

Free software / Open Source

- What is the free software movement / Open Source?
- History
- Consequences in the market

Quoted by Microsoft as its biggest commercial threat

Example - Firefox



What is Free Software?

- Both the source code and executable code are freely (and widely available) for anyone to use

“Free” ?

- Free as in “free speech”
- Not free as in “free beer”

Example - Firefox



Software license

- There are some restrictions on use
- Terms and conditions are attached to “free software” to ensure its continuance

Software license

- Open Source/free software is distributed under the terms of a 'Free software licence'

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

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Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program—to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to

```
function createPage() {  
  if (!isIE) {  
    iCenterX = (document.body.c  
    iCenterY = (document.body.c  
    if (!isRunning) {  
      for (var iTop=1; iTop<=  
        document.getElementById  
        document.getElementById  
    }  
  }  
}
```

- Companies 'hoard' the source code and use copyright law to stop redistribution of executable code

Compilation

1010100101001001010100101
0101010101010101010101010
1010101010101010101010101
0101010101010101010101010
1010101010101010101010101

Traditional software creation process

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- Write source code

Compilation

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0101010101010101010101010
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- Sell 'executable code'

Traditional software creation process

- Write source code
- Compile to executable code
- Sell 'executable code'
- Sell support, documents and training

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- 'compilation process' is one way only

Compilation

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Sell support, documents and training

Microsoft
Help and Support
Search Microsoft.com for:
Help and Support Home | Select a Product | Advanced Search
Top Solution Centers
2007 Office Suite
Internet Explorer 7
Microsoft Update
Office 2003
Outlook 2007
Outlook Express 6.0
Windows 2000
Windows Server 2003
Windows Vista
Windows XP
Home Solution Centers
Support Options
Self Support Options
Downloads & Updates
Microsoft Services
Contact Microsoft
Welcome to Microsoft Support
Top customer issues and solutions
• Get guided help when Internet Explorer crashes or hangs
• Stay current with the latest Windows XP service pack
• Find the Windows Installer Cleanup Utility
• Download updates for Windows Vista
• Update your computer for daylight-saving time
• Supported Windows Media Player file formats
Most popular solution centers
• Windows Vista Solution Center
• Windows Internet Explorer 7 Solution Center
• Windows XP Solution Center
• Office 2003 Solution Center
• E-mail Solution Center

Sell support, documents and training

The screenshot shows the Microsoft Learning website. The sidebar on the left contains links for Learning Home, Learning Manager, Learning & Reference, Microsoft Training, Microsoft Press Books, Skills Assessments, Certification, Microsoft Certifications, Exams, Information For (IT Professionals, Developers, Home & Office Users, Business Managers, Educators, Beginners), Community, Patterns & Practices, Solutions Accelerators, Learning Support, Program Opportunities, Worldwide Sites, and Customer Evidence. The main content area is titled 'New and Upcoming Titles' and features a table of developer titles with columns for Developer Titles and Release Date.

| Developer Titles | Release Date |
|--|--------------|
| Programming the Microsoft® ADO.NET Entity Framework | 07/09/2008 |
| How We Test Software at Microsoft® | 06/11/2008 |
| Hollywood Secrets of Project Management Success | 06/04/2008 |
| Windows® Internals, Fifth Edition | 05/28/2008 |
| Programming Microsoft® LINQ | 05/14/2008 |
| Inside the Index and Search Engines: Microsoft® Office SharePoint® Server 2007 | 04/09/2008 |
| Simple Architectures for Complex Enterprises | 04/02/2008 |
| Windows® Presentation Foundation: A Scenario-Based Approach | 03/26/2008 |
| Getting Results from Software Development Teams | 03/12/2008 |
| Programming Microsoft® Robotics Studio | 03/05/2008 |
| Programming Microsoft® Office Business Applications | 03/05/2008 |
| Working with Microsoft Dynamics™ CRM 4.0 | 02/27/2008 |
| Introducing Microsoft® Silverlight™ 1.1 Beta Edition, Second Edition | 02/27/2008 |
| Microsoft® Visual C#® 2008 Express Edition: Build a Program Now! | 02/27/2008 |
| Microsoft® Visual Basic® 2008 Express Edition: Build a Program Now! | 02/27/2008 |
| Microsoft® ASP.NET 3.5 Step by Step | 02/13/2008 |
| JavaScript™ Step by Step | 02/13/2008 |

Free software evolves

- More like the traditional scientific model
- New ideas or concepts built on previously constructed ideas or concepts
- Peer appraisal (suggestions and modifications) incorporated back into project
- Ensures that software has features that the clients want

Sell support, documents and training

The screenshot shows the Microsoft Learning website. The sidebar on the left contains links for Learning Home, Learning Manager, Learning & Reference, Microsoft Training, Microsoft Press Books, Skills Assessments, Certification, Microsoft Certifications, Exams, Information For (IT Professionals, Developers, Home & Office Users, Business Managers, Educators, Beginners), Community, Patterns & Practices, Solutions Accelerators, Learning Support, Program Opportunities, Worldwide Sites, and Customer Evidence. The main content area features a promotional banner for 'Get a free Second Shot at Microsoft Certification' with a photo of a man and a link to 'Get a Free Second Chance to Pass Your Certification Exam'.

- One of the key advantages over the closed source model
- Free software projects are claimed to have better reliability
- “All bugs are shallow to many eyes” - Eric Raymond

Free software creation process

- Write source code
- Distribute source & executable code
- Sell code, support, documents and training
- Source code must be available somewhere (typically the Internet)

Who pays for development?

- Code written by corporations, organisations or hobbyists
- Or combinations of the above

Example

- Sun funds the development of OpenOffice



- Sun then sells a commercial version of the suite, with extras, support, training and documentation



The GNU General Public License licence

Derived works

- The licence must allow modifications and derived works must be distributed under the same terms as the licence of the original software

No discrimination

- No discrimination against persons, groups or fields of endeavour

The GNU General Public License licence

- Free software is distributed under the GNU GPL
- Has a number of criteria that must be followed if the software is to be used in any way

Free redistribution

- The licence may not restrict any party from selling or giving away the software

The GNU General Public License licence

Licence must not be specific to a product

- Rights attached to a program must not depend on the program being part of a particular distribution

Licence must not contaminate other software

- The licence must not place restrictions on other software that is distributed along with the licenced software

The GNU General Public License licence

Source code

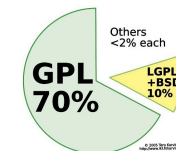
- Program must either include the source code and allow distribution of source code

Or

- Must include a well publicised means of obtaining the source code (frequently done through the Internet)

Other licenses

- Many other licenses of similar types



Free software Vs Open Source

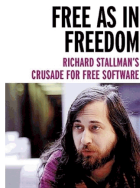
- From a users perspective, Open Source / Free software quite close at the moment
- Different and becoming more so ...

Open Source

- Invented in 1998 as a marketing term
- Describes a development model and characteristics of Open Source licenses
- Look at www.opensource.org

Free software

- Advocated by the Free Software Foundation (1985)
- Has a more political aim
- Leading figure - Richard Stallman



FLOSS

Free/Libre/Open
Source

FOSS

Free/Open Source

- Generic terms in common use

Free software

| | |
|-----------|--|
| freedom 0 | The freedom to run the program, for any purpose |
| freedom 1 | The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this |
| freedom 2 | The freedom to redistribute copies so you can help your neighbor |
| freedom 3 | The freedom to improve the program, and release your improvements to the public, so that the whole community benefits |

- DRM and patents are divisive issues
- GPL 3 - has anti DRM clauses

Digital Rights Management (DRM)

- A way to manage the ways that a file may be used

Prevent playback
after a certain time



Prevent playback on
unauthorised
devices

Prevent playback
after a certain
number of times

How is this an issue for FLOSS?

Free software community

- Generally opposed
- GPL 3 - has anti DRM clauses

Open Source community

- Generally neutral

Digital Rights Management (DRM)

- Note that such systems do NOT prevent copying
.. just the playback
- Apples Fairplay, Microsofts Plays For Sure + many others

Patents (USA)

- Software patents started to be granted after 1981

Supreme Court case, Diamond v. Diehr

How is this an issue for FLOSS?



Tivoization
(2006+)



Software Patents

- In fact - various definitions

...is a patent on any performance of a computer realised by means of a computer program

...is an invention whose implementation involves the use of a computer, computer network or other programmable apparatus, the invention having one or more features which are realised wholly or partly by means of a computer program

Software Patents

- For full versions of the *for* and *against* arguments, see

http://en.wikipedia.org/wiki/Software_patent_debate

Software Patents

- Whether pro or against, most people agree that Software Patents are being granted for “obvious” ideas
- Consider: Amazons One Click shopping

Software Patents



King Kong (Three-Disc Deluxe Extended Edition) (2005)

Starring: [Ricky Martin](#), [Jack Black](#) Director: [Peter Jackson](#)
Rating: [PG-13](#)

First Line: (drinking espresso) Mommy, that's a funny one, isn't that funny?

★ ★ ★ ★ ★ (384 customer reviews)

List Price: \$94.98
Price: \$26.42 & this item ships for FREE with Super Saver Shipping. [Details](#)

You Save: \$68.56 (24%)

Availability: In Stock. Ships from and sold by

[Add to Shopping Cart](#)

or
[Buy now with 1-Click!](#)

Ship to:

☐ Ship Anyway

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More Buying Choices

42 used & new from \$17.99

Have one to sell? [Sell yours here](#)

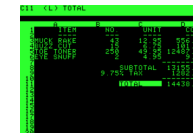
- Basically a button on a form that initiates the financial transaction straight away

Software Patents

- Ideas or concepts that predate 1981 are not patentable due to prior art
- Consider - Visicalc

Visicalc (1979)

- First ever spreadsheet



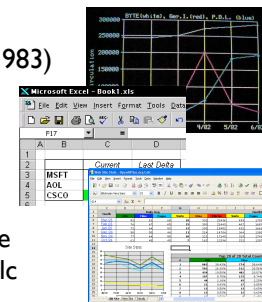
| | | |
|---------|-------------|-----------------|
| Rows | Columns | Cursor |
| Cells | Text | Values |
| Formula | Formula bar | Save/Load files |

- But invented before software patents so...

Lotus 1-2-3 (1983)

Microsoft Excel (1987)

Open Office (2000) - Calc



Current situation in Europe

- Software patents still not granted in Europe
- Many attempts at getting legislation passed - previous attempt July 2005

Computer Implemented Inventions Directive

Solutions?

GPL 3 states that if software is licensed under GPL, patent rights are granted

If patents are found, FLOSS advocates say that the software will be rewritten very quickly

How is this an issue for FLOSS?

Some patent claims may exist against GPL'd software

Users or software groups deriving other software may have to pay the patent holder

Skills, tools and requirements for FLOSS

To start the momentum

- Interest from a small community (probably technical)
- Weakness in a closed source technology
- Could be expensive, lacking facilities, buggy or not supported to the degree expected by users
- Rapid release cycle to maintain interest and make users / developers feel involved

How is this an issue for FLOSS?

Microsoft claims to hold 200 patents used in Linux

Refuses to say which ones!

Skills, tools and requirements for FLOSS

To develop

- Tools to allow shared parallel development of code (Commonly CVS)
- Version control mechanisms
- Internet interface

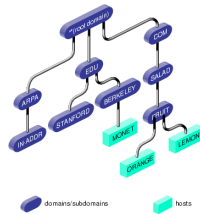
To promote

- Could be a website (www.freshmeat.org)

FLOSS Products (a selection)

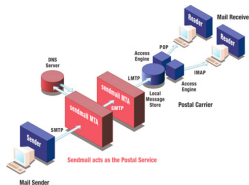
Internet software and protocol implementations

- *bind* provides the domain name service for much of the Internet backbone



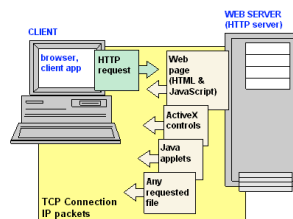
Internet software and protocol implementations

- *sendmail* the most common email transport software



Internet software and protocol implementations

- *apache* the most common web server
- *php*, *perl*, *python* common web programming languages



Office products

- *Firefox* alternative web browser
- *OpenOffice* fully featured Office suite
- *mySQL*, *mSQL* database products

Thousands of other products are promoted on freshmeat

Operating Systems

- *Linux* probably the most widely known open source product
- Actually a huge collection of software and an Operating System
- *Apple* has switched its entire hardware platform over to an open source Operating System

So: Office 2007

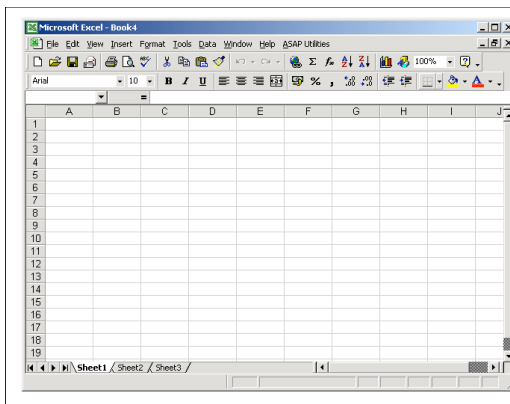
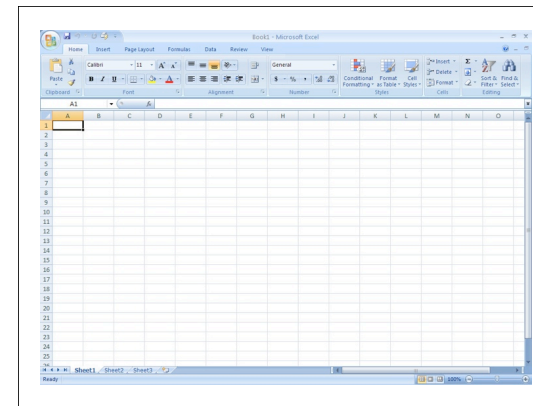
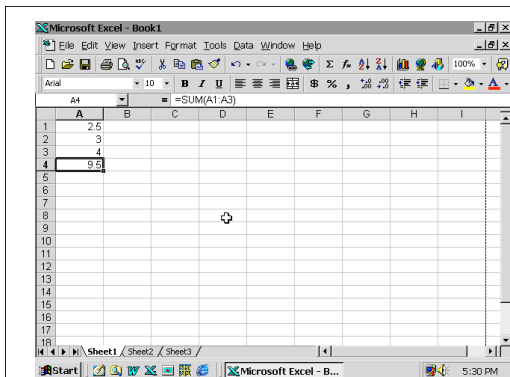
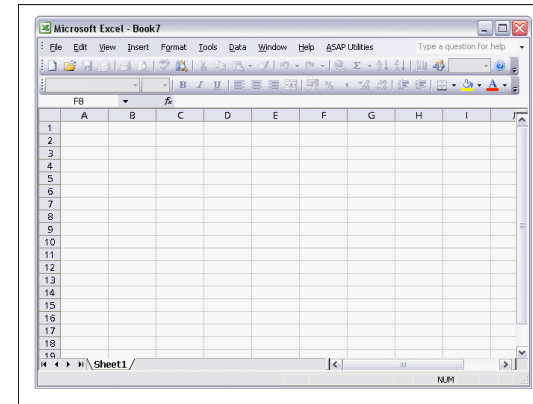
Pros

- Fully featured complete Office suite
- Fully integrated with OS
- Most popular Office suite in the world
- Wide support and common file formats
- Internet / Group functionality included in recent versions

So: Office 2007

Cons

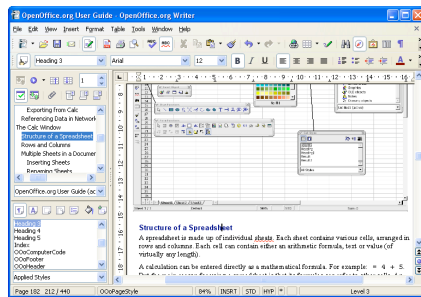
- Expensive
- Changes to interface dependant upon OS platform
- Changes to file format common between versions
- Little changes to the core functionality



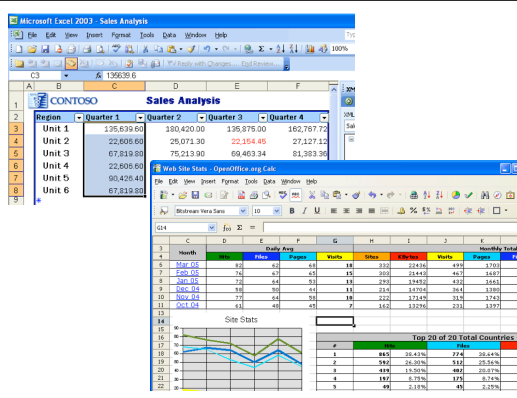
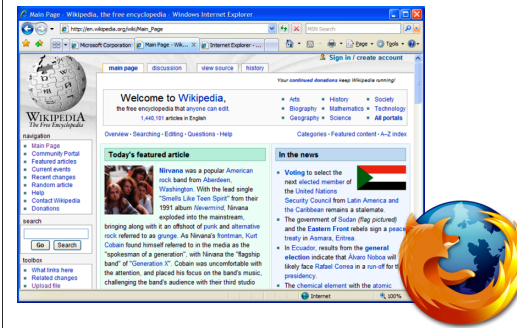
So: OpenOffice

Pros

- Fully featured complete Office suite
- Offers 95% of the features
- GUI very similar to Office (pre 2007)



IE vs Firefox - talked about this already



Microsofts Strategy

- Initially ignored it
- Then commissioned internal study that leaked - see Halloween papers
- Claimed it stifled innovation and had a viral nature that threatened intellectual property rights

So: OpenOffice

Cons

- Some very advanced features missing
- Not as fully integrated as Office XP
- Varied programming support (i.e. missing VB or a different macro language)

Microsofts Strategy



Microsofts biggest problem - Commoditization

Defn: When a product becomes indistinguishable from others like it and consumers buy on price alone, it becomes a commodity

However - Microsofts / Novell agreement

- Microsoft promises not to sue Novells Linux customers because of alleged patent infringements
- No evidence yet .. so FUD?

ASUS eee PC



£199

Comes with Linux, Firefox and Open Office

Microsoft can't ask £300 for OS and £250 for Office anymore

Further information

- Look at www.opensource.org
- Links to Free software foundation, Linux documentation project, Free software Bazaar, Mozilla site
- Books: The Cathedral and the Bazaar, Eric Raymond
- Articles: Use Google to discover Microsoft's Halloween documents

Microsofts Strategy

- Promoting a 'shared source' initiative, where corporate users can view code
- Some evidence that Microsoft may co-operate with the open source community now