

Commons-based Peer Production and Virtue*

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COMMONS-BASED peer production is a socio-economic system of production that is emerging in the digitally networked environment. Facilitated by the technical infrastructure of the Internet, the hallmark of this socio-technical system is collaboration among large groups of individuals, sometimes in the order of tens or even hundreds of thousands, who cooperate effectively to provide information, knowledge or cultural goods without relying on either market pricing or managerial hierarchies to coordinate their common enterprise.¹ While there are many practical reasons to try to understand a novel system of production that has produced some of the finest software, the fastest supercomputer and some of the best web-based directories and news sites, here we focus on the ethical, rather than the functional dimension. What does it mean in ethical terms that many individuals can find themselves cooperating productively with strangers and acquaintances on a scope never before seen? How might it affect, or at least enable, human action and affection, and how would these effects or possibilities affect our capacities to be virtuous human beings? We suggest that the emergence of peer production offers an opportunity for more people to engage in practices that permit them to exhibit and experience virtuous behavior. We posit: (a) that a society that provides opportunities for virtuous behavior is one that is more conducive to virtuous individuals; and (b) that the practice of effective virtuous behavior may lead to more people adopting virtues as their own, or as attributes of what they see as their self-definition. The central thesis of this paper is that socio-technical systems of commons-based peer production offer not only a remarkable medium of production for various

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¹Yochai Benkler, "Coase's penguin, or Linux and the nature of the firm," *Yale Law Journal*, 112 (2002), 369–446; Benkler, "Sharing nicely: on sharable goods and the emergence of sharing as a modality of economic production," *Yale Law Journal*, 114 (2004), 273–358.

kinds of information goods but serve as a context for positive character formation. Exploring and substantiating these claims will be our quest, but we begin with a brief tour through this strange and exciting new landscape of commons-based peer production and conclude with recommendations for public policy.

I. COMMONS-BASED PEER PRODUCTION – EXAMPLES

The best-known examples of commons-based peer production are the tens of thousands of successful free software projects that have come to occupy the software development market. Free or open source software development is an approach to developing software that resembles nothing so much as an idealized barn raising—a collective effort of individuals contributing towards a common goal in a more-or-less informal and loosely structured way. No single entity “owns” the product or manages its direction. Instead, it emerges from the collaboration of groups of developers, ranging from a few individuals up to many thousands. Many of the participants are volunteers working in their spare time. Some are paid by corporations that do not themselves claim ownership in the product, but benefit from its development by selling services or equipment associated with the software. The flagship products of free or open source software development—the GNU/Linux operating system, the Apache web server, Perl and BIND—are the most famous. But at any given moment there are tens of thousands of free software development projects, and hundreds of thousands of software developers collaborate on them in various forms to produce some of the world’s best software.² As Moglen pointed out, free software gains its salience from its functionality. One can compare the products of free software development communities with those of corporations, like Microsoft’s. There is a technical answer to the question: is this software better or worse?³ It is this measurable quality that has forced businesses and governments to take notice of free software. It is what caused the President’s Technology Advisory Committee in 2000 to recommend U.S. adoption of open source software as a strategy for supplying mission critical software.⁴ Measurable contributions to its machines and services caused IBM to invest over a billion dollars to support development of the Linux kernel and Apache Web Server software, without seeking ownership in the product.

While its functional success forces observers to take free software seriously as a sustainable form of production, what makes free software interesting from a

²Josh Lerner and Jean Tirole, “Some simple economics of open source,” *Journal of Industrial Economics*, 50 (2002), 197–234.

³Eben Moglen, “Anarchism triumphant: free software and the death of copyright,” *First Monday*, 4 (August 1999); Available at http://www.firstmonday.org/issues/issue4_8_mogden (accessed April 25, 2005).

⁴President’s Information Technology Advisory Committee, *Developing Open Source Software to Advance High End Computing* (Washington, D.C.: Government Printing Office, 2000).

social or moral perspective is its social and human structure. No one “owns” a free software project, though individuals own—in a formal sense—the software they contribute. Its touchstone is that all these individual contributors agree that none of them shall exclude anyone else from using it—whether they contributed to the development or not. No one is a formal manager who tells different people what they must do so that the project can succeed. Though leadership is present in many projects, it is based on no formal power to limit discussion, prevent subgroups from branching off if they are unhappy with a leadership decision, and in any event never involves the assignment of projects—no one can require or prohibit action by anyone. The effort is sustained by a combination of volunteerism and good will, technology, some law—mostly licensing like the GNU General Public License that governs most free software development—and a good bit of self-serving participation. But all these factors result in a model of production that avoids traditional price mechanisms or firm managers in organizing production or motivating its participants.

While the measurable efficacy of free software has captured wide attention, free software does not exhaust the universe of instances where one sees this emerging phenomenon of “barn raising”-like production on the Net. As one begins to look at information, knowledge and cultural production on the Internet, it becomes clear that free software is but one, particularly salient, instance of a more general phenomenon, the phenomenon of commons-based peer production. To provide something of a sense of this phenomenon and its human characteristics, we offer a few more examples. The first two capture the potential efficacy of widespread volunteer effort. The latter begin to give texture to the claim that these efforts offer a platform for qualitatively attractive human behavior.

The simplest example of large-scale volunteer production is distributed computing. Take SETI@home for example. The project is a scientific experiment that uses Internet-connected computers in a Search for Extraterrestrial Intelligence (SETI). The data sets collected from large radio telescope observations are immense. The project was organized to harness the computer processing cycles of millions of volunteers with computers connected to the Internet to process these vast data sets. Participants download a small free program that functions as a screen saver when they are not using their computers. At that point, it downloads and analyzes radio telescope data. According to statistics maintained on the SETI@home website, as of August, 2003, the project had absorbed over 4.5 million users from 226 countries, and provided an average computation speed almost twice that of the fastest “supercomputer” then in operation in the world. The approach, called distributed computing, has been similarly harnessed to simulate the process of protein folding (Folding@home), to model the evolution of drug resistance and design anti-HIV drugs (FightAids@home), and a host of other scientific and publicly minded projects.