OpenDocument format: from COSM to the ODF Advocacy Open Project

Marina Latini
marina.latini@libreoffice.org
Italo Vignoli
italo@libreoffice.org

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COSM

COSM (1)

- **Community of ODF Specification Maintainers**
- Project started by TDF in early 2018, based on the need of evolving the ODF standard beyond version ODF 1.2 to reflect the work of Technical Committee members
- Independent from LibreOffice
- Project housed at Public Software CIC (a UK Community Interest Company)

COSM (2)

- First crowdfunded open standards project: an effective way to have essential standards maintained without needing a deep-pocketed international corporation behind them
- Seeded by TDF in early 2018, and then funded by Microsoft, Collabora, CIB, the UK Government & the European Commission
- Paying for an editor to draft the ODF 1.3 specifications using the work of the great Technical Committee contributors

ODF 1.3

- ODF 1.3 Committee Draft approved September 9, 2019, and submitted to OASIS as a standard
- We do not expect significant reactions at this point
  - We do expect some random typo catching
- ODF 1.3 Committee Draft should be ratified by OASIS by the end of 2019
- ODF 1.3 ISO Standard expected for the end of 2020

ODF Advocacy
Open Project @ OASIS

ODF Advocacy on GitHub

OASISOPENPROJECTS

Welcome to the home of the ODF Advocacy Open Project.

The ODF Advocacy project works to create awareness and educate the world about the benefits of using the OpenDocument Format OASIS Standard (also published as ISO/IEC 26300).

ODF is an XML-based file format for personal productivity applications such as office suites, word processors, text/document editors, spreadsheets, and presentation software. Use of ODF guarantees access to your data forever, ensuring that data can be transferred between different computers and operating systems, without having to worry about vendor lock-in or license fees.

The ODF Advocacy project develops non-commercial, informational materials for a sustained communication campaign about the technical advantages and cost-savings of using standard-based document interoperability over proprietary formats.

ODF Advocacy is an OASIS Open Project.

Charter

- The objective of the OpenDocument Format (ODF) Advocacy Open Project at OASIS is to create awareness and educate the world about the benefits of using ODF
- The group will develop advocacy materials for a communication campaign about the importance of standard-based document interoperability versus proprietary formats

Purpose and Scope

- Educate users of personal productivity applications such as office suites and the likes, about the advantages of adopting the international, ISO-published, ODF standard
- Help users migrate from pseudo-standard formats to ODF to ensure interoperability and save costs
- **Awareness**: Dedicated Website, Social Media Campaign, Media Outreach Campaign, Conference Program, Plugfests
- **Education**: What is a Document Standard?, Importance of Document Standards, Advantages of Document Standards, De Jure vs De Facto Standards
- **Marketing**: Impact of Standards on Productivity, Economic Value of Interoperability, Competitive Advantages of ODF, Standards & Innovation

Business Benefits

- Users of personal productivity software will benefit from the ODF awareness and education campaign, as they will learn about how true document interoperability can protect their data into the future and ensure freedom-of-choice in software
- Large organizations deploying personal productivity software will discover the savings made possible by ODF and the associated advantage of increased security thanks to the reduced number of vulnerabilities affecting files based on standard file formats

Basic Concept

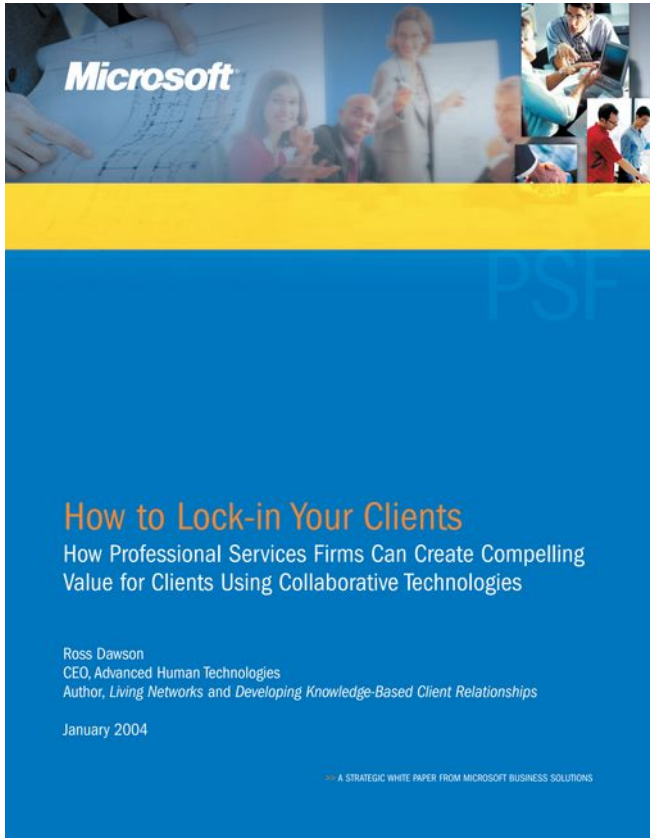
- ODF is solid and robust
- ODF is consistent across OS
- ODF is truly interoperable
- ODF is predictable
- **ODF is a better standard file format for users**

Food for Thought
ODF Advocacy

Lock In

WE CANNOT READ YOUR DOCUMENTS

DOCUMENTFREEDOM.ORG



Open Document Format
the true document standard
which offers freedom of choice

ODF is Standard

- France
- Portugal
- Sweden
- Taiwan
- UK

Open Format

- Independent from a single product: anyone can write a software that handles an open format
- Interoperable: allows the transparent sharing of data between heterogeneous systems
- Neutral: it does not force the user to adopt – and often buy – a specific product, but leaves a wide choice based on quality/price ratio
- Perennial: protects user developed contents from the "evolution" based obsolescence of technology

Proprietary Format

- Designed to be manipulated by a single software
- Evolves over the years based on commercial strategies and not on user needs
- Often, a direct serialization of data structures in memory
- The software is the format!
- Users borrow content from vendors through the format End User License Agreement (EULA)

ODF is an Open Standard

- Open and collaborative development
- Transparent access to the minutes of all meetings
- Ease of implementation in any software
- Freedom from patents and licensing restrictions
- No reliance on proprietary features or single vendor
- owned technologies
- Interoperability with any system designed to be ODF compatible

What is ODF? (1)

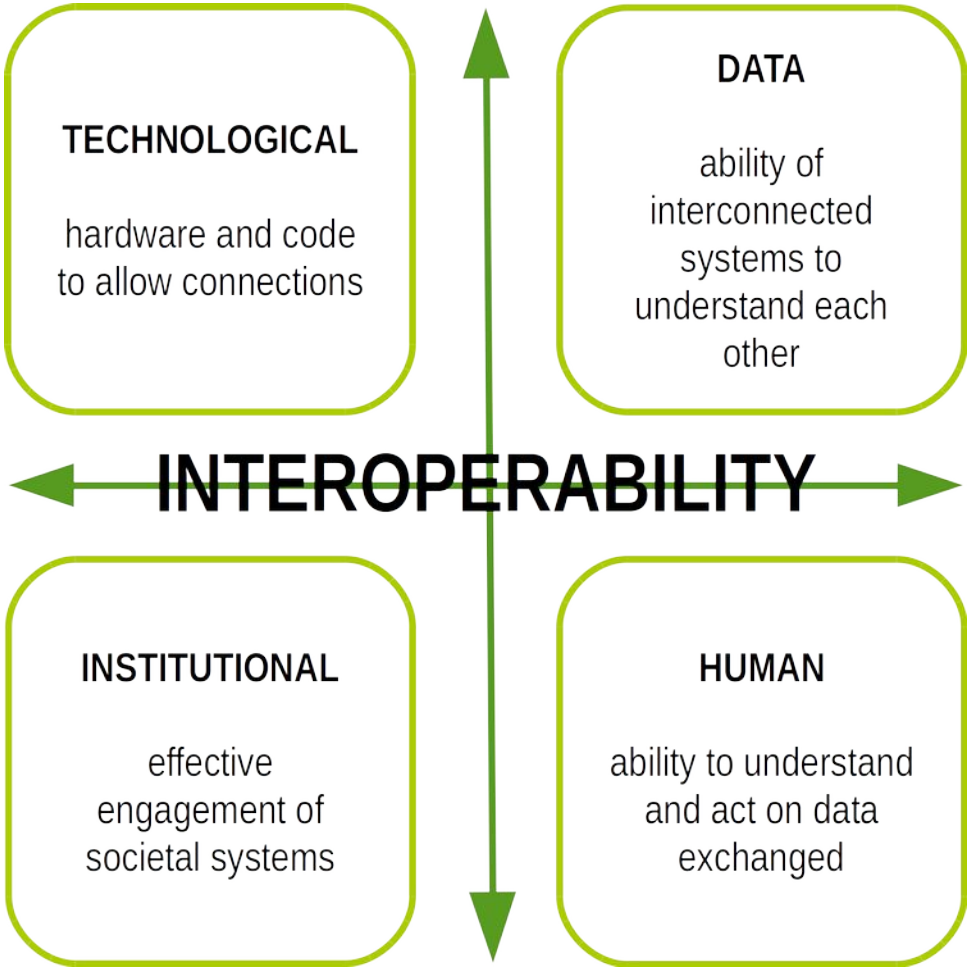
- OpenDocument Format (ISO / IEC 26300)
  - ISO: International Organization for Standardization
  - IEC: International Electrotechnical Commission
- Open file format based on XML, to create, view, edit and store Office documents
  - Text documents, spreadsheets, and presentations

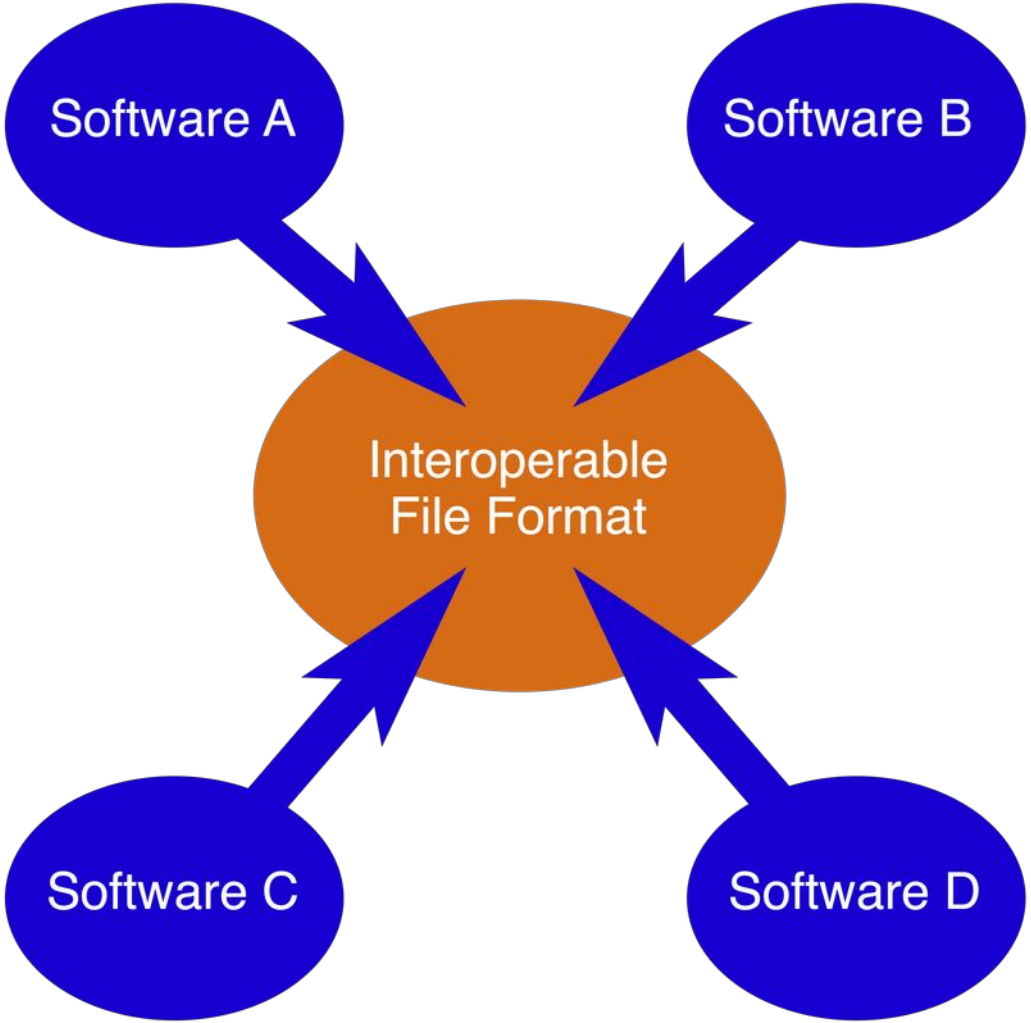
What is ODF? (2)

- Defined with an open and transparent process by OASIS
- Approved by the Joint Technical Committee 1 (JTC 1) of the IEC as International Standard (IS) in May 2006
- Available for deployment and use with no license, royalty payments or other restrictions

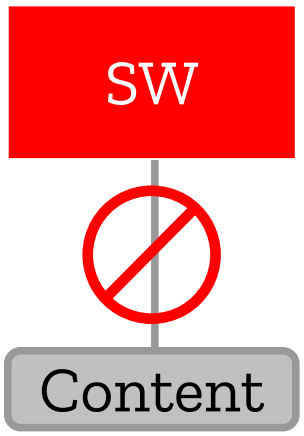
Interoperability

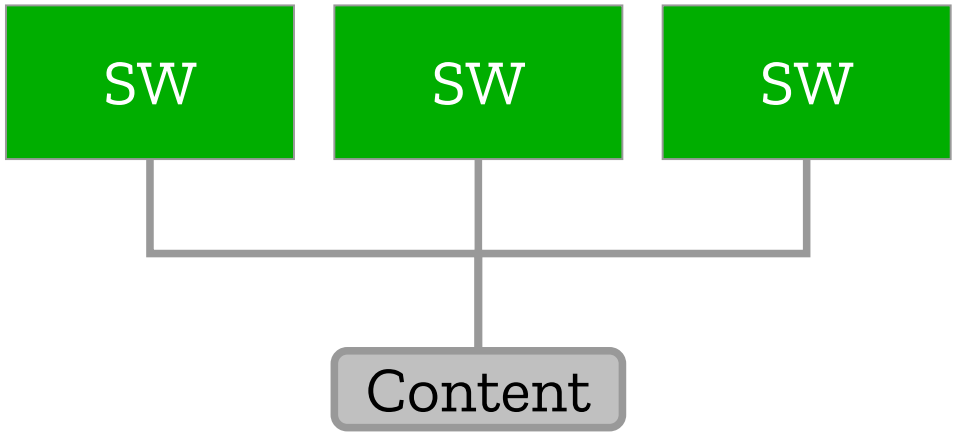
Elements of Interoperability




Software A
Software B
Interoperable
File Format
Software C
Software D

ODF Based Interoperability





OLD STYLE

Content closely related to a specific application

Developers and not users control the application

NEW STYLE

Content represented through an open standard which is not controlled by a single vendor, and supported by many applications

Users are in full control of their contents

Interoperability Costs (1)

NIST GCR 04-867

NIST
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

Interoperability Costs (2)

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
	Avoidance Costs	Data translation costs	0.002	0.02	2,139
		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
	Subtotal	**Subtotal**	**0.89**	**9.32**	**1,007,150**

Interoperability Costs (3)

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
	Mitigation Costs	Manual reentry costs	0.024	0.26	27,750
		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.

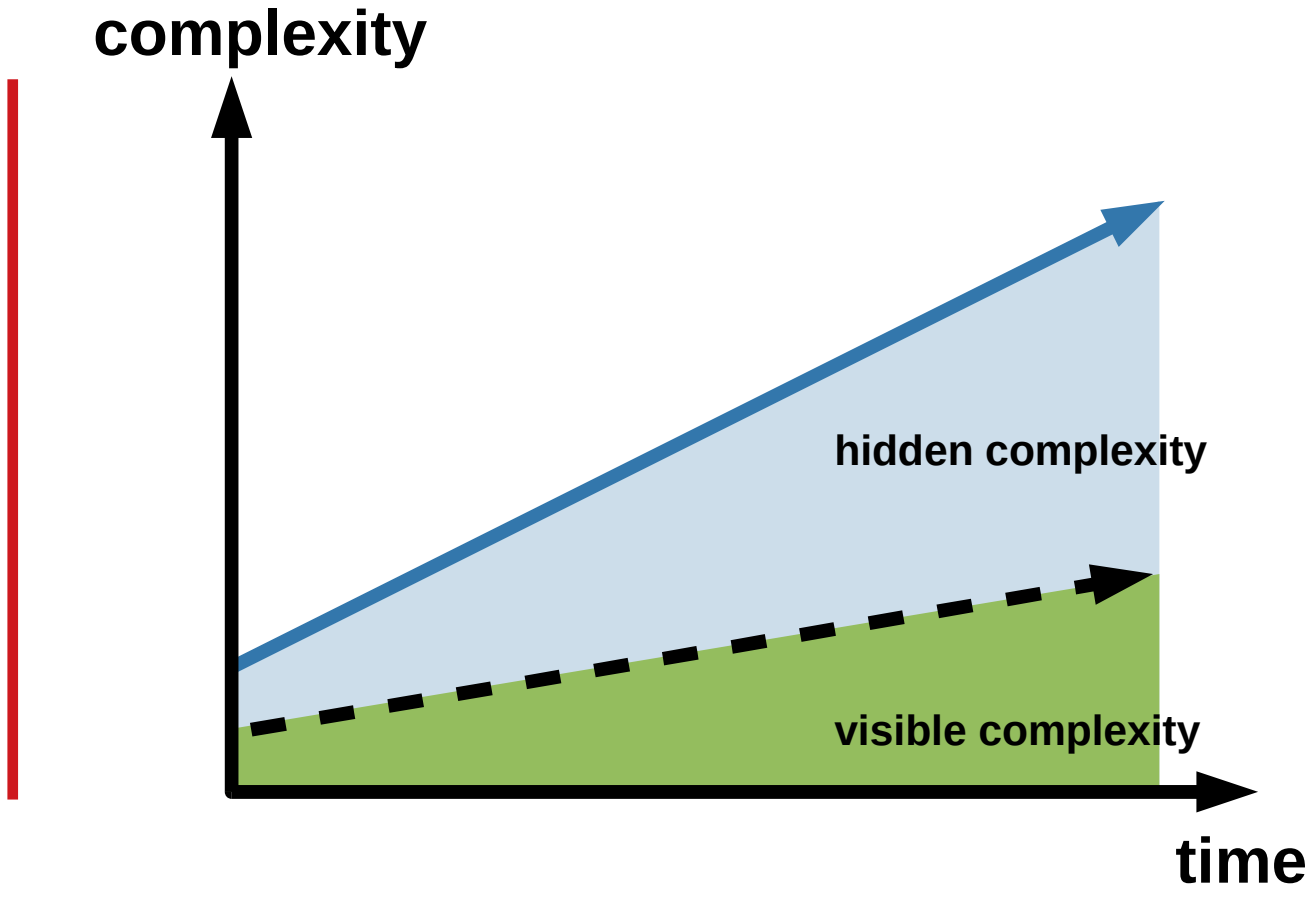
ODF vs OOXML

Battle of 2 Standards

Document Complexity

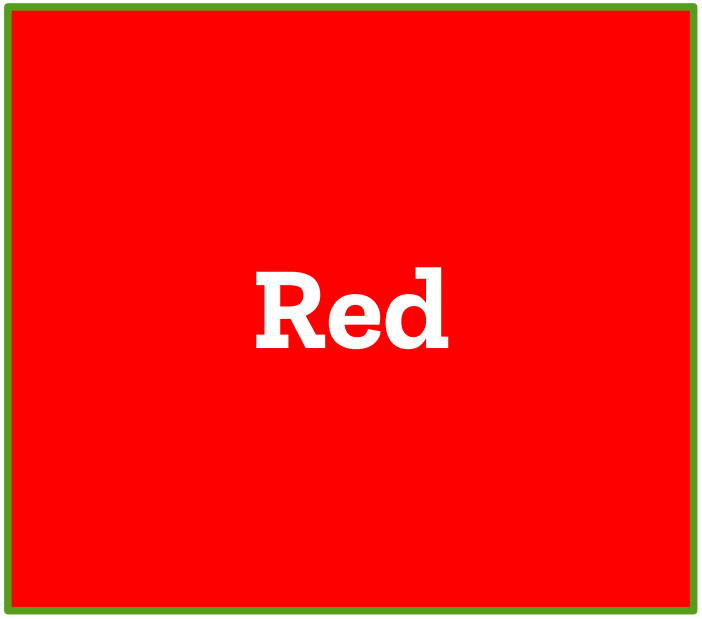
- **OBJECTS** - Typography, bitmap and outline images, colour, business rules, text, steganography, and much more are used to make up documents, however the management and approval process of these objects are also key to ensuring the correctness, and value of each individual document.
- **DATA** - You need to understand the structure of data, storage locations and techniques, extraction, backup, transmission methods, normalisation, consolidation, translation, manipulation, and sorting, plus security, privacy, and data governance.

Hidden Complexity



Brain and Computer

Brain



Computer

Description of Colours

ODF (LibreOffice)

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

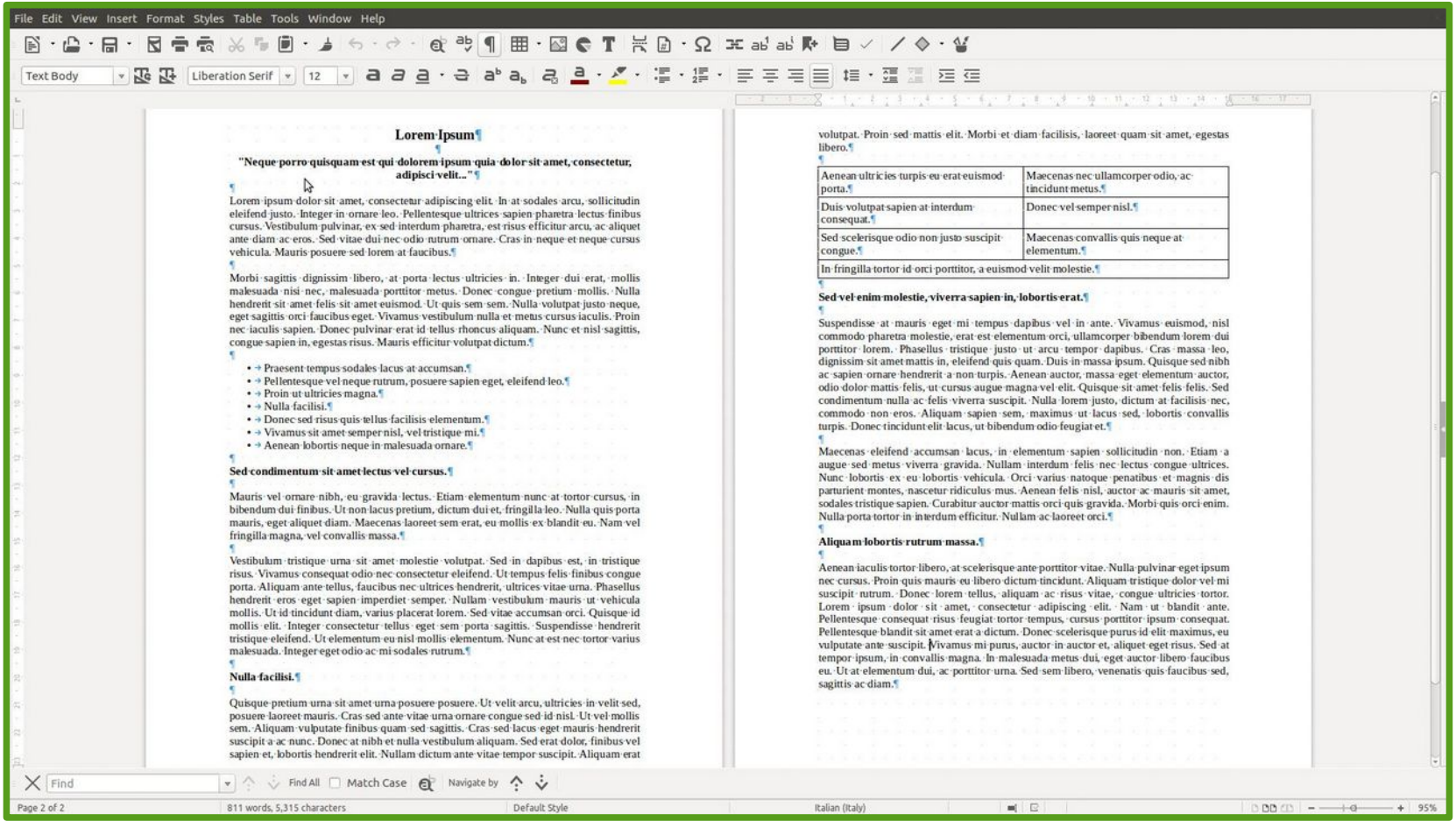
OOXML (MS Office)

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

Real Dates vs Excel Dates

Event	Calc	Excel
Italo Vignoli Birthday	12/08/1954	19948
Italo Vignoli Graduation	19/11/1978	28813
Italo Vignoli First Job	01/10/1981	29860
Italo Vignoli First PC	01/09/1983	30560
Italo Vignoli Wedding	08/09/1984	30933
Italo Vignoli Installs OOo	02/01/2003	37623
Italo Vignoli Launches LibreOffice	28/09/2010	40449

Comparison ODF/OOXML



Length of Content XML

Version	XML Lines
ODF 1.2 (any version of) LibreOffice	222
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
OOXML 2019 Transitional (MS Office Windows)	7085

Seasonality of Content XML

Version	XML Lines
Windows OOXML 2013 Transitional Summer 2017	1590
Windows OOXML 2013 Transitional Winter 2018	13515
Windows OOXML 2016 Transitional Summer 2017	11667
Windows OOXML 2016 Transitional Winter 2018	969
Windows OOXML 2016 Transitional Fall 2018	11288
Windows OOXML 2016 Transitional Spring 2019	7085
MacOS OOXML 2016 Transitional Summer 2017	11646
MacOS OOXML 2016 Transitional Fall 2018	854
MacOS OOXML 2016 Transitional Spring 201	7731

ODT by LibreOffice

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

DOCX by Microsoft Office

<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>
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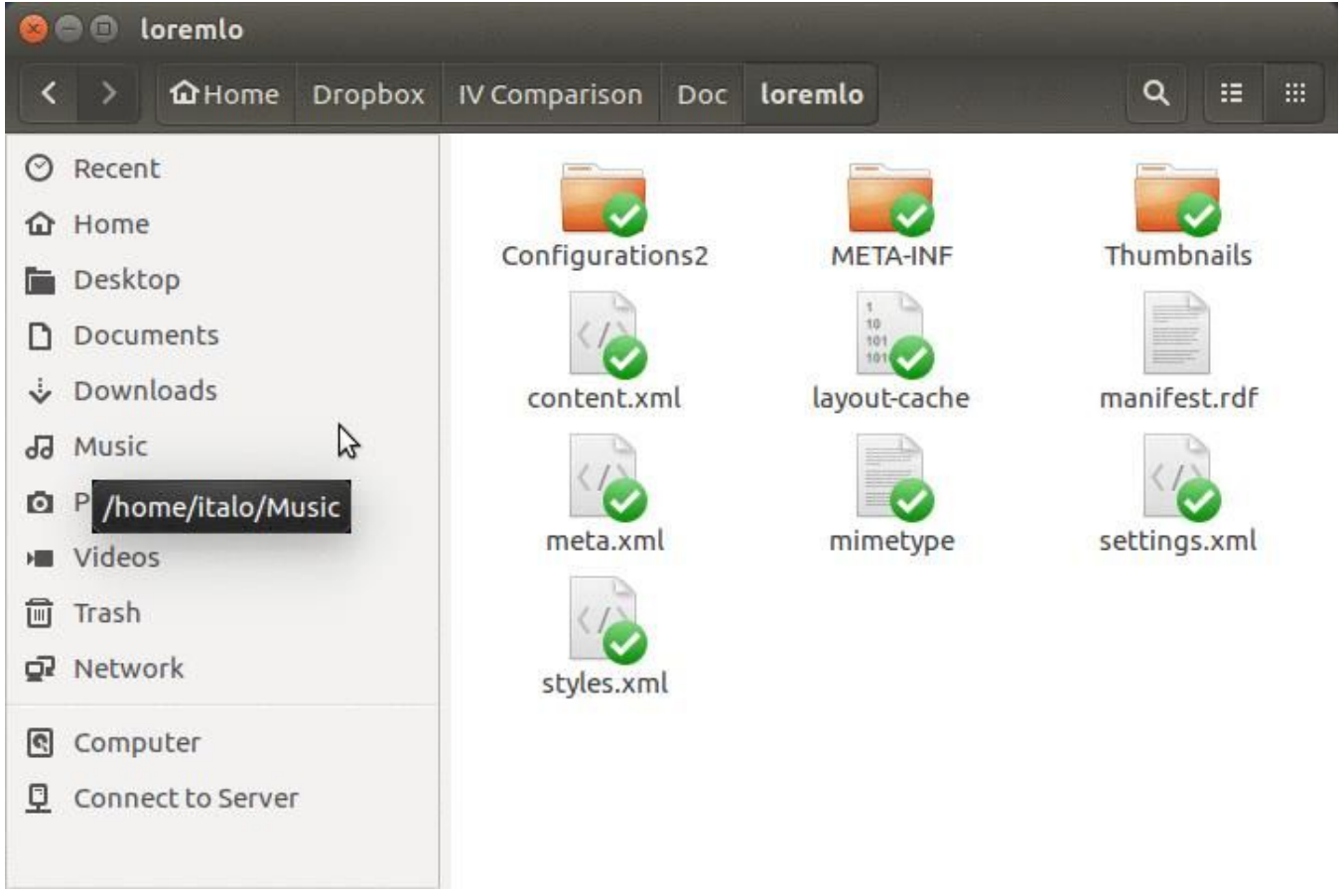
<start text>[space]<end text>
<start text>**be**<end text>
<keep together>
<start text>**,**<end text>
<keep together>
<start text>[space]<end text>
<start text>**this**<end text>
<keep together>
<start text>[space]<end text>
<start text>**is**<end text>
<keep together>
<start text>[space]<end text>
<start text>**the**<end text>
<keep together>
<start text>[space]<end text>
<start text>**problem**<end text>
<start text>**.**<end text>

Simplicity vs Hidden Complexity

- 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

Inside ODT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Dropbox
IV Comparison
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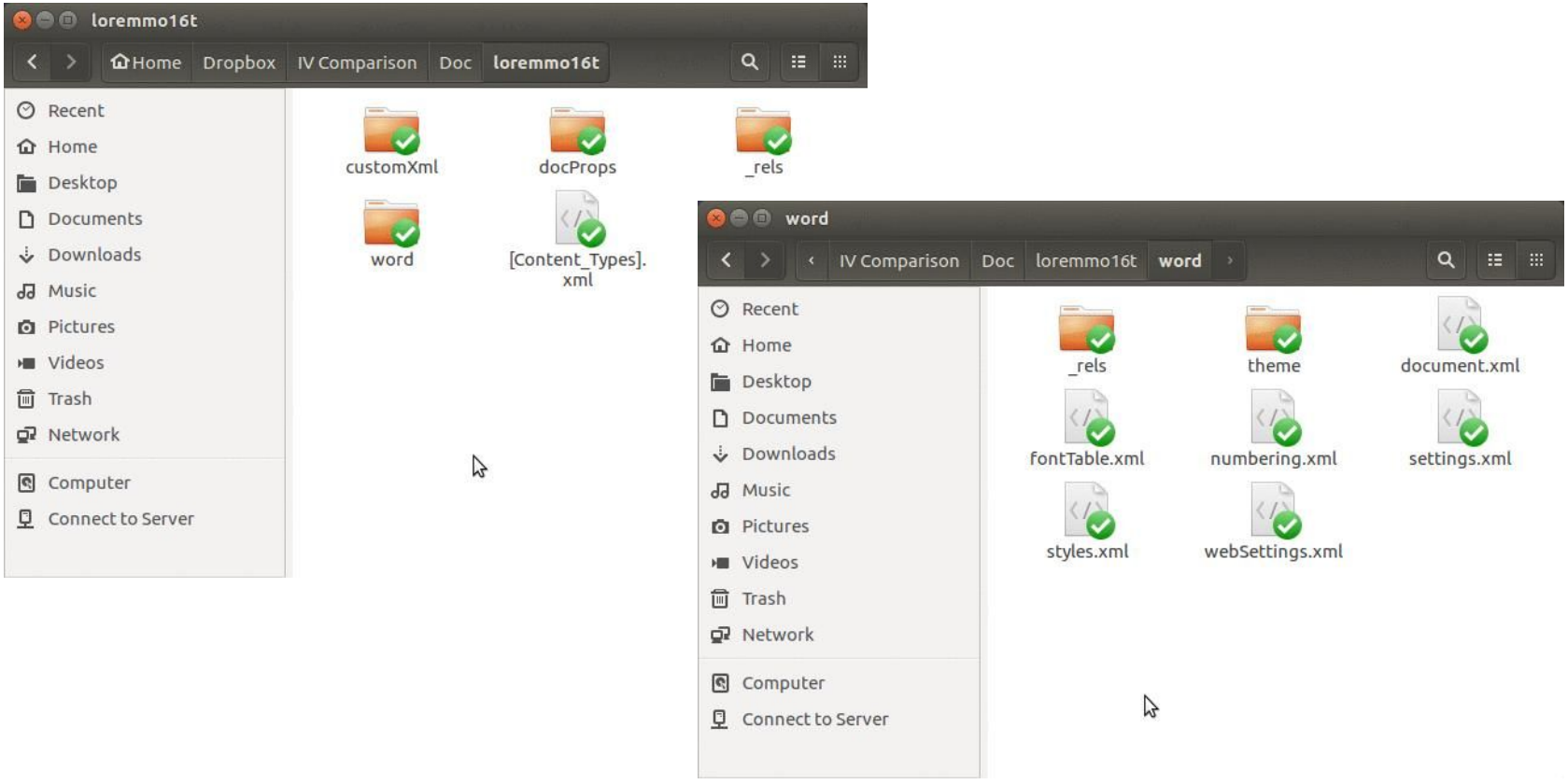
Videos
Trash
Network
Computer
Connect to Server
Configurations2
META-INF
Thumbnails
content.xml
layout-cache
manifest.rdf
meta.xml
mimetype
settings.xml
styles.xml

Inside DOCX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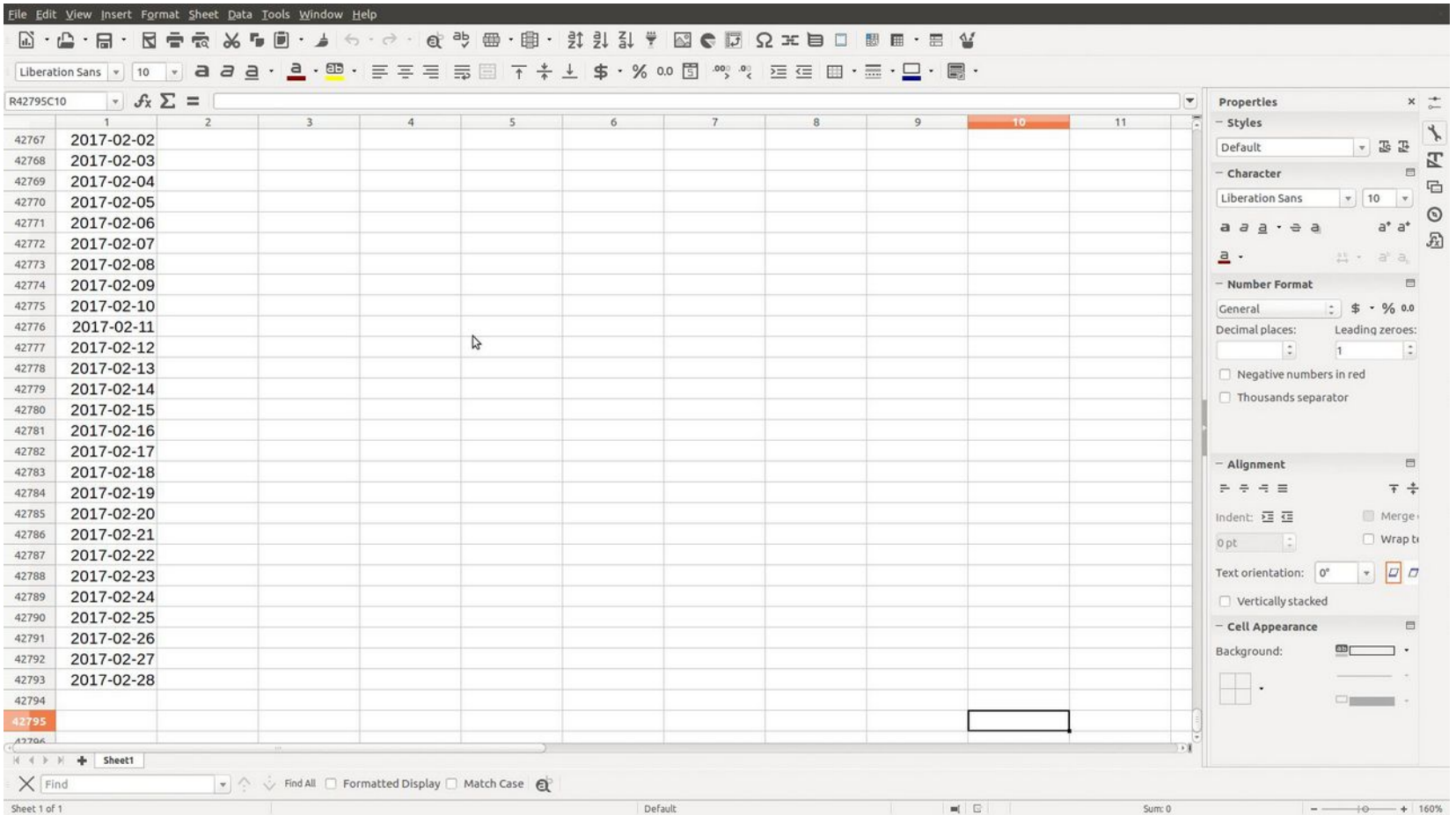
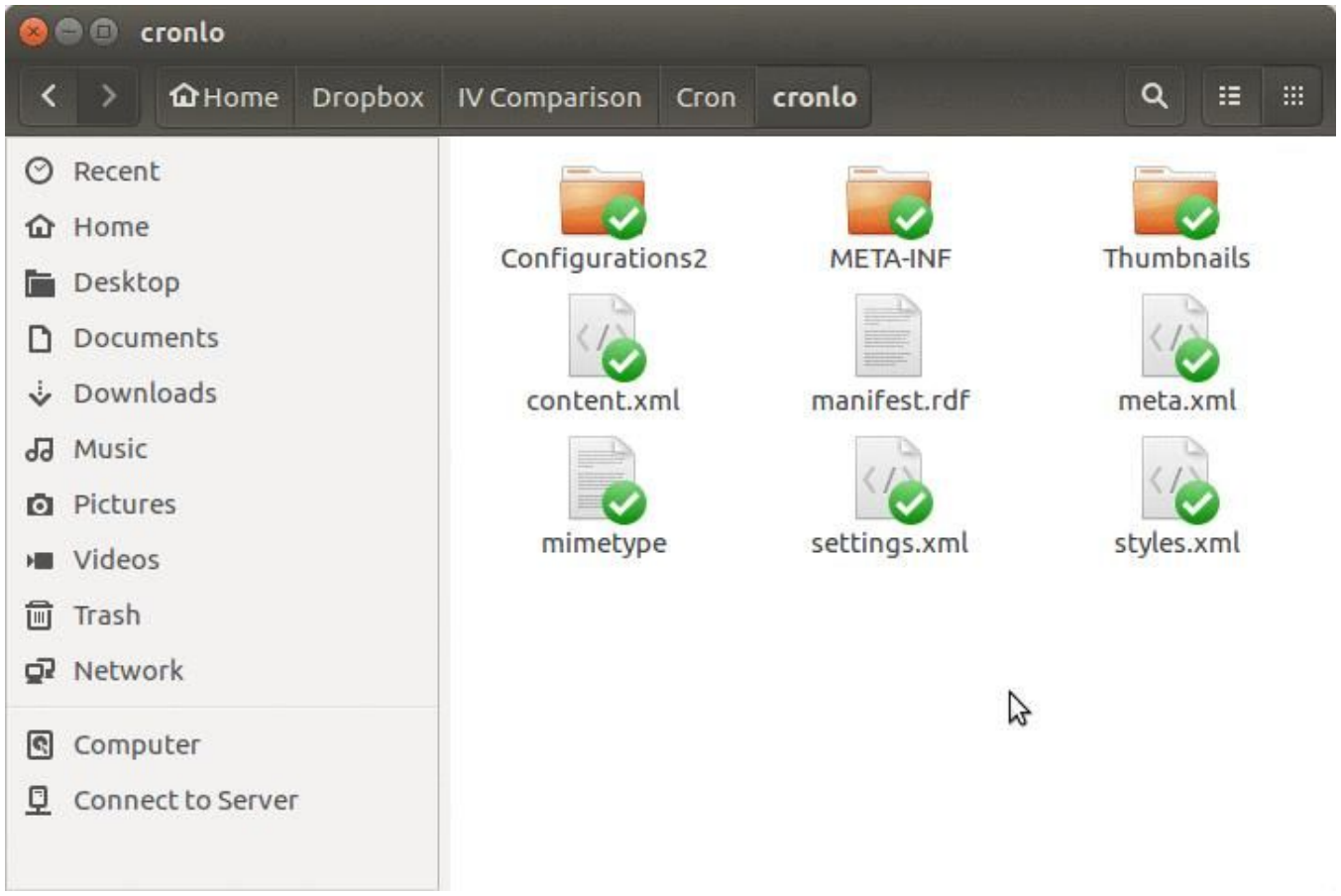
webSettings.xml

Comparison Spreadsheet



Inside ODS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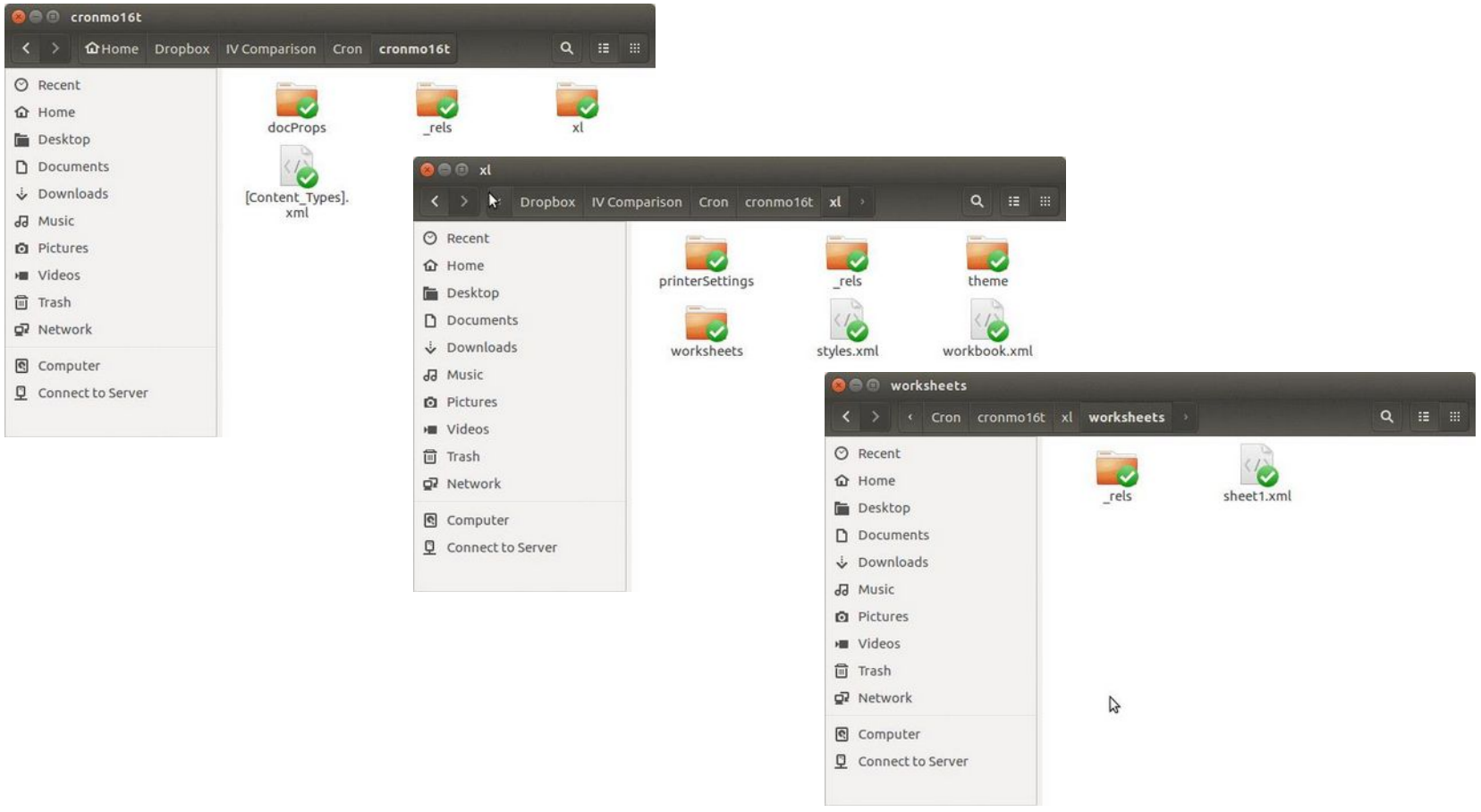
meta.xml
mimetype
settings.xml
styles.xml

Inside XLSX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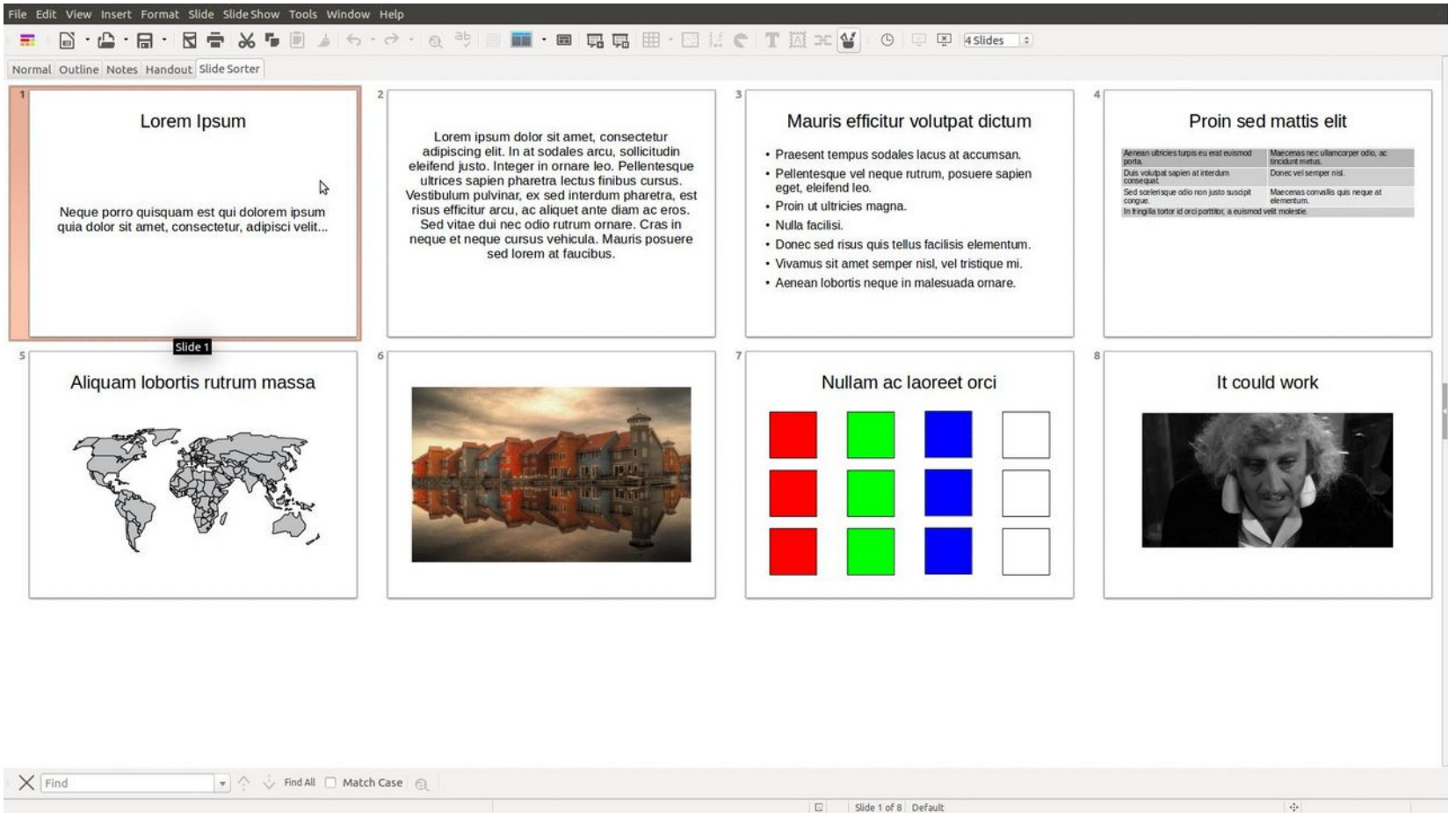
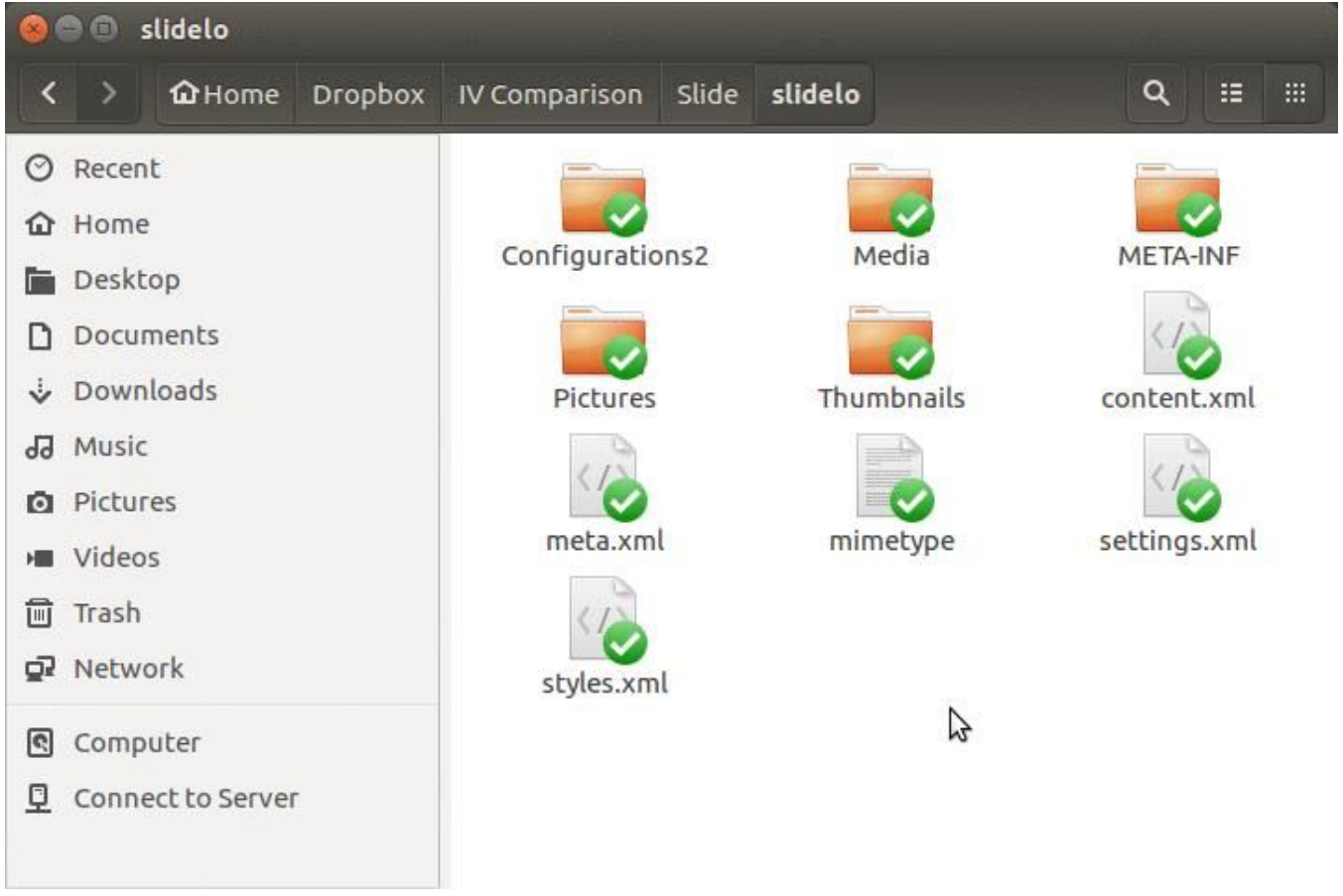
Comparison Presentation



Inside ODP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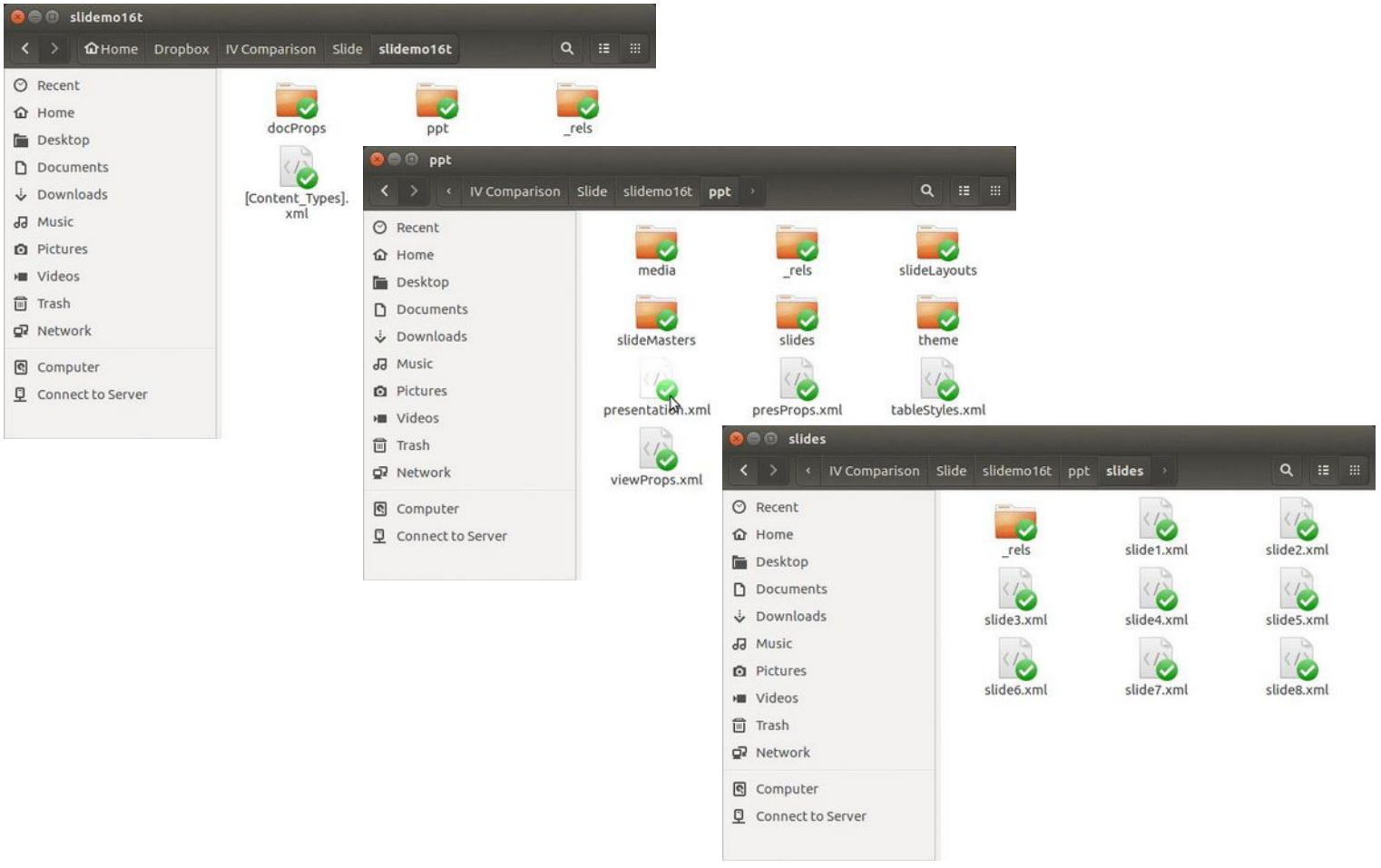
settings.xml
styles.xml

Inside PPTX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slide6.xml
slide7.xml
slide8.xml

Deductions of a Stupid Me

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

  unless

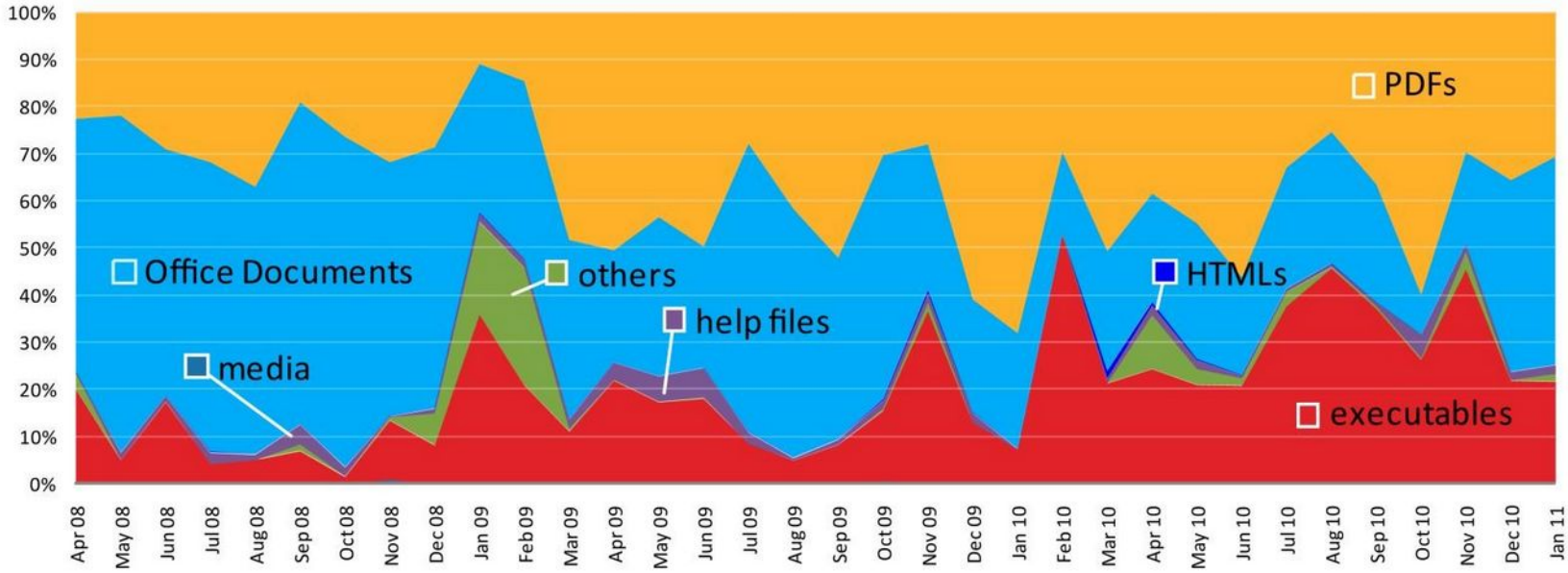
- Microsoft Office XML files are artificially stuffed with useless contents to reduce the chances that software other than Microsoft Office can open them properly
- Microsoft has a vested interest in killing standard based interoperability to protect a captive market still valued at over 25 billion dollars

Complexity of Document Formats

Document Format	# Elements
Office Open XML	1792
WordprocessingML	780
OASIS Open Document	530

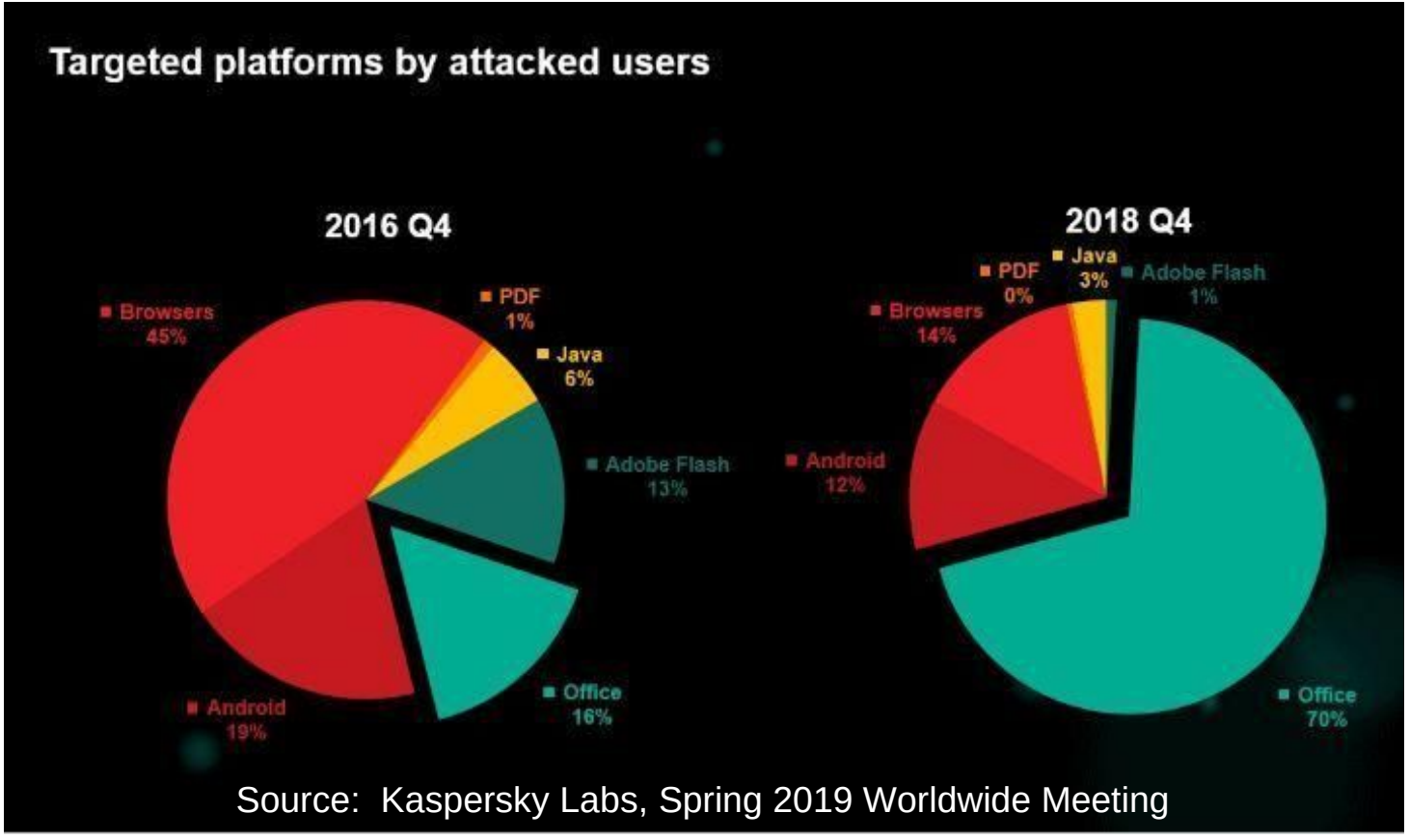
AS OF 2006

File Types Used in Attacks



Source: Symantec MessageLabs Intelligence, February 2011 Intelligence Report

File Types Used in Attacks



Source: Kaspersky Labs, Spring 2019 Worldwide Meeting

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