

University of the Arts
London College of Communication

Report

The Future of Open-Source Desktop Publishing Programs

November 28th, 2005

Gregor Fellenz
gf_public@gmx.net
BA Publishing

Introduction

The aim of this report is to show open source software (OSS) compared with traditional desktop publishing (DTP) programs. For that purpose it presents open-source DTP programs and their current state of development. It analyses the potentials of the programs and the feasibility of implementation in industry workflows.

The research on DTP programs is focused on the capability to use OSS in production workflows. The report refers to ease of use, stability and technical requirements.

Furthermore, this report includes necessary background information about open source software to understand and assess further developments. It will give an overview of the predicted future of OSS and areas in which it is already a viable alternative to proprietary software.

This report does not cover Tex respectively Latex, which is an excellent typesetting system, but based on a mark-up language it is not comparable to the classic DTP workflow.

Background

DTP is intended to create and edit print layouts and considers aspects for press ready documents. In the publishing industry proprietary software is used mostly in this process (Wikipedia).

A good cooperation between the publishing industry and software vendors such as Adobe, Macromedia and Quark is the strength of the current workflow. There is no distinctive need for alternatives in prepress companies and design agencies because bread and butter business is running well with the current workflow. Neither Adobe nor Quark have ported their major products to Linux, nor are there likely to do so soon (Walsh 2004).

Nevertheless the open-source DTP projects are growing rapidly and are worth to have a look at. In addition the marginalisation of Quark, the main competitor of Adobe, and the fusion of Adobe and Macromedia is leading to a monopoly position of Adobe (Rosykiewicz 2005). This could lead to a loss in bargaining power, higher prices and worse maintained programs (Robertson 2005). Furthermore OSS is using open standards and is in general free of charge. These aspects could have an important impact on software costs (Peeling 2001).

This report was intended to find out the feasibility and viability of open-source DTP programs in a professional environment. Because of the fast moving developments in this area the future developments and predictions were analysed and set in context with the special needs of the publishing industry.

The current situation in OSS DTP programs was known as incomplete, for this reason development potentials and planned enhancements were put in the focus of observation.

Methods

The research methods in this report were focused on internet sources such as internet sites, forums, newsgroups and mailing lists. In addition books and magazines were consulted.

For the software description and assessment the programs were installed and tested on a Linux based Ubuntu distribution. The abilities and outputs were checked and compared with industry standards specifications.

Findings

Open Source / Free Software

Open Source Software is software whose source code is openly published, which is usually available at no charge, and which is often developed by volunteers (Peeling 2001).

There is a debate about the terms and definitions of open source and free software. According to Richard Stallman (2002) free is used as in "free speech," not as in "free beer", nevertheless this was often misunderstood as simply free of charge. For this reason the term Open Source was introduced in 1998 to clarify the definition of free software and focus on the benefits of open standards.

There are three main criteria for Open Source, these criteria vary a little between the wide range of licences.

- The source code must have a human readable style, i.e. in a higher programming language.
- There is no restriction concerning copying and using the software.
- Further development and change of the source code is permitted. (Wikipedia)

The main licences are the General Public License (GPL) and the Berkeley Licences (BSD), the latter allows greater freedom for commercial exploitation (Peeling 2001).

The perceived importance of OSS is indicated by several commercial decisions. In 1999 Netscape made their browser available as Open Source. Industry giants like HP, Sun or IBM have decided to focus on OSS and to invest in the developments (Peeling 2001). This assures further developments and benefits all software users.

Successful Open Source Software Alternatives

In some areas OSS software is equal or superior to proprietary software. The most successful open source products are found in the internet server market. The Apache web server has gained nearly 70 % of market share and has been the leading web server since 1996 (Netcraft 2005).

But also end user applications are gaining attraction. Well known examples are OpenOffice and Mozilla Firefox. Firefox is a sophisticated and secure web browser. Its market share is fast growing and has recently reached 12 % (Onestat 2005). OpenOffice is an Office suite including a word processor, spreadsheet, presentation, and database components. It is maintained by Sun and is competing with Microsoft Office. Microsoft's package is still the unchallenged market leader but OpenOffice has reached 14 % of the large enterprise office systems market (Loftus 2005).

Open Source Desktop Publishing Programs

Open-source DTP programs have not gained a significant market share, in fact the industry uses almost exclusively Apple Computers (Walsh 2004). Anyway a lot of promising projects were developed, it is worth to have a look on these programs.

Image Manipulation - The Gimp

The GIMP stands for GNU Image Manipulation Program. It is a GPL licensed image manipulation program for creating and processing raster images. The project history began in 1995 by Spencer Kimball and Peter Mattis, today the development is maintained by volunteers. It was one of the first end user OSS projects and has gained a lot of attention (Wikipedia). Today The Gimp is available for Windows, Mac OS and Linux, there is also a Photoshop like customization called Gimpshop, which has the same look and feel like the well known Adobe Photoshop (Gimpshop).

The current stable release The Gimp 2.2 allows complex foto retouching and montage. Current methods in image manipulation are implemented and a huge bunch of free plugins is available. It is outstandingly applicable for web graphics (Wikipedia).

Unfortunately it still lacks a built in CMYK and colourmanagement functionality. In a prepress environment this turns out as a linchpin for a useful program. There is a plugin available which offers CMYK separation with ICC colour profiles (Robinson 2005).

The absence of CMYK support is an often heard request for enhancement (Lehmann 2001). The current The Gimp developer version 2.3.5 implements colourmanagement with ICC profiles. It is likely that this version will be stable in a few months (Anon 2005).

Krita as an alternative, only available for Linux, also implements colourmanagement, CMYK and 16 bit RGB images in a developer release (The Krita Team 2005).

Vector graphics – Inkscape

Inkscape is an ambitious development, based on the SVG Standard. The Scalable Vector Graphics Standard is specified by the World Wide Web Consortium and describes vector graphics in XML and CSS (W3C 2003). The project started as a fork from sodipodi, another vector graphics editor, in 2003 and is now available for Linux, Windows and Mac OS (Inkscape).

With Inkscape the user creates lossless scalable vector graphics. Because of the open SVG Standard graphics are compatible to other programs and platforms. Inkscape also supports PostScript and Adobe Illustrator formats, and is able to import bitmap graphics (Zastrow 2005). It does not have as many features as proprietary vector editors, but is suitable for the most logo and graphic creation.

Unfortunately Inkscape lacks CMYK support and PDF export functions. Given that the project is in an early stage it is likely that this will be implemented in the near future (Harington 2004).

Layout – Scribus

The first stable Scribus 1.0 version was released in June 2003, it only implemented the basic DTP requirements such as a frame based layout concept (Scribus). It was developed as an alternative for QuarkXPress, because the program is not ported to the Linux platform. Scribus is only available for Linux, but workarounds exist to install it on a Windows or Mac OS platform (Walsh 2004).

The current 1.3.1 technology preview contains the most common DTP features. Among other things it includes colourmanagement, CMYK output, conform to PDF/X-3, tables and a scripting interface. A special feature is the creation of PDF forms directly out of Scribus (Wikipedia).

It also refers to open standards and preserves a high degree of interoperability. Scribus imports SVG and Open Document Text formats directly. Also PostScript and PDF files and TIFF transparency are supported.

Scribus documents are saved as well formed XML files, as a matter of principle easy to convert and transform by other applications. Also XML repurposing is a growing demand.

Commercial support is given for North America and Europe through two companies. This includes migration support and on-site training.

According to the Scribus team three newspapers are using Scribus for daily production, quite a lot of small companies use it for their business as well (Walsh 2004).

Colourmanagement – Little CMS

The Little CMS CMM engine offers an open-source ICC colourmanagement library for any GPL licensed program. The programming library reduces implementation duration and thus shows the benefits of collaboration. Little CMS is distributed in the major Linux distributions and used in many OSS programs (Little CMS).

Discussion of Open Source Software in a DTP Environment

Even though open-source DTP programs have made good progress, their development status is not as good as the commercial products such as QuarkXPress or Photoshop (Zastrow 2005).

Unfortunately the OSS alternatives are not ready for production yet. The lack of CMYK and colourmanagement is a great restraint for using open-source DTP programs in a professional environment. However the problems are known, and in all cases there is a roadmap to implement these features.

Moreover the development focus is not on prepress, because most open-source developers are programming for their own use. This explains the better implemented web and RGB features, which are completely sufficient for their environment.

Another important point is that developers are commonly not paid, therefore the development is not predictable or influenced by special interests. Of course there is a possibility of earmarked funds to develop special functions. This procedure is used by Sun in the OpenOffice development, an amount of money is dedicated for the implementation of special features. As a matter of fact prepress companies could pay developers for the implementation of special features, this would lead to more sophisticated DTP programs that are usable by everyone at low cost. To realise the benefits of doing so, a change of minds is needed (Peeling 2001). In the long run a joint development is cheaper and benefits everyone. As an example the German Linux magazine sponsors one Scribus developer (Scribus).

On a global perspective there are also changes in the DTP Software market. The fusion of Adobe and Macromedia could lead to a monopoly position and fewer program choices for the prepress industry. OSS could prevent them from vendor or technology locking (Peeling 2001).

In this situation it is more likely for the prepress industry to look for alternatives this could also motivate the community for open-source developments as the monopoly of Microsoft's Windows and Office shows.

All this is related to programs with big volumes, programs for imposition or RIP servers have only small volumes and there are only few persons interested in an open-source approach (Peeling 2001).

However there will be an advantage in future because open-source programs are using to a large extent the open XML standards. Data transformations and file exchange is easier and more coherent (Zastrow 2005). Potentially this will lead to new standards for graphic interchange.

Referring to standards also the PDF specifications are well implemented (Scribus) or are going to be implemented (Inkscape). Also the commercial programs are forced to unveil their document formats, the QuarkXpress file format is now described in XML (Shafstall 2005). This could lead to a more open exchange between OSS and commercial programs.

Another interesting approach is suggested by Jozsef Mak (2005), he recommends to integrate Scribus, The Gimp and Inkscape in a program suite with the same look and feel and handling. This would lead to an open-source graphic environment even more attractive to prepress companies and graphic designers.

Recommendations

At the moment only Scribus is ready for professional prepress production. It offers common features including colourmanagement and PDF/X-3 export. Unfortunately it is only available for Linux which prevents sharing it with commercial programs on the Windows platform. But for small companies and home use Scribus is perfectly usable.

I would recommend to observe the development furthermore and reassess it in the near future. Because of low costs it might be interesting to test the abilities of open-source programs in a productive environment today. If the development will keep up with the speed shown in the past it could be a viable alternative in the near future.

Also a Scribus port to Windows and Mac OS is presumable. Given that, it could be used side by side with commercial programs in a productive environment.

As to The Gimp I would recommend to wait for the next stable release and then test the colourmanagement abilities again. Also Inkscape has to focus on improvements in this field for another assessment.

Acronyms

BSD Berkeley Licences
DTP Desktop Publishing
GPL General Public License
OSS Open Source Software

References

- Anonymous, The Gimp Changelog, <http://developer.gimp.org/changelog.html>, accessed 17. November 2005
- Harrington, B. (2004), cmyk-profile and pdf export, http://sourceforge.net/mailarchive/message.php?msg_id=9881506, accessed 17. November 2005
- GimpShop, http://plasticbugs.com/?page_id=294, accessed 20. November 2005
- InkScape, <http://en.wikipedia.org/wiki/Inkscape> , accessed 17. November 2005
- Lehmann, M. (2001), Thoughts on CMYK, and getting it without implementing it, <http://www.mail-archive.com/gimp-developer@lists.xcf.berkeley.edu/msg01350.html>, Gimp Developer Mailinglist, accessed 12. November 2005
- Little CMS, a free Colormanagement engine in 100K, <http://www.littlecms.com>, accessed 20. November 2005
- Loftus, J. (2004), Desktop apps ripe turf for open source, http://searchopensource.techtarget.com/originalContent/0,289142,sid39_gci1011227,00.html, accessed 20. November 2005
- Mak, J. (2005), It's time to integrate open source graphic applications, <http://software.newsforge.com/article.pl?sid=05/02/02/215259&tid=75>, accessed 21. November 2005
- Netcraft (Nov. 2005), Web Server Survey, http://news.netcraft.com/archives/web_server_survey.html, accessed 21. November 2005
- Onestat (2005), Mozilla's browsers global usage share is still growing, http://www.onestat.com/html/aboutus_pressbox40_browser_market_firefox_growing.html, accessed 21. November 2005
- Peeling, N. and Satchell J. (2001), Analysis of the Impact of Open Source Software, Farnborough, QinetiQ
- Robertson, T. (2005), Adobe and Macromedia will become one, <http://www.mymac.com/showarticle.php?id=198>, accessed 17. November 2005
- Robinson, A. M. (2005), Separate, <http://www.blackfiveservices.co.uk/separate.shtml>, accessed 20. November 2005
- Rosykiewicz R. (2005, : Vol.5 No. 2), Adobe Acquires Macromedia for \$3.4B, The Seybold Report, The Seybold Consulting Group, San Francisco
- Shaffstall, C. (2005), QuarkXPress Markup Language, http://www.quark.com/products/xpress/xpress_dom.html, accessed 17. November 2005
- Stallman, R. M. (2002), Free Software, Free Society, Boston, Free Software Foundation, p. 41

Scribus Open Source Desktop Publishing, <http://www.scribus.org.uk/>, accessed 17. November 2005

The Krita Team (2005), Krita, <http://www.koffice.org/krita>, accessed 20. November 2005

Wikipedia, <http://en.wikipedia.org>, accessed 25. November 2005

W3C (2003), Scalable Vector Graphics (SVG) 1.1 Specification, <http://www.w3.org/TR/SVG/>, accessed 20. November 2005

Walsh, J. (Dec 2004), Linux Layout with Scribus, Munich, Linux Magazine

Zastrow, T. (2005), Desktop Publishing unter Linux, <http://www.pro-linux.de/berichte/linux-dtp.html>, accessed 12. November 2005