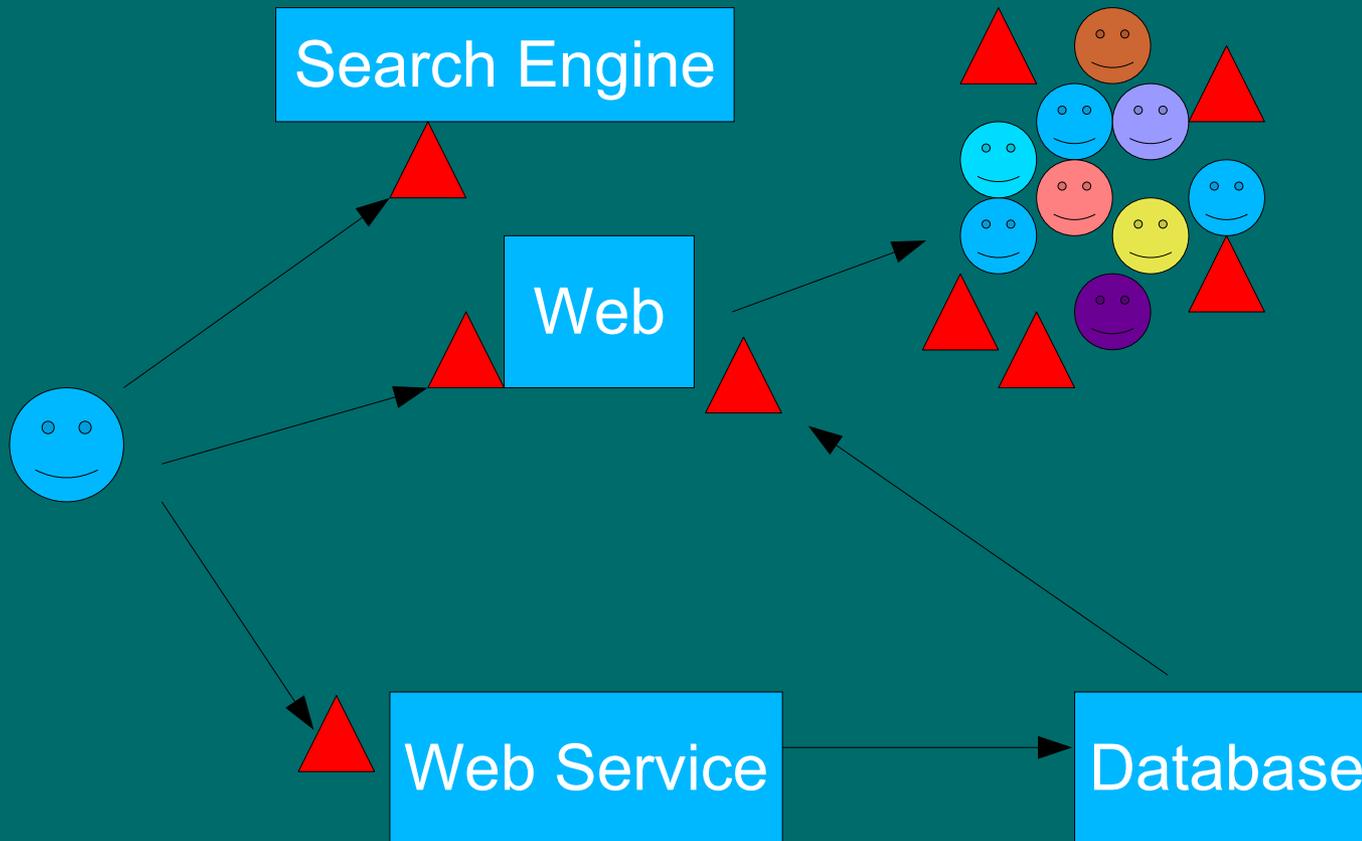
And don't forget the non-editors



A single document can easily be touched by a dozen different applications from different vendors during its lifetime.

The ultimate destination of your document is unknown to you and likely unknowable.

The Interoperability Tax

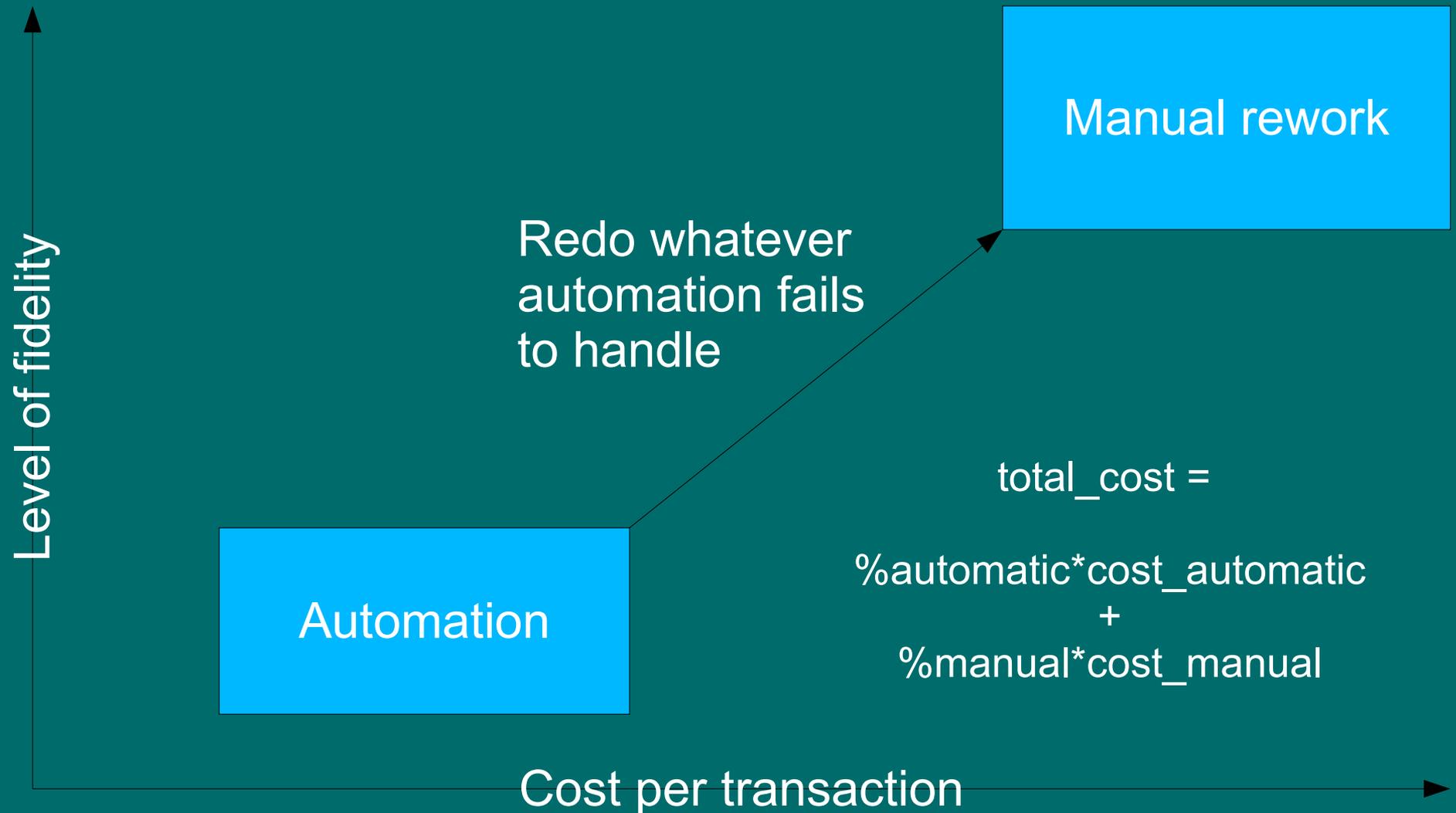


Losses may be:

- Fidelity
- Data
- Performance
- User frustration
- Reputation
- Opportunity

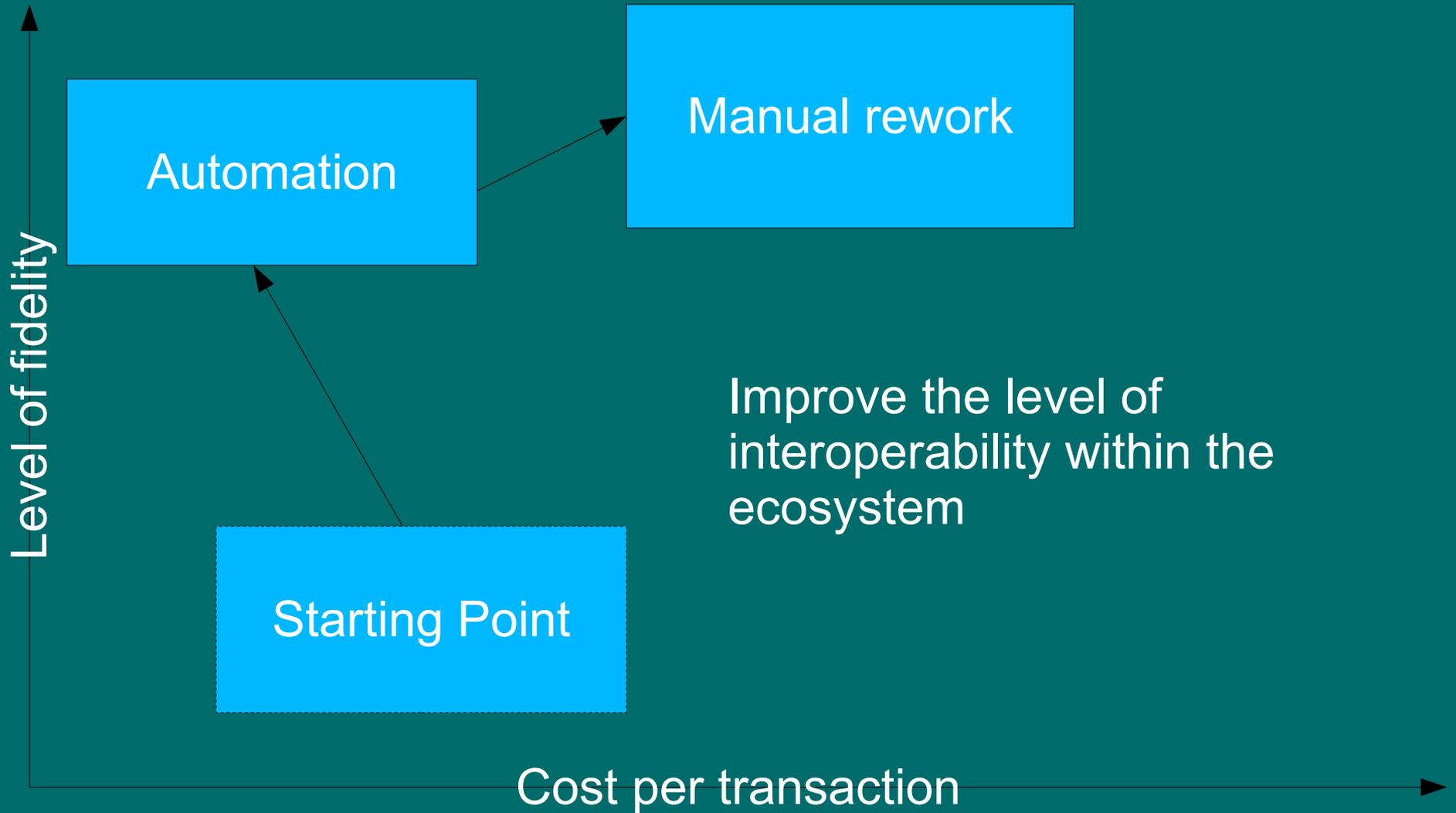
▲ = processing step with loss caused by poor interoperability

*Perfect Interoperability is Easy**



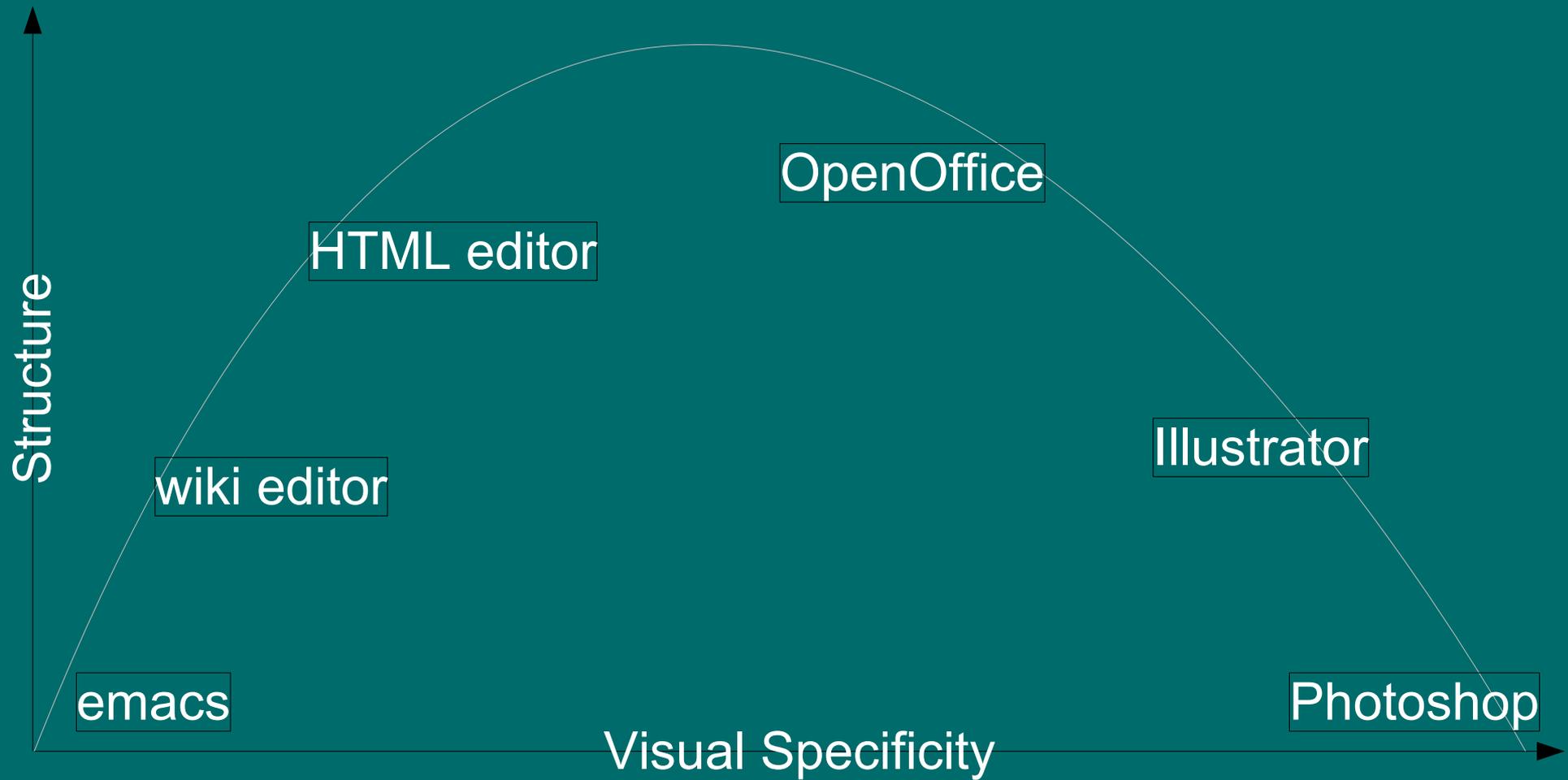
* But expensive

The Goal

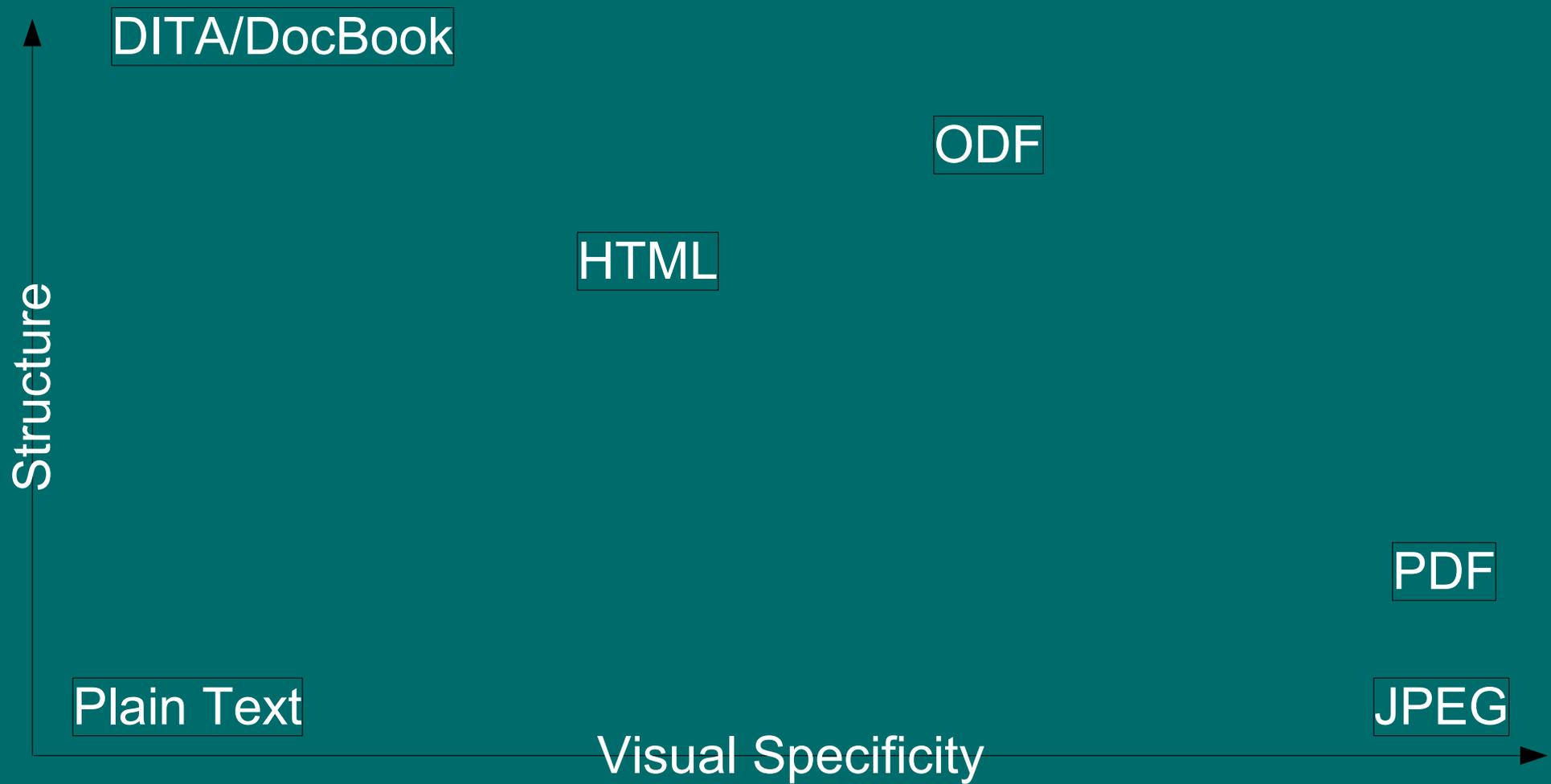


* But expensive

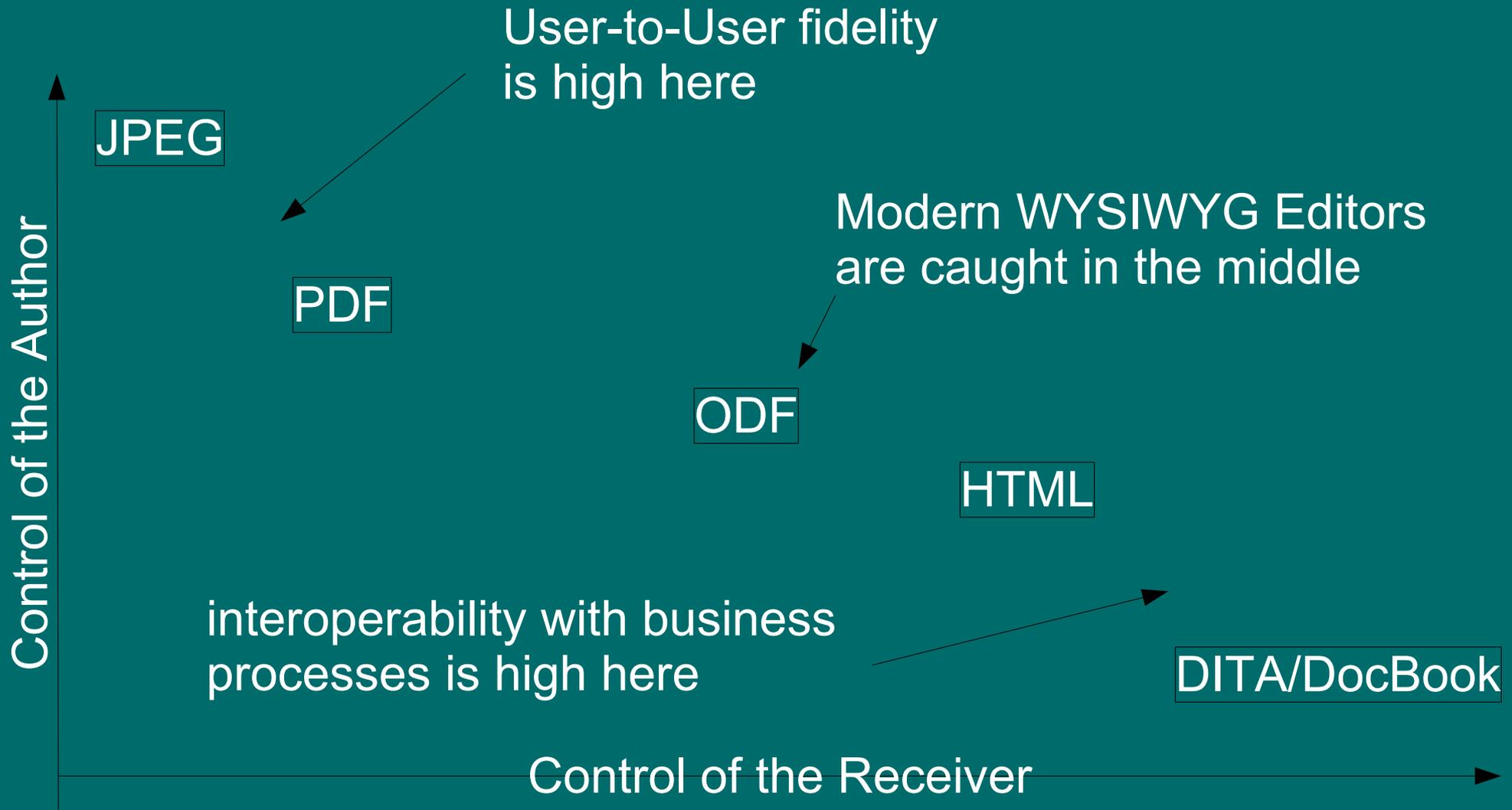
A range of available editors



And a range of formats



And in terms of control...



So what do you emphasize?

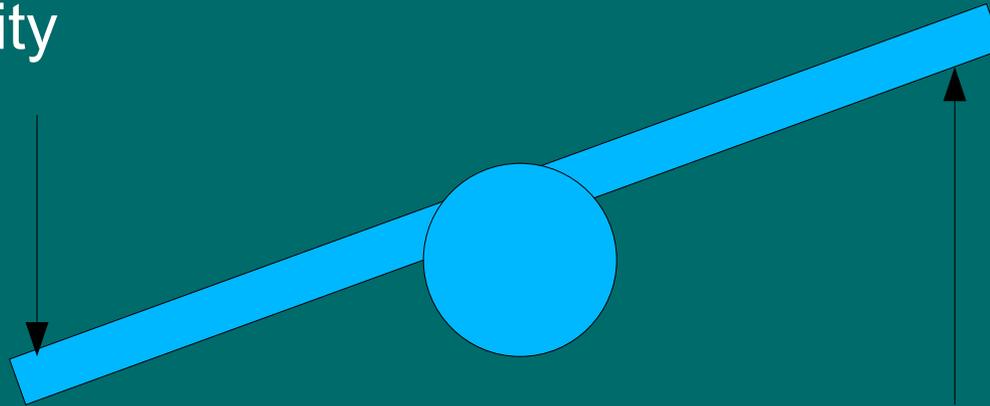
- Modern word processor has evolved into a multi-paradigm tool that supports different styles of use:
 - Highly structured data oriented use
 - Ad-hoc, visually-oriented layout
- Users have expectations that OpenOffice is suited for both uses. Until the last person who ever used a typewriter is dead, this will continue.



Traditional Trade-offs

1. Visual Richness of authoring environment
2. Power
3. Ability to say anything
4. Pixel Perfection
5. High Fidelity

1. Accessibility
2. Universality
3. Ability of everyone to understand
4. Structure
5. Semantic richness



Not a Law of Nature, but a tendency. The glory goes to those who can solve both problems at once.

A Good Design Principle

Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell.

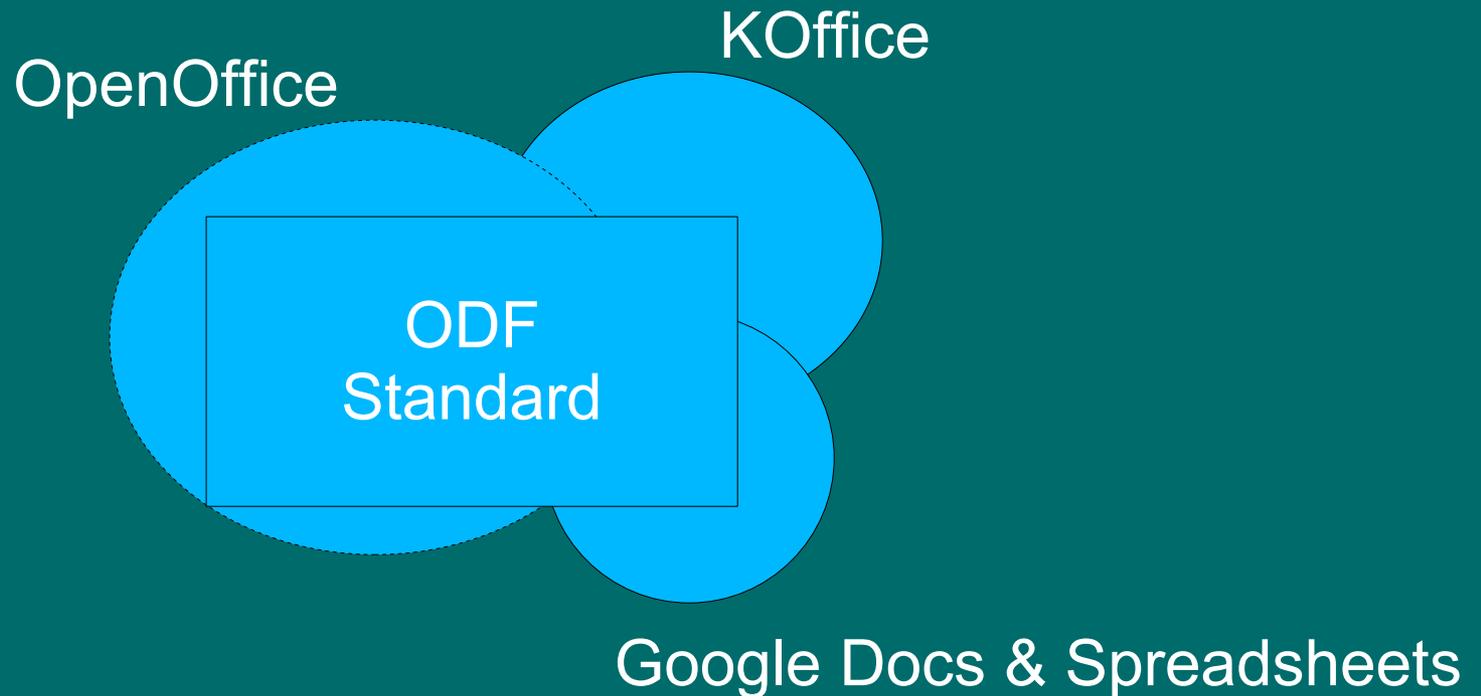
--William Strunk Jr. in *The Elements of Style*

Things that cause problems

- Application issues
 - Implementation defects
 - Functional subsets
 - Functional supersets (extensions)
- Standard issues
 - Specification errors
 - Undefined behaviors
 - Implementation-defined behaviors



The Conundrum



What is the effective overlap?

Solution Patterns

- Standards-development
 - Multi-vendor, multi-stakeholder participation
 - Expert review
 - Implementation concurrent with standards development
 - Standards
 - Detailed conformance clauses
 - Deep schemas, allowing deep validation
 - Reference implementations
 - Post-standardization activities
 - Translation of standard
 - Development of conformance assessment/certification
 - Multiple implementations
-
-

A powerful pattern



A powerful pattern

- The standard contains the definition of a conformant document
 - (but the standard may have errors or ambiguities)
- The test suite exercises and validates each feature of the standard
 - (but the test suite may have errors or omissions)
- The reference implementation is written to the standard, and tested with the test suite
 - (but the implementation may have errors or missing functionality)

Checks and Balances

- A test case fails. What is the cause?
 - An error in the application?
 - Is it an error in the test suite?
 - An error in the standard?
- Identify the cause of the failure
- Fix
- Continue until you have a complete test suite and a reference implementation that passes all of the test cases.

A Reference Implementation

- Should implement 100% of the standard, including all optional requirements.
 - It should be the first one, or one of the first applications to implement any new feature in the standard.
 - For any implementation-defined behaviors, it should document how it behaves.
 - Although it may extend the standard, it should have a mode of operation where it is strictly conformant.
 - Let's work to make OpenOffice.org be the full reference implementation for ODF!
-
-

A Test Suite: A rough estimate

- ~ 700 page ODF specification
- ~ 5 testable statements per page
- ~ 4 test cases per statement to test limits, positive and negative test cases, etc.

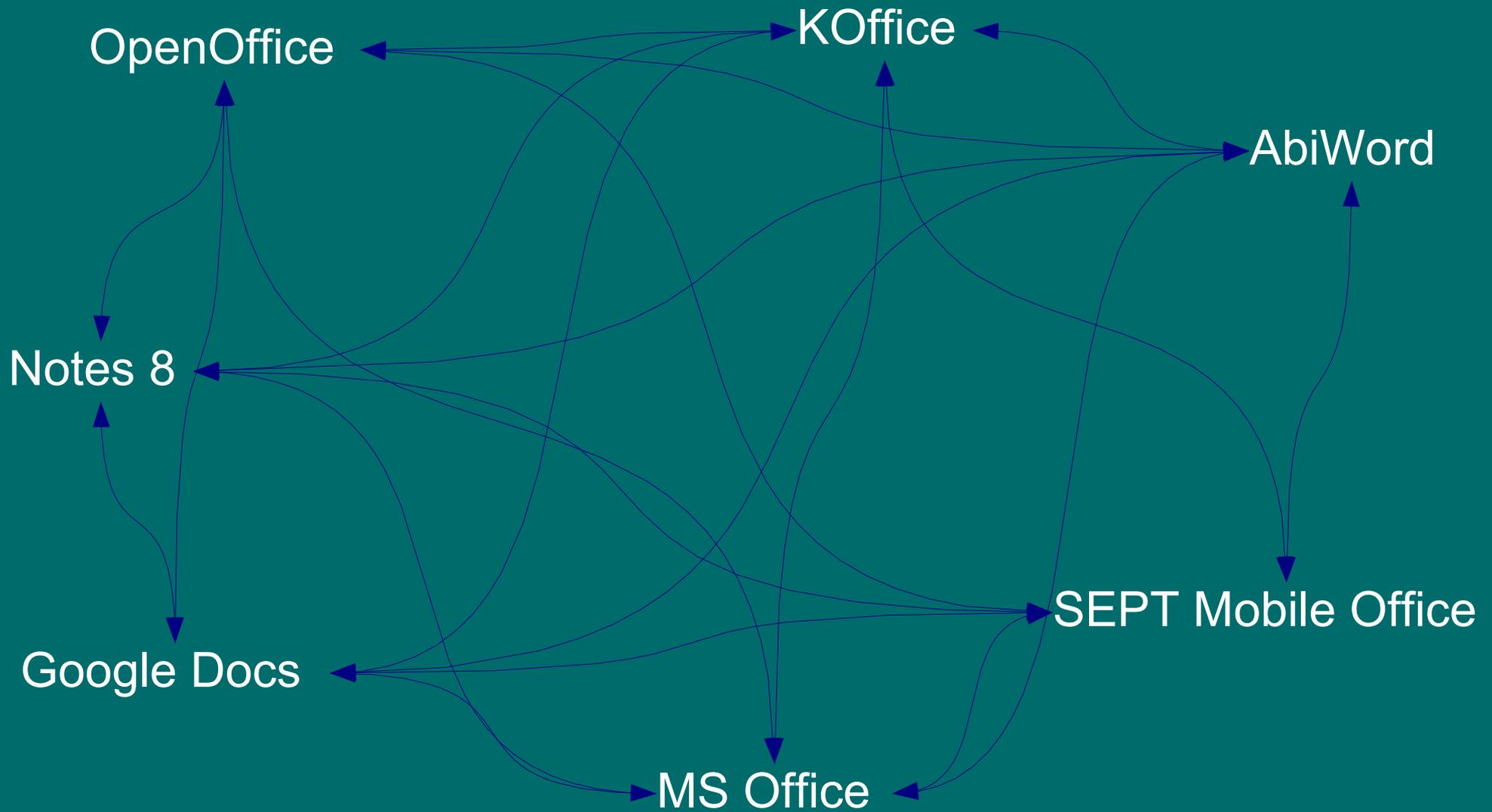
- So, on the order of 10,000 test cases, or 2 PY of effort.



That takes care of OpenOffice

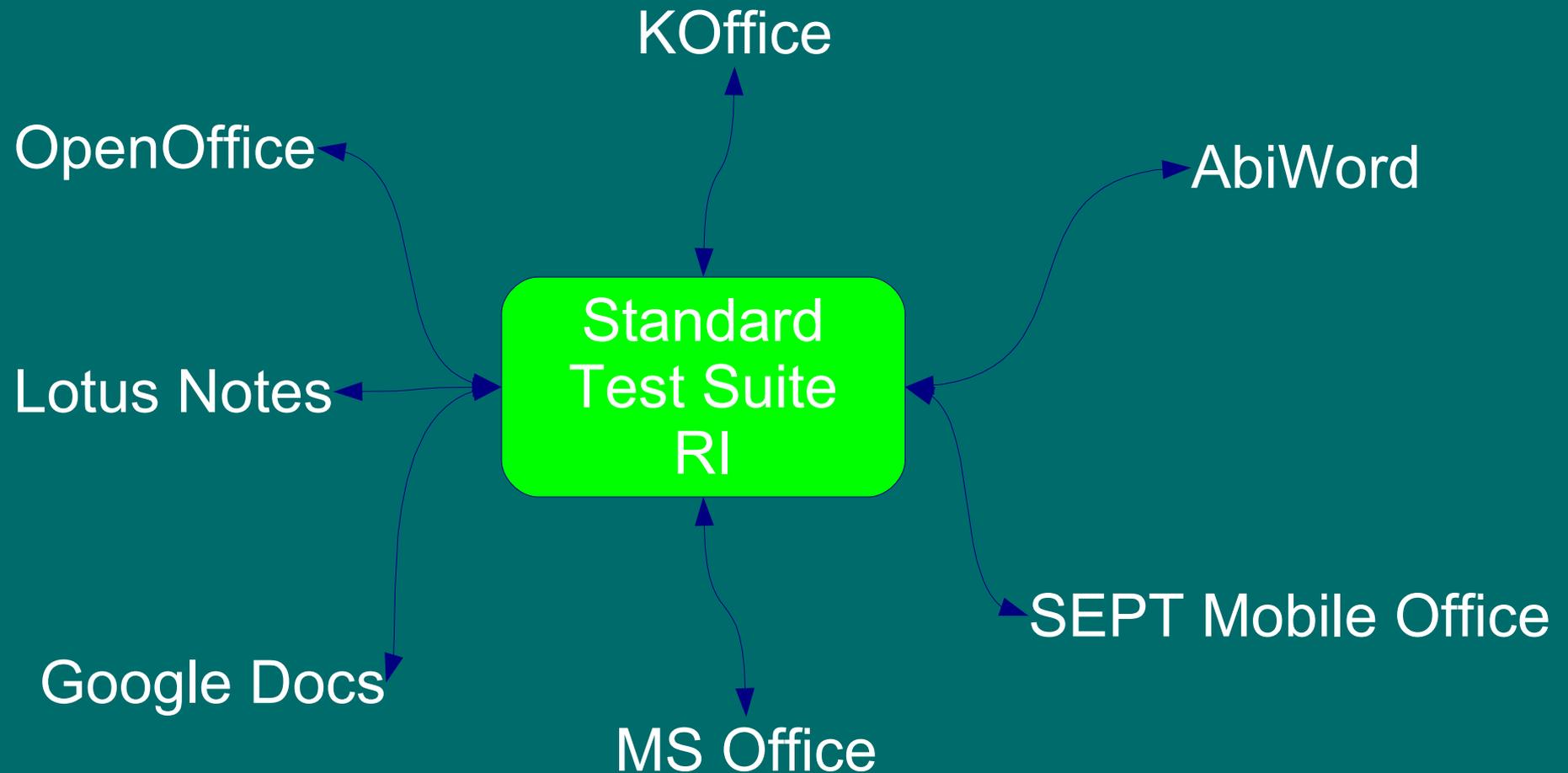
- But what about everyone else?
 - Having a single ODF Reference Implementation, by itself, doesn't really solve the interoperability problem.
 - But by having a good standard, a good test suite, and a good reference implementation, we allow other implementations to benefit as well.
 - Think of it as a “public health” issue. We are only healthy if we ensure that others can be healthy as well, otherwise the system falls apart.
-
-

This can help move us from...



With N editors, there are $N(N-1)$ interoperability tests*

...to this



With N editors, there are N interoperability tests

Things that foster interoperability

- In applications:
 - use of interoperable data formats
 - a strictly conforming mode of operation
 - guidance to the user on how to use the product in an interoperable way
 - inclusion of document templates and defaults that encourage interoperability
 - allowing validation of documents
 - In data formats
 - clean separation of content, attributes, behavior and metadata
 - reuse of existing, established standards
 - thorough review
 - standardization
-
-

Things that foster interoperability

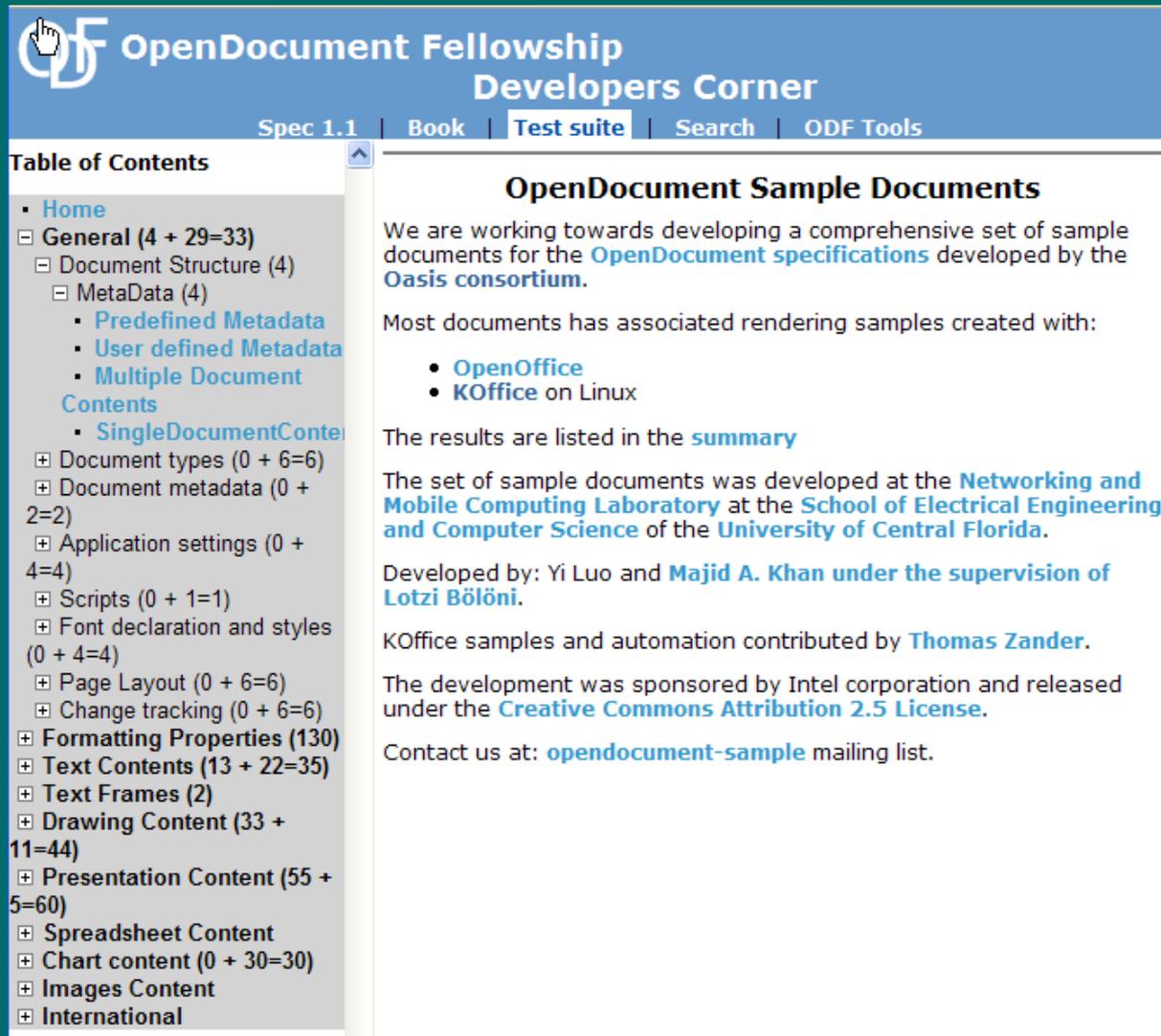
- In organizations:
 - adoption of a single standard document format
 - adoption of applications with proven conformance to that document standard
 - training of users on how to create interoperable documents
- In users:
 - capture information at the highest level possible
 - adding metadata
 - providing annotations for accessibility
 - using named styles

Progress in Interoperability

- Test Suites
- Validators
- Translators



ODF Test Suite



The screenshot shows the OpenDocument Fellowship Developers Corner website. The header includes the logo and navigation links for Spec 1.1, Book, Test suite (selected), Search, and ODF Tools. A Table of Contents sidebar is visible on the left, listing various document categories and their counts. The main content area is titled "OpenDocument Sample Documents" and contains text about the development of sample documents, associated rendering samples, and contributors.

OpenDocument Fellowship
Developers Corner

Spec 1.1 | Book | **Test suite** | Search | ODF Tools

Table of Contents

- Home
- General (4 + 29=33)
 - Document Structure (4)
 - MetaData (4)
 - Predefined Metadata
 - User defined Metadata
 - Multiple Document Contents
 - SingleDocumentConte
 - Document types (0 + 6=6)
 - Document metadata (0 + 2=2)
 - Application settings (0 + 4=4)
 - Scripts (0 + 1=1)
 - Font declaration and styles (0 + 4=4)
 - Page Layout (0 + 6=6)
 - Change tracking (0 + 6=6)
- Formatting Properties (130)
- Text Contents (13 + 22=35)
- Text Frames (2)
- Drawing Content (33 + 11=44)
- Presentation Content (55 + 5=60)
- Spreadsheet Content
- Chart content (0 + 30=30)
- Images Content
- International

OpenDocument Sample Documents

We are working towards developing a comprehensive set of sample documents for the [OpenDocument specifications](#) developed by the [Oasis consortium](#).

Most documents has associated rendering samples created with:

- OpenOffice
- KOffice on Linux

The results are listed in the [summary](#)

The set of sample documents was developed at the [Networking and Mobile Computing Laboratory](#) at the [School of Electrical Engineering and Computer Science](#) of the [University of Central Florida](#).

Developed by: Yi Luo and [Majid A. Khan](#) under the supervision of [Lotzi Bölöni](#).

KOffice samples and automation contributed by [Thomas Zander](#).

The development was sponsored by Intel corporation and released under the [Creative Commons Attribution 2.5 License](#).

Contact us at: [opendocument-sample](#) mailing list.

<http://develop.opendocumentfellowship.org/testsuite>

ODF Validator

ODF Validator - OpenDocument Validation Service

This is the Fellowship's ODF Validation Service, a free service that checks OpenDocument files for conformance with the ODF specification.

Select file

Browse...

validate

Privacy

We take your privacy seriously. Neither the Fellowship nor Cyclone3 will ever sell or distribute any document you upload. Uploaded documents are not used for any purpose other than validation. All documents are destroyed as soon as validation is complete.

Guidance

ERROR: Document not conform with the ODF specification.

WARNING: Not a violation of the specification but may indicate problems.

For example: If the file does not contain a mimetype the validator will produce a warning since a mimetype is a SHOULD in the ODF specification. But an undefined mimetype is an error as it violates the ODF spec.

Acknowledgements

ODF validator written by [Alex Hudson](#) as part of the [Fellowship's ODF Tools](#) project. Web service provided by [Cyclone3](#) and maintained by [Roman Fordinal](#). Learn more about Cyclone3 [ODFvalidator](#)

<http://opendocumentfellowship.org/validato>

ODF Add-in for Word

ODF Add-in for Microsoft Word

About

Documentation

Known Issues

Community

Snapshots

Download

Blog

- [Overview](#)
- [Contributors](#)
- [Licensing model](#)

Overview

The goal for this project is to provide an Add-in to **Microsoft Word XP/2003/2007** to allow opening and saving OpenDocument format (ODF) files.

The converter is based on XSL transformations between two XML formats, along with some pre- and post-processing to manage the packaging (zip / unzip), schema incompatibility processings and the integration into Microsoft Word. We chose to use an Open Source development model that allows developers from all around the world to participate & contribute to the project.

Along with the Add-in for Microsoft Word, we also provide a command line translator that allows doing batch conversions. This translator could also be run on the server side for certain scenarios.

<http://odf-converter.sourceforge.net/>

ODF Plug-in for MS Office

Sun Microsystems Announces OpenDocument Format (ODF) Plug-in Application for Microsoft Office

Users of accessibility devices now fully able to participate in organizations switching to ODF

MENLO PARK, Calif. February 7, 2007 Sun Microsystems, Inc. (NASDAQ: SUNW), the largest code contributor to free and open source communities, today announced the upcoming availability of the [StarOffice 8 Conversion Technology Preview](#) plug-in application for Microsoft Office 2003. The early access version of the OpenDocument Format (ODF) plug-in, available as a free download, will allow seamless two-way conversion of Microsoft Office documents to ODF.

"Organizations can now consider switching to ISO/IEC 26300 OpenDocument Format while protecting employees needing assistive devices only supported by legacy Microsoft software," said Rich Green, executive vice president, Software at Sun Microsystems. "ODF is important because it ensures documents will still be readable long into the future while allowing a wide choice of proprietary and open source software choices to work with the documents."

The StarOffice 8 Conversion Technology Preview is primarily based on the OpenOffice.org platform, the open-source office productivity suite developed by the OpenOffice.org community including the founder and main contributor Sun Microsystems. Sun offers distributions and configurations of and support for OpenOffice.org under the StarOffice brand. The initial plug-in application will support the conversion of text documents (.doc/.odt) only, but full support of spreadsheet and presentation documents is expected in April. The conversion is absolutely transparent to the user and the additional memory footprint is minimal.

 [Print-friendly Page](#)

Press Contacts

Sun Microsystems, Inc.
Terri Molini
(408) 404-4976
terri.molini@sun.com

Sun Newswire

» [Subscribe Now](#)



<http://www.sun.com/software/star/openoffice>

ODF Interoperability Camp

Thursday 20th - ODF Camp

Timetable

Location: Same as OOOCon

	ODF Development Workshop
09:00 - 09:15	Introductory Statement
09:15 - 09:45	Keynote: Peter Vandenabeele ODF plug-ins and other solutions to implement the Belgian open standards directive 
09:45 - 10:00	How does the ODF Boot Camp Work?
10:00 - 10:45	Session 1 : Review of documents
	Break
11:15-13:45	Session 2 : Review and analysis of documents
	Lunch Break
 15:00-16:45	Session 3 : Coding
	Break
17:00-18:30	Session 4 : Coding, solutions
18:40-19:00	Wrap up and next steps



**One standard
One test
Accepted everywhere**



World Standards Day 14 October 2002

Designed by Yoko Okuyama

Printed in Switzerland (Printed in ISO 216)