Free Software and Copyright Enforcement - A Tool for Global Copyright Policy?

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Abstract

One of the paradoxes of the free software ideology is its reliance on the legal institutions it was created to object. One could argue that Free Software Foundation is using copyright to enforce their free software licenses as aggressively as Business Software Alliance is enforcing its clients' copyrights. We will show that the reality is more complex and that there is a significant difference: the free software community uses primarily non-legal enforcement methods and trusts on social norms.

We argue that free software could be used as a tool to make copyright more accepted in the less developed world because of its positive connection with copyright and community based approach. We explain why strong copyright is also in the interest of free software developers. The article concludes by suggesting that World Intellectual Property Organization should include free software into its development agenda.

Keywords: Intellectual property rights, copyright, developing countries, free software.

1. Background

Free software[1] is often described as a bazaar based on Eric Raymond's article "Cathedral and Bazaar" (Raymond, 1996). The analogy has been questioned for some core projects (e.g. Sun's Schwartz on Linux; Shankeland, 2004) but as Raymond has pointed out (Vaughan-Nichols, 2004), his argument has been misunderstood. Free software projects are neither chaos nor anarchy and that is also true for real bazaars as well. Both have rules and structures, which are enforced by the community and the authorities. The difference to Cathedral is in Raymond's words:

> *"...Anyone who doesn't like Linus' decisions about Linux can fork the code base, start his own effort, and compete for developer and user attention on a legally equal footing. That is the essence of the bazaar.*" (Vaughan-Nichols 2004),

In other words, free software does not give control to a single entity while maintaining a legal footing for all participants.

This article starts by investigating how this footing is used i.e. the license enforcement of free software projects. Enforcement has received relatively little attention in academic literature with the notable exception of O'Mahony's (2003) empirical study. We believe that enforcement issues are growing in importance as the economic role of free software steadily increases in par with incentives to cheat the system. Still, actual legal cases on free software have been rare. Thus, one aim of this article is to explain why the role of non-legal norms and enforcement methods has been so far central.

The second part of the article describes first the current compliance problems with copyright legislation in the developing world. Even though unauthorized copying ("piracy")[2] is still rampant, the threat of trade sanctions and possible problems with World Trade Organization (WTO) have forced developing countries to clean the most blatant violations. Interestingly, free software has recently become a competitive alternative to unauthorized copying. Many free software solutions have finally sufficient functionality to replace proprietary systems and they are available "free as in beer". Combined with the rising ideological support, one may conclude that the future for proprietary solutions in the developing countries looks contested.

These facts lead us to the policy analysis. We argue that international bodies such as the World Intellectual Property Organization (WIPO) should endorse more heavily free software, because it teaches effectively one of the core motivations of the copyright (or perhaps more exactly "droit d'auteur"): the users must respect the author's rights to his or her intellectual creations. Free software license enforcement is ethically on more viable basis since it relies to the interests of individual authors instead of multinational corporations.

2. Community Norms and Informal Enforcement

2.1 The Rise of Software Copyright and GNU Response

Back in the 1970s the legal protection of software was still at the level of an idea. Early computer hobbyists freely copied and shared the software developed by others without much

fear of legal problems. Bill Gates (1976) became one of the first to address the habits of computer hobbyists and demanded they stop this behaviour at once:

> "*As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?"*

As the software products mass markets started to take off legislators quickly answered to the concerns of Gates and others. During the 1980s copyright laws across the world were amended to include computer programs as another category of protected works. United States was the first country to introduce a specific Software Copyright Act in 1980; after its enactment, the unauthorized copying, distribution and modification of computer programs has been illegal as copyright infringement.

The impact of copyright wasn't uniformly positive. When Richard Stallman was starting the GNU project he worked on Emacs text editor. Stallman had written the first Emacs back in the 1970s but because it was written for another operationg system (PDP-10) the source code was not useful. Subsequently James Gosling had implemented Emacs in 1981, which was available with source code. Stallman took this source code and started to modify it following the free sharing and improvement culture of the early hacker communities. Meanwhile, the other programmer sold his Emacs to a company, which claimed that Stallman wasn't allowed to distribute GNU Emacs because he had no authorization from the new copyright owner. In effect, Stallman was forced to rewrite many parts of the program (Tai 2001). Stallman (1986) memorized the event as follows:

> "*So it's sort of strange that they then changed their mind and refused to sign that agreement, and put up a message on the network saying that I wasn't allowed to distribute the program. They didn't actually say that they would do anything, they just said that it wasn't clear whether they might ever someday do something. And this was enough to scare people so that no one would use it any more*."

This was just one of the many occasions when Stallman was excluded from the further development of an interesting project.[3] Thus, Stallman wrote Emacs General Public License (GPL) in 1988. The idea of copyleft was for the first time implemented in this legal copyright

license text, which held that GNU Emacs was not public domain but under copyright. It was free to copy and distribute but it wasn't allowed to change the license terms in any derivative work. It is worth noting that before Emacs GPL the Free Software Foundation didn't use any license for their software and Stallman appeared to be opposing copyrighting software.[4]

With an innovative license Stallman was able to go against the exclusive effects of copyright with the help of copyright itself. In 1989 Emacs GPL license text was partly rewritten for clarity and the license was renamed to GNU General Public License. It became the default license for all GNU programs. The second version of GNU GPL was published in 1991 and the third version is currently in preparation. Today, thousands of software projects use free software licenses.[5]

GNU GPL is not the only free software license in use. Free Software Foundation's website counts over ten free software licenses. The Open Source Initiative (OSI), which was founded in February 1998, has certified over fifty licenses, which comply with the general terms of the Open Source Definition (Perens, 1997).[6] In this article, we however concentrate on GNU GPL simply because it is the most widely used license (Ghosh, R. & al, 2002).

2.2 Current License Enforcement Practises

In spite of increasing commercial interest and use of free software, court disputes on free software licenses have been so far rare.[7] As a result the legal validity of most of the licenses has not been tested in courts. There are several possible reasons. One very obvious factor is that even if the free software license would be found to be invalid, "normal" copyright still protects the software and thus outcome of the case would be the same or even worse.

Another reason could be that software developers form a community, which has its own internal social norms, which aim to prevent legal confrontation (Ellickson, 1991). Indeed, this seems to be the case. The actual enforcement is largely paralegal. According to O´Mahony's (2003) empirical study, most community projects seek licenses compliance through informal means such as pressuring online discussions, emails from volunteer legal counsels and threat of negative publicity. According to Free Software Foundation's "GPL Compliance engineer", the procedure typically goes as follows (Turner 2002):

> *"Once we've confirmed a violation, I write a letter for our executive director to send to the violator… Most violators want to cooperate with us and correct the violations. If they don't, a conference call with … counsel, usually convinces them that it's in their best interest to cooperate in a friendly way… We then ask companies to reimburse us for the time we spend on solving their problem."*

As noted, the threat of negative publicity can be a powerful tool to enforce licenses (Turner 2004). If for example a company is found to violate the GPL and does not comply with informal emails or phone calls, the case can be soon breaking news at online news-forums such as Slashdot and the company in questions starts to receive negative emails.[8] Thus, any potential violator must carefully judge whether it wants to accept publicity risk and go against the free software community.

It must be stressed that community projects do not typically threat with formal legal action or claim damages in the first place (Turner 2002). Justification for enforcement comes from the collective prevailing opinion of the community.[9]

3. Software Copyright Policy in the Developing World

3.1 Current Piracy Situation

As Business Software Alliance's (BSA) statistics show (Figure 1.), unauthorized copying is still rampant all over the world.

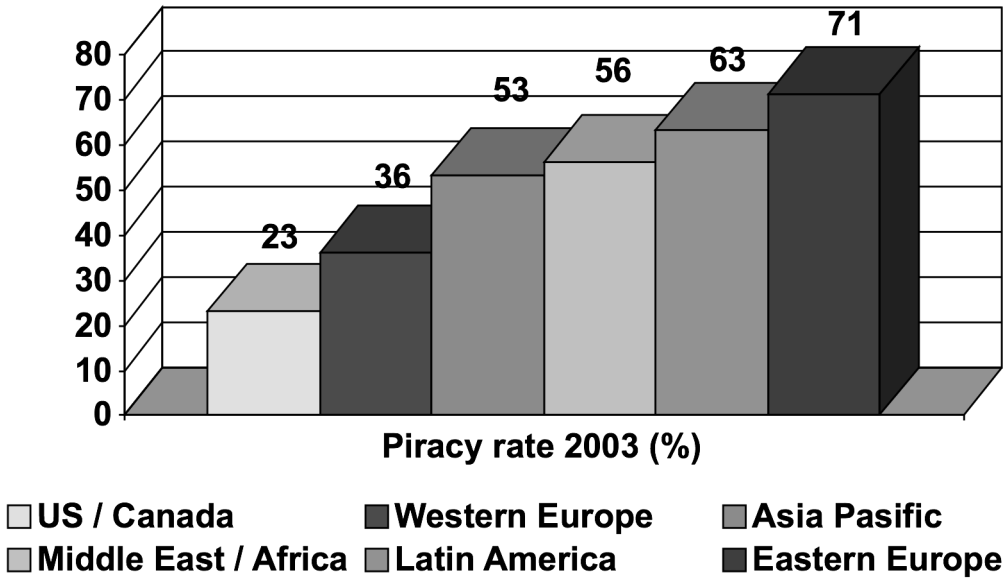

Figure 1 – Source: First Annual BSA And IDC Global Software Piracy Study (2003)

The situation is even darker if we take a look at individual countries inside the regions (Table 1.)

Country	China (1.)	Vietnam (2.)	Ukraine (3.)	Indonesia (4.)	Russia (5.)	Zimbabwe (6.)	Algeria (7.)	India (20.)
Piracy rate 2003	92%	92%	91%	88%	87%	87%	84%	73%

Table 1. Source: First Annual BSA And IDC Global Software Piracy Study (2003)

Most nations in the Top-20 can be counted as developing countries. Russia, which is a G8-country, is the biggest exception. The most interesting finding is that the least developed countries of the world are missing from BSA's list altogether (UN 2005). This can be attributed in the first place to the fact that those countries severely lack computers i.e. there is no need for any kind of software.

The developing countries don't have typically much internal reasons to enforce copyright. Their national cultural industries are weak and the trade balance distorted towards the rich countries. This is even truer for software copyright, which is sometimes seen to benefit only multinational companies. Combined with the strong cultural tradition of copying, which can

be found in certain parts of world – especially in Asia (e.g. Alford, 1997) – has resulted in the widespread violations of software copyright described in the statistics above.[10]

3.2 Political Pressures from the U.S.

One of the ironies of the current situation is that the United States, which was a "pirate nation" itself until late 19th century[11], has been lately the most aggressive proponent of a strong global intellectual property regime. The reason is very rational: the copyright-based industries generate more revenues internationally than any other U.S. industry (Richardson, 2001). Several critics have documented the strategies, which they believe the U.S. policy is fundamentally based on (e.g. Drahos & Braithwaite, 2002 and Weissman, 2003). According to them, the U.S. is basically using its internal markets – the world's largest – to get leverage in the international trade negotiations. If a developing country does not bend to the U.S. demands, trade sanctions can follow, which can have devastating effects to the affected industries in the developing country. As a consequence, the U.S has been able to get the strong protection of intellectual property rights to international agreements such as TRIPS (Trade Related Aspects of Intellectual Property Rights) and also to the bilateral free trade agreements, which it has been making with increasing pace with the countries in South America and Asia.[12]

The developing countries have tried to fight back with moderate success. The progress towards stronger intellectual property rights in World Trade Organization (WTO) has lately stalled and the protection for drug patents has been even weakened to help the disastrous health situation in Africa and Asia (Pugatch, 2004). The situation in World Intellectual Property Organization (WIPO) is also getting more difficult for the interests of the U.S as countries like Brazil, India and Chile are pushing for more flexibilities with initiatives like the Development Agenda (2004).[13] These countries are also getting increasing support from non-governmental organizations, which have started to participate in the WIPO meetings and lobby the governments of industrialized nations.[14]

3.3 From Piracy to Free Software?

The increasing political pressure from the U.S. has, however, brought some results. For example, China agreed in U.S- China Joint Commission on Commerce and Trade (JCCT) to take wide range of steps to curb down the illegal copying:

- Subject a greater range of intellectual property right violations to criminal investigation and criminal penalties including the import, export, storage and distribution of pirated and counterfeit products and copyright infringements in the Internet
- Conduct nation-wide enforcement actions against piracy and counterfeiting – stopping the production, sale and trade of infringing products, and punishing violators.
- Increase customs enforcement action against the import and export of infringing products and making it easier for rights-holders to secure effective enforcement at the border.
- Ratify and implement the World Intellectual Property Organization (WIPO) copyright treaties as soon as possible.
- Launch a national campaign to educate its citizens about the importance of IPR protection (campaign started on April 6). The campaign will include press events, seminars and outreach through television and print media. (ITRE, 2004a)[15]
- Extend an existing ban on the use of pirated software in central government and provincial agencies to include local governments.

The most interesting single action line is the last one. The project to clean the government from pirated software seems to be real but the results are most likely somewhat different than what the U.S and its software industry expected:

> "*Under draft regulations drawn up by the Ministry of Finance and the Ministry of Information Industry, companies wishing to sell software to government offices will have to either be certified as domestic enterprises or qualify as "preferred non-domestic" supplier"* (Batson, 2004).

Basically China is using now the government clean up as a way to build up its own software industry. For example, to qualify as a domestic enterprise, the copyright of products has to be assigned to a Chinese entity. This rule blocks effectively most of the big U.S companies even

if they'd have fully Chinese branches. The rules also specifically take into consideration the nature of open source, which is accepted easier as a domestic product even if the copyright remains in foreign hands (Batson, 2004). The effect of this draft regulation and the attitude, in which it is based on, can be already seen in practice. For example, the Beijing municipal government has put on hold a recent order for computer operating systems and office suite software from Microsoft. (Pun, 2004)

Somewhat similar progress can be found in other Asian countries. Vietnam, which is holding the second position in the Top 20-list above, has an ambitious plan for extending the use of open source in both public and private sector during 2004-2008. One of the indicated key motivating elements is yet again the hope to lower the piracy rate. The planned steps include:

- Implementing legal and policy foundations to support free software usage in the country
- Integrating free software into the formal educational curriculum
- Application of free software in government offices
- Experimental use of free software in the defence industry (Wong, 2004)

Naturally these two cases can't prove a real trend.[16] That said, it is rather logical that the easiest way for governments to limit the non-licensed software usage is by switching to free software. The cost of buying full licenses for proprietary software is typically far too high to be a realistic option for already heavily debt-ridden economies. (Ghosh 2003) Equally, as a result of the U.S. policy with intellectual property rights, the cost of not buying the licenses is too expensive, too. If the countries want to continue to use information technology, there really is not much else to do than to endorse free software.

The proprietary software industry has been aware of this threat to its business for a while. As a result trade organizations have launched projects like The Initiative for Software Choice (ISC), which lobbies the governments to acquire software based on "merits, not through categorical preferences" (ISC 2004a). The main focus of Software Choice has been on South America, the recent hotbed of the Free Software movement.[17] For example, ISC's web site has currently seven consult reports on the software industry (in Argentina, Chile, Columbia,

Costa Rica, Mexico, Peru and Venezuela). These reports suggest basically the same thing for every country i.e. the best way to support the local economy is:

> "*A comprehensive policy approach, tackling general IT capital stimulation and targeted to commercial software industry promotion, is the most economically beneficial."* (Sallstrom & Damuth, 2004)[18]

Also China's proposal for new software procurement policies have drew attention from lobby organizations. ISC protests for example the ideas of setting different standards for local and foreign companies and categorical favouring of free software. The organization suggest that

> "*…China amend the proposed Rules to embrace the global norms of openness, transparency, technology neutrality and non-discrimination and to exclude preferences for any specific type of development or licensing model, creating instead a policy that reflects software procurement based on objective criteria including performance, suitability, interoperability, and the best-value product." (ISC, 2004b)*

3.4 Free Software Misappropriation

One of the open questions pertaining to the success of free software in developing countries is "can it stay Free/Open". It is definitely fair to ask why the same people, who do not honour proprietary licenses, would respect the principles of free software. This is especially crucial for software under "copyleft" licenses such as GNU GPL, which seek to enforce that the source code remains open.

We believe there to be several factors why free software could indeed be easier to enforce than proprietary software:

- Individual developers have fewer incentives to free-ride. Instead, they can gain significantly from participating (according to the rules of the community) in free software development. Free software offers a possibility to market their skills globally and thus might help in finding jobs from rich countries or - more realistically - from a local subsidiary of a multinational software company.[19]

- Many companies can benefit from the participation into a development community, directly by getting e.g. development help and indirectly by getting e.g. new employees (e.g. Bonaccorsi and Rossi, 2004). It should be noted that this factor is not specific to the developing world .
- Also governments have genuine reasons to support free software communities. They can gain good-will not only among developers but also in the international diplomatic circles. Further, by supporting free software they can arguably foster local software development and thus create jobs (Ghosh, 2003).
- Finally, unlike proprietary software, free software is supported by informal but global compliance measures discussed above. This suggests that the social norms of software developers (at least the "hacker" –types) are better in par with free software principles than the letter of intellectual property laws.

4. WIPO and International Free Software Policy

World Intellectual Property Organization has had problems in finding a way to take a balanced approach towards free software. The strong anti-intellectual property attitudes, which are very common in the free software community, have played a substantial role in the antagonized reception. Especially the U.S has been wary because it has feared that opening the door for a discussion about the limits of intellectual property rights could have unwanted long-term implications to their national interests. Lois Boland, director of international relations for the U.S. Patent and Trademark Office, has been quoted stating that "*...open-source software runs counter to the mission of WIPO, which is to promote intellectual-property rights"* (Lessig, 2003). [20]

Interestingly countries like India, Chile and Brazil, which have been pushing otherwise aggressively for more flexible intellectual property rights regime, have not yet forced the issue on the table. A quite telling example is WIPO's Development Agenda accepted in 2004: it refers to free software ("open source") only once.[21] This approach is most likely dictated by WIPO's policy to aim for unanimous decisions. It would be waste of resources to try to bring up something, which would be certainly killed by one of the member organizations. To be precise, also EU would most likely object to anything, which could be perceived as a violation of the technological neutrality principle.

As explained above, the free software community does not currently have problems with the general idea of the software copyright as such.[22] Many free software developers can be said to be well aware about the details of the copyright system and they also do not hesitate to use it as a tool to protect their interests in the most extreme cases. The difference compared to other uses of copyright is that free software licenses use copyright to get benefits directly to the community (or arguably to even the society at large).[23]

Thus, instead of fighting against free software, it could be a useful tool for WIPO. In the developing countries the promotion of free software could be a non-controversial way to teach about the fundamental concepts of copyright. This is even truer if the strong emphasis on individual authorship and the potential of individual developers – irrespective of their background and corporate support – is taken into account. This should not undermine proprietary software production as such as long as there are no demands for preferring free software.

Finally, we should not forget that software is only one category of the works protected by copyright. For example the media industry trusts on copyright protection when it publishes new music, movies and books. Consequently, if free software could help creating a social norm "one should obey copyright", it should benefit every copyright industry equally.

5. Conclusions

Even though free software licenses are based on copyright, the enforcement mechanisms are quite different compared to the traditional approach of proprietary software companies. The community avoids formal enforcement and prefers softer methods to keep the "players" in the line. The enforcement also aims to bring benefits to the whole community as it aims to force the violators to publish the source code. Thus free software shows how copyright can be constructive to the community without being ethically questionable.

As described in this article, stricter copyright enforcement should help the adaptation of free software in the developing world. Therefore, it should be similarly acceptable to the free software ideologists. This means it is possible to find some common ground for the proponents of strong intellectual property and the free software movement. Another relatively

non-controversial theme should be the education about copyright as long as the language is kept neutral (i.e. no references to heated political terms like stealing).

If we combine these two actions, we can suddenly notice that the combination should fit very well to the core mission of WIPO. We believe consequently that a natural starting point for free software based copyright education should be in the WIPO's Development Agenda. Could the similar approach work for TRIPS agreement, too? This is a question, which should be addressed in future research.

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[1] In this article, we use free software as general term referring to all kinds of free and open source software. That said, in certain occasions we refer specifically to the Free Software Foundation and Open Source Initiative to point out that there are relevant philosophical differences.

[2] In our opinion the term "piracy" is too politically loaded to be used in academic articles

[3] Another anecdotal story is about buggy Xerox printer driver at MIT. Stallman wanted to fix the driver but the developer refused to give source code because he worked under non-disclosure agreement. (Williams 2001). One more is about LISP programming language, which was originally

developed at MIT. Later on, MIT licensed the code exclusively to two companies who made it proprietary and excluded Stallman from open development.

[4] Stallman (1986) for example said: "I want to establish that the practice of owning software is both materially wasteful, spiritually harmful to society and evil" and "we are back in the same situation as in the ancient world where copyright did not make sense."

[5] E.g. http://www.sourceforge.org/ hosted in March 2005 almost 100 000 software projects, most of which use a free software license. Granted, arguably the majority of those projects are not active or important but the sheer numbers still reflect the volume of interest and activity.

[6] For the purposes of this article the differences between free and open source software are secondary. We use free software in the broad sense of the term.

[7] Some of the rare cases include Progress Software Corp. v. MySQL AB (2002) and a German court decision by Landgericht München I on 19th May 2004. In both cases GNU GPL was treated as valid.

[8] E.g http://developers.slashdot.org/article.pl?sid=03/07/31/1350217&tid=106 about alleged GPL-violations by Linksys

[9] See O'Mahony (2003) who calls the informal mechanism as "the court of public opinion".

[10] The same is true for patents, which have been pushed to the developing countries by the research based pharmaceutical industry in order to stop the "theft" done by generic drug companies. (Best summary of this can be found from Pugatch, 2004)

[11] Until 1891, foreign copyrights were not protected in America (e.g. Lessig 2001)

[12] These agreements are available from USTR's homepage: http://www.ustr.gov/Trade_Agreements/Bilateral/Section_Index.html

[13] The co-sponsors were: Argentina, Bolivia, Brazil, Cuba, Dominican Republic, Ecuador, Egypt, Iran, Kenya, Sierra Leone, South Africa, Tanzania and Venezuela. U.S have vowed to fight back against these attempts to "*fundamentally change the WIPO charter and philosophy*" (Schrerer, 2004)

[14] For example a large group of non-governmental organizations endorsed Development Agenda by preparing and signing the Geneva Declaration (2004).

[15] U.S. is also launching a special review to see if the measures are actually working (ITRE, 2004b)

[16] Instead, this list (http://www.csis.org/tech/OpenSource/0408_ospolicies.pdf) of governmental policy initiatives seems to indicate that there is indeed a wide-spread trend towards open source.

[17] E.g. Brazil is known currently in certain very strongly pro IPR-circles as "The Afganistan of IPRs"

[18] The content of these reports is aimed to influence, not to meet any scientific criteria.

[19] There is no empirical research on how real this possibility is.

[20] The biggest beneficiaries of free software are currently big information technology service firms such as IBM and HP – most of them based in the U.S. Also, the most important Linux-distribution companies RedHat and SuSE (i.e. Novell) are from the U.S. This makes the U.S position quite complex.

[21] "In order to tap into the development potential offered by the digital environment, it is important to bear in mind the relevance of open access models for the promotion of innovation and creativity. In this regard, WIPO should consider undertaking activities with a view to exploring the promise held by open collaborative projects to develop public goods, as exemplified by the Human Genome Project and Open Source Software." (Development Agenda)

[22] Technical protection measures are never the less loathed by the community and also the rules about reverse engineering are consider to be too strict.

[23] Although, in the case of dual licensing, it might be possible that the enforcement is actually negative to the community.