R. Stuart Geiger

Open Source Software: The Next Specter?

23 November 2005

With the fall of the Berlin Wall, capitalists around the world heaved a collective sigh. After more than a century, it seemed like the specter of Communism had finally been chased out of the West, paving the way for a new era of globalization. Political Economist Francis Fukuyama famously stated that humanity had reached "the end of history" after the collapse of the Soviet Union, claiming that ideological conflicts based on politics and economics had finally come to an end.[1] The unprecedented growth of the American economy in the 1990's, fueled by technology and the Internet, left most capitalists blind to what many now consider Communism's newest incarnation: open source software.

As opposed to traditional proprietary programs which are copyrighted, controlled, and sold by the owner, open source programs are effectively in the public control, created, developed, maintained, and held in commons by a community which distributes the program freely to any who request it.[2] For this reason, the movement is often compared by supporters and opponents alike with a number of anti-capitalist economic philosophies.[3] Despite this, corporate adoption of open source software should not be viewed as antithetical to capitalism; rather, it is an example of corporations co-opting Communism to become more capitalist.

If the open source community consisted of a few dedicated individuals who produced inferior programs that were not adopted by the general public, then the debate over the nature of open source economics would most likely not exist.[4] The fall of the Soviet Union in 1991 seemed to empirically prove the concept that markets and competition create superior products

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1 Francis Fukuyama, *The End of History and the Last Man* (New York: Avon Books, 1992). Also available online at http://www.marxists.org/reference/subject/philosophy/works/us/fukuyama.htm

2 Steven Weber, *The Success of Open Source*, (Cambridge, Massachusetts, and London: Harvard University Press, 2004) 3-6.

3 Milton Mueller, "Info-Communism: A Critique of the Emerging Discourse on Property Rights and Information" (paper presented at The 33rd Research Conference on Communication, Information and Internet Policy, September 24-25, 2005), 8.

4 Weber 2004, 9.

than communitarian efforts.[5] To the surprise of economists and politicians alike, the community-driven model of production has created many products that are considered competitive to proprietary alternatives, and has even produced programs that have a majority of the market share in their class.[6]

Computer software is a unique good, as it has little intrinsic value. Like a recipe or a sheet of music, computer code is worthless until it is used to produce something of value. Just as the formula for a soft drink cannot quench a customer's thirst, computer code cannot perform its function until it undergoes *compilation*. This is a one-way process that turns human-written *source* into computer-readable *binaries.* Like Coca-Cola, most proprietary software developers make money selling this secondary product, and guard the means to produce it at all cost.[7]

Where distribution of computer software differs from physical goods are the rights associated with acquisition. When purchasing most products, ownership – and all rights reserved with it – is completely transferred from seller to buyer. Computer software, however, is rarely truly sold; instead, it is licensed to customers, who gain only the right to use the software.[8] Because the computer software is not physical and ownership is not transferred, some theorists have classified the business of computer software a service, not a good.[9]

In an open source system of distribution, software – always in the form of source code, but frequently in binary form as well – is given freely to any entity that requests it. This freedom is much more complex than simply being *gratis*, or free in cost. For a program to generally be

5 Joseph E. Stiglitz, *Globalization and It's Discontents* (New York, London: W.W. Norton and Company, 2003), 131.
6 Weber 2004, 9.
7 Ibid, 3-4.
8 Ibid, 191.
9 Eric S. Raymond, "The Magic Calderon," in *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (Beijing: O'Reilly, 1999), 145.

considered "open source," it must be *libre*, or free from restrictions.[10] The computer code must not only be open to the public, but also grant any user the right to alter the software, or create derivative works from it. Open source software is fundamentally different from proprietary software because the full rights associated with ownership of a program (modification, derivation, and distribution) are also completely given to all who obtain the software.[10] As Richard M. Stallman famously explained, the freedom given by such projects are free as in speech, not just free as in beer.[11]

The production of open source software is also significantly different from most proprietary models. Using metaphors to real-world construction of buildings, Raymond uses two examples, the cathedral and the bazaar, to explain the difference between the modes of production. When a cathedral is built, an elite group of monks and architects dictate the process down to the minutest detail. The parishioners have little say in the design or structure of the cathedral. However, when a bazaar – a market consisting of individual booths – is created, no one person controls it. Any individual with a certain agenda can set up a booth, and no one booth-holder can deny anyone – even customers – access to the rest of the bazaar. Paradoxically, because it is in the control of no one, it belongs to everyone.[12]

Traditional proprietary software is produced in the cathedral style. A strict hierarchy exists in which employed developers, working under managers, write software code as it is assigned. Outsiders could not assist in the development of the software, as all coding is done in a proverbial wizards hall.[13] In contrast, open source development is more like a bazaar. There is

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10 Weber 2004, *5.*

11 Richard M. Stallman, *The Free Software Definition.* Available online at http://www.gnu.org/philosophy/free-sw.html (accessed 22 November 2005)

12 Eric S. Raymond, "The Cathedral and the Bazaar," in *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (Beijing: O'Reilly, 1999), 145.

13 Ibid, 60-75.

no formal management, and developers – usually unpaid volunteers from around the world – simply submit new code whenever they feel inclined to do so. While certain members may ask that an individual begin working on a specific section of a program (especially if the individual has shown prowess in a certain area), each member has full autonomy in determining their direction and level of involvement in the project.[14]

Most of these volunteer software developers who contribute to programs in the open source community do so to fulfill an emotional need, as opposed to an economic desire. This concept is explored in depth by many scholars, including Raymond[15], Weber[16], Goldman and Gabriel[17], and Lerner and Tirole[18]. The conclusion is generally reached that individuals contribute to the community mainly because of its emotional and psychological benefits. The open source community, based on a "gift culture," is desirable to many developers. Like most societies, the open source community is based on wealth (computer code).[19] However, the attractive difference in the OSS community is that one's informal position in the society is not determined how much code one obtains, but by how much code is given away.

This radical form of ownership and production has incited many passionate reactions from both the left and right sides of the political spectrum. By 1998, software developers with Communist ideologies began equating the conflict between open source and proprietary software to Marx's class struggle between the bourgeoisie and proletariat.[20] In analyzing the relevance of Marx in the 21st century, philosopher Slavoj Zizek stated that "the information revolution on

14 Eric S. Raymond, "Homesteading the Noosphere," in *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (Beijing: O'Reilly, 1999), 145., 81-88.
15 Ibid, *97-105; 130-135.*
16 Weber 2004, 8-10.
17 Goldman and Gabriel, *Innovation Happens Elsewhere* (San Francisco: Morgan Kaufmann Publishers, 2005), 79.
18 Lerner and Tirole, *Economics of Technology Sharing: Open Source and Beyond*, (Cambridge: National Bureau of Economic Research, 2004), 7-11.
19 Raymond 1999, *Homesteading the Noosphere, 99-100.*
20 Mueller 2005, 2-4.

capitalism" should be considered "the ultimate exemplification ... of Marx's thesis," and had the very real possibility of destroying market forces in "the sphere of digitized information."[21] Bill Gates has publicly called open source activists "modern-day Communists," and many members of the community were more than happy to accept the accusation. This is most clearly shown in "The dotCommunist Manifesto," written by Eben Moglen in 2001, which further entrenched the association between the open source movement and Communism.[22]

One of the most obvious benefits of open source software is its low cost. Among experts and users alike, the cost of open source software has empirically shown to be less than that of proprietary software. Proponents of open source software believe that it is almost always less expensive to obtain, maintain, and implement than proprietary alternatives, and many studies have supported this claim[23]. In any market-based economy, competing firms operate as cost-efficient as possible, and many businesses see open source software as a way to gain a competitive advantage.

An internal publication written by Vinod Valloppillil, a high-level manager at Microsoft, stated the obvious. In the so-called "Halloween document," Valloppillil admitted that open source software was a "threat to Microsoft." Claiming that "commercial quality can be achieved/exceeded by OSS projects" and "OSS software is at least as robust – if not more – than commercial alternatives," the leaked memo told the open source community what it already knew: the community was better than the factory. [24]

For these reasons and more, the communal aspect of open source software is often

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21 Slavoj Zizek, *The Spectre is Still Roaming Around: An Introduction to the 150thAanniversary Edition of the Communist Manifesto*, (Zagreb: Arkzin, 1998), 33-34.
22 Mueller 2005, 3, 6.
23 Jason Williams, Peter Clegg, and Emmett Dulaney, *Expanding Choice*, (Indianapolis: Pearson, 2005), 205-217
24 Weber 2004, 126-127.

considered a reason against corporate adoption of open source software.[25] Despite this ideological difference, firms adopting open source software should not be seen as anti-capitalist, despite what the current political climate of the community is. Because most firms migrate to open source software in their own economic self-interest, any move towards open source that is done to increase competitiveness should not be considered an erosion of capitalism, but rather be viewed as a reinforcement of the ideology.[26]

Ecobaby Limited, a small distributor of environmentally friendly baby products, is one such firm that migrated to open source software in order to stay in business. A small business with little capital, Ecobaby "could not sustain the expense" of Microsoft software, and installed an open source alternative, Linux. In doing so, the company was able to keep their budget under control. Pearse Stokes, Ecobaby's Marketing Manager, proclaimed that "[A]nyone who can, should start to move towards Linux solutions within their businesses. Indeed, it seems illogical from a business or commercial viewpoint for any business to avoid doing so."[27]

For Ecobaby, and numerous other businesses, open source is a business strategy that is adopted for its cost-effectiveness.[28] The most obvious benefit that is realized from open source is the cost of initial acquisition. When obtaining most proprietary software, a licensing fee must be paid in order to use the program on a computer. In contrast, most open source software does not require the user to pay such a royalty, saving the firm a significant amount of money.[29]

However, the economic benefits of open source software extend past the original acquisition costs. Most OSS solutions are more efficient than proprietary ones, and can be

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25 Goldman and Gabriel 2005, 35.
26 Ibid, 39-42.
27 Pearse Stokes, *Story Success Detail*. Available online at http://www.li.org/success/view.php?x=70 (accessed 22 November 2005)
28 Goldman and Gabriel 2005, 14.
29 Williams, et al, 31.

implemented on older, less costly machines. Open source programs are generally more stable and reliable, and the costs involved with support and management have also been shown to be less with open source systems.[30] When implementing their open source servers, Ecobaby found that they were able to create a more stable system using open source software running on "low cost" hardware. Despite the fact that Ecobaby did not have a large amount of "in-house" computer knowledge, adoption of open source software was relatively easy. [31]

Most businesses are attracted to the low cost of open source software because it shares many similarities to a public good. Open source is economically advantageous because firms are able to utilize the benefits of countless hours of labor spent developing a project without contributing anything in return. Garrett Hardin's theory of the tragedy of the commons would seem to predict that open source software is unsustainable for this very reason. The theory states that when resources are held in common, entities will attempt to gain the most value from the resource before others do, and extract all value possible without contributing anything back.

Hardin uses the example of farmers who rush cattle onto a village lawn, attempting to gain as much of the resource as they can before others do. Because there is no enforced rule for distributing the wealth of the lawn, it turns into a desolate wasteland.[32] This analysis assumes a public good in which its available value is decreased whenever an entity receives more wealth from the commons than they contribute to it.

Open source software does not fit this model, as the wealth that an individual obtains from a certain OSS project does not decrease the wealth available to other individuals. If anything, the more an open source project is used, the more valuable it becomes, as users can

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30 Ibid, 32.

31 Pearse Stokes, *Story Success Detail*. Available online at http://www.li.org/success/view.php?x=70 (accessed 22 November 2005)

32 Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (1968):1243-1248.

find flaws and errors, give developers new ideas, and increase its popularity. Even if the user does none of these, and simply uses the program in isolation from the project to extract as much wealth as possible, the value that others can obtain from the project is simply not affected by whatever benefits the first individual obtains.[33]

Despite the communitarian structure and anti-capitalist sentiment that is often associated with the open source movement, corporate adoption of open source software should not be seen as an erosion of American capitalism. Because firms generally involve themselves in the movement to gain competitiveness in the markets, open source software actually reinforces principles of capitalism. Adopting open source software to reduce business costs is no more Communist than selling shirts with pictures of Che Guevara in order to turn a profit.

33 Raymond 1999, *The Magic Cauldron*, 151.