UNIVERSITY OF SKÖVDE

OPENDOCSOCIETY

ODF Plugfest #7
November 17th/18th 2011 Gouda (NL)

Experiences of document formats & office applications in the Swedish public sector

Will the ODF 1.2 hieroglyphs be supported in 2089?

Björn Lundell, Ph.D.
University of Skövde, Sweden
bjorn.lundell@his.se

NOV NEDERLAND OPEN in VERBINDING

17-18 October, 2011
Gouda, The Netherlands

gemeente gouda

UNIVERSITY OF SKÖVDE

Preamble ...

- Companies and public sector organisations **use** a **variety of different applications** and **file formats**
- Companies in the secondary software sector often need to **preserve** and **modify** their systems and **digital assets** for **more than 30 years**, sometimes even more than 70 years
- **Tools** used for the initial creation of digital assets **will not be available** during the complete life-cycle for many systems (both in the secondary software sector and in the public sector)

File formats ≠ Applications

UNIVERSITY OF SKÖVDE

*On use of **vendor dependent** file formats ...*

"Never use **vendor dependent formats** for long term storage if you can avoid it, because they often are too unstable, too unstructured, and with dependencies to different suppliers' business strategies." *(emphasis on "never" as in the original)*

TAM Arkiv, "Rekommendation: Format för långtidslagring", Version 1.0, 11 Mar. 2010, (a Swedish archiving organisation)

UNIVERSITY OF SKÖVDE

On use of ODF in the Swedish public sector ...

- *Survey of 290 Swedish municipalities (99% response rate)*
- **No evaluation** underpinning procurement decisions and no documentation of decisions in a large majority of cases
- Considerable **confusion** amongst respondents related to the difference between application and file format
- **83%** of Swedish citizens live in municipalities that are **unable** or **unwilling** to process ODF-documents
- **35%** prefer **only proprietary** (closed) document formats
- **8%** of Swedish citizens could expect to receive a response in an open document format (ODF or PDF/A)

Lundell, B. (2011) "E-Governance in public sector ICT procurement: what is shaping practice in Sweden?", European Journal of ePractice, Vol. 12, No. 6, www.epractice.eu/files/European Journal epractice Volume 12_6.pdf

UNIVERSITY OF SKÖVDE

The Swedish Government states (in Directive 2009:19) ...

- "Administrative e-services should, as far as is possible, be **based on open standards** and use software based on **open source software** and solutions that progressively frees management from reliance on individual platforms and solutions."
- "It is of great importance that **long-term digital preservation** is **strengthened** in e-government, both for systems and individual digital assets. For this to be possible, it is essential to take the conservation perspective into account when new systems are built."

"Delegation för e-förvaltning", Regeringen
Dir. 2009:19, 26 March 2009

UNIVERSITY OF SKÖVDE

The Swedish e-Government delegation states (in SOU 2011:67) ...

"The [e-Archive] specifications shall be based on open standards and also allow for applications implemented as Open Source software, in order to pursue greater innovation in the area and ensure that developed systems are maintainable during their entire life cycle."

"Så enkelt som möjligt för så många som möjligt – vägen till effektivare e-förvaltning"
e-Delegationen (the Swedish e-Gov. delegation)
SOU 2011:67, October 2011

UNIVERSITY OF SKÖVDE

Standards & technical specifications ...

*A **standard** "is a **published document** that contains a **technical specification** or other precise criteria designed to be used consistently as a rule, guideline, or definition."* (BSI, British Standards)

Procurement in **public sector organisations** should always refer to standards with technical specifications which are ...

- … published and completely specified - *Can be implemented*
- … available and specified without references to trade marks and proprietary technology - *Neutrality stimulates competition*
- … available under royalty-free (RF) conditions - *RF allows implementation under different (proprietary and OSS) licenses*
- … implemented in sustainable applications - *Supported until 2089 (i.e. during the full life-cycle)*
- … implemented in OSS-licensed reference implementations - *Provide transparency in interpretation and reusability*

UNIVERSITY OF SKÖVDE

***Open Standards** promote interoperability and transparency ...*

"It is my belief that **we need a clear definition of openness** in the European Interoperability Framework and that the definition of open standards and open source software as defined by the European Interoperability Framework **version one has served us well so far**. The use of open standards and open source solutions decreases the public sector's reliance on specific vendors and platforms and it **increases European competitiveness** as well as the **transparency**"

Mats Odell (Swedish minister), "European Public Sector Award", Maastricht, 5 Nov. 2009

UNIVERSITY OF SKÖVDE

Open Standard

(SOU 2009:86 & EU, EIF v1.0) ...

- "The standard has been **published** and the standard specification document is available either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee.
- The standard is adopted and will be **maintained** by a not-for-profit organisation, and its ongoing development occurs on the basis of an **open decision-making procedure** available to all interested parties (consensus or majority decision etc.).
- The intellectual property - i.e. patents possibly present - of (parts of) the standard is made irrevocably **available** on a **royalty-free basis**.
- There are **no constraints** on the **re-use** of the standard."

SOU 2009:86 & European Interoperability Framework, EIF v1.0, 2004

UNIVERSITY OF SKÖVDE

Open Source implementations *of an Open Standard* ***confirm openness*** *...*

"**Verify that the standards used are open**; a simple test for openness is to determine **if the standard is implemented** by **open source software**"

"Open Technology Development (OTD): Lessons Learned & Best Practices for Military Software", 16 May 2011, Assistant Secretary of Defense (Networks & Information Integration) (NII) / DoD Chief Information Officer (CIO) and the Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L)

UNIVERSITY OF SKÖVDE

Motivation for long-term support ...

- Open source projects with **healthy ecosystems** can be an appropriate way to **address risks** related to **lock-in** and **long-term maintenance of commodity software**

  *van der Linden, Lundell and Marttiin (2009) Commodification of Industrial Software: A Case for Open Source. IEEE Software, **26**(4)*

- **Company commitment** and **choice of software licenses affect longevity of tool support** for **different file formats**

  Lundell et al. (2011) Towards a Sustainable Swedish e-Government Practice: Observations from unlocking digital assets, In 16th EURAS Annual Standardization Conf.

- **Community commitment** and **choice of Open Source licenses may** significantly **affect long-term maintenance of digital artefacts**

  Lundell & Gamalielsson (2011) Towards a Sustainable Swedish e-Government Practice: Observations from unlocking digital assets, In eGov 2011

UNIVERSITY OF SKÖVDE

OSS licensed ODF and OOXML support?

*Research **Goal** ...*

- The Goal has been to investigate the availability of **effective** and **sustainable** Open Source Software (OSS) licensed Office Applications (hereafter referred to as OSSOAs) implementing the ISO-standardised XML-based document formats ODF (ISO/IEC 26300:2006) and OfficeOpen XML (ISO/IEC 29500:2008).
- *OSSOA = An Open Source Software licensed Office Application*

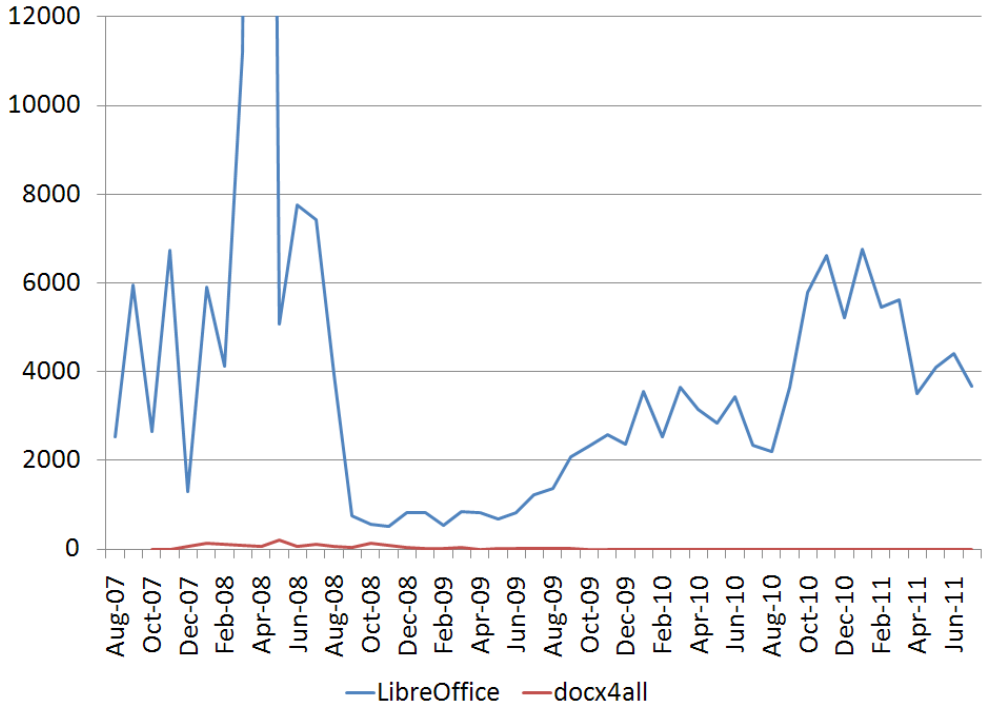
*Research **Approach** ...*

- Literature analysis, interviews, search in OSS forges, and an analysis of information on existing OSS available through framework agreements provided by the Legal, Financial and Administrative Services Agency in order to identify OSSOAs.

UNIVERSITY OF SKÖVDE

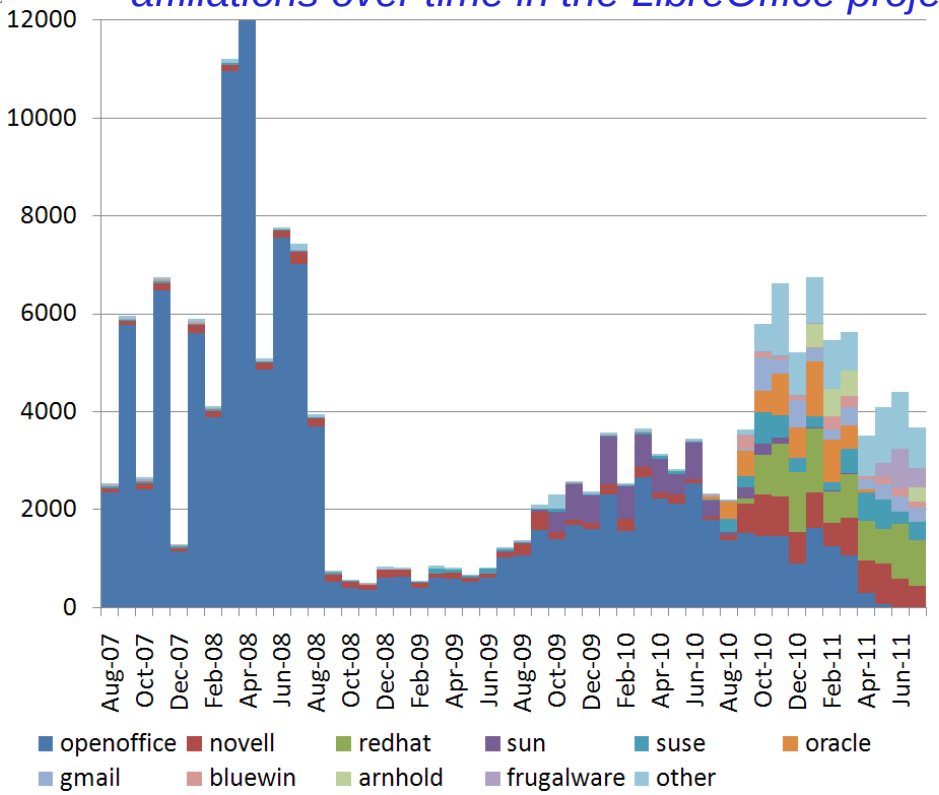
Sustainable OSS communities for file formats?

ODF *(LibreOffice.org,* ***blue****) &* ***OOXML*** *(docx4all,* ***red****)*



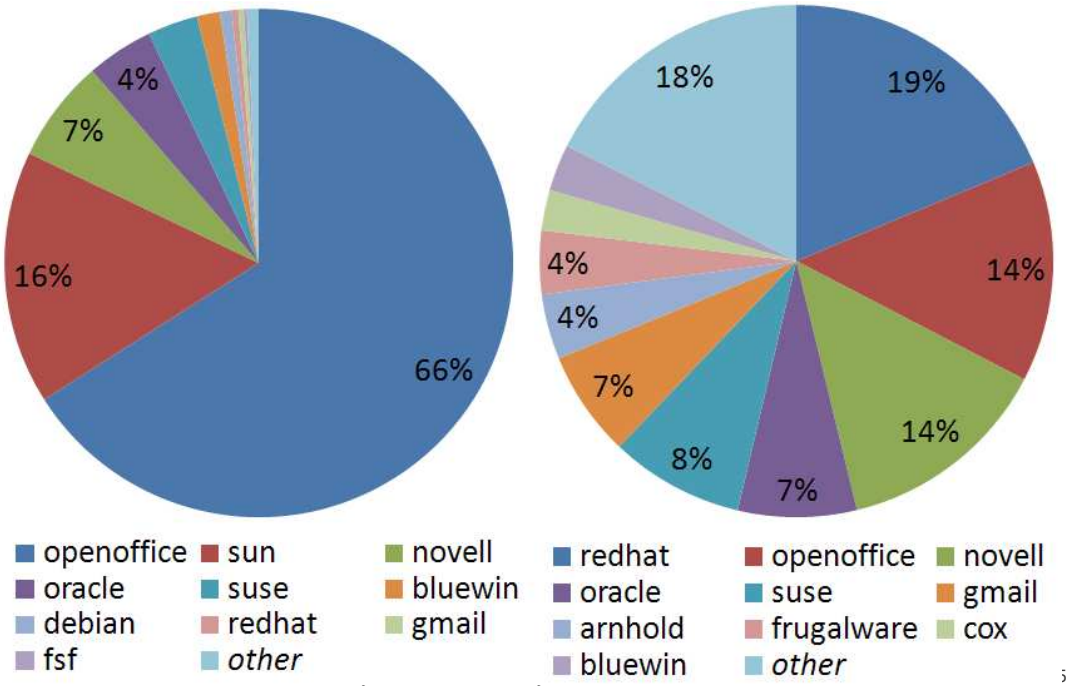
UNIVERSITY OF SKÖVDE

The proportion of commits for the 10 most active affiliations over time in the LibreOffice project



UNIVERSITY OF SKÖVDE

The total affiliation commit influence for LibreOffice 10 months before (left) & after the fork on 28 Sept. 2010



UNIVERSITY OF SKÖVDE

Summary & ***Implications*** …

- We find that there is are sustainable and effective Open Source Software (OSS) office applications for ODF
- Longevity of digital assets and supporting office applications is critical for private and public sector organisations
- Before a file format is used and referred in a public sector procurement, our results suggest that there should exist a sustainable implementation that is licensed under a "share-alike" or "keep-open" Open Source license. ***Such a requirement would be one effective strategy for minimising the risk for vendor lock-in and lack of interoperability in the public sector.***

UNIVERSITY OF SKÖVDE

Acknowledgements ...

VINNOVA