

# Free Software and Open Source movements

## Outline

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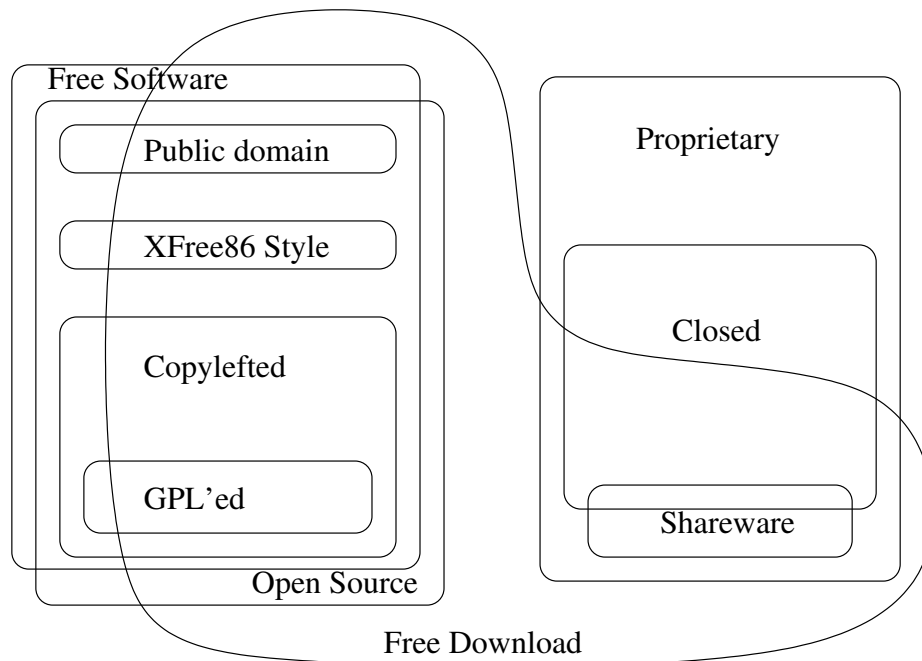
## I Introduction

### 1. Intellectual property (IP): copyrights, trademarks, patents, licenses

- (a) Intellectual property rights (IPR) — right of owning of non-rival goods (creations of the mind).
- (b) IPR gives temporary monopoly rights. After time is out created work became public domain.
- (c) Objective of IPR: growth of technologies by stimulating process of giving to the World intellectual creations.
- (d) Different types of intellectual property:
  - copyrights — exclusive rights to publication, distribution and adaptation of work. “Moral right”. Applies to any expressible form of an idea or information that is substantive and discrete (such as poems, movies, dances, paintings, software, radio. . . ) Berne Convention (1886): every written text is automatically copyrighted. Buenos Aires Convention (1910): every written text with note is copyrighted (US).
  - trademarks — signs for identification of product/service unique origin. Required to exclusively identify the commercial source or origin of product/service, it’s a badge of origin.
  - patents — exclusive rights granted to an inventor for a limited period of time in exchange for a disclosure of an invention. If inventors did not have the legal protection of patents, they would prefer to keep their inventions secret.
- (e) Criticisms:
  - ideas are not unique, and few people at the same time can invent something similar,
  - hard to divide what inventions are obvious and what is not.
- (f) IPR and software: good idea, bad implementation. Using unpatented ideas frightening because of possibility that someone will patent them later. Strange patents such as mouse double click. Patent trolls. Software world is too flexible and mobile.

### 2. Software categories

- (a) Diagram showing relations between software categories.



(b) “Commercial software” is not equal to “proprietary software”.

## II Free Software movement

### 1. How the movement was started

- (a) Richard Matthew Stallman. Born in 1953, graduated with BA in Physics at Harvard University in 1974, at the time of studying Harvard he worked in MIT AI Labs.
- (b) After U.S. Copyright Act of 1976 number of proprietary programs in 1970 –1980 grew, to prevent of being used on competitors’ computers.
- (c) In 1980, Stallman and some other hackers at the AI Lab were refused access to the source code for the software of the first laser printer, that Xerox company has gifted to them. Stallman had modified the software on an older printer for more comfortable use and wasn’t able to do so on Xerox printer. This experience convinced Stallman of people’s need to be free to modify the software they use.

- (a) Idea of Free Software and Free Software Definition, four freedoms of 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 2: The freedom to redistribute copies so you can help your neighbor.

Freedom 3: The freedom to improve the program, and release your improvements (and modified versions in general) to the public, so that the whole community benefits.

- (b) Social aspect of Free Software and the goal: it is a philosophy to make World better. Social solidarity: sharing and cooperation.

### 2. GNU Project (1983). Free software, mass collaboration project to develop replacement for non-free software.

### 3. GNU OS (1984)

- (a) GNU. GNU’s Not Unix. Compatible alternative to proprietary Unix.
- (b) Linus Torvalds, born in 1969.
- (c) Linux project and GNU/Linux OS. Filling gap of GNU OS.

### 4. Free Software Foundation (1985). Non-profit corporation to support free software movement.

5. Free software protectors — licenses

- (a) Copyleft. It is a copyright with addition that work can be modified and redistributed with modifications but only with the same restrictions.
- (b) GNU General Public License. Strong copyleft license.

### III Open Source movement

1. Open source is an approach to design, development, and distribution offering practical accessibility to a product's source. It is a "practical part" of Free Software.
2. Open source was born in the process of evolution of software development techniques.
3. Eric Steven Raymond, born in 1957. He had a lot of programming practice and wrote "The Cathedral and the Bazaar" (1997): analysis of software development by closed group vs. massive and partially decentralized development, development of Emacs vs development Linux. "Given enough eyeballs, all bugs are shallow." — "Linus' Law".
4. 1998. Netscape Communications Corporation releases their popular Netscape Communicator Internet suite as free software.
5. 1998. Focusing on source code without much attention to free software goals: Bruce Perens and Eric Raymond founded Open Source Initiative.
6. Open Source Definition:
  1. Free redistribution.
  2. Source code.
  3. Derived works.
  4. Integrity of the author's source code. (Distributing modifications as patches.)
  5. No discrimination against persons or groups.
  6. No discrimination against fields of endeavor. (Must not be restricted to be used in business for example.)
  7. Distribution of license. (No additional license restrictions.)
  8. License must not be specific to a product. (No restrictions to use software in particular software distribution.)
  9. License must not restrict other software. (No restrictions like all software that come with this program must be open source.)
  10. License must be technology-neutral.
7. Open Source is a powerful and reliable software.
8. Advantages:
  - Open source software is a well written software and provide high quality of services, otherwise someone else will be able to provide better open source solution from their code or better services. Open source software must be best software to be successful.
  - No monopolies, all ideas and technologies correctness and quality can be controlled by community.
  - Better bug fixing scheme than in proprietary model.
  - Very flexible solutions, no limitations in changing software for needs of end user. Software will not "die" when get unsupported by original developers.
  - Cheap development for good projects due to community support.
  - No spyware and malware.
9. Free Software and Open Source are different. Free Software fights for personal freedoms to make World better, Open Source is an effective development approach.

## IV Licenses

1. Copyleft vs. permissive licenses vs. public domain. Common rights that they give.
2. GPL-like: GNU Lesser GPL, GNU Affero GPL, GNU Free Documentation License.
3. BSD-like: BSD, MIT, Boost Software License, Apache License.
4. CreativeCommons. BY/BY-SA/BY-ND/BY-NC/BY-NC-SA/BY-NC-ND.

## V Free Software, Open Source and profit

1. “Free” is not about price! R. Stallman made some money on selling GNU Emacs.
2. Selling program binary is mostly unprofitable if you are not Big Monopolist Corporation.
3. Open Source business models:
  - (a) Redistribution and support. MySQL.
  - (b) Double licensing. Trolltech Qt, Berkeley DB.
  - (c) Free Open Source editions and commercial enterprise editions. Red Hat (Fedora and Red Hat Enterprise Linux), Novell (openSUSE and SUSE Linux), Sun (OpenSolaris and Solaris)
  - (d) Implementing programs/servers solutions. Zend Corporation.
  - (e) Partnerships with other companies. Mozilla and Google.

## VI Success stories

1. End user examples: operating systems, servers, supercomputers, desktop, web, science tools, a lot of developer tools. . . Well working Free and Open Source software are everywhere.
2. Corporation examples: Cygnus Solutions, Canonical Ltd. Red Hat, Mozilla Corporation, Qt Software, Sun Microsystems, Google. . . Biggest corporations gaining profit using and developing Free and Open Source software.

## VII Conclusion

1. Free Software is a way to make world better and may require some sacrifices.
2. Open Source is a quality guarantee and a proved model of software development.
3. It is possible to gain money and work for freedom.

## Sources

- <http://www.fsf.org/> — Free Software Foundation
- <http://www.opensource.org/> — Open Source Initiative
- [http://en.wikipedia.org/wiki/Portal:Free\\_software](http://en.wikipedia.org/wiki/Portal:Free_software) — Wikipedia Free Software Portal