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Entrepreneurial Open Source Software Hackers: MySQL and Its Dual Licensing

by
*Robert W. Gomulkiewicz**

I. INTRODUCTION

Hackers¹ often quibble about commercializing software, yet most will readily sell their programming services. Richard Stallman, the father of free software,² has always recognized that hackers have a right to make money.³ Aside from selling programming services, however, Stallman's disciples seem to frown upon commercializing software.⁴ Other hackers, labeling themselves "open source" developers, have warmed to the possibility that free software may be profitable.⁵

This article describes one of the most promising business models for hackers, called "dual licensing." In this model, hackers offer the same code under two different licenses: a commercial license and an open source license. Licensees who are willing to give up trade secret protection for their source code and re-license their derivatives for further modification and distribution choose the no charge open source option; other licensees pay a fee for a commercial license. The article concludes by analyzing the issues that the MySQL development team experienced in its dual licensing program.

* Director, Intellectual Property Law & Policy Program and Associate Professor of Law, University of Washington School of Law. Copyright 2004 Robert W. Gomulkiewicz. All rights reserved.

1. Software developers who have a passion for programming call themselves "hackers." Hackers distinguish themselves from "crackers"—those who use their programming skills for mischief or malicious purposes. ERIC S. RAYMOND, *THE NEW HACKER'S DICTIONARY* 233-34 (3d ed. 1996).
2. "Free software" refers to software which comes with the freedom to do certain things with it. See Free Software Foundation, *The Free Software Definition*, at <http://www.fsf.org/philosophy/free-sw.html> (visited Aug. 6, 2004).
3. Peter Wayner, *FREE FOR ALL: HOW LINUX AND THE FREE SOFTWARE MOVEMENT UNDERCUT THE HIGH-TECH TITANS* 85 (Harper-Collins 2000), <http://www.wayner.org/books/ffa/ffa-2002-12-13.pdf>.
4. See Frank Hecker, *Setting Up Shop: The Business of Open-Source Software*, at <http://www.hecker.org/writings/setting-up-shop.html> (visited July 23, 2004) [hereinafter Hecker, *Setting Up Shop*].
5. *Id.* Advocates of the "free software" philosophy take issue with the change in focus suggested by the "open source" philosophy. See Free Software Foundation, *Why "Free Software" is better than "Open Source"*, <http://www.gnu.org/philosophy/free-software-for-freedom.html> (visited Dec. 20, 2002). While recognizing the differences, for purposes of this article I use the term "open source" as shorthand to refer to both philosophies.

II. A BRIEF INTRODUCTION TO OPEN SOURCE SOFTWARE

Software comes in two basic forms: object code and source code.⁶ Software in object code form runs the computer hardware.⁷ Object code comes from software in source code form.⁸ In other words, source code is the source of object code. Source code is written by programmers in a computer language such as Basic, C, or Java, which then gets converted (using a tool called a compiler or interpreter) into object code to run the computer.⁹

The difference between most commercial software developers and open source software developers is best characterized by their attitudes toward access to source code and derivative works licensing. Many commercial developers hold their source code as a trade secret, but open source developers make their source code available for anyone to examine.¹⁰ In addition, many commercial developers grant the right to create derivatives of their software on a relatively limited basis, while open source developers grant broad derivative works rights.¹¹

III. OPEN SOURCE HACKERS AS SOFTWARE ENTREPRENEURS

Although it is unfair to say that hackers have never been interested in commercializing their software, it *is* fair to make two historical observations about the free software movement. First, rhetoric about the “free-ness” of free software gave hackers the general reputation of being hostile to software entrepreneurship.¹² Second, commercial successes in the free software movement were rare.¹³

Hacker Eric S. Raymond deserves credit for taking a leadership role in changing hackers’ “anti-commercial” reputation. To begin with, he was among those who coined the term “open source” software¹⁴ to convey the

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6. See *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1243 (3d Cir. 1983); Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 HOUS. L. REV. 179, 180-81 (1999) [hereinafter Gomulkiewicz, *How Copyleft Uses License Rights*].
 7. *Apple Computer, Inc.*, 714 F.2d at 1243.
 8. *Id.*
 9. *Id.*; Gomulkiewicz, *How Copyleft Uses License Rights*, *supra* note 6, at 180-81.
 10. *Id.* at 181.
 11. See *id.* at 186-89 (describing the principles of open source licensing). See also BRUCE PERENS, *The Open Source Definition*, in *OPEN SOURCES: VOICES FROM THE OPEN SOURCE REVOLUTION* 171 (Chris DiBona et al. eds., O’Reilly 1999), <http://www.oreilly.com/catalog/opensources/book/perens.html>.
 12. See Open Source Initiative, *History of the OSI*, at <http://www.opensource.org/docs/history.html> (last visited June 21, 2004).
 13. See Gomulkiewicz, *How Copyleft Uses License Rights*, *supra* note 6, at 183.
 14. *History of the OSI*, *supra* note 12.

message of programming openness without the anti-commercial tinge of the “free software” label.¹⁵ Raymond also wrote papers explaining various ways for open source hackers to profit financially from their software.¹⁶

Now, hackers are experimenting with a variety of business models to commercialize their code. Commercial software companies are also finding ways to profit from using open source code. Below, I describe some of these efforts.¹⁷

IV. OPEN SOURCE BUSINESS MODELS

- *Sell hardware, give away software*

In this business model, the company makes money by selling its hardware and giving away the accompanying open source software.¹⁸ For example, I.B.M. sells servers pre-loaded with Linux-based operating systems and the Apache web server. Similarly, Intel sells more processors because they work effectively in computer systems running Linux-based operating systems. Not surprisingly, I.B.M. and Intel are two major supporters of open source software.

- *Sell services, give away software*

Most open source software is difficult for novices to use. Much of this software is complex, such as web server software (e.g., Apache) and operating system software (e.g., the Linux kernel), and must therefore be accompanied by software services. I.B.M., RedHat, and others have engaged in a lucrative business of selling such services for open source software. These services include training, installation, support (helping when things break), and maintenance (keeping the software up-to-date with the current bug fixes and versions).

In a related model, a company might license its software on an open source basis to establish a reputation as an excellent software development shop. To put it a different way, open source licensing becomes a powerful advertisement for the company’s programming services. Digital Creations

15. *Id.*

16. Raymond’s writings include *The Cathedral and the Bazaar*, *The Magic Cauldron*, and *Homesteading the Noosphere*, among other works. See his website at <http://www.catb.org/~esr/writings>.

17. See generally Hecker, *Setting Up Shop*, *supra* note 4; Eric. S. Raymond, *The Magic Cauldron*, at <http://www.catb.org/~esr/writings/magic-cauldron> (last visited June 21, 2004); Patricia Krueger, *Tour de Source: A Guide to the Start-Ups*, at http://www.wired.com/wired/archive/7.05/tour_pr.html (visited July 23, 2004); *Jobs for Hackers: Yes You Can Eat Open Source*, at <http://www.opensource.org/advocacy/jobs/php> (visited July 23, 2004).

18. Raymond calls this “widget frosting.” See http://www.opensource.org/advocacy/case_for_business.php (visited July 23, 2004).

decided to license its Zope software in this manner as a way to bring in consulting business.¹⁹

- *Charge for a branded version of the software*

Although open source software is readily available on the Web, some users are willing to get the software from trusted vendors whom they rely on to choose a stable version of the software, test the software with various hardware configurations, and support the software once it is on site. RedHat and Novell apply this model.

- *Charge for applications, give away the systems software*

Though some in the open source community feel that that systems software should be distributed free of charge, they believe that it is acceptable to charge for applications software. So, some open source publishers specialize in applications that run on open source systems software platforms.

- *Sell a value-added package*

Open source software “products” are often collections of open source code called “packages.” These packages come with various open source components, chosen and often customized by the hacker. Hacker entrepreneurs can also add value by including documentation, media, or utilities. This model is often related to the branded version model used by RedHat.²⁰

- *Give away low-end version of software, charge for high-end version*

SendMail is the most popular Internet e-mail router. SendMail began as a free product (“free” as in freedom and “free” as in price). Now, SendMail publishes a high end commercial version but continues to offer the basic version of SendMail for free download.²¹ Netscape also had this business model in mind when it licensed its Communicator code on an open source basis.²²

- *Give away standard version of software, charge for customized version*

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19. See Paul Everitt, *How We Reached the Open Source Business Decision*, at <http://www.zope.org/Members/paul/BusinessDecision> (visited July 23, 2004) (describing companies decision to open source its Zope software).
 20. See ROBERT YOUNG, *Giving it Away: How Red Hat Stumbled Across a New Economic Model and Helped Improve an Industry*, in OPEN SOURCES: VOICES FROM THE OPEN SOURCE REVOLUTION 113-25 (Chris DiBona et al. eds., O'Reilly 1999), <http://www.oreilly.com/catalog/opensources/book/young.html>; see generally ROBERT YOUNG ET AL., UNDER THE RADAR: HOW RED HAT CHANGED THE SOFTWARE BUSINESS AND TOOK MICROSOFT BY SURPRISE (1999).
 21. See *Why Migrate to Commercial Sendmail Software?*, at http://www.sendmail.com/why_sendmail.shtml.
 22. See *Open Source Case For Business*, at http://www.opensource.org/advocacy/case_for_business.php (visited July 23, 2004).

This business model is akin to the high end/low end model, except that the software publisher creates a package customized for a specific customer need beginning with open source code as a starting point.

- *Create software/hardware packages*

Systems integrators and so-called “value-added” re-sellers combine open source software, hardware, and services to provide turn-key systems to certain lines of businesses, such as law offices.

- *Sell sponsorships*

Linux pioneer Linus Torvalds has founded an organization called Open Source Development Labs which is sponsored by Hewlett-Packard, I.B.M., and Intel, among others.²³

- *Use free software to attract traffic to website to sell ads*

Many open source websites, such as SlashDot²⁴ and SourceForge,²⁵ sell advertising.

- *Sell accessories*

The Debian free software organization sells T-shirts and other merchandise;²⁶ O’Reilly & Associates²⁷ sells books about open source software. Most recently, companies have begun to offer insurance against the risk of intellectual property litigation associated with the use of open source software.²⁸

V. DUAL LICENSING

One of the most promising business models for open source software is “dual licensing.”

A. The Importance of Licensing to Open Source

Licensing is the legal mechanism that hackers use to grant the rights to create and distribute derivative works of open source software.²⁹ Hackers

23. See http://www.osdl.net/about_osdl/members/.

24. See <http://www.slashdot.com>.

25. See <http://www.sourceforge.net>.

26. See <http://www.debian.org>.

27. See <http://www.oreilly.com/>.

28. See Stephen Shankland, *Group: Linux Potentially Infringes 283 Patents*, at http://news.com.com/Group:+Linux%5Bpotentially%5Binfringes+283%5Bpatents/2100-7344_3-5291403.html (visited Aug. 1, 2004); see also Brad Stone, *Nickles, Dimes, Billions: Big Tech Companies are Raking in Big Bucks—a Little at a Time—by Charging Fees for Use of Their Innovations*, at <http://www.msnbc.msn.com/id/5578247/site/newsweek> (visited Aug. 6, 2004) (reporting on the potential threat of patent litigation to the open source community).

29. See Gomulkiewicz, *How Copyleft Uses License Rights*, *supra* note 6, at 186-90. See generally LAWRENCE ROSEN, *OPEN SOURCE LICENSING: SOFTWARE FREEDOM AND INTELLECTUAL PROPERTY LAW* (2004).

use various licenses, but the General Public License (GPL) and the BSD-style license (BSD) are the two most popular.³⁰ Both of these licenses grant broad rights to create derivative works. The BSD License grants these rights free and clear,³¹ but the GPL attaches important conditions. The GPL provides that if a programmer creates a derivative work of GPL-licensed code, the programmer must grant the right to make unlimited derivatives of his or her derivative work, free of charge for all time.³² Many programmers do not want to grant derivative work rights under these conditions; this is the impetus for dual licensing.

B. Dual Licensing: The Best of Both Worlds or Cowardly Compromise?

Many observers consider dual licensing a clever way for open source hackers to freely share their code while simultaneously profiting from those who wish to use the code for proprietary purposes.³³ Some free software purists frown on the practice, believing that no one should charge a fee for the right to create derivatives and that source code never should be kept secret.

Aside from the philosophical debate, dual licensing creates some licensing-related issues, which I describe in the context of the MySQL software product.

VI. MYSQL'S DUAL LICENSING SCHEME, ITS COMPLICATIONS, AND RESOLUTIONS

A. The Software

MySQL is a database software program published by a Swedish company, "MySQL AB." The MySQL software often runs in conjunction with software known as PHP, which lets computers construct customized web pages.³⁴ PHP and MySQL run on the Apache web server and Linux-based

30. Robert W. Gomulkiewicz, *De-bugging Open Source Software Licensing*, 64 U. PITT. L. REV. 75, 83 (2002).

31. *Id.* at 93.

32. Free Software Foundation, *GNU General Public License*, § 2, at <http://www.gnu.org/copyleft/gpl.html> (last visited June 21, 2004). See Gomulkiewicz, *De-bugging Open Source Software Licensing*, *supra* note 29, at 88-92 (discussing the license conditions in GPL Section 2).

33. Dual licensing is used by Digium, MandrakeSoft, Sleepycat, Technical Pursuit, and Trolltech.

34. See Stephen Shankland, *MySQL Addresses Open-Source License Problem* (March 12, 2004), at http://news.com.com/2100-7344_3-5173014.html (last visited June 21, 2004).

operating systems so frequently that the combination is popularly known by the acronym LAMP.³⁵

B. The Licensing

MySQL AB licenses its MySQL software under the GPL.³⁶ If a user accepts the software under the GPL, the license is free of charge. The only “cost” is that the user must comply with the terms of the GPL, which, as noted previously, require the user to release the source code of any derivatives that he or she creates using MySQL and license the right to make further derivatives at no charge.

MySQL AB also licenses its MySQL software under a license that it calls its “Commercial License.”³⁷ Under the Commercial License, the user must pay a license fee for every copy of MySQL installed on a database server.³⁸ However, the user is not required to release its source code or license its derivatives.³⁹

Users can freely choose the licensing model that best suits their needs. MySQL AB recommends the GPL for “free software enthusiasts” and most non-profit and academic organizations.⁴⁰ It recommends the Commercial License to “all commercial and government organizations” because this “frees [the user] from the broad and strict requirements of the GPL license.”⁴¹ MySQL AB also recommends the Commercial License for non-profit and academic institutions who have “strong reasons to not publish [their] application in accordance with the GPL” and to “anyone in doubt” about which license to choose.⁴²

MySQL AB contends that its dual licensing program is a “win-win” for all parties for several reasons. First, the open source community gets additional superior software at no charge. The software is presumably superior because it has been tested by thousands of hackers who constitute a virtual

35. *Id.* See also <http://www.mysql.com/company/> for an explanation of LAMP.

36. MySQL, *MySQL Open Source License*, at <http://www.mysql.com/products/opensource-license.html> (last visited June 21, 2004); MySQL, *MySQL Licensing Policy*, at <http://www.mysql.com/products/licensing> (last visited June 21, 2004) (MySQL AB offers a GPL license because it “believe[s] in open source/free software” and “welcome[s] all initiatives to publish more software under the GPL license. . .”).

37. MySQL, *MySQL Commercial License*, at <http://www.mysql.com/products/commercial-license.html> (last visited June 21, 2004).

38. *Id.*

39. *Id.*

40. MySQL, *MySQL Open Source License*, *supra* note 35.

41. *Id.*

42. *Id.* (“To anyone in doubt, we recommend the commercial license. It is never wrong.”).

team of worldwide debuggers, and because MySQL AB's profits enable it to improve the software more than the average hacker organization can. Second, commercial customers obtain this open source "battle tested" software at a relatively low cost, as the hacker community provides its bug fixes to MySQL AB free of charge.

Mindful that it must convince the free/open source community that it is truly "one of *them*" in order to attract hacker support, MySQL AB states that its licensing model contributes to software "freedom."⁴³ "MySQL's dual licensing increases freedom in two ways: first, it encourages the growth of free software by licensing MySQL under the GPL; second, it makes it possible to use our software in situations where the GPL is not applicable."⁴⁴

C. Complications and Resolutions

MySQL AB encountered several difficulties in its dual licensing model. One difficulty occurred because there are a variety of open source licenses, not all of which are compatible with the GPL. In the case of MySQL, the incompatibility arose from the combination of changes that MySQL and PHP developers made to their licensing models.

PHP developers changed from using the GPL to a BSD-style license because it thought that more people would use PHP under a "much more loose license."⁴⁵ MySQL AB moved from the Library General Public License⁴⁶ ("Library GPL") to the GPL.⁴⁷ The Library GPL (now called the "Lesser GPL") provides an exemption for certain libraries from the source code disclosure and derivative works licensing requirements of the GPL.⁴⁸ However, MySQL AB realized that this exemption permitted many users to utilize MySQL without paying a license fee in scenarios where MySQL AB

43. See MySQL, *MySQL Licensing Policy FAQ*, at <http://www.mysql.com/company/legal/licensing/faq.html> (last visited June 21, 2004).

44. *Id.*

45. PHP, *License Information FAQ*, at <http://www.php.net/license> (last visited June 21, 2004). The BSD license is looser in the sense that licensees have complete freedom to do as they please with derivatives. As noted *supra*, the GPL imposes conditions on its derivative works grant. See Gomulkiewicz, *De-bugging Open Source Software Licensing*, *supra* note 29, at 93.

46. Free Software Foundation, *GNU Lesser General Public License*, at <http://www.gnu.org/licenses/lgpl.html> (last visited June 21, 2004) (Lesser General Public License was formerly known as the Library General Public License).

47. See MySQL, *MySQL Licensing Policy FAQ*, *supra* note 42.

48. See Free Software Foundation, *GNU Lesser General Public License*, *supra* note 45.

thought a fee should be due.⁴⁹ Thus, MySQL AB closed this loophole by licensing MySQL under the GPL.⁵⁰

These independent changes in licensing created a conflict when PHP combined with MySQL. Since a BSD-style license does not require licensees to automatically re-license derivative works, PHP did not pass on the GPL-mandated derivative works licensing obligations when PHP was combined with MySQL. To solve this problem, MySQL AB offered a “License Exception” to certain GPL requirements when MySQL is combined with PHP software.⁵¹ MySQL AB also decided to offer a similar License Exception when MySQL libraries are combined with software licensed under certain open source licenses approved by the Open Source Initiative.⁵²

VII. CONCLUSION

Open source programmers have convinced many people to use their software. For some hackers, that is enough. However, others want open source software to be commercially successful as well.⁵³ Indeed, they argue that commercial success⁵⁴ contributes positively to the health of the open source community. Even among hackers who are striving for commercial success, challenges remain.

One challenge arises from the ongoing debate among hackers about whether to license their code under the GPL or a BSD-style license.⁵⁵ In the past, the debate was interesting and vigorous, but in the end, a hacker chose a license for his or her software and life moved on. Now, the incompatibility of these licenses can threaten the success of open source products. MySQL AB believes that it has fixed the problem with its License Exception for PHP and its broader exception that allows GPL-licensed MySQL client libraries to be combined with software licensed under certain non-GPL open source licenses. It may be time for open source hackers and their legal counsel to

49. MySQL, *MySQL Licensing Policy FAQ*, *supra* note 42.

50. *Id.*

51. *Id.*

52. *Id.*

53. See David Becker, *Open-Source Companies See Profit Aplenty* (May 19, 2004), at http://msn.com.com/2100-1104_2-5216387.html.

54. MySQL, for one, seems poised for commercial success. See Martin LaMonica and Stephen Shankland, *MySQL Takes Cue from Master* (April 14, 2004), at http://msn-cnet.com.com/2100-7344_3-5190975.html (visited October 2, 2004); David Becker, *HP Expands Open-Source Support* (May 30, 2004), at http://msn-cnet.com.com/2100-7344_3-5222843.html (visited October 2, 2004) (reporting on the success of MySQL).

55. See Wayner, *supra* note 3, at 90-93.

create generalized licensing solutions that can be used community-wide rather than rely on case-by-case licensing patches.⁵⁶

56. See Gomulkiewicz, *De-bugging Open Source Software Licensing*, *supra* note 29, at 96-103.