

# Why Open Source Software Is Fundamental to a Robust Democratic Culture

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Software programming is sometimes patronized as an arcane black art that is the preserve of techies. And that may or may not be true. But it is not well-appreciated that software itself has ramifications that reach far beyond the techie community and even the software marketplace. It is becoming the invisible architecture of our emerging digital culture.

The structures that are embedded in software – and in the technical standards of the Internet – determine what kinds of inter-relationships we can have as a society. Software is becoming a key component of the hard-wiring of our culture. This, of course, is one of the primary themes of Larry Lessig's 1999 book, *Code and Other Laws of Cyberspace*. He talked about how code, markets, law and social norms each play a role in structuring and regulating our lives.

What's really interesting to me is that the "architectural power" of software is barely known among politicians or other Washington policymakers. I have been in some fairly high-toned gatherings of name-brand politicians, journalists, corporate leaders, college presidents and the like. Only a few of them had heard of Linux and most could not explain why it -- or open source software more generally -- is important beyond its curiosity value.

We in this room may flatter ourselves that *everyone* knows about free and open source software. But they don't. Most people not only don't understand the

technical differences between proprietary and open software. They don't realize how those differences radiate outwards, affecting the United States' and global communications infrastructure, the structures of national and international markets – and inevitably, the ways that people can communicate with each other, pursue creative works and debate civic and political issues.

The difference between open and proprietary software -- and its deeper strategic and philosophical implications -- is something that is barely acknowledged in mainstream political conversation, let alone analyzed in probing ways.

Today I'd like to talk about what open source software means for our democratic society – which is to say, how it affects:

- the values of free expression and self-directed creativity;
- the ability of people to carry on robust public dialogues without having to obtain advance permission or pay fees;
- the transparency and accountability of institutions; and
- the structure of markets (open and competitive or closed and oligopolistic).

Let me first address the impact of open source software on markets. The short answer is, open source helps make markets more competitive, innovative and consumer-friendly. By providing a common base of technical standards – with no proprietary impediments at one bottleneck in the network or another -- no single company can commandeer a market and monopolize it. It is much harder to erect artificial barriers to competition.

Companies are forced to compete on a more meritocratic basis. Real innovation can rise to the top – which has predictable benefits for consumers and the

economy as a whole. The history of the Internet is a case study of how open standards provide a rich host environment conducive to innovation.

Another significant result of an open regime is the structural, automatic pressures against monopoly. The benefits to consumers are obvious – lower prices, greater choice and flexibility, greater control and higher quality products. But while we usually talk about monopolies in terms of their consumer or marketplace impacts, we don't often discuss the civic and political implications of monopoly.

Namely: Large concentrations of corporate power tend to undermine democratic values. John Adams warned that the people are free “in proportion to their property” and its division in small quantities among the multitudes. Monopolies or hugely dominant firms like Enron or Microsoft or Worldcom can exert a disproportionate political power to set public policy, abuse consumers, milk taxpayers by charging government too much for their products, and changing the very structures of markets to favor themselves over others.

We can already see this in how cable broadband is seeking to establish “quality of service” tiers with differential pricing. We see this in AOL's “walled garden” strategy that seeks to keep Internet users within a proprietary space that can send targeted advertising, monitor user behavior, ban downloads of free software, and in other ways control users from the top down. Of course, on the Internet – and in a democracy – the “bottom-up” sovereignty of the people is the most significant defining force.

So to the extent that open source software militates against corporate concentration and monopoly, it is an active force not just for strengthening market competition but for strengthening the democratic exercise of power.

The problem is, we don't really have a conceptual scaffolding for talking about the civic, cultural and democratic value of open source software. We have a highly developed vocabulary for talking about economic and commercial matters. But the values of civil society; social and humanistic values, ethical concerns, democratic values? These tend to have little standing.

I'd like to propose that one way we can get a more full-bodied understanding of the actual value of open source software is by seeing it as the product of *the commons*. Intellectual property law has no categories for recognizing the commons or collaborative creativity – and it has no explanation in its philosophical premises to explain how open source software is conceivable. After all, copyright law insists that people won't work unless they have strict property protection and economic rewards for their work, yet here we have thousands of programmers working for free -- and those who are paid as employees generally capture the gains from their work in the most indirect ways.

The idea of the commons can fill an important void in our understanding of how creativity in the online world actually works. Duke law professor Jamie Boyle, has pointed out that the idea of “the environment” literally didn't exist in the 1950s and early 1960s. It had to be culturally invented. No one quite realized that bird hunters and bird watchers might actually share the same interests until the language of “the environment” helped articulate the common ground... “The environment” helped showcase the natural world and created an overarching narrative that helped make sense of seemingly unrelated phenomena. In so doing, the new language gave voice to – and made possible -- a political and cultural movement.

Today, I believe *the commons* helps us showcase the many realms being threatened by overly powerful and intrusive market forces – while validating a new affirmative framework for achieving our desires as citizens and consumers. It's not

that the market is bad in principle, but that its reach and influence is excessive – to the extent of undermining the market’s own performance. We see this in the “tragedy of the anti-commons,” as described by Rebecca Eisenberg and Michael Heller, in which property rights in the form of patents have grown so expansively in some fields – software and medical research, for example -- that they are disrupting the efficient functioning of the market.

The commons offers a vocabulary for talking about these excesses and about the systematic privatization of resources that should belong to all as a civic right. It gives us a language for talking about inappropriate commodifications of knowledge.

It is tempting to regard open source software merely as an adjunct to the marketplace -- a mode of production whose value is chiefly in supporting important ancillary or derivative products and services, of the sort offered by IBM or Red Hat or Oracle. But of course, open source software has deeper roots and larger purposes that servicing the marketplace (even if it does indeed do that). It is *that* idea which we need to articulate and popularize.

Open source software is a rich embodiment of the commons – an alternative mode of producing wealth that is frequently more socially benign and compatible with democratic norms than a market populated by proprietary companies. Or put another way, this commons serves as a necessary *complement* to the proprietary market, which is why the proper balance between the two must be respected.

First of all, as we know, open source software does not operate according to the classical principles of a market. For the most part, its development is not governed by proprietary legal contracts, individual property rights, and monetary exchanges – even if these elements are not entirely absent.

Open source at its core consists of a *gift economy*, which is a different type of transactional economy altogether. People give and get by participating freely and voluntarily in a community of programmers. Market norms are not the engine of this type of wealth-creation. Social, personal and creative forces are. I hasten to point out that this alternative paradigm is not a matter of altruism and do-gooding. It is simply a different way of pursuing one's own self-interest – or let us say, a *broader* kind of self-interest than the materialistic, utility-maximizing rationality that economists have in mind.

I like to talk about the commons because it offers a whole new vocabulary for talking about roles, behaviors and relationships that cannot be adequately captured by market theory. The commons gets us beyond market-speak in which everyone must be either a producer or a consumer. It gets us beyond property-speak in which everything must be strictly owned by an individual or corporation. It gets us beyond the short-term, profit-maximizing mindset of the business enterprise, and allows us to entertain broader long-term objectives that may or may not be profitable, but are nonetheless useful and socially constructive. The commons *situates* open source in the larger context of our political culture.

The commons is a valuable conceptualization because it sets forth a different taxonomy of categories, a different matrix of values, than those of the market. The commons allows us to conceptually aggregate many new genres of knowledge and creativity that are otherwise seen as aberrational or unique. Consider, for example, how policymakers and economists don't really understand the value of:

- peer-to-peer file sharing as a mode of knowledge production;
- online libraries and archives as tremendously efficient ways to amass research, share information and mobilize citizens;

- websites that invite online collaboration in everything from the search for extraterrestrial life and prime numbers, to distributed proofreading and volunteer classifying of the craters of Mars;
- websites that invite new kinds of creative works such as “mash songs” that mix and match different types of music, or the highly celebrated “fan edit” of George Lucas’ *The Phantom Menace*.
- Then of course there is Linux and the open source phenomena, one of the most robust and powerful commons in the online universe.

The commons confers a theoretical respectability and standing on these otherwise isolated phenomena. We don’t generally group all these diverse collaborative genres together and understand them as related. But they are. They are all different varieties of Internet-facilitated commons.

As an alternative to traditional regimes of property and markets, these commons exemplify certain common attributes that make them especially compatible with – if not actively supportive of -- democratic values.

First, the commons is based on openness and feedback. They thrive precisely because there is a social transparency and effective feedback loops. This is not necessarily the case in markets. Indeed, dominant firms in markets tend to want to disclose as little as possible and shut down feedback loops lest they spur disruptive changes in the company’s fixed investments or business practices.

Second, successful commons are based on collective participation and decisionmaking. A commons is flexible yet hardy precisely because it draws information from everyone in a bottom-up flow. This means that the rules are “smarter” because they reflect knowledge about highly specific, local realities. Everyone has access and the right to participate – a hallmark of democracy. In

markets, of course, access and participation are granted only to those who can afford to pay and centralized control is a key priority.

Third, commons thrive on diversity. Diversity combined with openness can yield phenomenal creativity – as we can see in scientific inquiry. It is also the story of America – *E pluribus unum*. Introduce barriers – especially proprietary barriers such as overly broad patents, non-disclosure agreements and the like – and you shut down the engine of innovation. In a democratic context, they are the equivalent of political censorship. But open up the access to information and you get the kind of creative explosion we saw in the 1990s when the Internet served as an open, accessible platform for all kinds of innovators. Science is fabulously productive and creative because it honors openness, collective participation and diverse perspectives.

Fourth, a commons honors a rough social equity among its members. This, too, is a cardinal principle of healthy democracies. In a market economy, inequality is not only common but to be expected and even celebrated. The average CEO earned 400 times the amount earned by the average worker a few years ago.

Open source software exemplifies all of these attributes of the commons – as does our democratic culture. Jefferson would surely agree: distributed intelligence is the essence of a healthy democracy. This is not just a matter of theory or philosophy, but a highly practical matter.

- Open source can neutralize the anticompetitive behavior of proprietary software makers, especially Microsoft.
- It is a way for the civic and educational sectors to build a defensible new “media space” for a richer variety of communications than the market may allow.



- It makes better use of our tax dollars if government uses its purchasing power to support an open, versatile software infrastructure that cannot be manipulated in the many ways that proprietary vendors such as Microsoft can.

Professor Yochai Benkler has pointed out that our communications system consists of three distinct layers – the *physical layer* of wires and computers, the *logical layer* of Internet protocols and software, and the *content layer* consist of actual words and images. Open source is invaluable because it helps assure that the logical layer remains open and interoperable. This is especially important in a networked environment where any single proprietary bottleneck can impede the flow of information.

Philippe Aigrain of the European Commission has written that the GPL licenses “create a cluster of inter-supporting, unproprietary components. It forbids some changes in licenses (for GPL-ed components) and makes other changes immediately visible as aggressions against the common infrastructure.” This is an especially important function as more proprietary vendors become eager to privatize the value that has accrued to the commons through the Internet.

GPL-ed software has the same freedom-enhancing properties in the content layer because there is no proprietary rights holder who can control downstream uses of the content. The Microsoft antitrust trial has shown us the many manipulations and abuses that are possible in software applications – and thus the hidden limits that can constrain creativity and free expression in the computer and online environments.

By contrast, what the conventional economic and property theorists find perplexing not only makes perfect sense under a commons critique, it *works!* A commons is a growing number of instances *is simply more productive and innovative* than

property-driven regimes. That is the gist of Professor Benkler's brilliant essay, "Coase's Penguin, or Linux and the Nature of the Firm." It turns out that peer-production can *outperform* market-based production in terms of efficiency and creativity. Market incentives may be no match for innovation that is based on "modularity, granularity of components and the difficulty/cost of integrating components," Benkler writes. Free riders can actually benefit the system – a concept that conventional economists have trouble comprehending.

Some of us are trying to leverage these advantages for the benefit of democratic participation. I am pleased to report that Public Knowledge has recently completed a GPL-ed software application for online citizen organizing, with support from the Free Software Foundation. We hope it will be viral in the extreme.

This is the real point about open source software. It is ultimately more compatible with the norms of an open, evolving democratic society than the closed, rigid norms of proprietary software. Just as American democracy proved more resourceful, resilient and productive than the rule-bound Soviet Union, so open source and free software are more resourceful, resilient and productive than the property-bound system of software development favored by Microsoft and others.

This is not to say that proprietary software does not have an important role to play. Of course we need the market. Of course we need profit-driven firms to innovate and sell through the marketplace. Yet we are not talking about an either/or proposition here. Any healthy market, democracy or culture needs a robust commons to help it function efficiently and equitably. Open source software has long played that role in computing and computer networking. We need health markets *and* flourishing commons. It's a point that needs to be respected as software becomes the invisible skeleton for our emerging digital society.