LibreOffice
The Document Foundation

LibreOffice ODF Advantages

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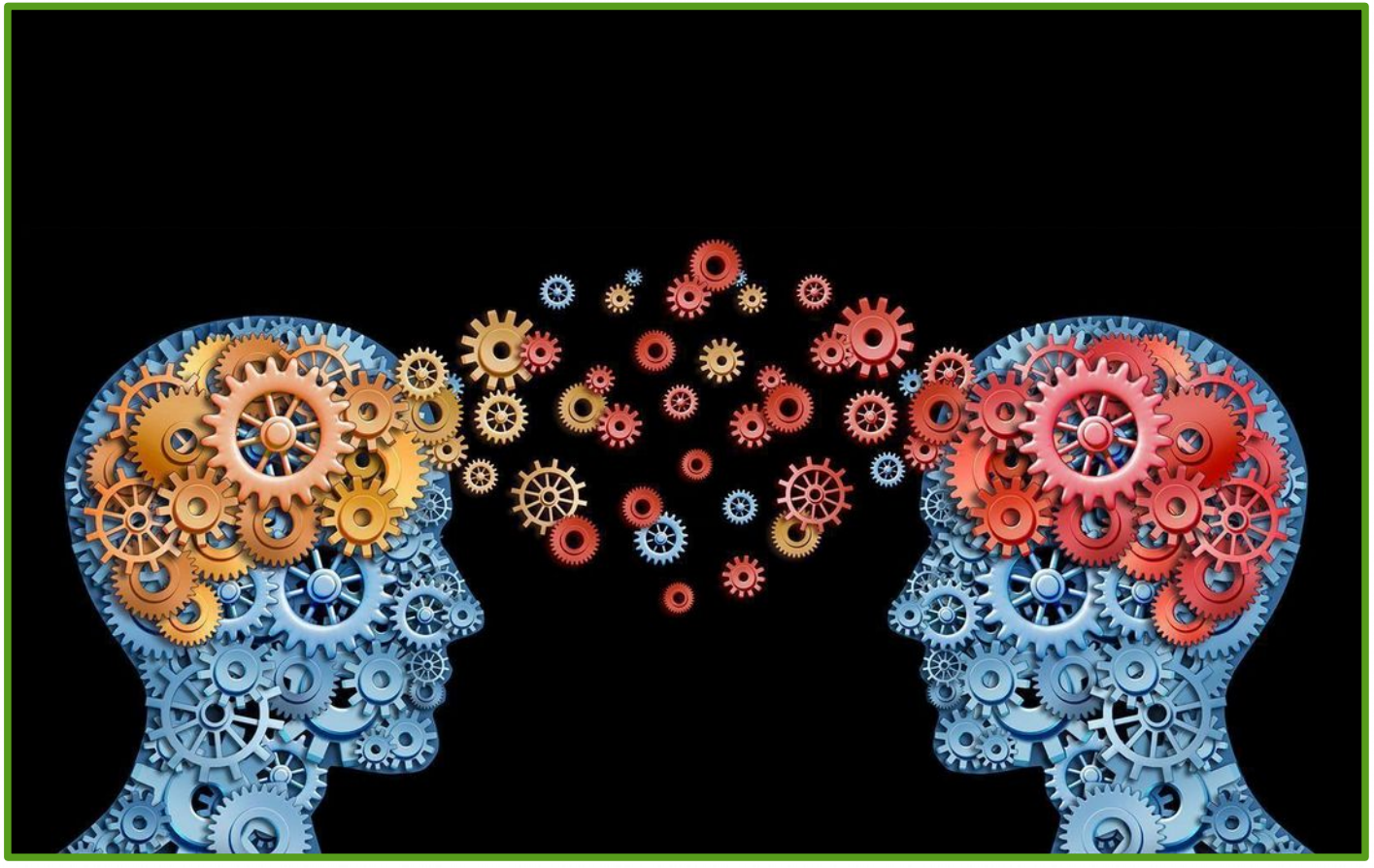
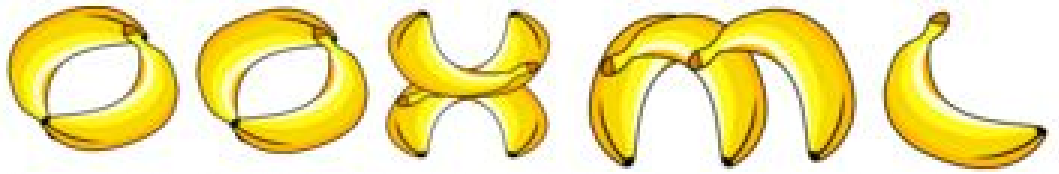
TIRANA
September 26, 2018

LIBOCON TIRANA 2018

Open Source is Sharing Knowledge



Battle of Two Standards



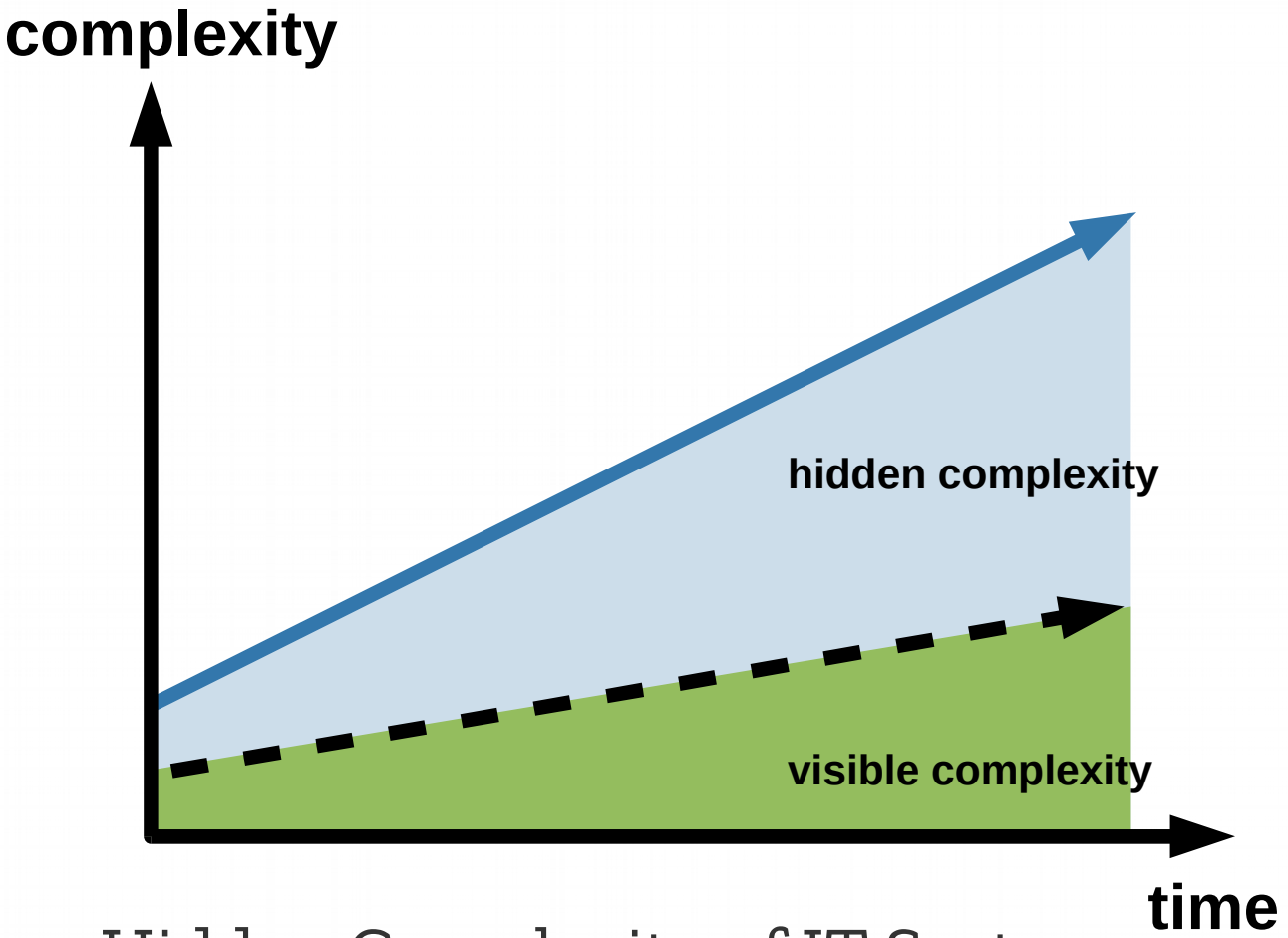
Your title here

ODT by LibreOffice

- Low or no hidden complexity
- Same approach when writing OOXML
- Files are human readable (security)

OOXML by Microsoft Office

- Highest option of hidden complexity
- Same approach when writing ODT
- Files are not human readable



Hidden Complexity of IT Systems

How to Lock-in Your Clients

How Professional Services Firms Can Create Compelling Value for Clients Using Collaborative Technologies

Ross Dawson
CEO, Advanced Human Technologies
Author, *Living Networks* and *Developing Knowledge-Based Client Relationships*

January 2004

>> A STRATEGIC WHITE PAPER FROM MICROSOFT BUSINESS SOLUTIONS

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Standardization Process

ODF

Based on OOo XML format

Dec 12, 2002: document format presented to OASIS

May 1, 2005: ODF released by OASIS

Nov 16, 2005: ODF presented to ISO/IEC JTC1 based on Publicly Available Specification (PAS)

May 3, 2006: ODF approved as ISO/IEC IS 26300 standard

Review: 720 paged in 1239 days

OOXML

Based on Microsoft Office 2003 XML format

Dec 15, 2005: document format presented to ECMA

Dec 31, 2006: ECMA standard approved by General Assembly

Jan 31, 2007: OOXML presented to ISO/IEC JTC1 based on Fast Track

Mar 31, 2008: OOXML pseudo standard approved

Review: 7200 pages in 838 days

Re-Use of Standards

ODF

Dublin Core

XLS:FO

SVG

MathML

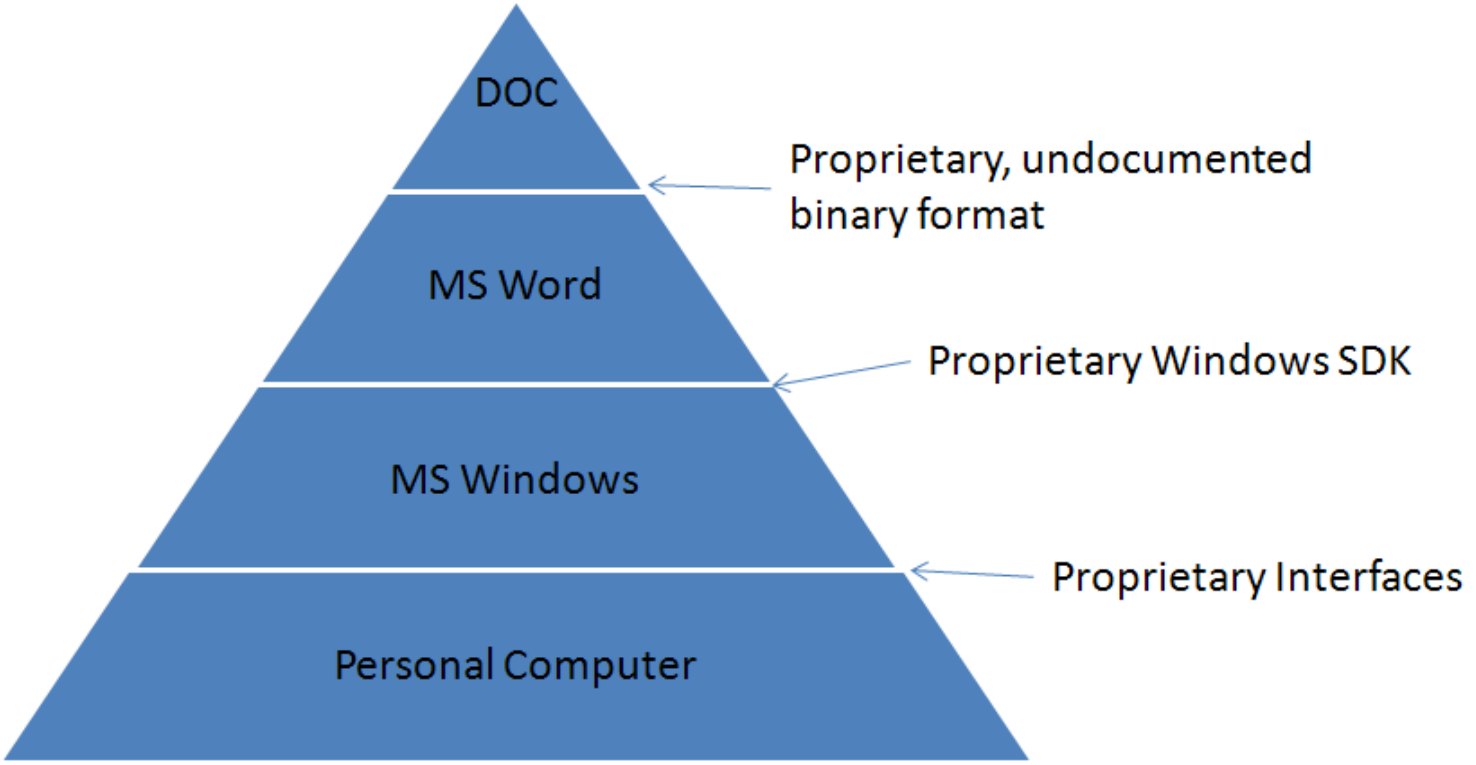
XLink

SMIL

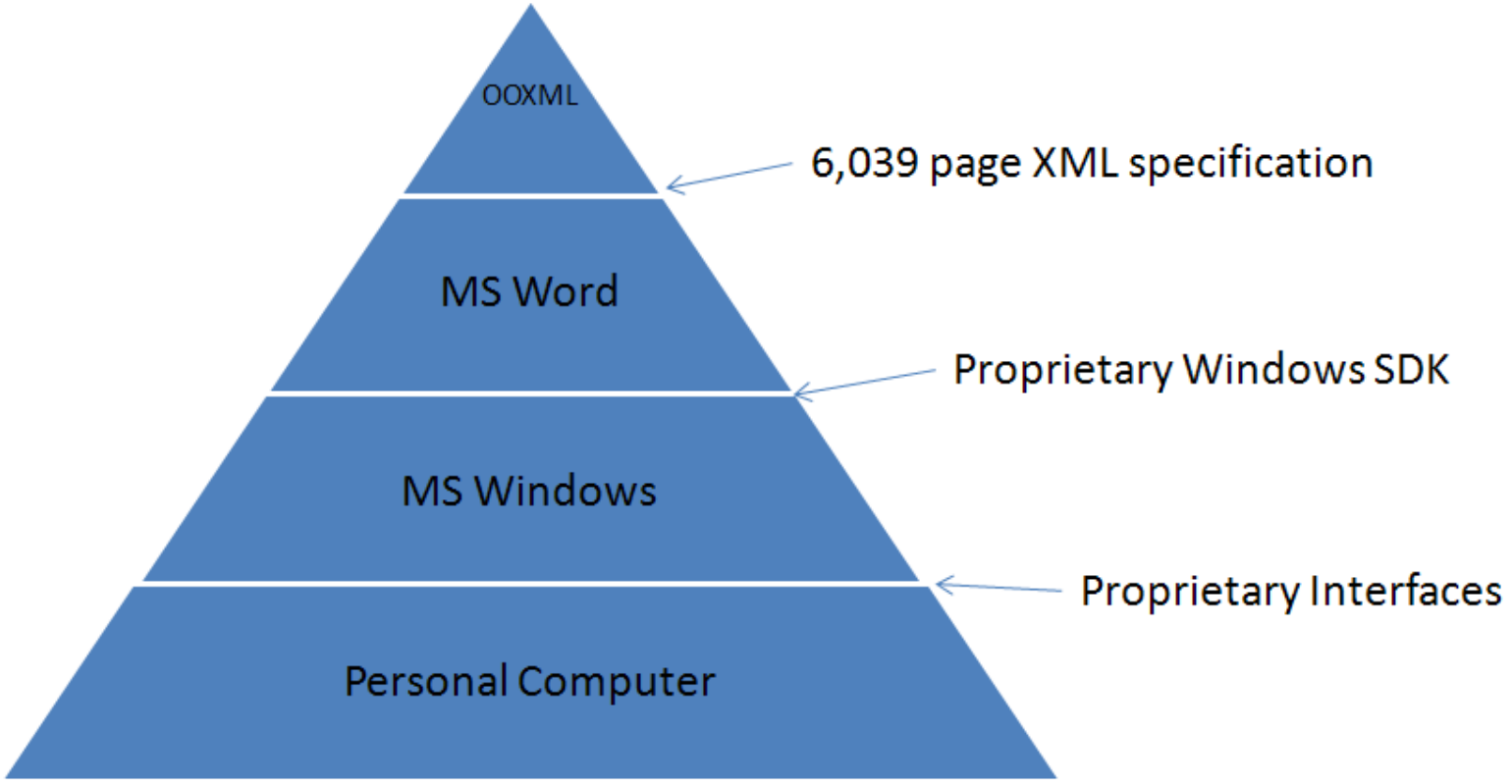
XForms

OOXML

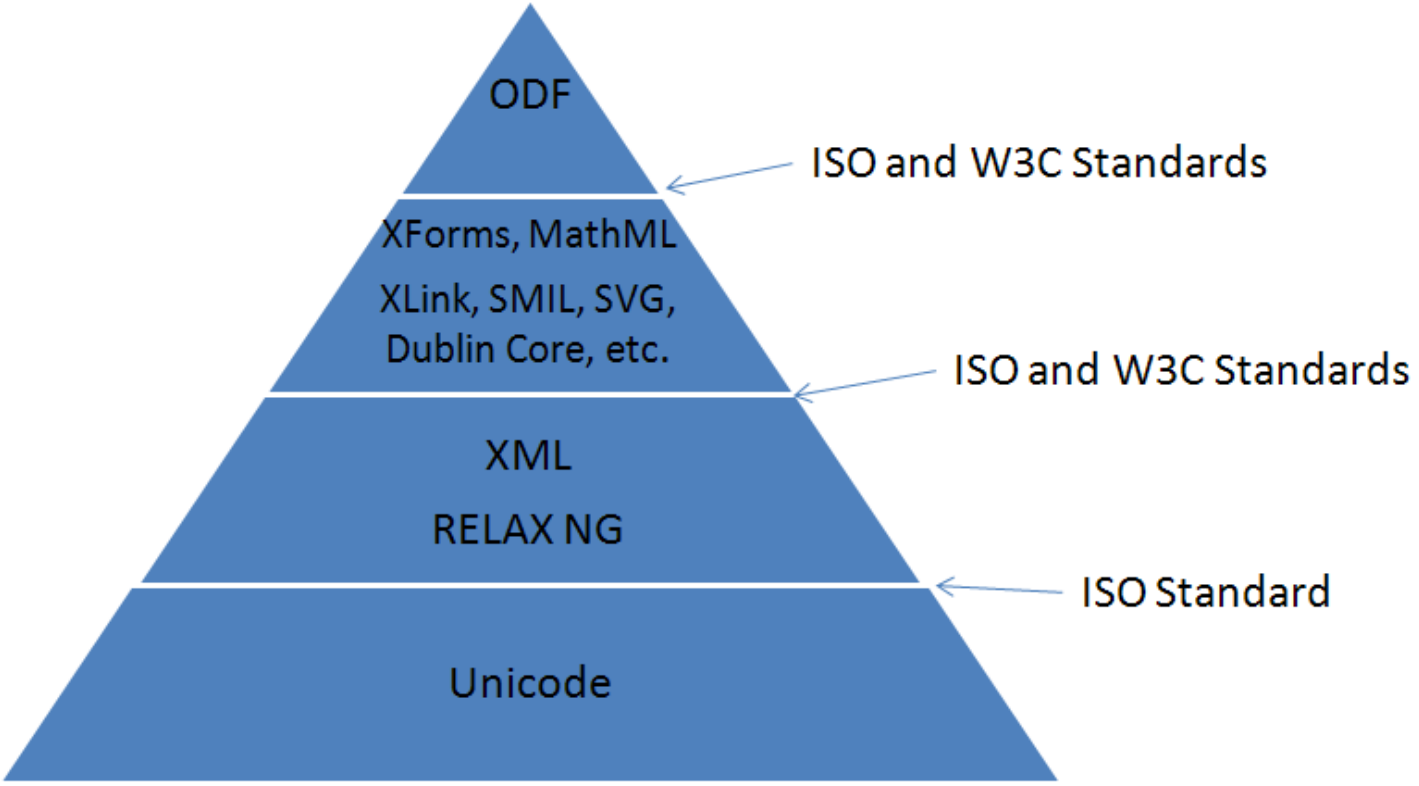
Dublin Core



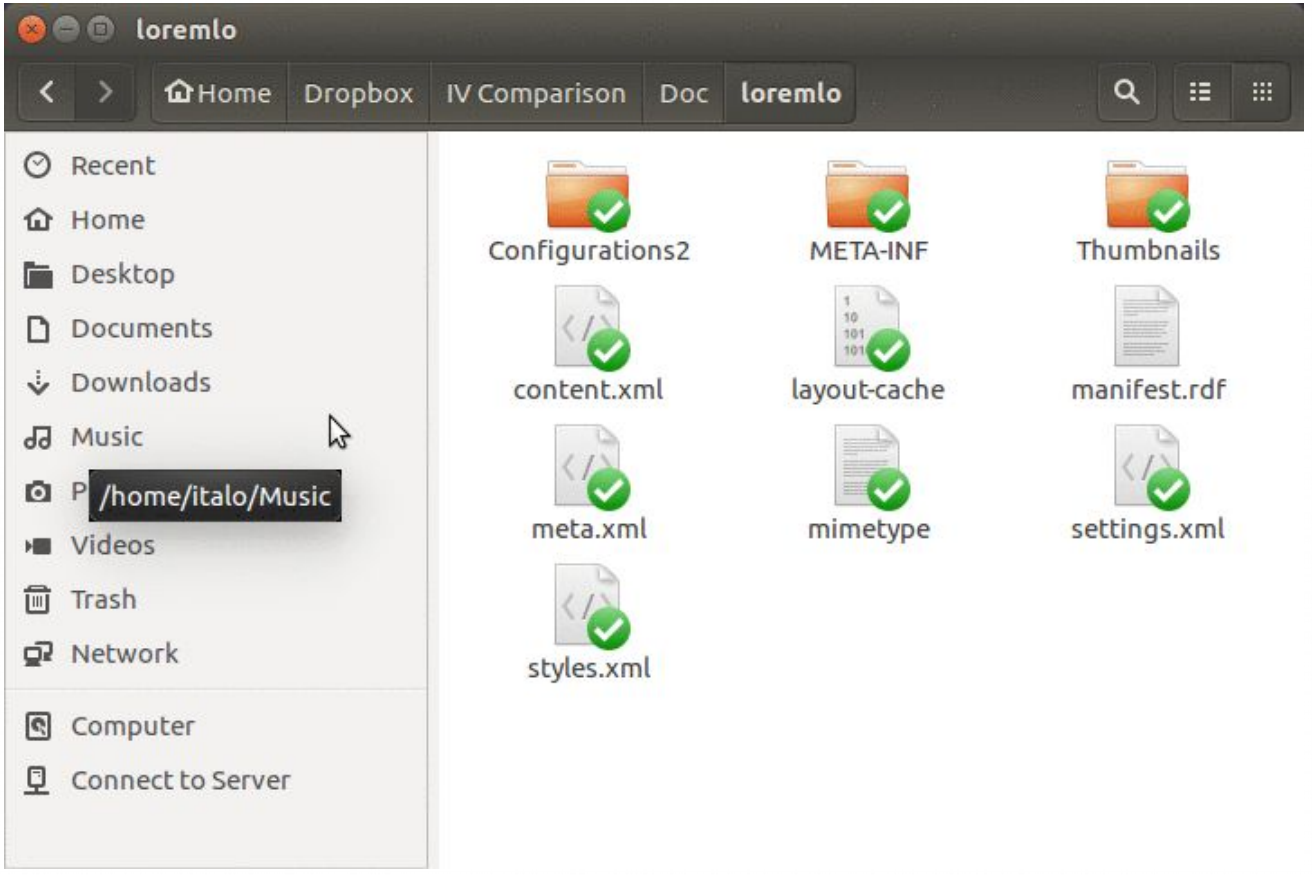
Proprietary File Stack



Pseudo-Standard File Stack



Standard File Stack



Inside ODT

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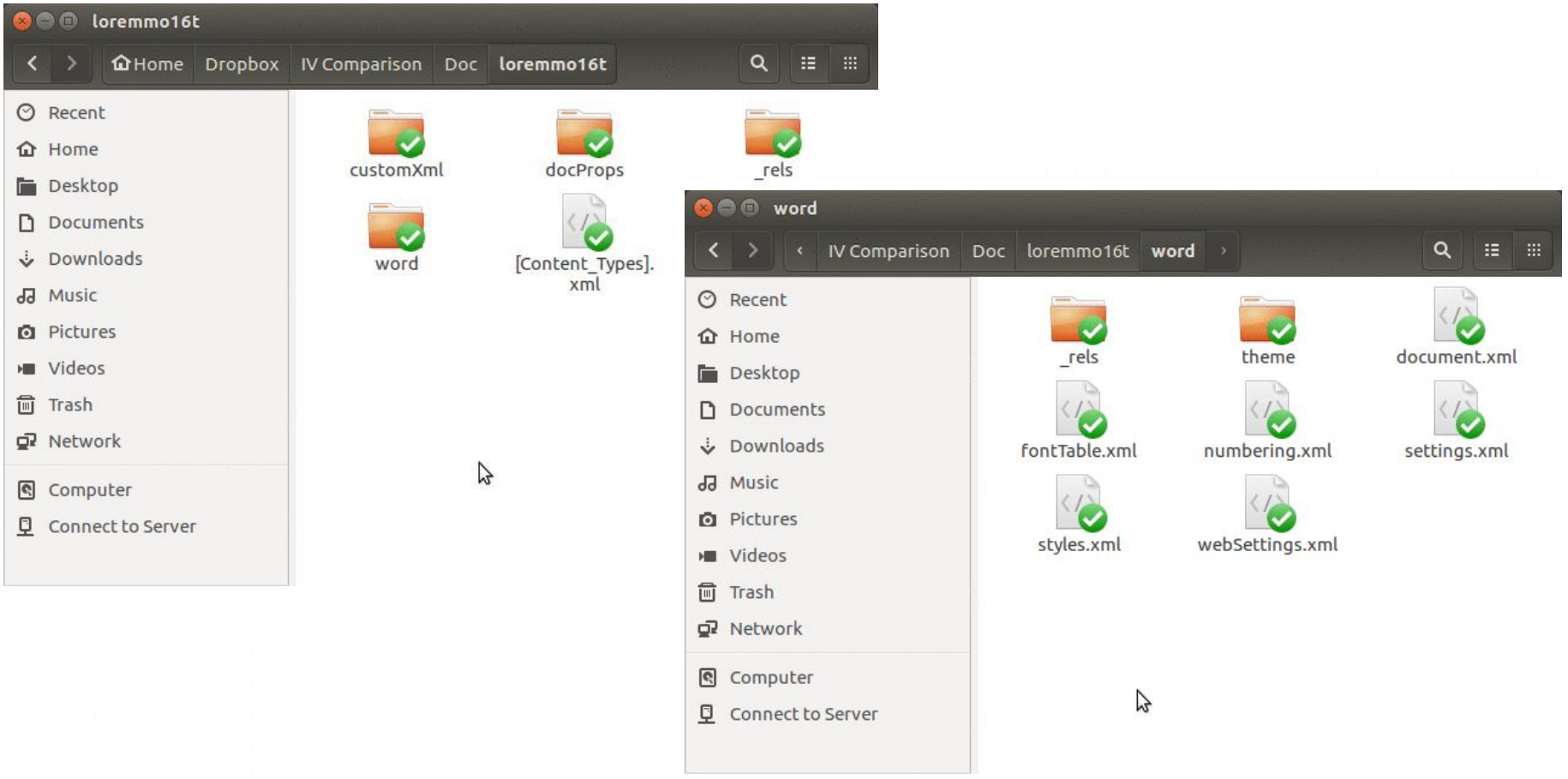

Inside DOCX

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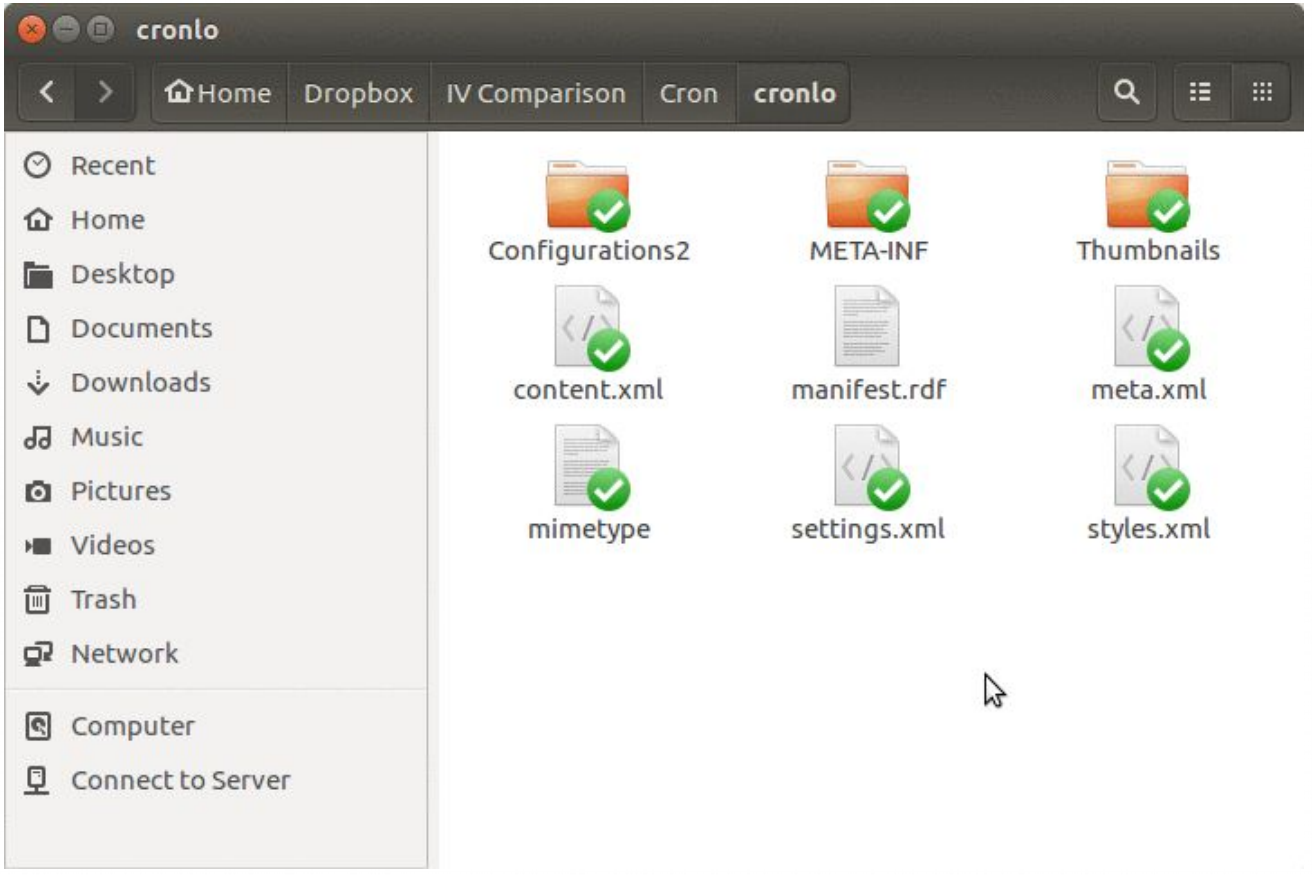

Inside ODS

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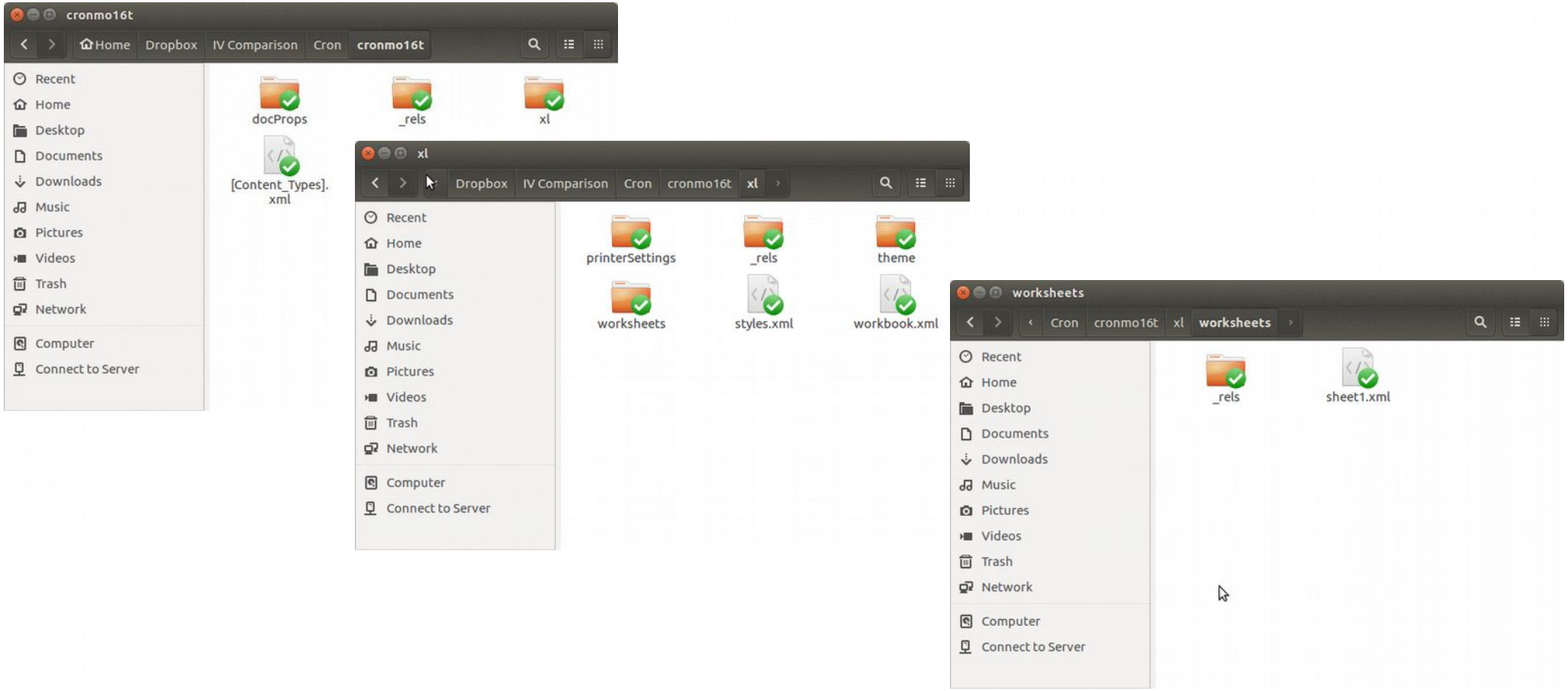

Inside XLSX

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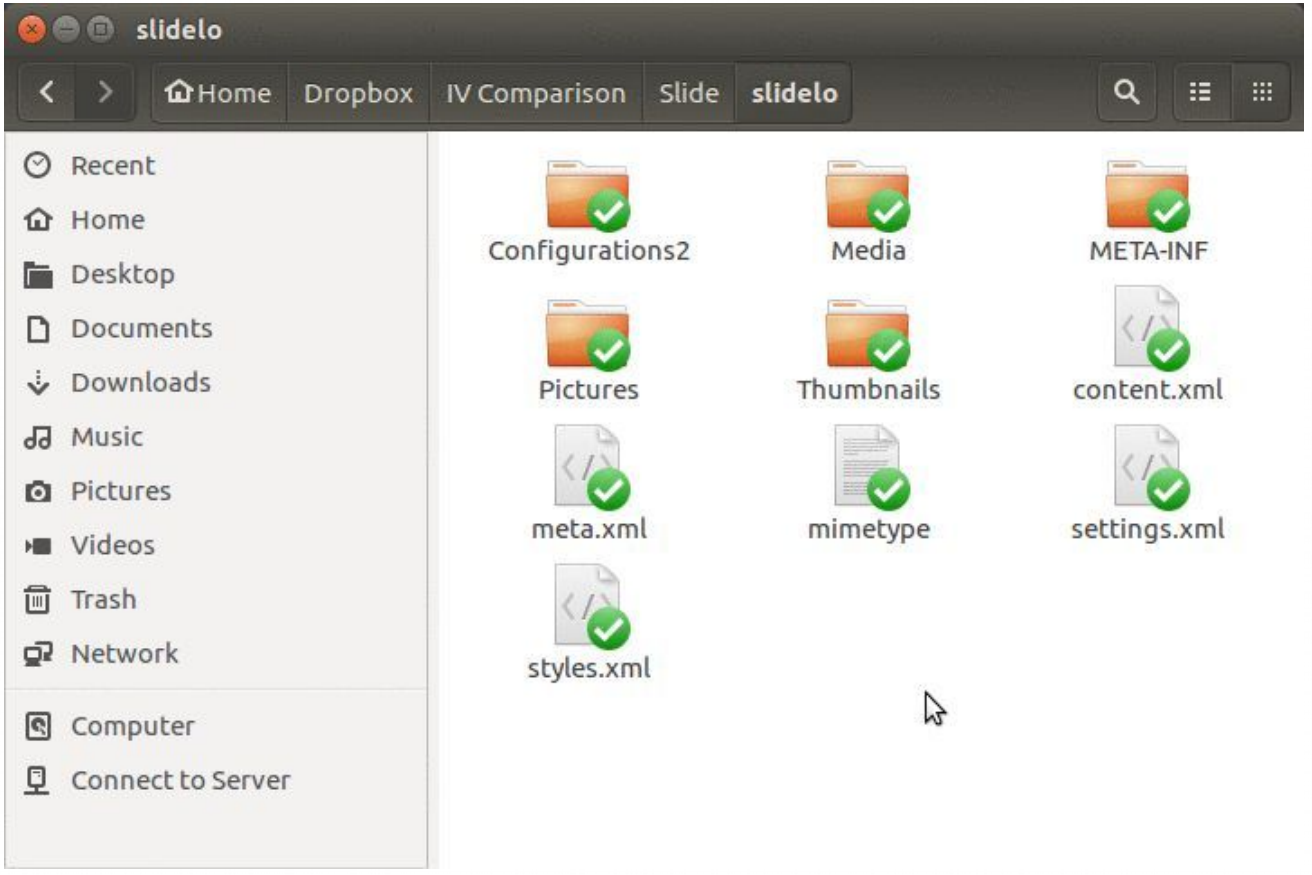

Inside ODP

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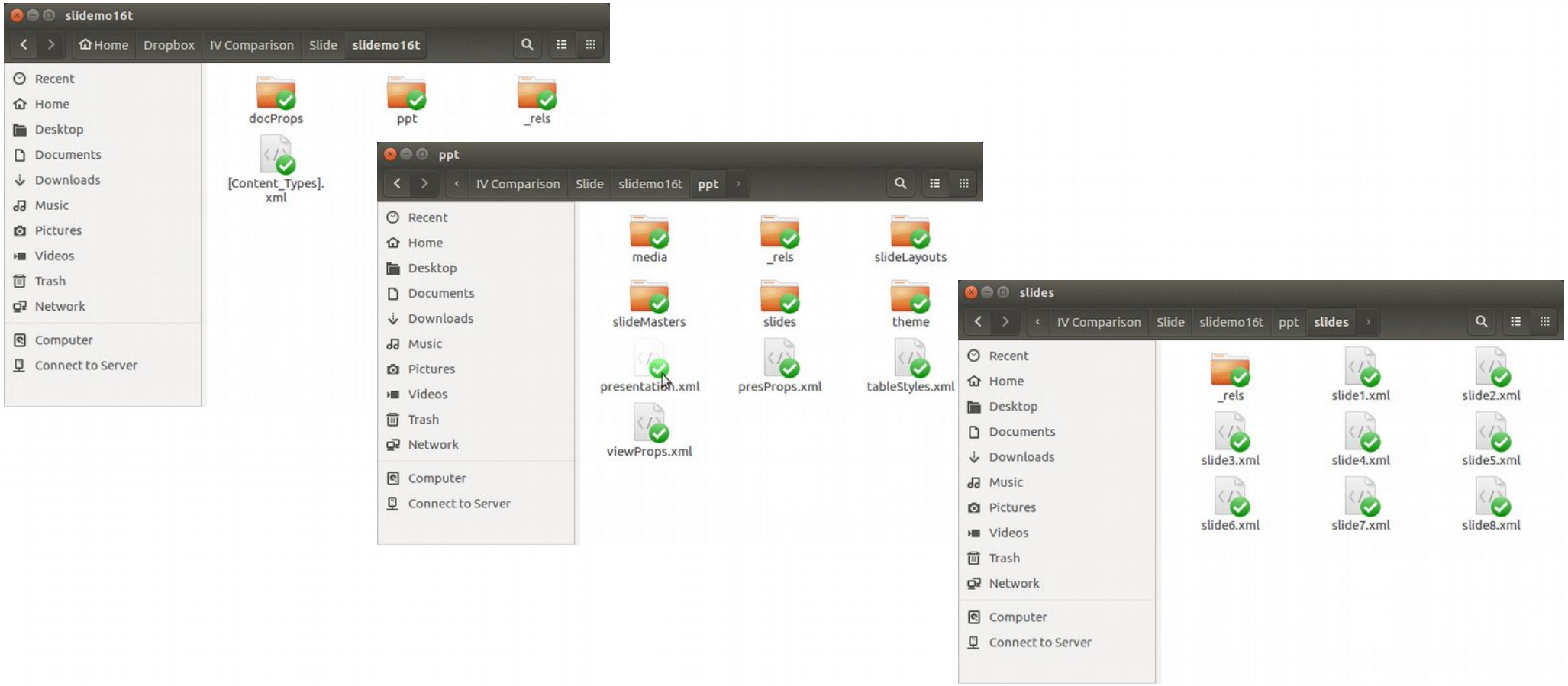

Inside PPTX

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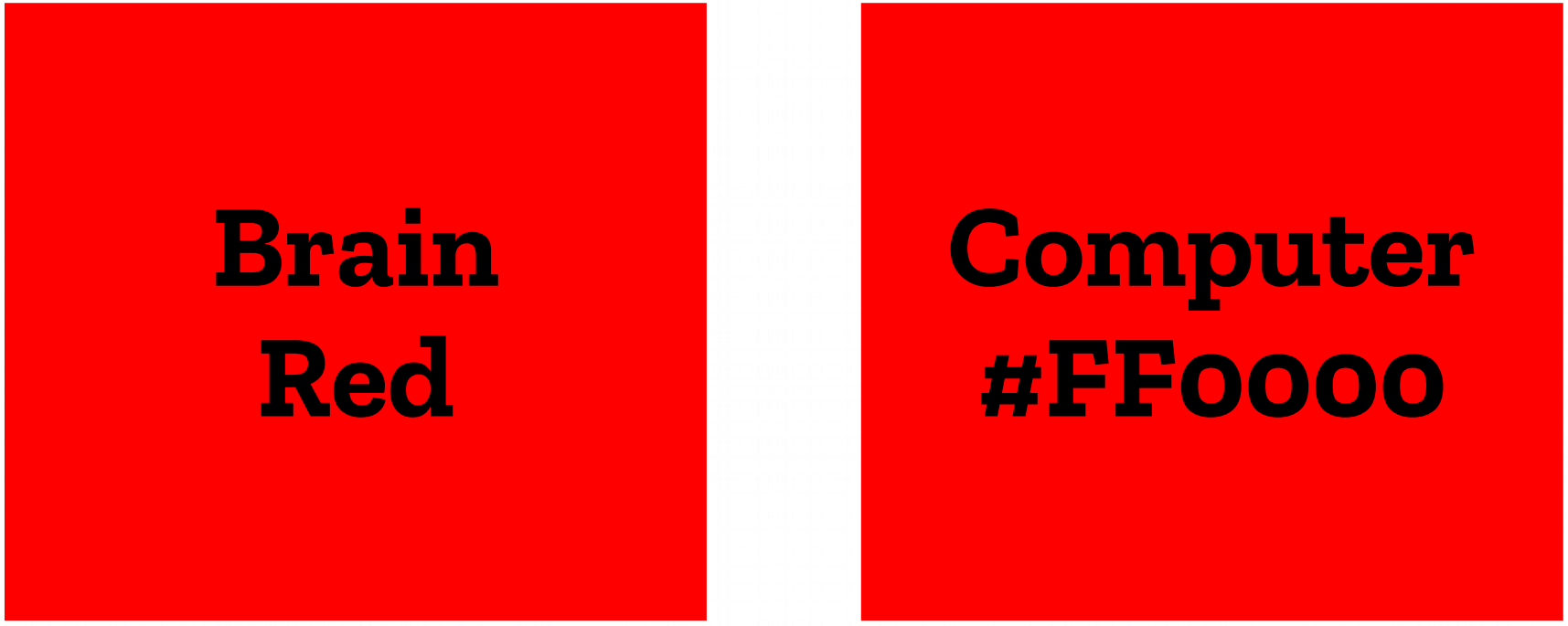

Brain & Computer

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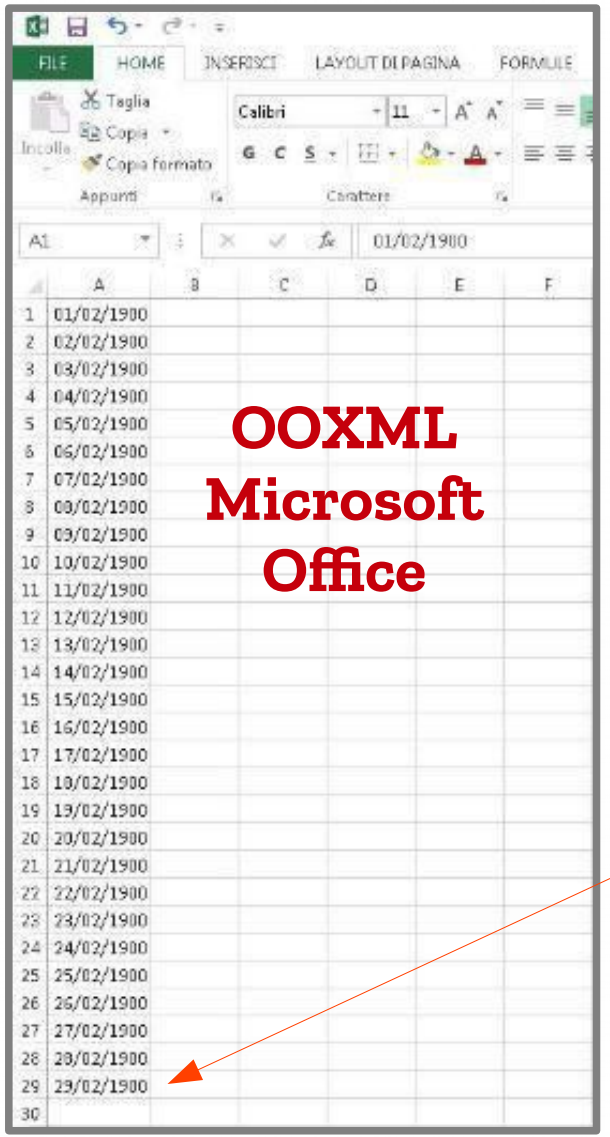
ODF (LibreOffice)

- Writer
  fo:color="#FF0000"
- Calc
  fo:color="#FF0000"
- Impress
  fo:color="#FF0000"

OOXML (MS Office)

- Word
  w:color w:val="FF0000"
- Excel
  color rgb="FFFF0000"
- PowerPoint
  a:srgbClr val="FF0000"

Brain & Computer



September 29, 1900
"Excel Day"

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Issues with Other Calendards

- Some version of OOXML (but only Microsoft knows which versions) do not consider Jewish and Muslim users, who use a different calendar
- In fact, regardless of the local configuration, Excel Networkdays () function always returns Saturday and Sunday as weekend
- Serious issue for almost one billion people in Asia and Africa

Issues with Language Codes

- ISO 639 is the global standard to define short codes for language names (English = EN)
- OOXML uses a different proprietary list of numbers
- This creates interoperability issues with software compliant with the ISO standard

Issues with Graphics

- ISO/IEC 8632 is the global ISO standard for computer graphics: 2D graphical information based on "vector graphics", "raster graphics" and "text"
- OOXML recommends Windows Metafiles or Enhanced Metafiles instead of using ISO/IEC 8632 or W3C SVG
- WMF is a proprietary Windows format which has never been approved by ISO

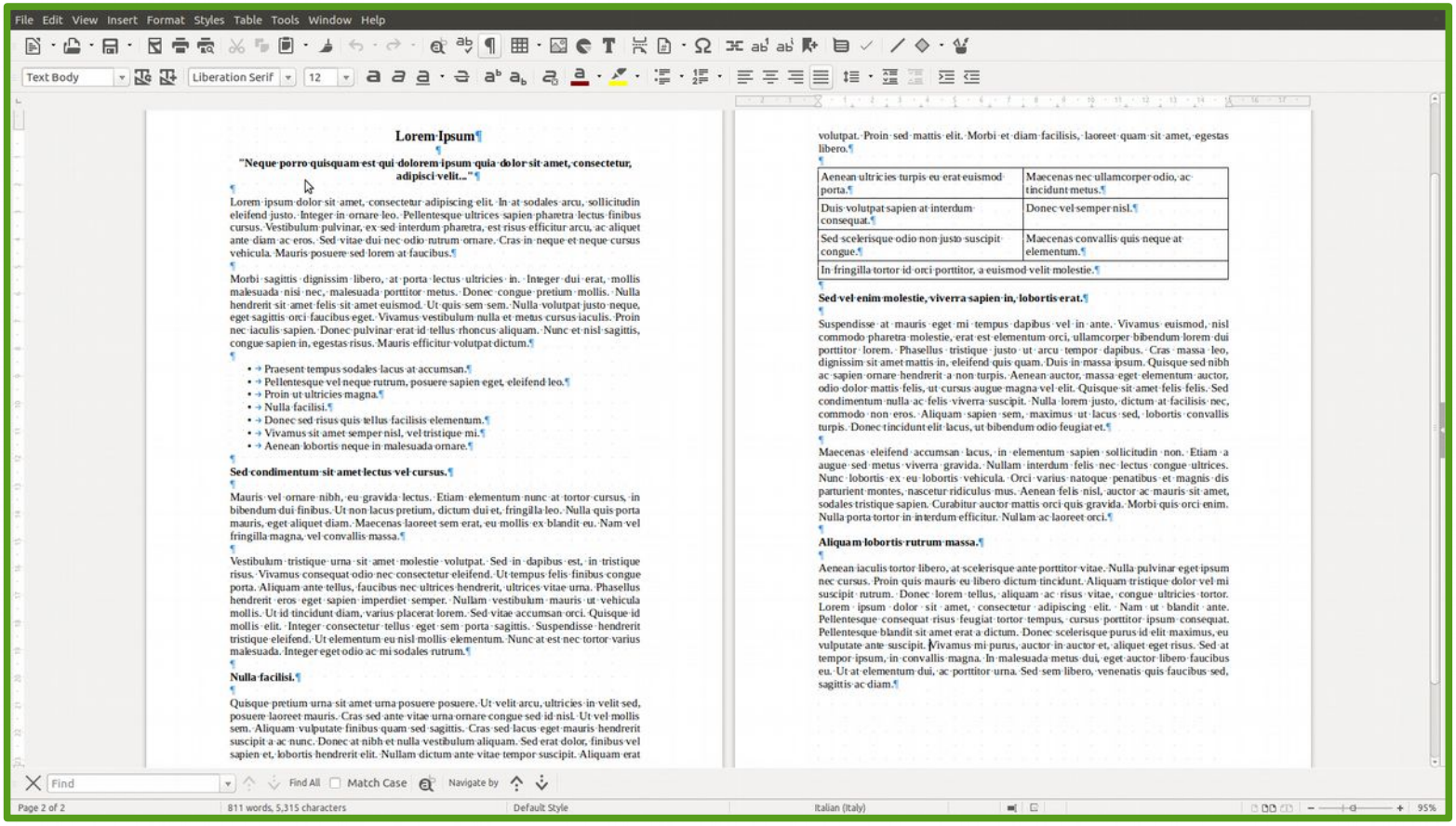
Conflict with MathML

- MathML is W3C standard for "describing mathematical notation and capturing both structure and contents"
- Microsoft OOXML "Math" manages mathematical expressions with a format in conflict and incompatible with MathML, recommended by the W3C
- MathML is part of ISO/IEC 26300 (Open Document Format), so Microsoft OOXML intentionally creates a conflict with an existing standard

Conflict with MathML

Color	SVG	OOXML
Dark Blue	00008B	000080
Dark Cyan	008B8B	008080
Dark Grey	A9A9A9	808080
Dark Green	006400	008000
Dark Red	8B0000	800000
Light Grey	D3D3D3	C0C0C0

File Comparison
ODF vs OOXML



Comparison ODF/OOXML

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Length of Content XML

File Version	XML Lines
ODF 1.2 (any version of) LibreOffice	222
ODF 1.2 Microsoft Office 2013 Windows	541
ODF 1.2 Microsoft Office 2016 Windows	496
OOXML 2010 Transitional (MS Office Windows)	1040
OOXML 2011 Transitional (MS Office MacOS)	12854
OOXML 2013 Transitional (MS Office Windows)	1590
OOXML 2016 Transitional (MS Office Windows)	11667
OOXML 2016 Transitional (MS Office MacOS)	11646

Digging Deeper

File Version	XML Lines
Windows OOXML 2013 Transitional	1590
Windows OOXML 2013 Transitional in late 2018	13515
Windows OOXML 2016 Transitional in 2017	11667
Windows OOXML 2016 Transitional in early 2018	969
Windows OOXML 2016 Transitional in late 2018	11288
MacOS OOXML 2016 Transitional in 2017	11646
MacOS OOXML 2016 Transitional in late 2018	854

<start text>**To be, or not to be, this is the problem.**<end text>

ODT by LibreOffice

<start text>**To be, or not to be, this is the problem.**<end text>

ODT by LibreOffice

<start text>**To**<end text>
<keep together>
<start text>[space]<end text>
<start text>**be**<end text>
<start text>**,**<end text>
<keep together>
<start text>[space]<end text>
<start text>**or**<end text>
<keep together>
<start text>[space]<end text>
<start text>**not**<end text>
<keep together>
<start text>[space]<end text>
<start text>**to**<end text>
<keep together>
<start text>[space]<end text>
<start text>**be**<end text>
<keep together>
<start text>**,**<end text>
<keep together>
<start text>[space]<end text>
<start text>**this**<end text>
<keep together>
<start text>[space]<end text>
<start text>**is**<end text>
<keep together>
<start text>[space]<end text>
<start text>**the**<end text>
<keep together>
<start text>[space]<end text>
<start text>**problem**<end text>
<start text>**.**<end text>

Italo Vignoli's Life Milestones

Event	Calc	Excel
Birth	12/08/1954	19948
Broke Nose	18/01/1965	23760
Degree	19/11/1978	28813
First Job	01/10/1981	29860
Got a PC	01/09/1983	30560
Got Married	08/09/1984	30933
Was Featured on BBC	17/02/1987	31825
Installed OOo	02/01/2003	37623
Repaired Noze	12/04/2008	39550
Launched LibreOffice	28/09/2010	40449
Got Married Again with Same Wife	08/08/2014	41859

Deductions of a Stupid Me

- LibreOffice developers are a bunch of geniuses
- Microsoft Office developers are a bunch of *****

  unless

- Microsoft Office XML files are artificially stuffed with useless contents to reduce the chances that software other than Microsoft Office can open them properly
- Microsoft has a vested interest in killing standard based interoperability to protect a captive market still valued at over 25 billion dollars

NIST GCR 04-867

U.S. Department of Commerce
Technology Administration
National Institute of Standards and Technology

Advanced Technology Program
Information Technology and Electronics Office
Gaithersburg, Maryland 20899

Cost Analysis of Inadequate Interoperability in the U.S. Capital Facilities Industry

Michael P. Gallaher, Alan C. O'Connor, John L. Dettbarn, Jr., and Linda T. Gilday

Table 6-5. Costs of Inadequate Interoperability for Architects and Engineers

Life-Cycle Phase	Cost Category	Cost Component	Average Cost per Square Foot	Average Cost per Square Meter	Inadequate Interoperability Cost Estimate ($Thousands)
Planning, Engineering, and Design		Inefficient business process management costs	0.31	3.37	356,126
		Redundant CAx systems costs	0.0001	0.001	158
		Productivity losses and training costs for redundant CAx systems	0.04	0.45	47,947
		Redundant IT support staffing for CAx systems	0.0004	0.005	501
		Data translation costs	0.002	0.02	2,139
	Avoidance Costs	Interoperability research and development expenditures	0.02	0.21	22,234
		Manual reentry costs	0.41	4.38	462,734
		Design and construction information verification costs	0.10	1.08	114,342
	Mitigation Costs	Reworking design files costs	0.0009	0.009	968
		Avoidance costs	0.38	3.85	429,106
		Mitigation costs	0.51	5.47	578,044
	Subtotal	**Subtotal**	**0.89**	**9.32**	**1,007,150**

Construction	**Avoidance Costs**	Inefficient business process management costs	0.04	0.41	43,290
		Redundant CAx systems costs	0.00003	0.0003	28
		Productivity losses and training costs for redundant CAx systems	0.007	0.08	8,461
		Redundant IT support staffing for CAx systems	0.00008	0.0008	88
		Data translation costs	0.0003	0.004	378
		Interoperability research and development expenditures	0.003	0.04	3,924
		Manual reentry costs	0.024	0.26	27,750
	Mitigation Costs	Design and construction information verification costs	0.006	0.07	7,377
		RFI management costs	0.05	0.53	55,656
	Subtotal	Avoidance costs	0.05	0.49	56,169
		Mitigation costs	0.08	0.86	90,783
		Subtotal	**0.13**	**1.35**	**146,952**
Operations and Maintenance	**Mitigation Costs**	Post-construction redundant information transfer costs	**0.01**	**0.15**	**15,660**
Total Cost					**1,169,762**

Source: RTI estimates; totals may not sum correctly due to rounding.

Questions ?

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