



# LibreOffice

The Document Foundation



# LibreOffice ODF Advantages

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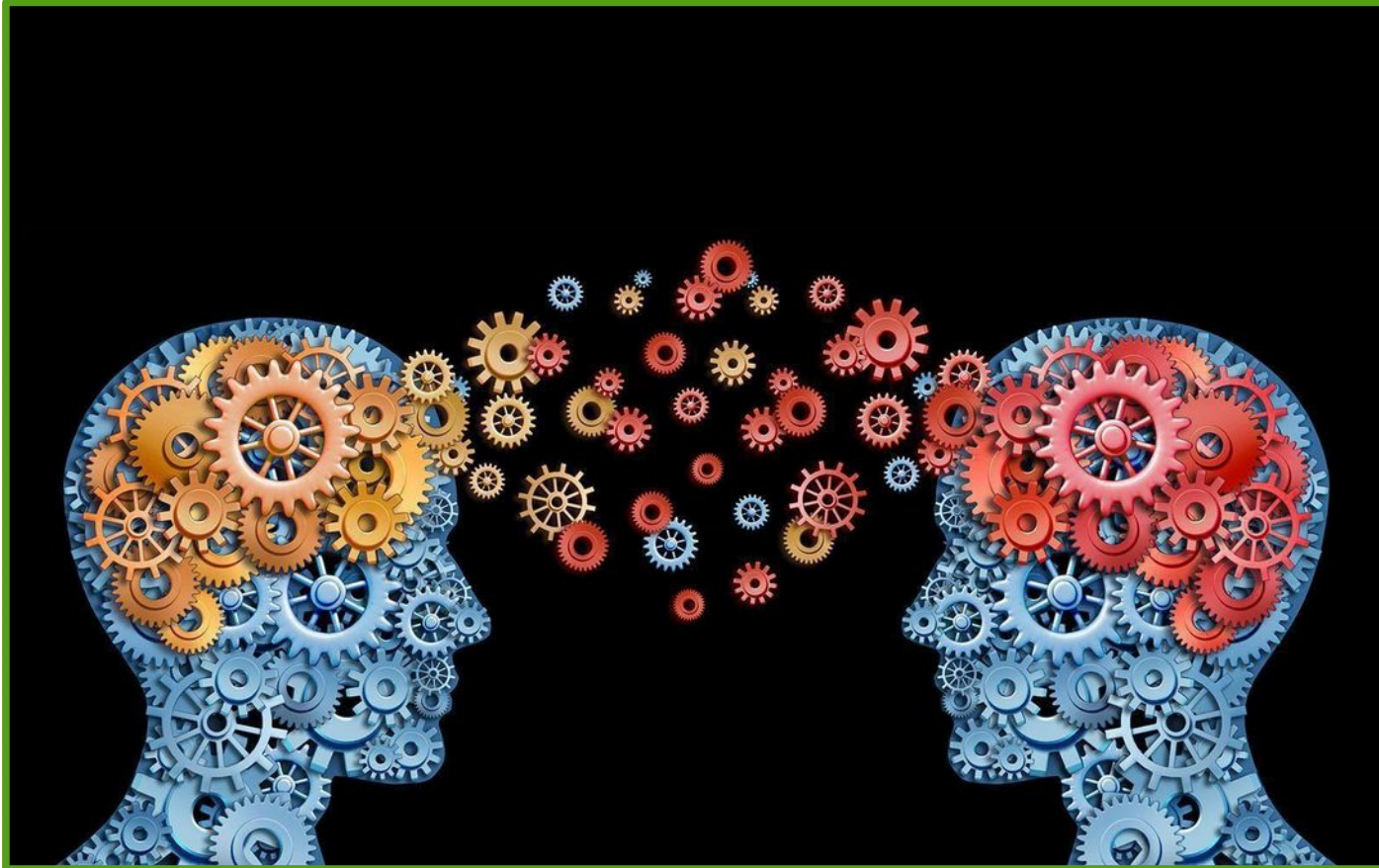
**TIRANA**  
**September 26, 2018**



**LIBOCON**  
**TIRANA 2018**

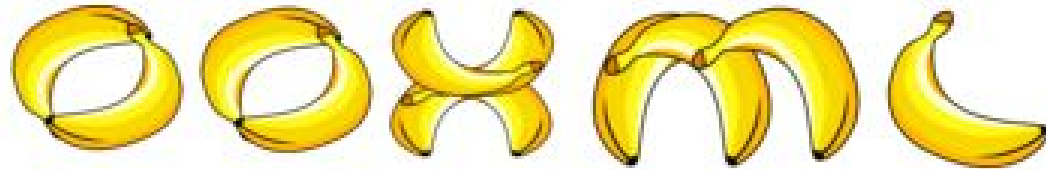


# Open Source is Sharing Knowledge





# Battle of Two Standards





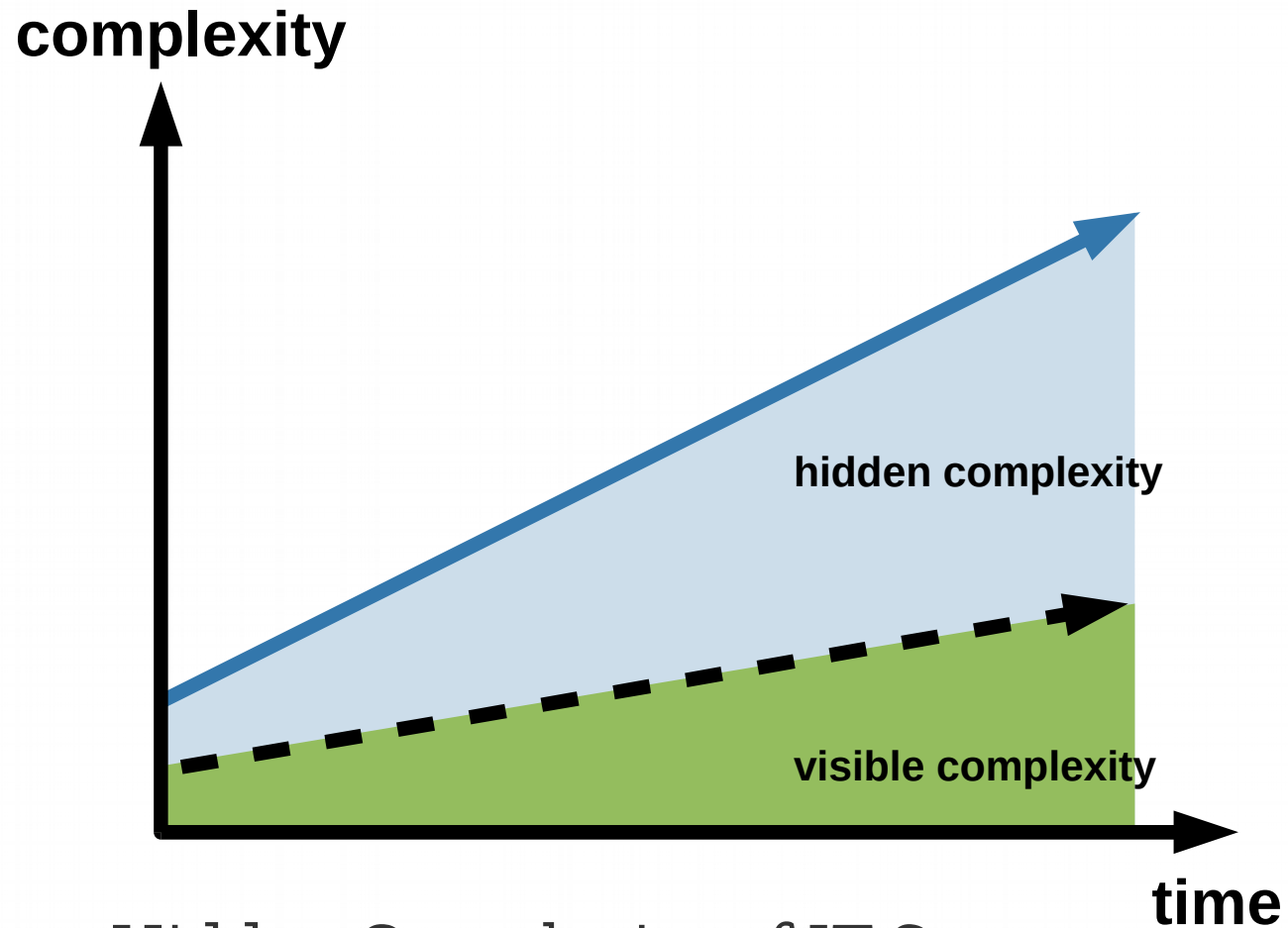
# Your title here

## **ODT by LibreOffice**

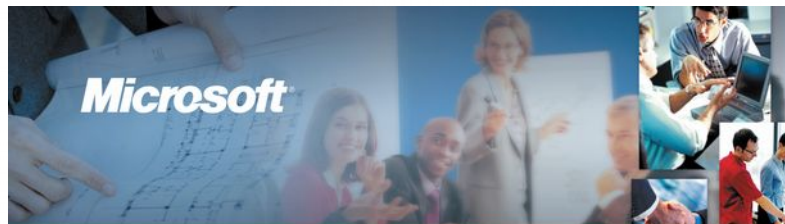
- Low or no hidden complexity
- Same approach when writing OOXML
- Files are human readable (security)

## **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



# 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

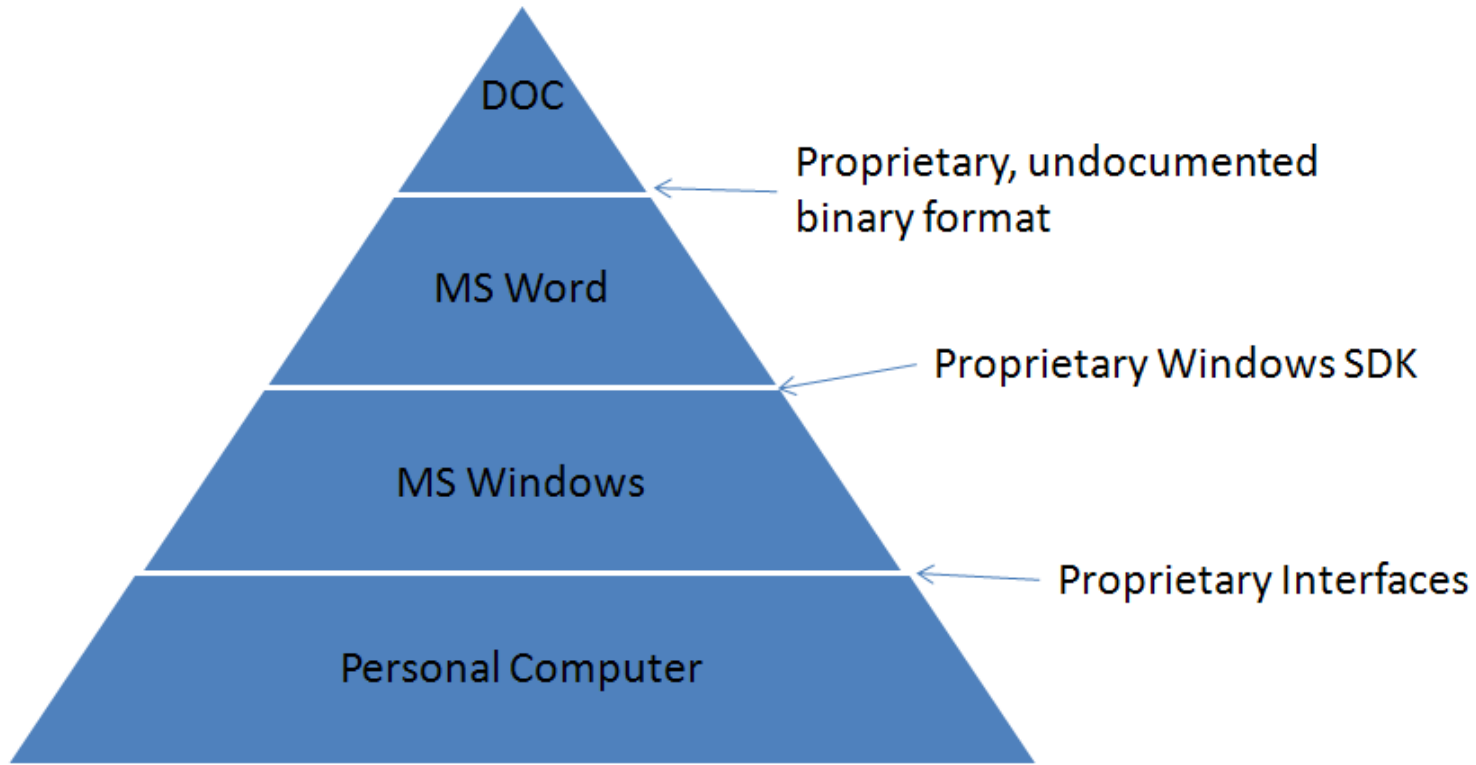
SMIL

XForms

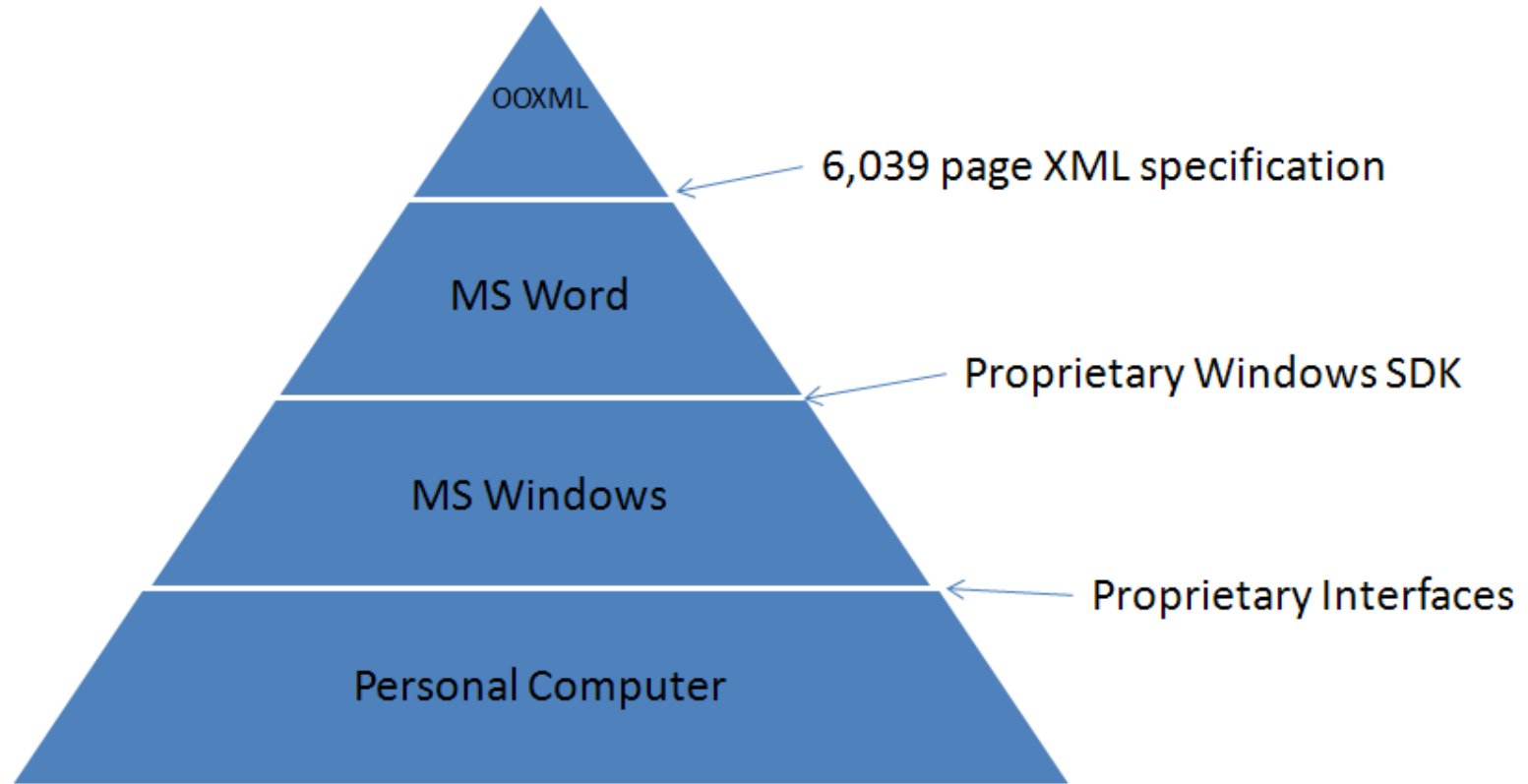
## **OOXML**

Dublin Core

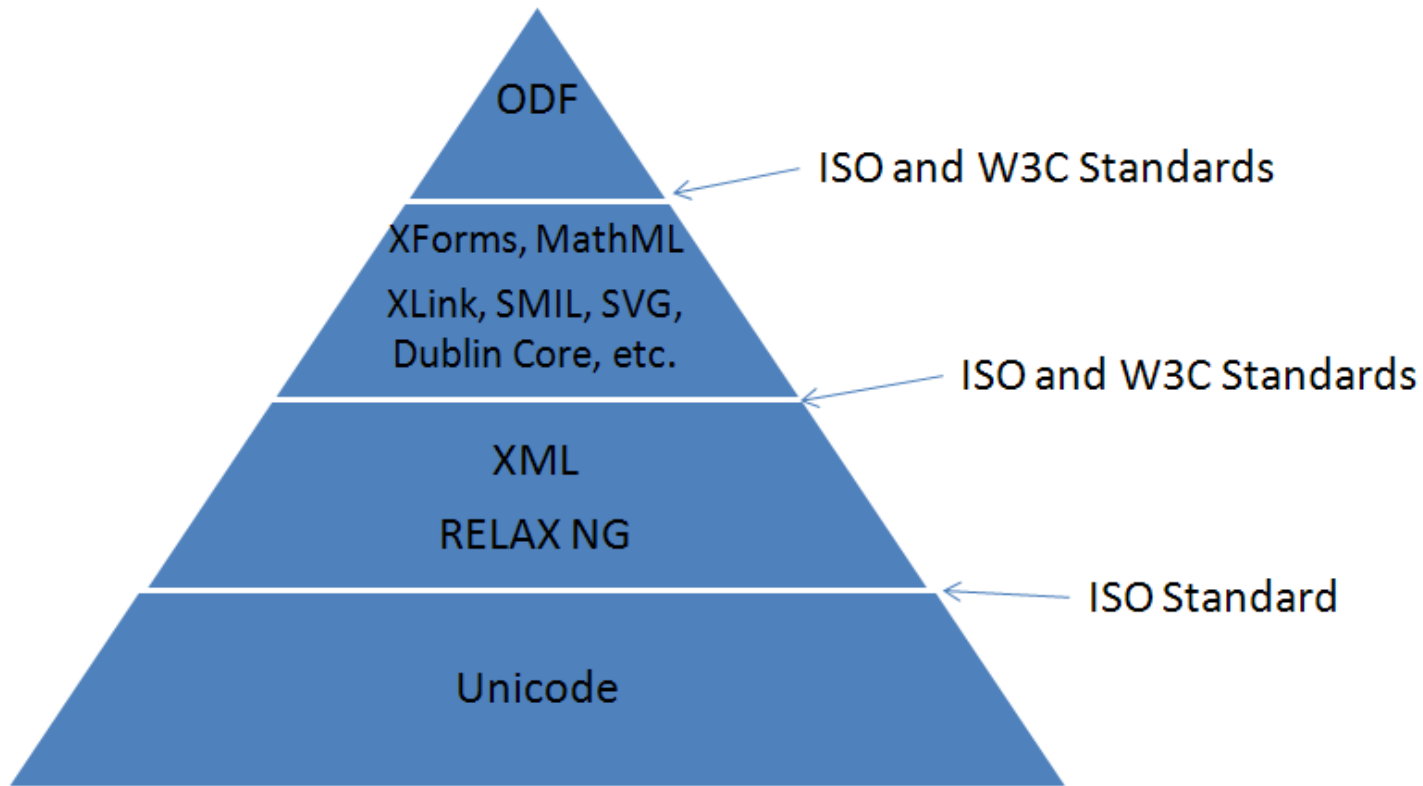




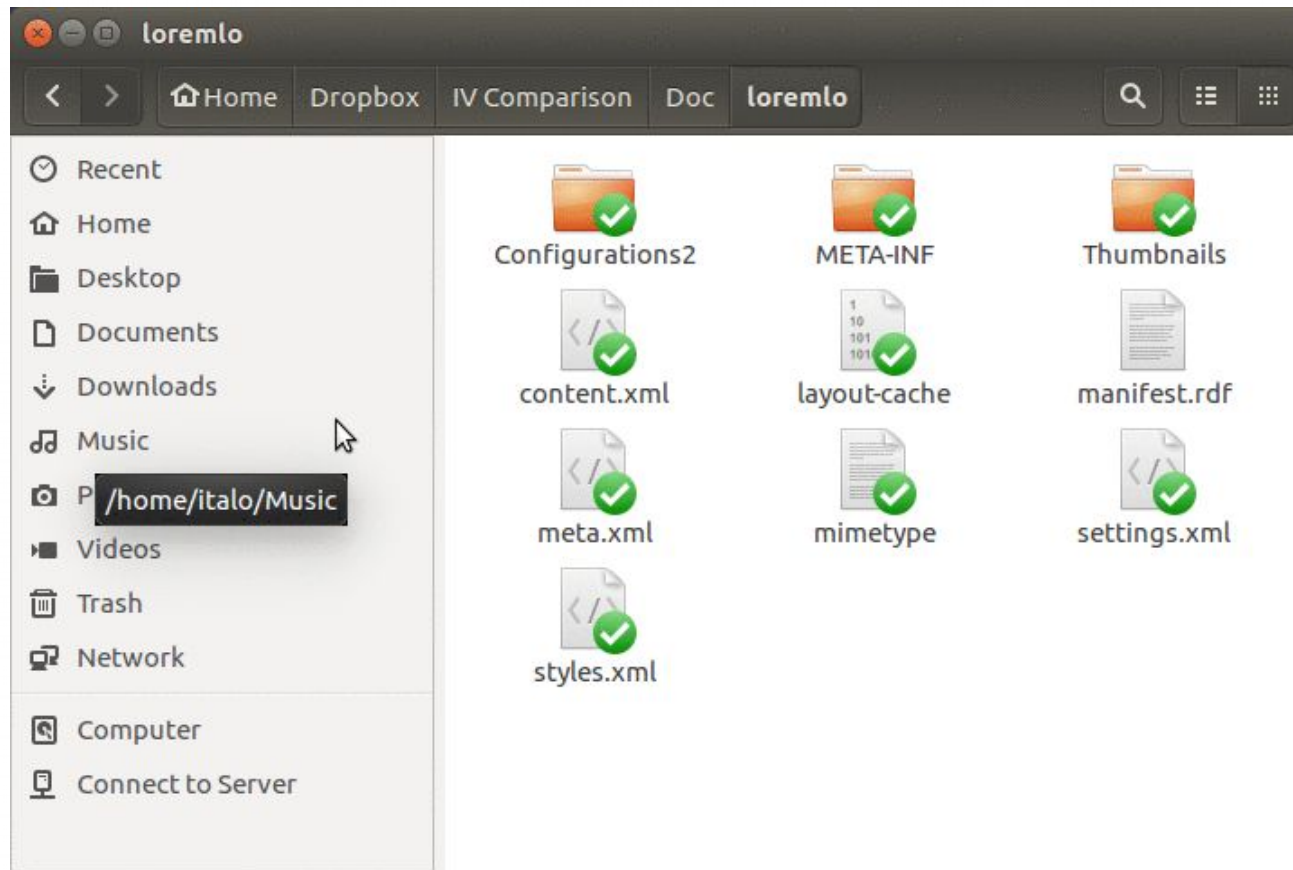
## Proprietary File Stack



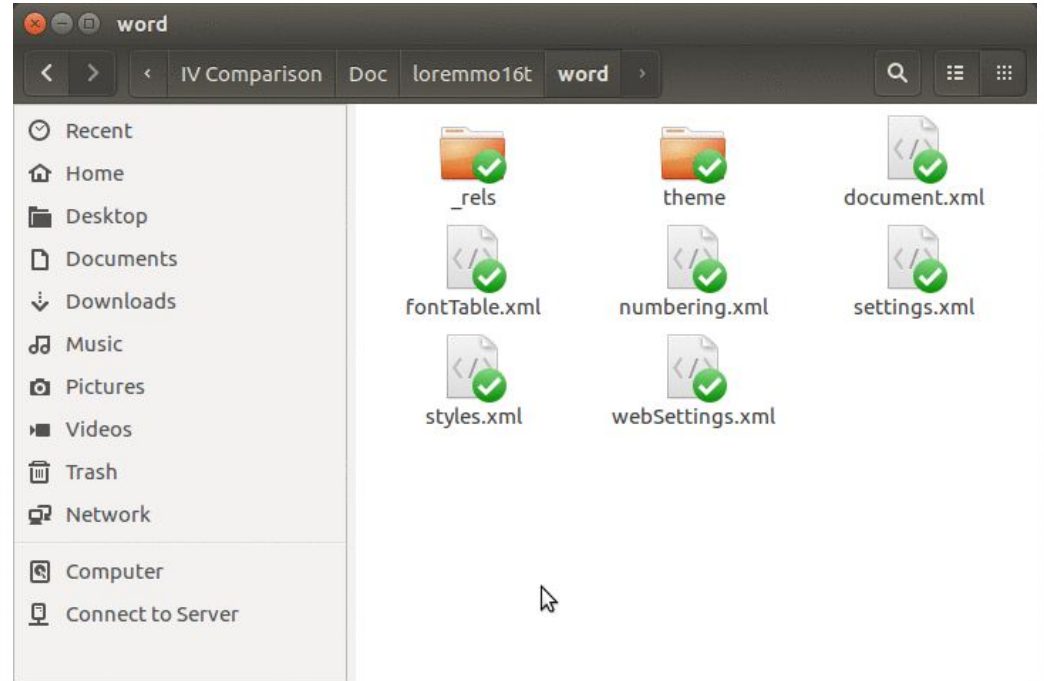
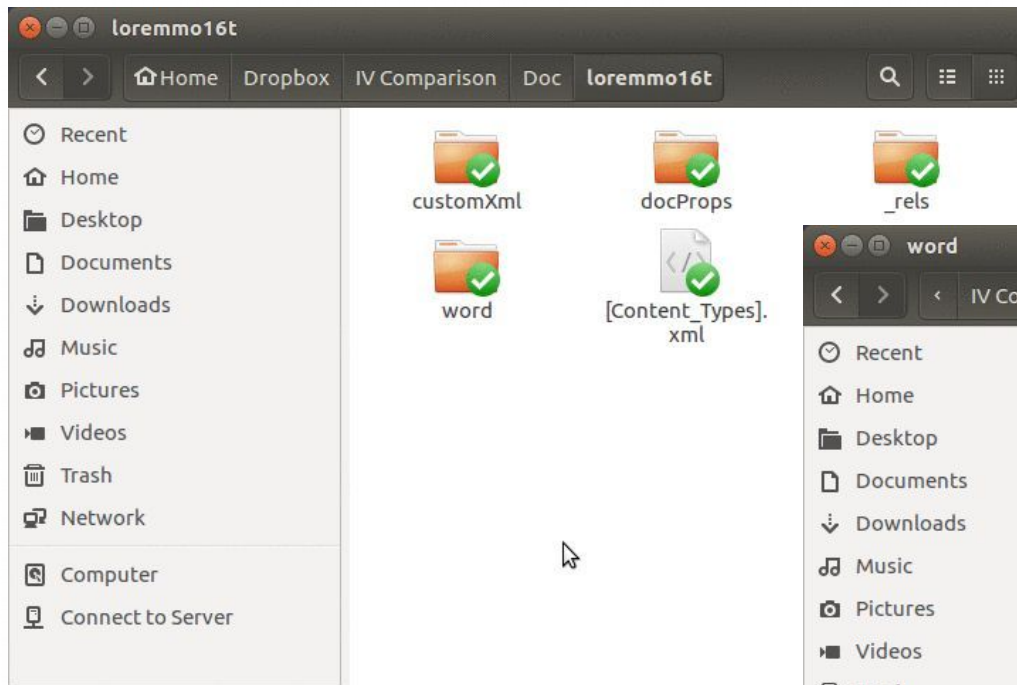
## Pseudo-Standard File Stack



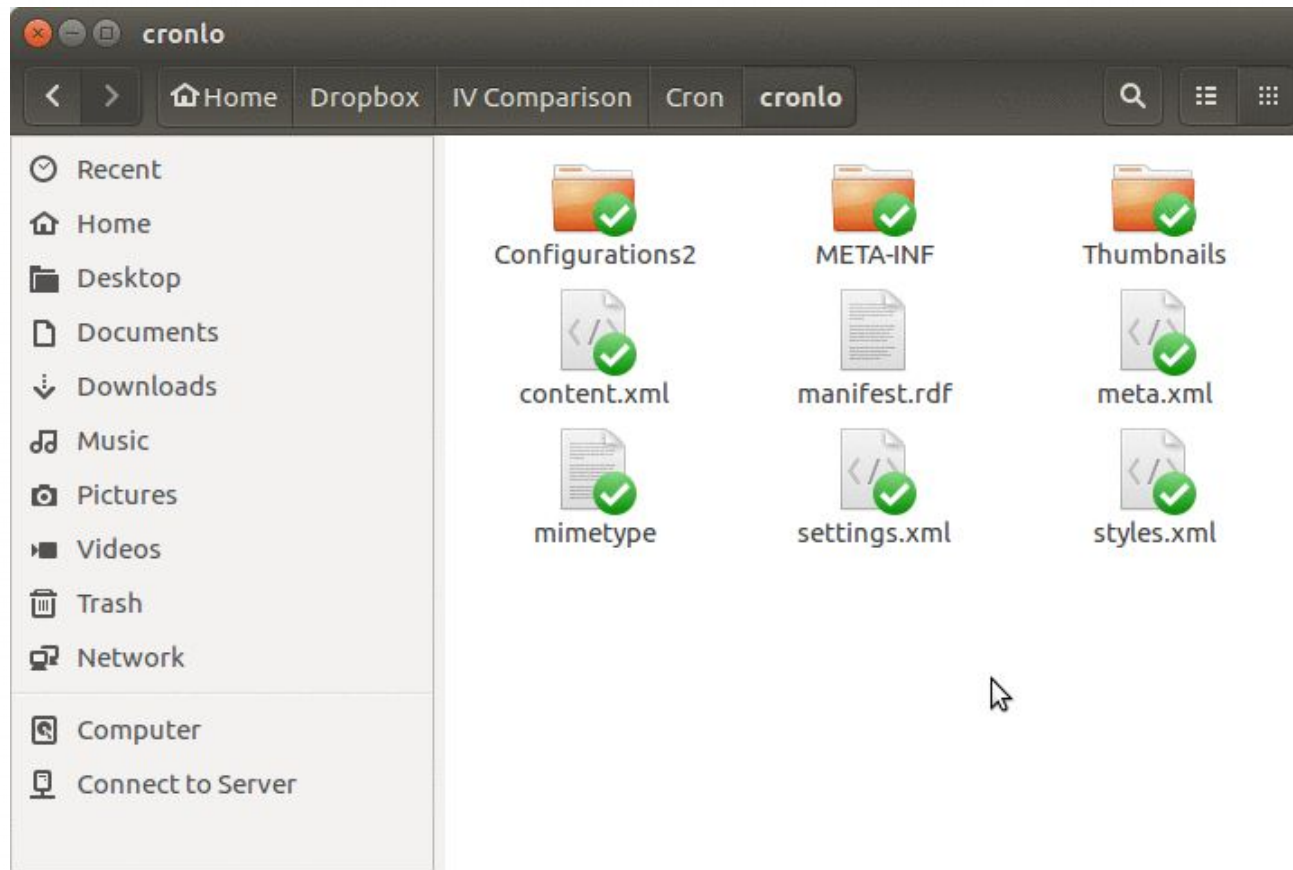
## Standard File Stack



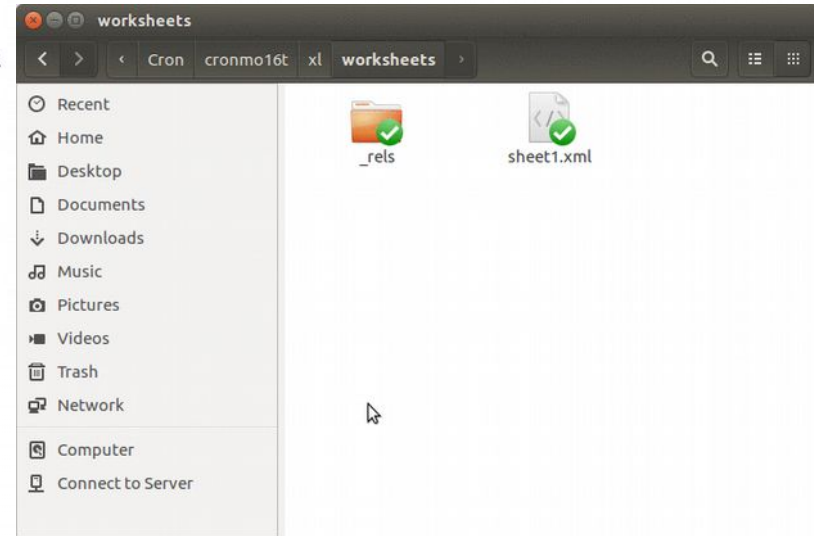
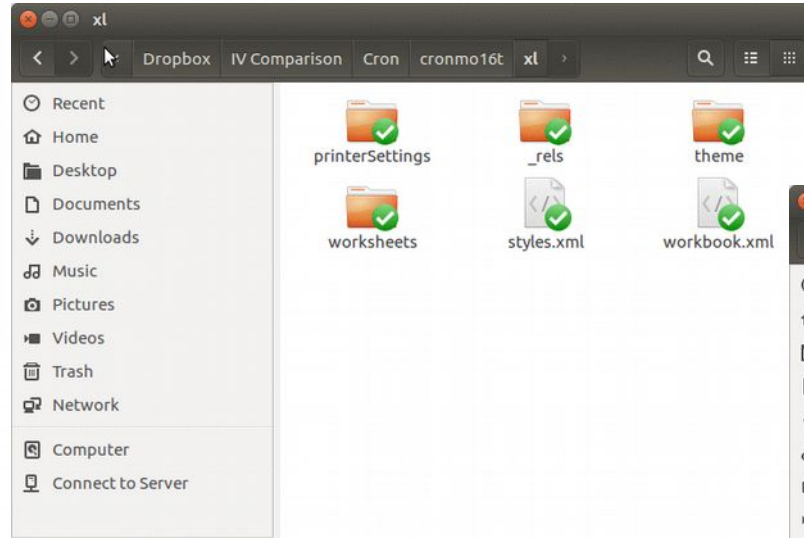
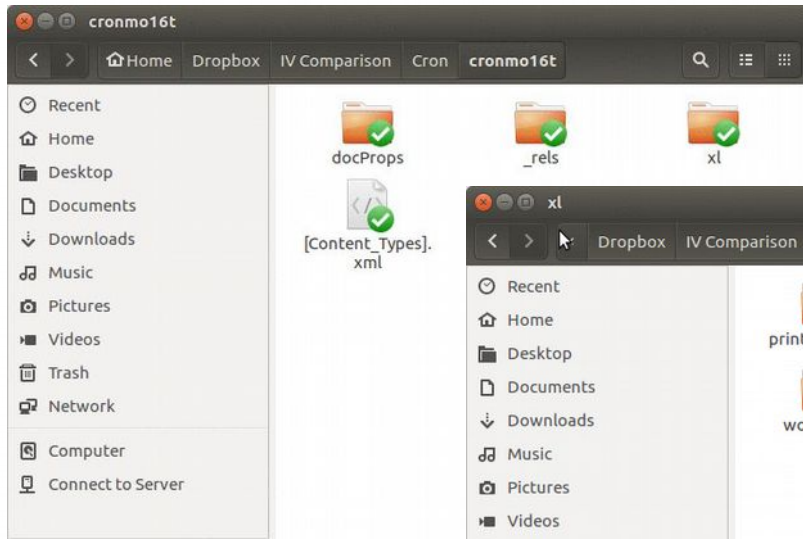
## Inside ODT



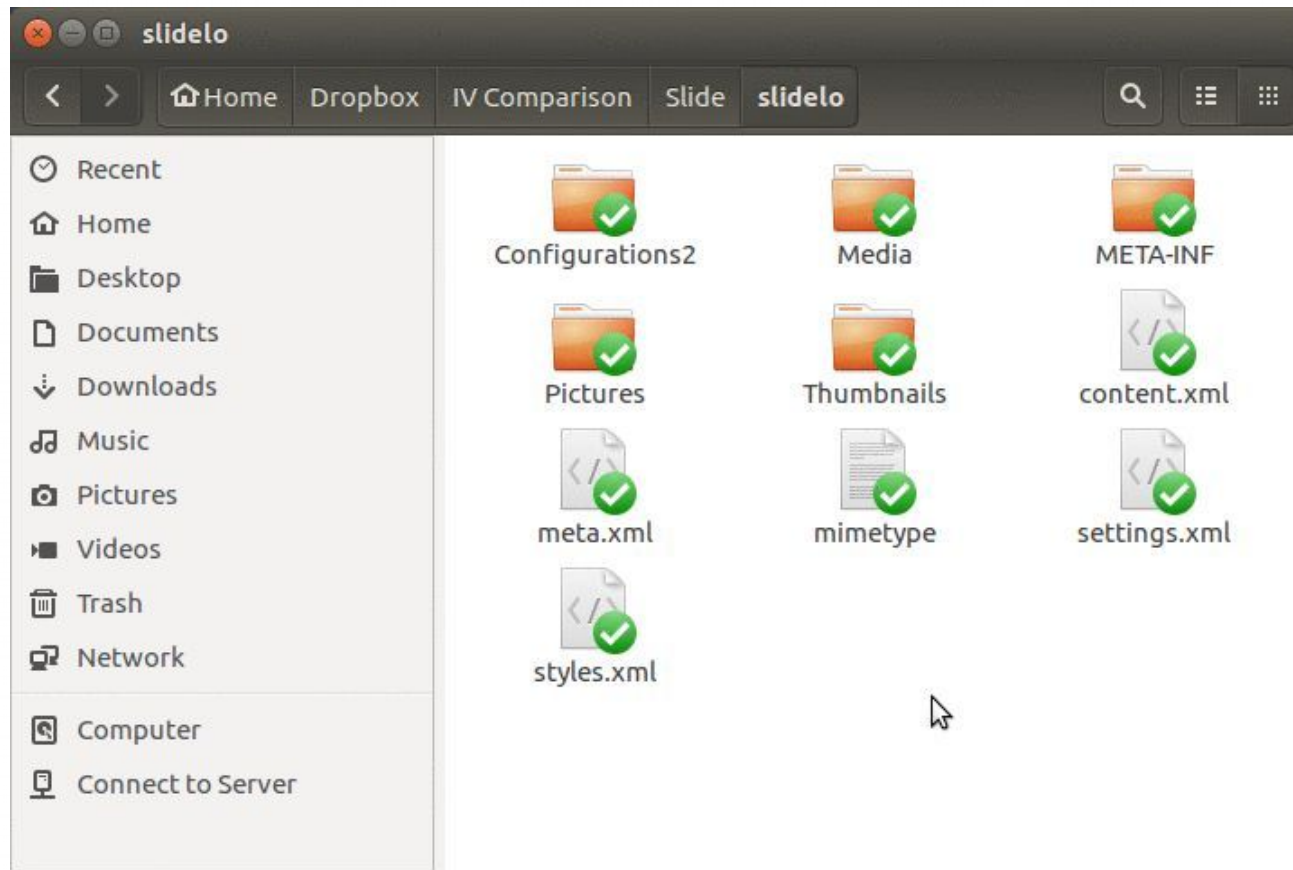
## Inside DOCX



## Inside ODS

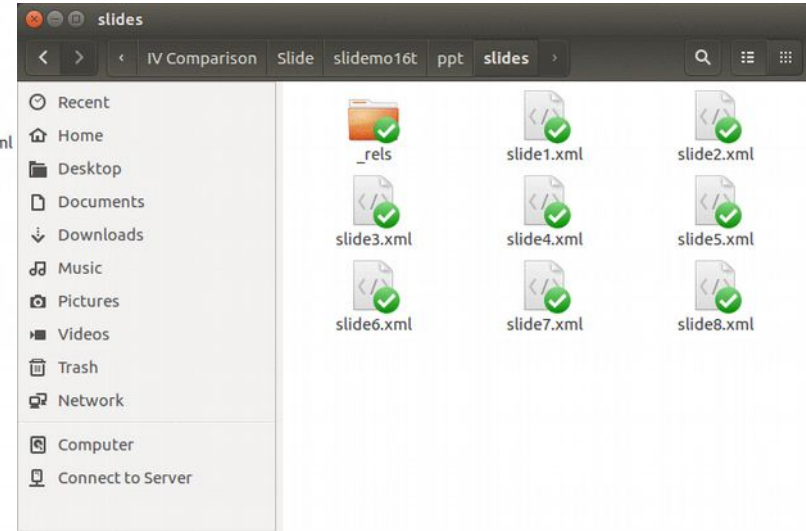
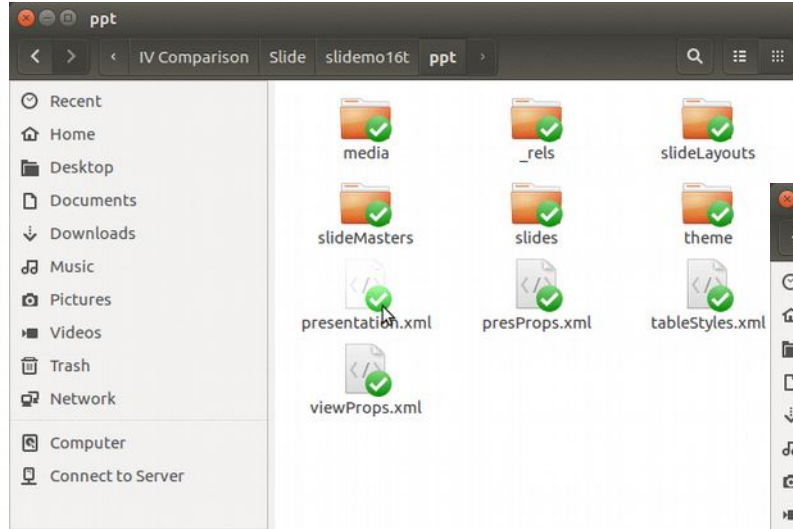
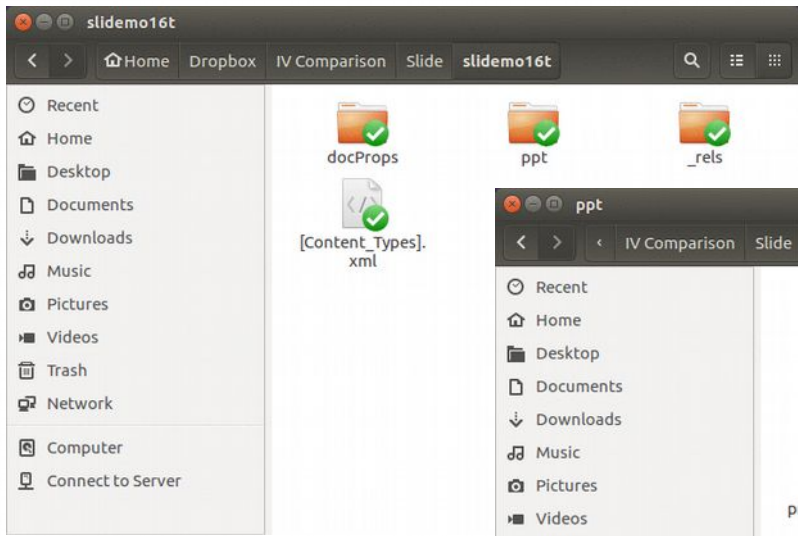


# Inside XLSX



## Inside ODP





## Inside PPTX

**Brain  
Red**

**Computer  
#FF0000**

Brain & Computer

## 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

**OOXML  
Microsoft  
Office**

	A	B	C	D	E	F
1	01/02/1900					
2	02/02/1900					
3	03/02/1900					
4	04/02/1900					
5	05/02/1900					
6	06/02/1900					
7	07/02/1900					
8	08/02/1900					
9	09/02/1900					
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28	28/02/1900					
29	29/02/1900					
30						

September 29, 1900  
"Excel Day"



**ODF  
LibreOffice**

	A	B	C	D
1	01/02/1900			
2	02/02/1900			
3	03/02/1900			
4	04/02/1900			
5	05/02/1900			
6	06/02/1900			
7	07/02/1900			
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26	28/02/1900			
27	27/02/1900			
28	28/02/1900			
29	01/03/1900			
30				



# Issues with Other Calendars

- 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	CoCoCo

# File Comparison

## ODF vs OOXML

File Edit View Insert Format Styles Table Tools Window Help

Text Body Liberation Serif 12

**>Lorem ipsum**

"Neque porro quisquam est qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit..."

>Lorem ipsum dolor sit amet, consectetur adipiscing elit. In sodales arcu, sollicitudin eleifend justo. Integer in ornare leo. Pellentesque ultrices sapien pharetra lectus finibus cursus. Vestibulum pulvinar, ex sed interdum pharetra, est risus efficitur arcu, ac aliquet ante diam ac eros. Sed vitae dui nec odio rutrum ornare. Cras in neque et neque cursus vehicula. Mauris posuere sed lorem at faucibus.

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- Proin ut ultrices magna.
- Nulla facilisi.
- Donec sed risus quis tellus facilisis elementum.
- Vivamus sit amet semper nisl, vel tristique mi.
- Aenean lobortis neque in malesuada ornare.

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Page 2 of 2 811 words, 5,315 characters Default Style Italian (Italy) 95%

# Comparison ODF/OOXML



# 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>

<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>  
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<start text>**[space]**<end text>  
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<start text>**not**<end text>  
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<start text>**[space]**<end text>  
<start text>**to**<end text>  
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<start text>**this**<end text>  
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<start text>**[space]**<end text>  
<start text>**is**<end text>  
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<start text>**[space]**<end text>  
<start text>**the**<end text>  
<keep together>  
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<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



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

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

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# **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

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**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
	Mitigation Costs	Design and construction information verification costs	0.10	1.08	114,342
		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	
<b>Subtotal</b>		<b>Subtotal</b>	<b>0.89</b>	<b>9.32</b>	<b>1,007,150</b>

<b>Construction</b>	<b>Avoidance Costs</b>	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	
		<b>Mitigation Costs</b>	Design and construction information verification costs	0.006	0.07	7,377
			RFI management costs	0.05	0.53	55,656
			<b>Subtotal</b>	Avoidance costs	0.05	0.49
		Mitigation costs	0.08	0.86	90,783	
		<b>Subtotal</b>	<b>0.13</b>	<b>1.35</b>	<b>146,952</b>	
<b>Operations and Maintenance</b>	<b>Mitigation Costs</b>	Post-construction redundant information transfer costs	<b>0.01</b>	<b>0.15</b>	<b>15,660</b>	
<b>Total Cost</b>					<b>1,169,762</b>	

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

# Questions ?



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