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Building a sustainable library network and technology
Open Standards, Open Source and Free Software

The modern library meets many new challenges. We work now in a digital, network-based environment with boundaryless information flow and a demand for global interoperability.

We cannot concentrate on current patrons alone but also must include future patrons and future plans. The cultural and scholarly heritage need to be stored for coming generations even those in digital formats.

ICT has an essential role in how we can manage. This presentation doesn't deal with library standards per se but instead with **common technological standards** because we are working in an environment with many facets.

It makes a difference what kind of technological solutions we choose. We are very lucky today because it is possible for us to make good choices. It was much more difficult seven years ago when my library started to investigate these questions, already in 1999.

Lets' study the topic from the points which are the key responsibilities of the libraries.

Storing Data

When storing data for posterity we must remember that the key to unlocking that information must be in our own hands, not in one single enterprise's hands. It could also be possible that no one has the key, and that is not good either. In other words, **the data format used must be well-documented, freely available, and still usable in the future**.

File formats that are open standards assist in long time archiving of information because they allow for **software and hardware independence**. Software and hardware independence are important because we cannot let our digital history depend on proprietary (private and closed) data formats owned or controlled by some private company.

What happens if that company goes down ? Or what happens, say, in 15 years when the programs we have today will not run on the computers produced at that time, not to mention 100 or even 1000 years from now ? What will happen then to our data ? **Our cultural heritage may not be stored in data formats which are not owned by mankind**. Our task is to ensure this! To use closed, proprietary technology is wrong for an artist, a scientist, a government employee and any others who want to deal with their works in the long term.

Furthermore, barriers that restrict people's access to information are counter-productive. The self-promoting policies of large software makers are the worst threats later, because they are consciously trying to make customers less able to move by trying to force formats

which their competitors are not allowed to use. Often they try to force their own undocumented so-called 'standards' with licensing and other restrictions in the place of proper, well-documented, freely usable standards. The harder it is to move, the more they can charge later for the next release.

Do we keep our data in closed formats ?

Using open data formats will help most of all simply accessing our own data.

Open Standards are not only for libraries which are one part of the museums, archives and libraries community. **Open standards are for all who use the networked information environment**. These standards are developed by other information communities than libraries. We can use those. The EU and many others recommend open standards and open source for many reasons, including those just mentioned.

Open Standards
http://en.wikipedia.org/wiki/Open_standard
Open Source
http://www.opensource.org/docs/definition.php

Communicating

The modern library has a lot of communication with other institutions, patrons, agencies and so on. Technologically there is a need for interoperability as a result. **Open standards are therefore important to libraries because we want to be able to communicate, independent of which computer platform or word processing program we happen to be using**. As part of the public sector, we cannot force our patrons to use or buy specific brands or models of software or hardware.

Think of a situation without open standards: You couldn't read my e-mail without also having the same e-mail software. Yet, today, we can read e-mail with whichever e-mail software we choose to use. We have that thanks to several open standards, one of which is SMTP. Without open standards, it would not be possible to read a web page without the same software. The web is born of open standards and from a time when open standards and open source were simply called 'standards' and 'programs'. Even **the Internet itself is the result of open standards**. These problems with closed software and closed standards have come later on.

Another question is, can we open our files nowadays ? We don't want only the computers to communicate with each other we also want **document interoperability**. **We need open document formats to be used**. Open standards ease information transfer between systems on the web. Posting data online or transferring it use open formats like HTML, PDF, JPEG, PNG or XML. [1] They are the appropriate formats for transmitting digital content on the web. **Anyone can open them, no matter which web software they use**.

However, it is a daily problem that other programs cannot exchange files without difficulties. It's not just different brands of the same program that have this trouble, but also different versions of the same brand. Some vendors actually use this form of planned obsolescence to force their customers to buy new software.

The way to make certain that these diverse systems and any future systems can communicate with each other is by using open standards. Open standards help achieve

the free flow of information through interoperability.

Retrieval

To build a sustainable environment means demands on the software, for example the library system.

These demands are platform independence, vendor-neutrality, independence from licensing restrictions like commercial copyright and patents, and the source code must be available to get the freedom to add features and make changes when needed. Our legal obligation is to fulfill privacy and safety requirements. Having the source code makes it possible to guarantee that there are no backdoors and ensures privacy. **Our further obligations include democratic access to information regardless of economic or social status.** One cannot have democratic access if it can only take place using the newest and most expensive software and hardware which quickly become obsolete and must be repurchased frequently. It is not only our patrons who may have limited economic means, but also many libraries as well do not have unlimited funds for technology purchases and maintenance.

Open source represents a way for librarians to keep control over their computing environments instead of being themselves controlled by their computing environment, or by the vendors and ICT Centers that control the computing environment. Proprietary software can in this way lead to a single point of failure: If a vendor goes out of business or is tied up in lawsuits or decides not to support a program anymore, there is often nothing a user can do. The situation is similar for data formats. Proprietary standards often lead to the customer falling under the control of the vendor. Soon thereafter the customer is working to meet the vendor's needs, a situation of the tail wagging the dog, rather than vice versa.

The Case of Muurola Village Libary

We have been building a sustainable technological environment in Muurola since 1999. Free Software is built on open standards and open source. That's why we use **OpenOffice.org 2** for word processing, spreadsheets, etc. both in our own work and on public terminals. This presentation is made using OpenOffice.org's presentation graphics tool, **Impress** not powerpoint. We use **FireFox** to browse the web. Every public station uses an open source operating system (various **Linux** distributions). They are free of charge, stable, and low-maintenance. There are no 'virus' or other problems like those which one common brand is infamous for. We work in the **Koha** project with the hope that one day our library system is also Free.

Koha
http://www.koha.org/
OpenOffice.org (suite)
http://www.openoffice.org/
Free Software
http://www.gnu.org/philosophy/free-sw.html

Ubuntu (Linux distro)
http://www.ubuntu.com/
Fedora Core (Linux distro)

http://fedora.redhat.com/
Debian GNU/Linux (Linux distro)
http://www.debian.org/

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[1] even an open standard like XML can be made closed by encumbering parts of it, such as the schema, with licensing restrictions or (in certain trade zones) patents