Documents and your Digital Sovereignty

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PCs & Documents:
The very old days:

Collaboration:

- Everyone comes & sits around the same CRT
- Or – we print-out & post documents around the world
- I still see footers: “to avoid wasting paper, please don’t print out this E-mail”
Netware / NT / network effects ...

A feast of new networking protocols & standards:

IPX/SPX, TCP/IP, DCE/SMB, Token-Ring, Ethernet, etc. etc. Storage + Auth ...

Document data – not standardized: RTF ? - DOC/XLS/PPT
Global networks & E-mail

E-mail projects standards across the world ... standard protocols

- Plain-text → still migrating to HTML E-mail ... TNEF ?
- Meanwhile attaching Office documents ... what version ?

Opte - unmodified CC license
The problem of complexity:

Rich feature-set

- Extremely complex Microsoft Office file format(s)
  - A historic challenge for interoperability.
  - many trillion Office documents extant

Open Document Format: ODF 2002 → onwards

- Encouraging open-ness, documentation, standardization in file formats!

Microsoft Open-XML – 2005 → onwards

- Excellent work: codifying decades of curious & arbitrary design decisions
  - multiple, incompatible generations of form technology eg.

Still getting E-mailed all around the world - ~daily ...
Meanwhile the web:
The web: an open ISV platform ...

Unhelpfully inflammatory:

"[Netscape will soon reduce Windows to] a poorly debugged set of device drivers."
(Marc Andreessen, 1995)

“We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.”

Roy Amara - “President of the Institute of the Future”.

The Web APIs: wildly attractive:

- Cross-platform, cross device form-factor ...
  - by 2012 (15+ years later) → we could even generate & play web-audio !
- Has broken the hold of Windows API for vertical-apps ... web apps everywhere.
Ad. supported FLOSS: fat PC apps ...

Browser usage - statcounter

Any proprietary cores?

khtml / webkit / Blink derived

A Linux desktop technology break-out
Devices are changing:
Desktops are changing more slowly

![Desktop OS - statcounter](Image)

- **Windows**
- **OS X**
- **Linux**
- **Chrome OS**
Tied to documents?
Web (standard) offices – HTML5 ...

- Wikis: ~2002 ...
  - Awesome single editor collaboration
  - Learn markdown
  - Write an encyclopedia

- Google Docs: 2006
  - A WYSIWYG CSS thing.

- Office 365: 2011
  - A non-WYSIWYG editor
  - “Reading View”
  - “At last MS Office runs on Linux” ...
  - The year of the Linux desktop?

but ...
MS Office Online tied to Windows:

Microsoft Word Online

Sorry, Word Online can't open this document for editing because it has document protection enabled for one or more sections. To edit this document, please open it in Microsoft Word.

Tell us about this problem to help us fix it. Give feedback to Microsoft

Edit in Word  Open in Reading View

Microsoft Word Online

Sorry, Word Online ran into a problem while opening this document. To view this document, please open it in Microsoft Word.

Edit in Word

Couldn't Open the Workbook

Sorry, we can't open your workbook in Excel Online because it exceeds the 5 MB file size limit. You'll need to open this in Excel.

Learn more

Open in Excel

Edit a Copy?

To edit this in your browser, we will create a copy that doesn't include unsupported features.

Learn more

Compatibility Report

We can't show these features in the browser:
- Shapes or other objects
- SmartArt (process, hierarchy, cycle and relationship diagrams)

But you can see all the content in this workbook by opening the file in Excel.
A dream of robust, peered networks
Document data gets centralized:
Encryption & DRM ...
How not to do it: (but oddly popular)

Send the whole document data to everyone with ‘view’ access.

Render whole document data using HTML5 in Javascript, press F12 to debug policy enforcement.

Simple, handwritten ‘browser’?

Apply watermark on top.

End to End Encryption!

Huge attack surface.
Central Digital Rights Management

How can we show people a document, and control their access:

- e.g. disable copy/paste, print, save-as, control views etc.

Step 1: encrypt the document

Step 2: send the key to Azure

Step 3: mail it

Step 4: check system and app is fully signed, and policy is ok & Decrypt document.

MS sign / revoke from bottom up

| Windows OS | Bootloader | BIOS |
Real Secure View: send watermarked *pixels* ...

- Enable Secure View
  - Set default share permissions for all users (available for shares without edit permission)
  - Can print/export
  - Secure View (with watermarks)

Set watermark text for Secure View. To include the user email address dynamically, use the `{viewer-email}` variable. Click outside the text field to finish.

Granular permissions

- Edit, Print, Share, Download
- Watermarked PDFs if printing is allowed.

Simple, Elegant, Federated

No central points of failure: corporate or technical

Collabora Online 4.0: the enterprise-ready LibreOffice-based Online Office Suite allows you to stay in control of your office documents from anywhere, anytime.
Ideally: secure, on-premise, federated, interoperable, powerful, web based collaboration easy to deploy & scale, fast & pretty
Collabora Online

Built with awesome LibreOffice Technology

Rich, FOSS, secure, interoperable, collaborative documents, on-premise ...

Let me show you some pixels:
**Collabora Online 21.11**: the enterprise-ready LibreOffice-based Online Office Suite that allows you to stay in full control of all your office files.

LibreOffice is the world’s most popular [Open Source Office suite](#) with over 200 million users. Collabora, a leading contributor to the project, and developer of the enterprise-ready, Long Term Supported edition of LibreOffice, Collabora Office, has brought [LibreOffice-technology to the Cloud](#).

With Collabora Online you now have access to a powerful, enterprise-ready and 100% [Open Source Online Office suite](#) functionality, with excellent support for all popular office file formats and collaborative editing features.

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Collaborative Drawing

Glow & Soft Edge Effects on Shapes

Original shape

Glow & Soft Edge effect applied
Collaborative Presentations

2021 - All about COOL days
Collabora Online

Setting up your own Collabora Online

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QA Engineer  Collabora Online
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Mobile app / responsive UI for apps:

750k installs
Available for iOS, Android & Chrome OS
MS Word: eg. Rich Fields

Lots of legacy forms to fill out in DOC / DOCX format:

- tab through editable fields; skip protected sections
**Writer: Rich Fields support ...**

Fill out your DOC / DOCX forms

- tab through editable fields; skip protected sections
Excellent Microsoft Interoperability

- **Most mature code base** outside Microsoft
  - More than 8 million lines of code...
- Continue working with your **existing MS file formats**
  - DOCX, DOC, RTF, XLSX, XLS, PPTX, PPT
- **Not only Microsoft** → PDF, Visio, Publisher, Keynotes, Numbers, Pages + many more
- "**100% interoperability**" – not a credible claim
  - Interoperability – a mix of: import, rendering, feature-set, export
  - To edit you have to **understand the format** – no reliable short-cuts.
- Unparalleled migration of legacy file-formats
Without needing to ask anyone you can (still):

Examples of deprecated pre-Word (19)97 basic compatibility use:
- WordBasic.ScreenUpdating 0
- WordBasic.StartOfDocument
- WordBasic.ViewPage
- case 42: WordBasic.MsgBox "Could not find file " + filepath$ + "."

Continue to use your ancient APIs today

Directly use COM API:

Set oWshShell = CreateObject("Wscript.Shell") ' New IWshRuntimeLibrary.WshShell

Hook windows DLLs:

Private Declare Function QueryPerformanceCounter Lib "kernel32"
(lpPerformanceCount As LARGE_INTEGER) As Long
Built on LibreOffice Technology

- 200+ million LibreOffice user-base
- ~1000 people helping to develop LibreOffice
  - 100 localization teams
- Product developed in public: outer-source

12,952 Code commits
Aug 2020 – Sep 2021

Berlin: Federal Ministry of Economics and Technology

City of Rome: Capitol Hill
Security

the powerful, flexible way
Digital Sovereignty: don’t leak your data

Security is provided via several layers:

- Document data is held in your server room.
- Not sent to every single device to be controlled by the browser + JS + local debugger.
- We send pixels.

Continual active fuzzing
- Google’ OSS-fuzz

Coverity static checking
Digital Sovereignty ...

- Control of:
  - Software – FLOSS
  - CPU / execution
  - Network
- Privacy & Robustness
  - Don’t let your data leave your site

- Don’t fear the 3G’s
  - Germs
  - Geopolitics
  - GDPR

- Take back control of key workflows & feature-function.
Conclusions

- **Documents:**
  - one of the oldest migration blockers.
  - Now with a compelling solution
- **Recovering control**
  - Get back your data, workloads and documents

- **Look forward to liberty**
- **Checkout CODE:**
  - [https://www.collaboraoffice.com/code/](https://www.collaboraoffice.com/code/)
  - latest features & fixes
  - 100% open-source code
  - no limits.
- **Get involved with LibreOffice**

Oh, that my words were recorded, that they were written on a scroll, that they were inscribed with an iron tool on lead, or engraved in rock for ever! I know that my Redeemer lives, and that in the end he will stand upon the earth. And though this body has been destroyed yet in my flesh I will see God, I myself will see him, with my own eyes - I and not another. How my heart yearns within me. - Job 19: 23-27
Open Source, Open First