

# Open Source Software - a Collaboration Platform for Web Applications

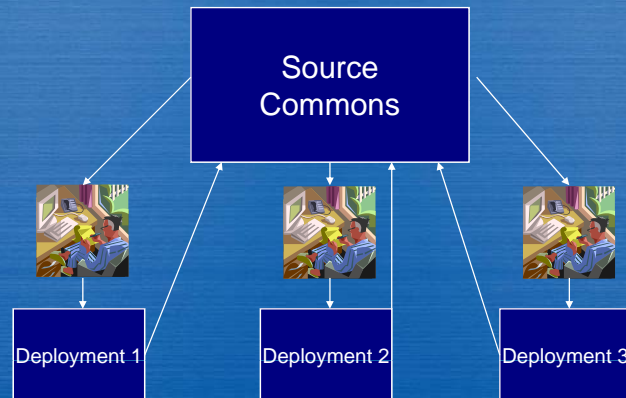
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June 6 2007

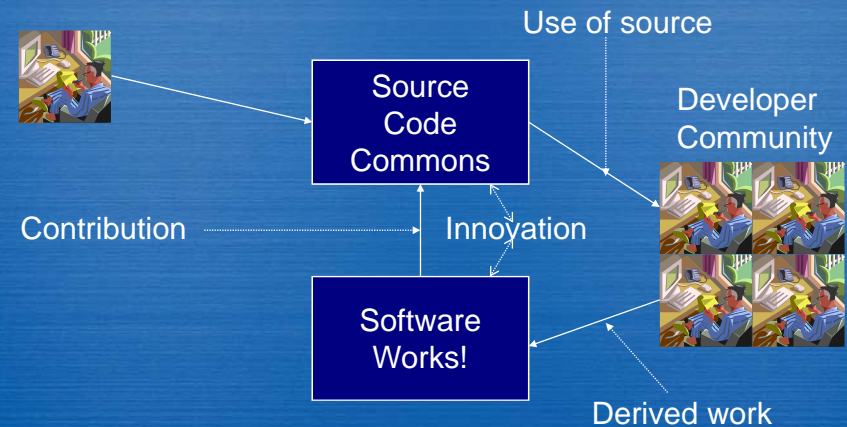
## What is Open Source (Quick Answer)?

- A community of developers
- Sharing a code commons
- Creating “wealth” from the commons
- Enriching the commons in the process
- “Open source works by everyone contributing what they want without compulsion and using what they need without restriction”
- “The ‘craft guilds’ rediscovered” - *Connected Capitalism*

## Open Source Ecosystem



## “Virtuous” Cycle Model of Open Source (2/2)





## Software Similar to but not Open Source

- **Public domain**

A software author who chooses to release his or her software into the public domain surrenders the copyright. Other people can then use the author's work as they see fit.

- **Freeware**

In freeware, the developer offers a standard license, but does not give access to source code or the right to make derivative works.



## What is Open Source (Long Answer)?

- Free redistribution
- Source code
- Derived works
- Integrity of the author's source code
- No discrimination against persons or groups
- No discrimination against fields of endeavor
- Distribution of license
- License must not be specific to a product
- License must not restrict other software
- License must be technology-neutral

(Opensource.org)



## Use of Source

- Controlled by license
- Open to all
- Open Source Initiative (OSI) compatibility



## Derived Work

- Controlled by business model
- Affected by license
- Affected by governance





## Contribution

- Controlled by governance
- Affected by license
- Gated by committers
- Fueled by self interest
- “Meritocracy”



## Software Market 3.0 (Simon Phipps)

- Software Market 1.0  
Software with system  
Pay for software with mainframe
- Software Market 2.0  
Select system and software separately  
Pay for software at time of acquisition
- Software Market 3.0  
Select software and features and assemble as needed  
Pay for software at time of value (when needed)



## Actually...

- Open source predates proprietary software
- Gates letter (circa 1976)
- The Free Software Foundation (1985)



## No Guarantee of Freedom Alone

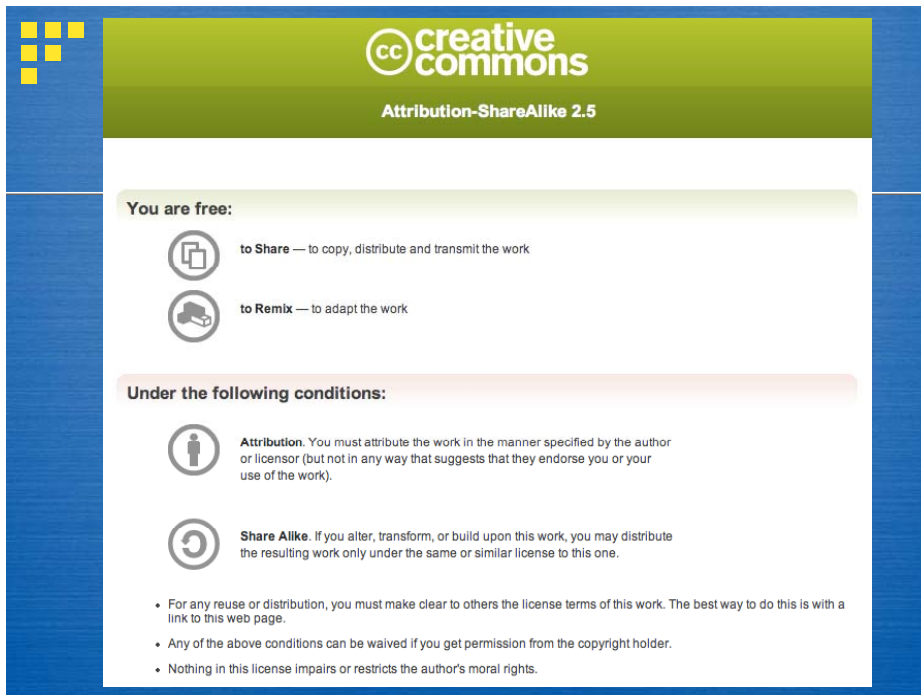
- Open Source is about the freedom to develop
- End-User Freedom is not inevitable
- Freedom for all is a product of:
  - Open standards
  - Software portability
  - Transparency and inclusiveness
  - Interoperability
  - Open licensing
  - Open source

## License Classes (1/2)

- **Class A (Market Creating)**  
“Unrestricted”
  - Create any work
  - No restrictions on licensing
- **Class B (Community Protecting)**  
“File-based”
  - Files derived from commons must use license B
  - Files added may use any license

## License Classes (2/2)



- **Class C (Competition Restricting)**  
“Project Based”
  - All files in project must use license C if any file derived from commons C





The image shows the Creative Commons Attribution-ShareAlike 2.5 license logo and text. The logo consists of the CC symbol followed by the words 'creative commons' and 'Attribution-ShareAlike 2.5' below it. The text is set against a green background. Below the logo, there are two sections: 'You are free:' and 'Under the following conditions:'. The 'You are free:' section contains two icons: a person with a plus sign (Share) and a person with a wrench (Remix). The 'Under the following conditions:' section contains two icons: a person (Attribution) and a circular arrow (Share Alike). Below these icons are detailed descriptions of each condition. At the bottom, there are three bullet points providing additional information about the license.

**cc creative commons**  
Attribution-ShareAlike 2.5

**You are free:**

-  **to Share** — to copy, distribute and transmit the work
-  **to Remix** — to adapt the work

**Under the following conditions:**

-  **Attribution.** You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
-  **Share Alike.** If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

- For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.
- Any of the above conditions can be waived if you get permission from the copyright holder.
- Nothing in this license impairs or restricts the author's moral rights.

## Open Source Mantra

- **Collaborate** - over what does not differentiate
- **Compete** - by innovating on the commodity base
- **Contribute!**





## What is an Open Source Project?

- It is about (in no specific order)
  - Transparency
  - Consensus
  - Non-affiliation
  - Respect for fellow developers
  - Meritocracy
- It is not about
  - “To flame someone to shreds”
  - “To make code decisions on IRC”
  - To demand that someone else fix your bugs

(Ref: The Apache Foundation)



## The Open Source “Poster Children”

- Perl
- Tcl
- Python
- Apache
- Linux

Other contenders - MySQL, PHP, Ruby, Rails etc.



## Why Open Source and Web Development?

- Because I’m a “Web person?”
- The evolution of the Web has been driven by innovation and “free”
- Open source Web tools are among the most commonly used (e.g., Apache, Firefox, LAMP, etc.)
- Everyone uses Web applications
- The W3C supports open source
- The future of the Web includes strong user involvement (Web 2.0?)



## Open Source Web Tools

- Scripting
  - PHP
  - EmbPerl
  - Mason - Perl
  - Aquarium - Python
- Java
  - Turbine
  - Cocoon
  - Jakarta/TomCat
- End-to-End
  - ArsDigita



## “Collaboration Platform?”

- Collaboration - “working jointly on an activity or project” (Oxford Dictionary)  
Web 2.0 is about collaborative, community effort
- Platform  
An infrastructure that makes collaboration possible  
A structure upon which something is placed or from which something is launched



## Open Source and Standards

- What do standards do for open source?  
Helps to focus open source projects  
Allows open source applications to compete with and interoperate with commercial software
- What does open source do for standards?  
Provide implementations to test out/prove standards  
Helps to pressure others to use standards



## Case Study - Drupal

- drupal.org
- Allows an individual or community to easily publish, manage, and organize a wide variety of content on a Web site
- Has been used for community Web portals, discussion sites, corporate Web sites, intranet applications, personal sites/blogs, e-commerce, resource directories, social networking sites



## Drupal Mission

“By building on relevant standards and open source technologies, Drupal supports and enhances the potential of the Internet as a medium where diverse and geographically-separated individuals and groups can collectively produce, discuss, and share information and ideas. With a central interest in and focus on communities and collaboration, Drupal's flexibility allows the collaborative production of online information systems and communities. “





## Drupal Principles (1/2)

- Modular and extensible - provide a slim, powerful core that can be readily extended via custom modules
- Quality coding - high quality, elegant, documented code is a priority over roughed-in functionality
- Standards-based - support of established and emerging standards; specific target standards include XHTML and CSS



## Drupal Principles (2/2)

- Low resource demands - minimal requirements, e.g., Apache, PHP, MySQL
- Open source - licensed under the GPL; written in PHP; supports MySQL
- Ease of use - emphasis on developer, administrator, and user usability
- Collaboration - open collaboration in Drupal projects
- Security - major emphasis; dedicated security team



## Drupal Modules

- Content management
- Blogs
- Collaborative authoring environments
- Forums
- P2P networking
- Newsletters
- Podcasting
- Picture galleries
- File uploads and downloads



The screenshot shows the Drupal website interface. At the top, there is a navigation bar with links for 'Support', 'Handbooks', 'Forum', 'Downloads', and 'Contr...'. Below the navigation bar, the main content area is titled 'Developing for Drupal'. On the left side, there is a sidebar menu with the following items: 'Contributing to Development', 'Mailing lists', 'Coding standards', 'Writing secure code', 'CVS', 'Patches', 'Drupal's APIs', 'HOWTO: Benchmark Drupal code', and 'List of modules seeking help or maintainers'. The main content area contains two paragraphs of text. The first paragraph discusses the open source nature of Drupal and the importance of documentation. The second paragraph discusses the collaborative nature of the documentation and the use of Doxygen.



Drupal

Support Handbooks Forum Downloads Contr

Home » Developing for Drupal

Developing for Drupal

- Contributing to Development
- Mailing lists
- Coding standards
- Writing secure code
  - HOWTO: Report a security issue
  - Input, the root of all evil
  - Database access
  - File uploads, downloads and management
  - Handle text in a secure fashion
  - JavaScript
  - Session IDs
  - When to use db\_rewrite\_sql
  - Contacted by the security team. Now what?

## Writing secure code

Whether you're writing a PHP snippet or an entire module, it's important to keep your code secure.

Here's how you prevent three major security risks:

1. Cross site scripting attacks by properly checking output
2. SQL injection attacks by using the database abstraction layer
3. Node access restrictions bypass by using db\_rewrite\_sql

To prevent Cross site scripting (XSS) attacks, read the [How to handle text in a secure fashion](#) page. To sum up that page: If something that you output is not surrounded by one of the various `check_*` functions, it is very likely that it's insecure.

Second, you need to utilize the database layer correctly. Never, ever write user data into your SQL. You need to read [db\\_query](#) docs on the syntax. Common and very insecure practice is to simply end your query with something like

```
db_query('SELECT foo FROM {table} t WHERE t.name = ' . $_GET['user'])
```

## Closing Thoughts

- The future development of the Web depends on the use of open standards
- The Web and Web technology should remain as free as possible
- The future development of the Web will be driven by community as well as business
- Open source is a viable model for creating a distributed, interoperable, and sustainable Web

Thank You!  
Questions?  
Comments?

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