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Richard Epstein: Why open source is unsustainable

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James Boyle: Give me liberty *and* give me death?

Intellectual property often creates strange bedfellows on the left and the right sides of the political spectrum. On the left, many socialists oppose private property in all its forms. On the right, some libertarians, such as Tom Bell of Chapman Law School, are deeply suspicious of the use of intellectual property to block the right of other individuals to think and speak as they choose. While they regard private property as acceptable for physical resources that cannot be used by everyone at once, they draw the line at intellectual property, which can be copied at close to zero cost.

All this anti-IP rhetoric begs one question: how do we produce IP in the first place? On that question, the open source movement - which has already generated some real successes in both operating systems and various kinds of servers - offers its own distinctive institutional response. The movement, whose principles have been expertly analysed by James DeLong of the Progress and Freedom Foundation in his paper "The Enigma of Open Source Software (Version 1.0)", is organised around three tenets. First, access to source code (the master plan that generates the zeros and ones to which computers respond) must be made available to all. Open availability allows other individuals to tinker with the original program with an eye to improvements in its operation or extension in its use. Second, once someone incorporates open source software in his own programs, then any licence that he issues cannot charge others for its use or restrict them from making further modifications of the program. Third, each licensee agrees that all subsequent licensees may use or modify on the same terms as the original licensee.

The linchpin of much, but not all, of the open source movement is the General Public Licence (GPL) prepared by the Free Software Movement, which covers, for example, the Linux operating system. Its key provision reads: "You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License."

Does open source software represent a viable alternative to the competing forms of proprietary software, which is licensed only for a fee? In answering this question, first note that open source software relies on the very private property regime that its supporters, most noticeably Richard Stallman, disdain on moral grounds. As DeLong rightly notes, the GPL does not place open source software in the public domain, where any one may use it as he pleases. Rather, like the "copyleft" movement in general, the GPL often supplies, as with Linux, an all-enveloping ownership structure by which a central committee decides whether to incorporate proposed changes into the basic public program. (Anyone can keep whatever version he likes for personal use.) No cash compensation is paid to the self-selected improvers, who either work for the love of the game, or because they are supported by some third party payers, either in universities or industry, who want to keep this alternative platform alive.

There are two serious weaknesses with this governance system. The first is that the critical provision of the GPL set out above has not been tested. Yet it may prove vulnerable on least two grounds. First, as a straight interpretive matter, it only states what the obligation of each programmer is with his own private improvements. It does not in so many words specify the appropriate remedy when some portion of the open source code is incorporated into an otherwise proprietary program. The apparent intention of the provision is to "infect" that new program so that all of its content becomes open source software subject to the GPL. In principle, the entire Microsoft operating system could count as "the work" that becomes open source because a few lines of open source code have been incorporated into it by inadvertence. I doubt very much whether courts will tolerate that extreme remedy, if they enforce the clause at all. Just imagine if Microsoft insisted that it had exclusive rights to any derivative work that incorporated its code! In both cases, it is much more likely that courts would allow the incorporator to remove the offending lines of code, or to pay some damages for the improper inclusion.

Second, the clause might only bind those people who know that they are using open source code. Suppose, for example, that A uses some open source code in his program, which is in turn used by B. If B has no knowledge of how A cobbled together his program, then the GPL may be read not to apply at all. Indeed, even if B knew of the provision, the GPL might not apply on the ground that it constituted an illegal restraint on alienation that everyone is free to ignore. One way or another, courts are likely to counteract the creeping imperialism of the GPL licence. Once the contract protection lapses, then the open source movement is left only to its copyright remedies, which are likely to prove far weaker.

The difficulties with the open source movement , moreover, go deeper than the problems with a single provision of the GPL. The open source movement shares many features with a workers' commune, and is likely to fail for the same reason: it cannot scale up to meet its own successes. To see the long-term difficulty, imagine a commune entirely owned by its original workers who share pro rata in its increases in value. The system might work well in the early days when the workforce remains fixed. But what happens when a given worker wants to quit? Does that worker receive in cash or kind his share of the gain in value during the period of his employment? If not, then the run-up in value during his period of employment will be gobbled up by his successor - a recipe for immense resentment. Yet that danger can be ducked only by creating a capital structure that gives present employees separable interests in either debt or equity in exchange for their contributions to the company. But once that is done, then the worker commune is converted into a traditional company whose shareholders and creditors contain a large fraction of its present and former employers.

The bottom line is that idealistic communes cannot last for the long haul. The open source movement may avoid these difficulties for outside contributors who work for credit and glory. But how do the insiders, such as Linus Torvalds, cash out of the business that they built? And in the interim, how do they attract capital and personnel needed to expand the business? Traditional companies have evolved their capital structures for good reason.

But suppose this analysis is wrong. One clear policy implication remains: this novel form of business association should succeed or fail on its own merits. The do-or-die question is whether open source offers a low cost solution to particular problems. Ordinary companies will make just those calculations, but government agencies may be swayed to take a different tack, as has been suggested by a number of EU studies. That temptation should be avoided. Governments are bad at forcing technology by playing favourites. If open source is less effective than proprietary software, that gap should not be ignored by positing some positive network externalities that come from giving it a larger base. Proprietary systems also show positive network effects from increased users, as software designers are always attracted by a larger installed base. It's a tough world out there, in which no one should be exempted from the general competitive pressures of the marketplace. The fiduciary duties of government to all citizens demand no less.

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James Boyle: Give me liberty *and* give me death?

The price of liberty is death, at least so far as free software is concerned. Or so goes the argument in Richard Epstein's column, "Why open source is unsustainable". It is a characteristically provocative title, but I am unconvinced.

The article gives two main reasons for open source's doom. The first is an attack on the vagueness and, somewhat paradoxically, the imperialism Professor Epstein sees in the General Public Licence, the licence common to most "free software" and much "open source software." Prof Epstein claims that the licence is silent on certain key issues, vague on others and likely not to be enforced by the courts in certain cases. I disagree with most of his arguments, and think the fears are exaggerated. An extended analysis would require a law review article, not an Op-ed. How is a reader to judge whether there are deep flaws in the licence? Two handy guidelines suggest themselves. Listen to the market, and assume judicial common sense.

Listen to the market
Global businesses such as IBM have very good lawyers. They are not known for investing billions of dollars into businesses built on licences that are simultaneously vague and imperialistic. (I imagine an absent-minded Genghis Khan.) Unenforceable licences are also unpopular. In his scholarship, Prof Epstein has pointed out eloquently that the market is the best information processing system we have: we should assume that it is incorporating all available information. If we apply his principle here, it indicates that the market has weighed his fears and found them wanting. In my view, the market is discounting Microsoft's stocks moderately because of fears about the competitive challenge posed by open source, and discounting open source-reliant stocks mildly, because of fears about legal challenges to the GPL or software produced under it. (The much-hyped SCO litigation, interestingly, is not a challenge to the GPL itself.) That does not mean that the free software movement will inevitably triumph. Nor does it imply that the GPL is seamless - no licence is. But every business has an element of legal risk, or contract-uncertainty; the GPL seems to me - and, so far as I can tell, to the market - less uncertain than most. As for the implication that the *intent* of the GPL's authors or users is to "infect" proprietary code, I think the evidence runs exactly to the contrary. So far as one can tell from their words and deeds, the authors of the GPL want passionately to avoid the entanglement Prof Epstein describes. They certainly take pains to specify the ways that one can avoid problems, including distribution of separate programs on the same disk, appropriate ways to use proprietary "software libraries" and plug-ins, and so on.

Assume judicial common sense
Another guideline is more a matter of legal culture. To the extent that there are problems with the GPL, they are unlikely to produce either the vagueness or the imperialism Prof Epstein describes because, as he concedes, courts strive to interpret licences so as not to undermine legitimate expectations. Legitimate expectations here would include "multi-billion dollar enterprises that people have erected on the premise that this licence actually works." Courts are also unlikely to doom multi-billion dollar proprietary software businesses just because someone inadvertently included a line of GPL

code. Despite occasional examples to the contrary, courts are fairly commonsensical institutions, and their decisions are unlikely to bring about the legal apocalypse for *either* side of the proprietary hedge. The market valuations that I mentioned before probably reflect that point.

But legal uncertainty is only part of the reason that Prof Epstein thinks that open source is unsustainable. His key criticism is that "idealistic communes cannot last for the long haul." Well, the Catholic Church is also a relatively idealistic institution, based on canonical texts that are subject to conflicting interpretations. It is doing pretty well so far. Presumably the key word here is "commune." But is open source a "commune", holding tangible property in common and excluding the rest of us, worrying about how to split up the proceeds if someone leaves because of bad karma? Or is it a community, creating and offering to the entire world the ability to use, for free, non-rival goods that all of us can have, use and re-interpret as we wish? In that kind of commune, each of us could take all the property the community had created with us when we left, and the commune still be none the poorer. Copying software isn't like fighting over who owns the candles or the VW bus.

How about idealism? Prof Epstein himself is careful to point out that it is by no means clear that the production of open source software *is* based solely on the idealism of its creators. There are lots of reasons that people write open code. They want to solve a particular problem and don't mind others getting the fruit of their efforts, because they themselves benefited from the earlier work of other programmers. They believe in free software. They hope to get a better job. They are good at coding, and like to display their virtuosity. They are paid to do it. The last category is an increasingly large percentage of the whole. Amazingly, IBM now earns more from what it calls "Linux-related revenues" than it does from traditional patent licensing, and IBM is the largest patent holder in the world. This does not seem like a community that is declining.

People used to say that collaborative creation could never produce a quality product. That has been shown to be false. So now they say that collaborative creation cannot be sustained because the governance mechanisms will not survive the success of the project. Prof Epstein conjures up a "central committee" from which insiders will be unable to cash out - a nice mixture of communist and capitalist metaphors. All governance systems - including democracies and corporate boards - have problems. But so far as we can tell, those who are influential in the free software and open source governance communities (there is, alas, no "central committee") feel that they are doing very well indeed. In the last resort, when they disagree with decisions that are taken, there is always the possibility of "forking the code", introducing a change to the software that not everyone agrees with, and then letting free choice and market selection converge on the preferred iteration. So far, "forks" have been comparatively rare, but are not unheard of; the tradition of "rough consensus and running code" seems to be proving itself empirically as a robust governance system.

Prof Epstein is careful to note that he might be wrong about the future of open source, but he concludes with an admonition nonetheless. Even if he *is* wrong, "this novel form of business association should succeed or fail on its own merits." It should not be aided by government agencies "playing favourites." "If open source is less effective than proprietary software, that gap should not be ignored by positing some positive network externalities that come from giving it a larger base." Given that initial "if", I think this is a reasonable point. If open source software is less effective, government should not be investing in it. (Some people assume it will always be superior: I do not.) The point, of course, is that most of the government recommendations to invest in open source are based on assessments that, for a particular task, open source is actually superior *and* that adopting open source has important benefits because of its design - including ease of modification, and ability credibly to pressure proprietary providers to lower their prices.

The UK, for example, concluded last year that open source software "will be considered alongside proprietary software and contracts will be awarded on a value-for-money basis." In fact, in a serendipitously timely report about British pilot study trials issued a few days after Prof Epstein's column, the Office of Government Commerce had this to say. Open source software is "a viable desktop alternative for the majority of government users" and "can generate significant savings… These trials have proved that open source software is now a real contender alongside proprietary solutions. If commercial companies and other governments are taking it seriously, then so must we." Sweden found open source software to be in many cases "equivalent to - or better than - commercial products" and concluded that software procurement "shall evaluate open software as well as commercial solutions, to provide better competition in the market." Sounds sensible to me.

I think Prof Epstein's neutrality principle is a little narrow. There are many benefits to society as a whole that governments could rationally factor into their decision in picking open software - including creating a social good that other citizens can share, and producing specific competition (lower software prices for my department) and general competition (lower prices for the society as a whole.) But let us say that we adopted his principle. Would it change state purchasing policies? I don't think so, for the reasons given above. What would it change? There, I think the answer is clear. The key implication of a principle of neutrality would be this; it would change our intellectual property policy. If we were truly neutral, we would be as concerned about the impact of software patents on open source software development as about the impact of illicit copying on closed source software development. We would spend as much time thinking about how to encourage distributed creativity as we do about encouraging proprietary "top-down" creativity. *That* principle of neutrality would be worth adopting. Where do I sign?

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