

# Open Source Software

by John McMillan

### Open Source Software

Open Source software is one of the most exciting developments in the world of IT. It is changing the way computers are used. Huge cost savings can be made by adopting Open Source.

#### Firstly: What is Open Source Software?

There is a confusion about Open Source software. It is not necessarily free of charge. The principle of Open Source is that the authors of the software release the source code. Anybody is then free to modify the code and to pass it on to other parties. However anybody who does this must then release the modified source code. Open Source can be built into other software, but if it is, the source code of that software must be released.

In practice, there is no charge made for the bulk of open source software.

#### What is Available?

There are many thousands of Open Source packages available. These cover a wide range of applications.

Perhaps the most widely known Open Source package is the Linux operating system. Linux is widely used on file servers and web servers, and many users claim great advantages over Microsoft operating systems. The majority of web sites are powered by Apache web servers, and the PHP language and MySQL database are widely used in web sites. These go under the collective moniker of LAMP.

During 2007, the Open Office suite has emerged as an alternative to Microsoft Office. It includes a word processor, spreadsheet, presentation program, database and drawing package. The first three are compatible with Word, Excel and Powerpoint – the author has installed Open Office on his laptop and regularly transfers documents between them without problems.

Web browsers have caught on in the last few years, lead by Firefox, but also Opera. Indeed, many people are coming to regard Firefox as the new standard for browsers. Firefox had 30% of the browser market in August 2008.. This is interesting because the main anti trust case against Microsoft was brought because Internet Explorer destroyed Netscape. A decade on, similar products to Netscape are succeeding against Internet Explorer.

Email programs like Thunderbird are also popular.

#### Background to Open Source: Paradigm Shifts

There is a case for considering Open Source as representing a paradigm shift in business. There have been a number of these shifts. The first was steam power. Steam power in the 19<sup>th</sup> century enabled much larger enterprises to operate. These in turn were able to

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make more complex products which required the large companies of the mid and late 20<sup>th</sup> century.

A less obvious shift occurred when personal computers were developed. Suddenly, very small companies sprung up making individual components like disc drives, keyboards, printers, word processors, operating systems and Basic interpreters. A Harvard paper called "Unbundling the Corporation" has described this. Modern products are usually made and by lots of specialist companies and few of the major computer companies have survived this process. .

The current shift is being drive by high speed broadband. This has slashed software distribution costs and has enabled long distance collaborations to take place.

The author has run software houses for many years. In 1980 it cost the equivalent of £70 to ship and sell a piece of software. In 2008 this can be done via the Internet for maybe a tenth of a penny. This has given rise to entirely new business models. Adobe for example, give away Acrobat reader. (Acrobat is not open source). By doing so, Adobe have established the PDF file format as a standard, and this enables them to sell many more copies of the chargeable Acrobat product.

Broadband has changed some jobs out of recognition, and software development is one of them. Fifteen years ago programmers in a team had to work on the same computer. This meant they had to work in the same building as the computer. Now they don't have to be in the same location or even the same organisation.

### Who Pays For Open Source?

This is perhaps the question which most worries a businessman. There are a number of ways in which Open Source is funded. A company can develop software for internal use, release it to the world and have other people support it. (Unix seems to work like this). Sun Microsystems for example, found they had to pay \$25M for Microsoft licences, and realised it would be cheaper to develop office software themselves. They created the Open Office suite of programs. This model will certainly grow; if you are a very large company, you can spend \$1M a year on software licences or lend a programmer to an Open Source project. It's an economic no-brainer.

Another new economic model, mentioned above, is to give away one product as a lever to sell other, chargeable, services. This is the model used by the search engines and certainly works for Google. Many Open Source projects work this way.

Also, the user community often contributes to the development of the software. This happens a lot with the PHP programming language and the MySQL database. If a programmer finds a bug, it's a lot quicker to fix it than to work round it. He's then got a high incentive to post the bug fix to the controllers of the software: if he doesn't, it will come back when he updates the software.

A lot of Open Source is developed by individuals, and there are a number of reasons for this. One way is community service. Many people give up time for community work, charities and the like. A lot of programmers develop free software as a community service.

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Another reason is peer recognition and status. Interest is another. A lot of programmers find their day jobs writing things like banking systems to be boring. They spend their spare time doing interesting project and releasing them. This is like an artist working in an advertising agency and painting as a hobby.

### How Does it Work?

There are a number of bodies who set Open Source standards. The W3C (World Wide Web Consortium) lay down many open standards which are adhered to. Mozilla ([www.mozilla.org](http://www.mozilla.org)) is a large organisation dedicated to promoting open source. An organisation called GNU provides a standard open source licence.

Every larger project will have a controller. People contribute new features and bug fixes to the software. These are then passed to a quality team. If a change passes the tests, it's incorporated into the next release of the software.

### What About Quality?

The bad news is that quality is patchy. The good news is that quality in the main projects is from good to excellent. Linux, Apache, MySQL and PHP are excellent, and in the author's experience, far better than one expects. Open Office is no worse than the competition. Web browsers and mail programs are better than proprietary products, but sadly the documentation is industry average.

### What Is Available?

#### Linux

The Linux operating system is extremely reliable and resilient, there are rumours of Linux machines running for years without a need to reboot. It is very much more secure than Windows, there are estimated to only be around 100 Linux viruses (see Wikipedia for more details). It is compact, needing only 256Mb of RAM (compared to 1024Mb for Windows Vista).

There are numerous variants ("flavours") of Linux available from various distributors. This can cause compatibility issues, but in practice these issues only affect software that addresses computer resources directly. (This actually has a benefit, because viruses fall into this category and many Linux viruses only affect one flavour.)

Linux works very well on servers, but is less suited to the desktop. The main reason is that it has been text based, so commands have to be typed in. This may change fairly soon because a version of Linux called Ubuntu is now available which has a full graphical interface. As yet, however, not a lot of software is available to take advantage of Ubuntu.

Linux is often easy to buy. There are several Linux magazines available from newsagents, and these often come with complete Linux installations on DVDs.

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The position with Linux, is that if you run file servers, you should certainly consider Linux. It is still not really ready for desktop PCs, but if you are responsible for large numbers of PCs, you would do well to look into Ubuntu.

### Open Office

Open Office is a suite of programs that compete with Microsoft Office. Open Office has been developed over several years and is almost a viable alternative. The author is using Open Office exclusively on his laptop, with very few minor problems. Open Office contains a word processor, spreadsheet, Power Point style presentation manager, a good drawing program and a database. The word processor, spreadsheet and presentation are almost fully compatible with Word, Excel and Power Point.

There is no email or calendar yet in Open Office (They have been promised for 2008). In the meantime, other Open Source programs are available such as Thunderbird and Sunbird that provide these facilities.

Good cost savings can be made by installing Open Office on most of a team's PCs and only paying for one proprietary licence.

### Web Browsers and Email

The Mozilla organisation supply the Firefox browser. This is very standard, with around 30% of the market and is well supported. It has advantages over Internet Explorer, like multiple tabs.

The Opera browser is also good, but less popular. Opera also has multiple tabs and other advantages, especially speed.

Mozilla also supply an email program called Thunderbird. This is good for accessing multiple email accounts and has good search facilities. It contains a fully featured address book, as well as newsgroup support. Mozilla also supply a calendar called Sunbird that contains many features. The author finds separate calendars and email useful – you can leave the calendar running for reminders but only load the email program when you want to check your email, thereby losing the distraction of incoming emails.

### Further Information

These web sites give information about how Open Source works:

#### *Open Source Initiative*

This gives the fullest background to Open Source.

<http://www.opensource.org/>

#### *The GNU Project*

The GNU Project was launched in 1984 to develop a complete Unix-like operating system. With the weird humour of geeks, GNU stands for “GNU’s not Unix”. The site describes the philosophy behind free software, the work free being used in the sense of free speech.

The site includes the common licence used by most Open Source.

<http://www.gnu.org/>

#### *Open Office*

The web site for the Open Office. It describes Open Office, and provides support and downloads.

<http://www.openoffice.org/>

Click the “Participate” tab to see how it works

#### *Mozilla Project*

Mozilla were one of the originators of Open Source, emerging from Netscape. They produce the Firefox browser, Thunderbird email and Sunbird calendar, as well as other software.

<http://www.mozilla.org/>

And of course Wikipedia: [http://en.wikipedia.org/wiki/Open\\_source\\_software](http://en.wikipedia.org/wiki/Open_source_software)

### Suggested Strategy

Download a browser from Firefox or Opera:

<http://www.opera.com/download/> (4.7MB)

[www.mozilla.com/firefox/](http://www.mozilla.com/firefox/) (5MB)

and use it for a week or so. Doing this won't remove your existing browser, so if you don't like it you can simply uninstall it.

Download Open Office (127MB):

<http://www.openoffice.org/>

Again, use the programs. Try opening and editing word documents and Excel spreadsheets. If you find Open Office works, next time you order a PC, don't pay for office software with it.

Buy an Open Source magazine.

### About John McMillan

John McMillan is a consultant with many years experience running software companies, launching software products and developing solutions for customers. Some of his projects and more articles are described in [www.mcmillantech.co.uk](http://www.mcmillantech.co.uk). John can be contacted on <mailto:john@mcmillantech.co.uk> or 01787 371099.

