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Wealth Without Markets?

The Wealth of Networks: How Social Production Transforms Markets and Freedom

BY YOCHAI BENKLER

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INTRODUCTION

In June 2006, Texas Governor Rick Perry announced a \$5 million plan to install night-vision-equipped webcams along the state's border with Mexico and to launch a website that would allow virtual minutemen to monitor portions of the border from their homes and workplaces. People around the country could call a toll-free hotline to notify law enforcement personnel if they spotted suspected illegal immigrants on their computer screens.¹

Around the same time, something subtly related happened. Internet blog posters began bemoaning a frightening new phenomenon on Skype, the increasingly successful Voice over Internet Protocol (VoIP) service that allows its users to make free long-distance calls to other Skype members across the globe. The phenomenon was telemarketing, and blog commenters began discussing the obvious solution to the problem: setting one's Skype preferences so that the user would receive calls only from a preapproved list of callers known to the Skype user.²

Both these stories emerged roughly contemporaneously with the appearance of Yochai Benkler's important and influential book, *The Wealth of Networks: How Social Production Transforms Markets and Freedom*.³ That seems appropriate because the two stories offer the beginnings of a rebuttal to Benkler's eloquent opening argument about the ways in which nonmarket production is transforming our economic and political systems. Benkler tells us that "social production" will make us freer, richer, and happier unless our pesky lawmakers get in its way. But some of the events that accompanied the publication of his book, along with events that preceded it, suggest that law may be the least of social production's worries.

In this Review, I scrutinize Benkler's claims that social production is transforming our world. Along the way, I highlight the dangers that social

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1. See Alicia A. Caldwell, *Virtual Posse: Texas Governor Proposes Web Cams Along Border*, BUFFALO NEWS (N.Y.), June 12, 2006, at C2.
 2. See *Telemarketing on Skype? Our Worst Fears Being Realised?*, Digg, http://digg.com/software/Telemarketing_on_Skype_Our_worst_fears_being_realised_ (last visited Mar. 27, 2007). For many professors of intellectual property law, this development came as no surprise. In April 2005 at a Fordham Law School conference, Tim Wu predicted that once Internet telephony lowered the costs of long-distance voice communications to zero, there would be an onslaught of telemarketing and voice-spam. Wu scared the heck out of the assembled professors by asking us to envision having our dinners routinely interrupted by callers informing us of unique business opportunities to recover unclaimed money held in Nigerian bank accounts.
 3. YOCHAI BENKLER, *THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM* (2006).

production inevitably faces. Some of these dangers stem from legal rules and interventions, as Benkler anticipates. But basic economic forces and social trends pose far greater threats to the flourishing of communications-technology-driven social production. Finally, I challenge Benkler's most striking and ambitious claim: his conclusion that social production will lessen the gap between rich and poor.

Part I restates the core of Benkler's argument and examines its contributions to the fields of intellectual property and economic theory. In so doing, it critiques several of Benkler's central premises and perhaps a few peripheral ones.

Part II examines the primary threats facing social production in the coming years. The discussion focuses on three bases for skepticism about the transformational power of social production. First, social production efforts that seem quite promising when they attract sophisticated, self-selected users can seem less so when their user bases begin better reflecting the broader demographics of society. Second, when proprietary firms are competing with social producers, they can adopt competitive strategies that successfully target the excess capacity that enables social production. Third, proprietary firms have already shown the ability to appropriate the strategies of social producers, with firms like eBay, Linden Labs, and MySpace earning substantial profits off of the social production of their user bases.

Part III devotes sustained attention to the most audacious portion of Benkler's book: his claim that the growth of nonmarket production will diminish the gap between the haves and the have-nots. This Part suggests that social production writ large could plausibly increase the rich-poor gap, through the proliferation of socially produced reputation systems. Counterintuitively, however, this development may be desirable because of its beneficial incentive effects and its potential to render society more meritocratic. Even if Benkler's assessment about social production's inherent progressivity is correct, one wonders whether he has identified the appropriate set of tools for tackling global inequality.

I. ASSESSING THE WEALTH OF NETWORKS

The Wealth of Networks is an unusually ambitious book, an epic that lends structure to the economic and technological transformations the world has already experienced and that provides an imaginative but well-reasoned account of how these transformations will accelerate in the coming years. Benkler's methodology is particularly apt for someone who valorizes remix

culture⁴ and cumulative innovation. He stands on the shoulders of giants like Ronald Coase and Richard Titmuss, creatively adapting their insights to profoundly new circumstances.⁵ In so doing, Benkler shows the reader a vast intellectual terrain that would not otherwise have been apparent. In this Part, I provide a brief description of that terrain, peppering that overview with praise or skepticism when pertinent.

A. On the Shoulders of Aristotle: Explaining Excess Capacity

Benkler has written a book about social production. It is therefore a little frustrating that he does not provide a clear definition of the term. The closest Benkler comes to a definition is his statement that social production encompasses all efforts to create content that are “not based on exclusive proprietary claims, not aimed toward sales in a market for either motivation or information, and not organized around property and contract claims to form firms or market exchanges.”⁶

Benkler argues, convincingly, that a large portion of the wealth that exists in society arises from these nonproprietary motivations. A lost tourist might pay me a dime or a dollar for clear directions to Soldier Field, but I provide the information free of charge. A wealthy benefactor anonymously donates millions to ovarian cancer research after having lost a loved one to that terrible disease. A drifter forgoes Greyhound, hitching a ride with a big rig headed for Kalamazoo.⁷ Add up the economic value of these various services, performed daily around the world, and old-economy social production becomes quite significant in economic terms. As Benkler observes, excess capacity often drives social production.⁸ I give clearer directions when I am not rushing to the

4. See *infra* note 83 and accompanying text.

5. The phrase was borrowed from Sir Isaac Newton’s letter to Robert Hooke, which stated, “If I have seen further it is by standing on ye shoulders of giants.” Letter from Isaac Newton to Robert Hooke (Feb. 5, 1676), reprinted in ROBERT K. MERTON, *ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT*, at ii, ii (Post-Italianate ed. 1993). Aptly enough, Newton borrowed this phrase from earlier writers, and the first known use of the phrase was by Bernard of Chartres, in approximately 1130. See JOHN OF SALISBURY, *THE METALOGICON* 167 (David D. McGarry trans., Univ. of Cal. Press 1962) (1159). For a discussion, see Joe Yoon, *On the Shoulders of Giants*, <http://www.aerospaceweb.org/question/history/q0162b.shtml> (last visited Mar. 27, 2007).

6. BENKLER, *supra* note 3, at 105.

7. These examples are inspired by Benkler’s discussion. See *id.* at 117–18.

8. See *id.* at 100, 115.

airport; the wealthy philanthropist has more money than she can spend on herself; and the truck driver has extra space in his cab.

While Benkler is right to zero in on the role of excess capacity in facilitating social production,⁹ that relationship is one that Aristotle grasped.¹⁰ After all, democracy itself is in many respects a socially produced resource relying on the leisure time of its citizens as an essential input.¹¹ Indeed, socially produced democratic texts, such as the U.S. Constitution, relied heavily on the contributions of the landed aristocracy, who had the luxury of ruminating about the ideal form of government because they could survive on the work and income of slaves, tenants, and spouses.¹²

Of course, Benkler's focus is on the present day, not on the Greek or Founding eras, and today we see Aristotle's intuition about excess capacity playing out in many sectors. Users of peer-to-peer networks are more likely to upload files to anonymous strangers when they have bandwidth to spare.¹³ Computer enthusiasts are happy to participate in SETI@home, which harnesses their excess computing power to aid in the search for extraterrestrial intelligence, because their computers spend hours a day idling and electricity is rather cheap.¹⁴ And there exist, scattered around the world, Wikipedia contributors with extra time on their hands and an interest in contributing to a

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9. There are, of course, exceptions, and when we observe social production without excess capacity we are usually watching humanity at its noblest: poverty-stricken families take in strangers displaced by Hurricane Katrina; firefighters face nearly certain death in an attempt to save innocent workers in the World Trade Center; ordinary people incur substantial medical risks to donate bone marrow or even kidneys to strangers needing transplants. These exceptions, however, are rare enough to underscore the persuasiveness of Benkler's point. When contributing to a collective good is costly for individuals, anonymous contributions will be rare.
 10. See ARISTOTLE, *THE POLITICS* bk. VII, ch. IX, at 210-11 (Carnes Lord trans., Univ. of Chi. Press 1984) (c. 330 B.C.) ("[I]t is evident from these things that in the city that is most finely governed . . . the citizens should not live a vulgar or a merchant's way of life, for this sort of way of life is ignoble and contrary to virtue. Nor, indeed, should those who are going to be [citizens in such a regime] be farmers; for there is a need for leisure both with a view to the creation of virtue and with a view to political activities.").
 11. So are social norms, which explains why legal scholars who rely on rational actor models have had to labor to explain norms' existence and enforcement. See, e.g., ERIC A. POSNER, *LAW AND SOCIAL NORMS* (2000); Robert C. Ellickson, *The Market for Social Norms*, 3 *AM. L. & ECON. REV.* 1 (2001).
 12. Indeed, it is useful to consider the Constitution as an example of social production, with James Madison playing the part of Linus Torvalds.
 13. See BENKLER, *supra* note 3, at 86.
 14. See *id.* at 82.

valuable public good.¹⁵ There are, to be sure, important differences between the excess physical capital that drives peer-to-peer sharing and the excess human capital that drives Wikipedia—differences explored more fully below.¹⁶

B. On the Shoulders of Titmuss: A Theory of Social Production

If we understand social production to encompass all forms of production that do not rely on rights-based exclusion, then Benkler's framework identifies six types of social production. Three of these are driven by proprietary motives. These include the "Scholarly Lawyer" strategy, employed by people like Howard Bashman of the *How Appealing* blog,¹⁷ who uses his terrific and free blog to generate clients and name recognition; the "Know-How" strategy, whereby firms develop and hoard in-house innovations that they use to create more competitive markets; and the "Learning Network," such as the A.P. wire service, which is a cooperative venture funded by a number of newspapers.¹⁸ Although Benkler spends a lot of time discussing Scholarly Lawyers, his book largely ignores the Know-How and Learning Network models. This is appropriate. After all, the Know-How model usually relies on trade secret law, a rights-based exclusion system, to guard against misappropriation of innovations by ex-employees or third parties. And learning networks have long been subjected to scrutiny by legal scholars, particularly those who work in the antitrust area.¹⁹

Benkler's other three categories are the most interesting. These are what he calls nonexclusion-nonmarket production strategies. Benkler dubs the first approach "Joe Einstein," reflecting the motivations of the individual who produces something valuable and then gives that valuable resource away, perhaps for altruistic reasons, or perhaps to enhance his reputation. Two other nonmarket approaches include the "Los Alamos" approach, which seems merely to be the "Know-How" approach employed by the government, and the "Limited Sharing Network," whereby a small group of individuals (such as a law school faculty) help each other become better Joe Einsteins (by reading and

15. See *id.* at 375.

16. See *infra* Sections II.A-B.

17. How Appealing, <http://howappealing.law.com> (last visited Mar. 27, 2007).

18. See BENKLER, *supra* note 3, at 43 tbl.2.1.

19. See, e.g., Joel B. Eisen, *Antitrust Reform for Joint Production Ventures*, 30 JURIMETRICS J. 253 (1990); Mark A. Lemley, *Antitrust and the Internet Standardization Problem*, 28 CONN. L. REV. 1041 (1996); Michelle K. Lee & Mavis K. Lee, Comment, *High Technology Consortia: A Panacea for America's Technological Competitiveness Problems?*, 6 HIGH TECH. L.J. 335 (1991).

commenting on each other's papers).²⁰ Again, though, the Los Alamos and Limited Sharing Networks fade into the background of Benkler's book, and he focuses most of his attention on Joe Einsteins. Really, then, Benkler's book is about two phenomena: the more altruistic Joe Einstein and the less altruistic Scholarly Lawyer.

Recent events, such as the YouTube *lonelygirl15* affair,²¹ indicate that apparent Joe Einsteins are often Scholarly Lawyers in disguise. Sensibly, Benkler does not seem to want to police the boundaries of his typology too rigidly. Forms of social production like blogging, open source programming, and peer-to-peer file sharing seem characterized by a mix of motivations, be they altruistic, status-oriented, or proprietary. For example, many open source programmers see participation in an open source project as a valuable resume builder and a promising pathway to startup venture capital funding, or are encouraged to contribute to the project by their employers. Other contributors seem genuinely motivated by a desire to solve a vexing technical problem, participate in a team effort, or help others.²² Scholars argue about what sorts of motivations predominate in particular settings, and these are indeed interesting research questions, but the joint presence of some other-regarding preferences and absence of immediate market transactions seems like a clear enough basis for characterizing the "social production" phenomenon. That said, to the extent that some participants in social production projects are merely seeking delayed returns from the marketplace (i.e., enhanced reputations that they can later convert into employment or endorsement opportunities), social production seems increasingly evolutionary and decreasingly revolutionary.

Benkler's next claim is that social production is often a better method for creating wealth than relying on old-fashioned incentives, such as monetary payments and exclusive private property rights.²³ As Benkler notes, Titmuss made essentially the same claim about the blood "market" in 1970, arguing that a regime relying on voluntary donations would produce a more reliable supply

20. See BENKLER, *supra* note 3, at 43 tbl.2.1.

21. See Tom Zeller Jr., *Lonelygirl15: Prank, Art or Both?*, N.Y. TIMES, Sept. 17, 2006, § 4 (Week in Review), at 16 (describing the controversy created when an actress posed as a home-schooled teenager broadcasting to a very large audience on YouTube).

22. See Josh Lerner & Jean Tirole, *Some Simple Economics of Open Source*, 50 J. INDUS. ECON. 197, 213-20 (2002); David McGowan, *Legal Implications of Open-Source Software*, 2001 U. ILL. L. REV. 241, 260-81.

23. See BENKLER, *supra* note 3, at 115-16.

for transfusions than a system in which people were paid for blood.²⁴ Note that on Titmuss's account, too, the presence of excess capacity is what makes the altruistic regime work: donors have more blood than their bodies need and are willing to spend one half-hour or so at a blood bank to do a good deed.²⁵ Titmuss's conclusions have been second-guessed in the intervening years,²⁶ and in light of recent advances in blood screening, the question of whether an optimal blood provision regime relies on paid or charitable contributions is once again debatable.

With respect to a great deal of information content, however, Benkler argues that the question of optimal incentives is not a close one: social production does better than market production.²⁷ To make this counterintuitive argument, Benkler relies on theory and empirics. The theoretical claim is straightforward and plausible. Benkler says that in the creative industries, outputs are also inputs.²⁸ For example, when Salman Rushdie writes a novel, he creates a valuable literary work. But the characters, linguistic flourishes, themes, and plot devices from Rushdie's novel can be appropriated by other authors to create their own novels. So whereas we intuitively understand that had Rushdie been granted insufficient intellectual property rights, he might not have written *Midnight's Children*, Benkler would stress that if Rushdie had been granted too strong intellectual property rights, then he might have used those rights to prevent other writers who were influenced by his work, such as Arundhati Roy and Jhumpa Lahiri, from making their own contributions to literature. Copyright law has long recognized the "outputs as inputs" point via doctrines such as the idea-expression dichotomy, and the same logic explains both patent law's relatively short patent term and its requirement of nonobviousness.²⁹ Of course, this

24. *Id.* at 93 (citing RICHARD M. TITMUSS, *THE GIFT RELATIONSHIP: FROM HUMAN BLOOD TO SOCIAL POLICY* (1970)).

25. When donation is more cumbersome, as with bone marrow, it is far less common. See generally Roberta G. Simmons et al., *The Self-Image of Unrelated Bone Marrow Donors*, 34 J. HEALTH & SOC. BEHAV. 285 (1993) (characterizing bone marrow donation as an exceptionally altruistic act, in light of the associated pain and risks).

26. See Philippe Fontaine, *Blood, Politics, and Social Science: Richard Titmuss and the Institute of Economic Affairs, 1957-1973*, 93 ISIS 401, 423-33 (2002). For a recent assessment of Titmuss's theoretical contributions and shortcomings, see Robert Pinker, *From Gift Relationships to Quasi-Markets: An Odyssey Along the Policy Paths of Altruism and Egoism*, 40 SOC. POL'Y & ADMIN. 10 (2006).

27. See BENKLER, *supra* note 3, at 116-17, 305-06.

28. *Id.* at 37.

29. See Robert C. Denicola, *Copyright in Collections of Facts: A Theory for the Protection of Nonfiction Literary Works*, 81 COLUM. L. REV. 516, 523-24 (1981) (discussing cumulative

theoretical argument does not answer the hard question of how much intellectual property protection is optimal. But it does introduce a useful sort of Laffer curve to the analysis of innovation policy.

Benkler relies on the empirical work of other scholars to suggest that current patent and copyright protections may be too strong to encourage optimal innovation. He is particularly impressed with the scholarship of Harvard's Josh Lerner:

Lerner looked at changes in intellectual property law in sixty countries over a period of 150 years. He studied close to three hundred policy changes, and found that, both in developing countries and in economically advanced countries that already have patent law, patenting both at home and abroad by domestic firms of the country that made the policy change, a proxy for their investment in research and development, decreases slightly when patent law is strengthened! The implication is that when a country . . . increases its patent protection, it slightly decreases the level of investment in innovation by local firms.³⁰

Lerner is a first-rate economist, and his work is interesting and informative. But other first-rate economists have used different methodologies to determine what effects strong intellectual property laws have had on innovation, and they have reached very different conclusions.

MIT's Petra Moser, for example, has examined the diffusion of innovations during the nineteenth century in two recent papers. Her 2005 paper in the *American Economic Review* studied the innovations that were highlighted at the 1851 and 1876 World's Fairs.³¹ She concluded that in nations without patent laws—such as Switzerland and Denmark in 1851, and Switzerland and Holland in 1876—there was little innovation in industries like manufacturing and agricultural machinery, in which trade secrecy is a poor substitute for patent protection, and more innovation in industries like food processing and scientific instruments, in which trade secrets do provide a relatively effective means for maintaining a monopoly on innovation.³² Thus, patent protections

innovation in the copyright context); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, J. ECON. PERSP., Winter 1991, at 29 (discussing cumulative innovation in the patent context).

30. BENKLER, *supra* note 3, at 39 (footnote omitted).

31. Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214 (2005).

32. See *id.* at 1231-32.

do seem to encourage successful innovation. A related paper suggested that in British industries in which firms relied heavily on patent protection, innovations were more geographically dispersed than in those industries in which patent protection was unavailable or not often sought.³³ On the basis of these data, Moser concluded that strong patent protections served an information-forcing purpose and enhanced socially desirable knowledge spillover across England.³⁴

The research results obtained by Moser, like those obtained by Lerner, are entirely consistent with economic theory. Lerner's findings are driven by the insight that creative outputs are also inputs.³⁵ Moser's findings are driven by the business reality that the choice for a firm is usually not between patenting an invention and giving it away for free. Rather, the choice is often between patenting the invention and relying on some other form of protection—e.g., maintaining it as a trade secret. If the firm opts for trade secret protection, then it need not disclose the invention either to the public at large or to competitors, and its monopoly on the innovation may last longer than the patent term.³⁶ A firm possessing a valuable innovation as a trade secret may take steps to limit the exodus of its employees to competitor firms, use encryption and physical security measures to guard the innovation, spread out the insights constituting a valuable trade secret among several employees so that no individual knows the entire secret, and try to prevent competitors and the public from learning about the innovation's very existence. For all these reasons, trade secret protection typically results in less diffusion of innovations than does reliance on patent law.³⁷

33. See Petra Moser, Do Patent Laws Help To Diffuse Innovations? Evidence from the Geographic Localization of Innovation and Production in 19th-Century England (July 10, 2005), <http://web.mit.edu/moser/www/loc507nber.pdf>.

34. See *id.* at 21-23.

35. See BENKLER, *supra* note 3, at 37-39, 49.

36. David D. Friedman et al., *Some Economics of Trade Secret Law*, J. ECON. PERSP., Winter 1991, at 61, 63.

37. An important argument cuts the other way. Trade secrets, unlike product patents, are not protected against reverse engineering by competitors. Thus it may be that although trade secrets curtail the diffusion of information about innovations, they enhance the net innovation that occurs in society. Of course, firms interested in guarding against reverse engineering have begun turning to contractual provisions that prohibit reverse engineering, and the courts have generally held these provisions enforceable. See, e.g., *Bowers v. Baystate Techs., Inc.*, 320 F.3d 1317 (Fed. Cir. 2003).

Benkler's book does not discuss trade secret protection at all³⁸—a puzzling omission in a 473-page book about innovation policy. If patent protections are weakened, as Benkler advocates, then some firms will be driven toward a social production business model, but some firms will be driven toward a trade secrets business model.³⁹ Even in the “new” economy, it is hard to believe that the former trend would trump the latter. And one can construct a compelling argument that society is worse off if more of its innovations are protected as trade secrets than as patents. Indeed, that persuasive argument explains the presence of patent laws in every developed nation on Earth.⁴⁰

In short, the empirical evidence concerning the net effects on innovation of strengthening intellectual property protections is ambiguous. So are the conclusions of economic theory. Maybe economists will coalesce around a particular view in a decade or century, but so far a lack of consensus exists among careful scholars.⁴¹ At present, it seems likely that there are some industries in which a proprietary model based on exclusive property rights maximizes innovation and others in which that model diminishes innovation.⁴² There are places in the book where Benkler seems ready to concede as much.⁴³ But there are other places where Benkler gets ahead of himself. For example, Benkler summarizes the literature in this way:

Let us call a rule set that is looser from the perspective of access to existing information resources Rule Set A, and a rule set that imposes

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38. The book mentions trade secrets once in passing, in the context of a discussion about vote tallying machines and their proprietary software. See BENKLER, *supra* note 3, at 227.
39. Trade secret protection is probably the most common “substitute” for patent protection, but it is not the only one. Other options include leveraging patents for complementary products, aggressive branding campaigns that rely on trademark law, and efforts to appropriate large first mover advantages.
40. See John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109, 109-10 (2000); Stephen P. Marks, *Tying Prometheus Down: The International Law of Human Genetic Manipulation*, 3 CHI. J. INT'L L. 115, 119-20 (2002).
41. See Keith E. Maskus, *Intellectual Property Rights and Economic Development*, 32 CASE W. RES. J. INT'L L. 471, 494-95 (2000) (“The analysis reviewed here claims that strengthening IPRS systems could raise or lower economic growth, though the relationships would be complex and dependent on circumstances.”). Maskus reviewed some of the empirical literature, *see id.* at 476-95, and concluded that the limited evidence suggests that stronger intellectual property rights promote economic growth and development, but only as “part of a coherent and broad set of complementary” trade, antitrust, and other economic policies, *id.* at 502.
42. Cf. Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003) (arguing that patent law does and should look very different across industries).
43. See, e.g., BENKLER, *supra* note 3, at 41, 49.

higher costs on access to information inputs Rule Set B. . . [I]t is *quite likely* that adopting B would depress information production and innovation, even if it were intended to increase the production of information by, for example, strengthening copyright or patent.⁴⁴

Broad generalizations like these are in my view premature, especially when we are confronted with a growing empirical economics literature that has achieved decidedly mixed results.

C. *On the Shoulders of Coase: A Framework for Understanding the Choice of Production Regimes*

Benkler's primary contribution in the early chapters of the book is not empirical. He relies on economists like Lerner to do the heavy lifting here. What Benkler adds to the discussion is a terrific theoretical insight, which is to extend Coasean economic analysis of the firm to social production via the commons. Here, Benkler nicely recounts his wonderful 2002 article, *Coase's Penguin, or, Linux and The Nature of the Firm*, which appeared in the pages of this law journal.⁴⁵

Ronald Coase is famous for many things,⁴⁶ but his scholarship on the nature of the firm ranks among his most important achievements. Coase saw that a proprietary firm inevitably performed some essential tasks in-house and relied on outside contractors, consultants, agents, or suppliers for other equally essential tasks. What determined which tasks were performed in-house or externally? Coase argued that the decision to produce in-house was a product of transaction costs. In a competitive market, if the transaction costs of dealing with outside agents or vendors were particularly high (say, because of the dangers of trade secret misappropriation, or the high costs of crafting contracts that dealt with uncertainties and unforeseen events, or the dangers associated with strategic behavior), then a firm would be inclined to perform the task in-house. If, by contrast, these and other transaction costs were low, then the firm

44. *Id.* at 305-06 (emphasis added).

45. Yochai Benkler, *Coase's Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369 (2002). In *Coase's Penguin*, Benkler shied away from characterizing social production as a "more efficient model of production for information and culture," stating that "[w]hen peer production will surpass the advantages that the other two models may have in triggering or directing human behavior through the relatively reliable and reasonably well-understood triggers of money and hierarchy is a matter for more detailed study." *Id.* at 381.

46. Extraneous citation to R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

could be expected to outsource the work via the marketplace.⁴⁷ Coase, in short, suggested that in a competitive market, firms are structured the way they are because of transaction costs.

Benkler was the first scholar to realize that just as transaction costs will sometimes dictate that some aspects of production be outsourced to other firms, they will sometimes dictate that production occur outside of the proprietary marketplace altogether. This is where social production comes in. Some resources can be produced most efficiently neither in-house nor by an outsourced firm, but by a large group of like-minded altruists, voluntarily contributing to their creation. Typically, the transaction cost savings of using social production depend on the reduced costs of identifying the person who can best accomplish a modular task within a larger project and of negotiating terms of employment with that person.⁴⁸ After all, the best available person for the job may well self-identify, and the contributor invariably will receive credit but no cash.⁴⁹

One of Benkler's strongest examples of social production provides a nice illustration of its possibilities. Astronomers at the University of California are engaged in the process of searching for extraterrestrial intelligence by analyzing radio astronomy signals for patterns that might indicate the presence of life outside our solar system. This is a task requiring enormous computational capacities. To that end, the brilliant folks at Berkeley had a neat idea: distribute a free screensaver to millions of computer owners. When these computer owners used their machines to type e-mails or play video games, SETI@home would make itself invisible. But when the computer users went to school, work, or sleep, their SETI@home screensaver would launch, and their machines would begin downloading small number-crunching problems that

47. See R.H. COASE, *THE FIRM, THE MARKET, AND THE LAW* 40-47 (1988).

48. See BENKLER, *supra* note 3, at 110-15.

49. Benkler recognizes the problem of inaccurate self-assessment, whereby the hapless contributor volunteers for the difficult project, which he will execute poorly. *See id.* at 112. Benkler sensibly suggests that the role of peer review in social production is to reduce the costs of inaccurate self-assessment, but such solutions are imperfect. Waiting for peer review to correct inaccurate self-assessment and to reopen a project for other volunteers imposes substantial production delays. Indeed, it may be that the proprietary market's approaches to this problem (e.g., headhunters, requests for proposals, management consultants, and market discipline) are often the superior approach. There may also be many circumstances in which another contributor could have done a far better job on a modular task but is deterred from doing so by the fact that someone else already has begun the effort. Cf. Michael Abramowicz, *A Theory of Copyright's Derivative Right and Related Doctrines*, 90 MINN. L. REV. 317 (2005) (discussing the implications of redundancy in copyright law).

would keep the CPUs occupied until their owners returned.⁵⁰ Once a notebook computer found the solution to one problem, it would upload that solution to the SETI@home servers and download a new problem. By utilizing the excess capacity of millions of notebooks and desktop machines, Berkeley created the fastest supercomputer in the world—a machine that ran 75% faster than the largest single supercomputer heretofore invented, IBM's Blue Gene/L.⁵¹

Berkeley might have gone a different route. Just as it might have built a single supercomputer or leased IBM's machine, it could have paid scattered computer owners for the temporary use of their excess capacity. But Benkler asserts that either approach would have been inefficient.⁵² IBM had lots of other uses for Blue Gene/L, making it a valuable and scarce commodity, and negotiating with individual users might have gotten complicated and expensive. Should computer owners with faster microprocessors be paid more? Would Berkeley negotiate with arbitragers? Instead of paying computer users for resources and incurring substantial transaction costs trying to answer these questions, Berkeley just accepted donations from anyone willing to contribute to a worthy collective cause: locating Wookies, Klingons, or other alien life forms in outer space. Discussions of the SETI@home program first appeared in the legal literature as far back as 2000.⁵³ Benkler's important contribution, though, is to show us a world in which projects like SETI@home are ubiquitous. Indeed, he anticipates that ours will become a world in which SETI@home is the norm and IBM's Blue Gene/L is the exception.

Where are these ubiquitous SETIs@home? Benkler sees them, convincingly, in Wikipedia and Slashdot.⁵⁴ More controversially, he identifies similar forms of social production in peer-to-peer file swapping networks, open source programming, the World Wide Web, massive multi-user online games like Second Life, the blogosphere, Internet search engine algorithms, experimental crop breeding, and WiFi Internet access.⁵⁵ Indeed, the dangers of writing a *book* about the Internet are exemplified by the emergence of new phenomena, such as podcasting, YouTube, Librivox, Digg, and MySpace, that seem to illustrate Benkler's thesis but were not at the forefront of popular

50. See BENKLER, *supra* note 3, at 82.

51. See *id.* at 81-82.

52. See *id.* at 114-15.

53. See, e.g., Kent Walker, *Where Everybody Knows Your Name: A Pragmatic Look at the Costs of Privacy and the Benefits of Information Exchange*, 2000 STAN. TECH. L. REV. 2, ¶ 54.

54. See BENKLER, *supra* note 3, at 70-74, 76-80.

55. See *id.* at 63-90, 216-25, 337-44. These examples are less clearly characterized as instances of social production in that market incentives may play a greater part in their success than the fact that they utilize nonmarket production. See *infra* Section II.C.

discourse when he was writing his manuscript. Assessing the terrain, and the buzz generated by some of these innovations, one gets the distinct impression that Benkler is on to something big.

Taking his argument further, Benkler says that the social production revolution will have demand-side effects as well as supply-side effects. More precisely, active consumers of creative content differ from passive consumers of creative content. The latter are being manipulated by large media conglomerates that will provide mind-numbingly banal, “lowest-common-denominator” content⁵⁶ designed to lull consumers into a mood that will make them receptive to commercial advertisers’ messages.⁵⁷ The former are more demanding of challenging, provocative, and stimulating content, and they are willing to take control over the environments that were spoiled when content creators let commercial interests trump their artistic integrity.⁵⁸ Benkler gets worked up about the vapidness of American pop culture here, noting that if music fans themselves can be tasked with identifying breakthrough acts, instead of relying on record labels and radio station conglomerates to do the sorting for them, “fewer mediocre musicians with attractive physiques will be sold as ‘geniuses.’”⁵⁹

I do not disagree with Benkler’s assessment that the television programs, music albums, and books that are most widely watched, listened to, and read by Americans are usually pretty bad. I will admit to elitism on that front and lay the blame where Benkler is reluctant to place it—with the consumers who refused to watch, say, *Arrested Development* despite the pleas of television critics across the land.⁶⁰ In any event, I do not wish to rehash the high-culture versus low-culture debates here. My purpose is more modest. Namely, I want to suggest that although his articulation of these demand-side arguments is thought-provoking, Benkler has misidentified the villain on this score.

Take television programming, about which Benkler spills the most ink. It is not the case that the market provides inadequate incentives for the production of excellent television content aimed at engaging intelligent viewers. The cable

56. BENKLER, *supra* note 3, at 165.

57. *Id.* at 170.

58. *See id.* at 171-74.

59. *Id.* at 426.

60. *See* Alessandra Stanley, *A Quick End to the Cult Series That Lived Up to Its Name*, N.Y. TIMES, Feb. 10, 2006, at E30.

network HBO is extremely profitable.⁶¹ It also produces the types of television programs the absence of which Benkler bemoans: stimulating, creative, provocative, critically acclaimed, and wonderfully addictive shows such as *The Sopranos*, *Six Feet Under*, *Deadwood*, and *The Wire*.⁶² These shows are also quite expensive to produce relative to their network television peers.

HBO is not PBS. Money drives its decision-making. But because subscriptions and DVD sales, not ads, provide its primary revenue stream,⁶³ it need not force content producers to stop the narrative flow every eight minutes so that advertisements can run. And because it is not a broadcast network, it need not comply with restrictive FCC regulations regarding profanity and sexual content. *The Wire* has never attracted sparkling Nielsen ratings, but its audience is strongly devoted to the show and is willing to ante up substantial monthly subscription fees.⁶⁴ *The Wire* thus avoided the fate of *Arrested Development*, which had a small but similarly devoted audience, because the economics of cable television work reasonably well for “long tail” content and the economics of broadcast television do not.⁶⁵ To the extent that Benkler’s attack on the quality of broadcast television offerings is correct, it suggests that the market is ripe for a shift to HBO’s subscription model or even to a pay-per-view model, both of which have become increasingly viable mechanisms for converting eyeballs into cash as a result of recent advances in digital rights management. It is far easier to imagine such developments in the marketplace than Benkler’s scenario of market-driven television’s displacement by amateur uploads to YouTube.⁶⁶

61. See Maureen Ryan, *While You Were Out . . . Tony, the Television World Changed, from New Sunday Competition to a Digital Video World*, CHI. TRIB., Mar. 5, 2006, § 7 (Arts & Entertainment), at 1.

62. See, e.g., Bill Carter, *The Emmys: HBO Batters Broadcasters*, N.Y. TIMES, July 16, 2004, at E1. Of course, not everything HBO touches turns to gold. Consider *The Mind of the Married Man*, *K Street*, *The Comeback*, and *Big Love*.

63. Ryan, *supra* note 61.

64. See Joshua Chaffin, *Cult Hit Shows Are Hitting a Right Note as Strategy Pulls in the Viewers*, FIN. TIMES, Nov. 22, 2006, at 27.

65. See CHRIS ANDERSON, *THE LONG TAIL: WHY THE FUTURE OF BUSINESS IS SELLING LESS OF MORE* 164-67, 194-96 (2006).

66. See BENKLER, *supra* note 3, at 168 (“The high-production-cost Hollywood movie or television series are the threatened species.”).

D. On the Shoulders of Rawls: Distributional and Political Consequences of Social Production

In the book's most ambitious chapter, Benkler asserts that social production will do more than alter the production of intellectual property content. It will also help reduce resource disparities between the world's haves and have-nots, creating a better society under the frameworks put forward by John Rawls and other liberal theorists.⁶⁷ Benkler's book rises to the challenge of those who assert that scholars interested in issues of social justice should direct their energies to things other than intellectual property law. This challenge asks why the Somali subsistence farmer or the Bolivian slum dweller should care about frivolous luxuries like Wikipedia or massive multi-user online games.⁶⁸

Such a critique has intuitive appeal. Of course, the same criticism can be launched at most law scholarship: what difference does Sarbanes-Oxley or the separation of powers or customary international law make in the lives of the world's billions of poor people? Most legal scholars would respond, "not much," and move on, suggesting that the legal questions to which they devote their time still affect enough people to be worth the enterprise. Benkler is not so quick to surrender. And good for him, because chapter nine, in which he defends the claim that "information policy has become a critical element of development policy,"⁶⁹ is the most exhilarating part of his book.

Benkler makes two persuasive claims in this chapter. First, he notes that the market and intellectual property systems of incentives largely determine which diseases are targeted by pharmaceutical companies. Would the marginal dollar spent on a cure for malaria do more "good" than the marginal dollar spent on an acne treatment? Certainly, by virtually any defensible measure of social welfare. But malaria kills poor Africans and acne affects American teenagers from affluent families, so research and development resources flow toward therapies for the relatively trivial medical condition.⁷⁰ If rewards for

67. *See id.* at 303-08.

68. *Id.* at 301.

69. *Id.* at 302.

70. *See id.* at 318. Of course, the story here is more complicated than Benkler's telling suggests. Low per capita GDP in the parts of the world affected by malaria may explain pharmaceutical firms' lack of investment in malaria research. But so might the (legitimate) fear that if pharmaceutical firms do develop an effective treatment, their patent rights will be expropriated by developing world governments. And who can blame them? Faced with a disease, like HIV, that threatens large swaths of the population and with a shortfall of funds to pay for the cure, a democratically elected government official would be sorely tempted to

pharmaceutical innovation were not so heavily dependent on patent revenues, which are in turn dependent on consumers' respective abilities to pay, we might well see an allocation of research and development dollars that saved more lives and better reflected society's moral intuitions.

Second, Benkler points out that information outputs can be particularly valuable for developing nations. Widespread access to science and engineering texts, without more, will not improve a country's lot, but the availability of such resources combined with other investments in education might help a country modernize its economy in a generation or two.⁷¹ Genetically modified crops can go a very long way toward preventing malnutrition in the developing world, but many crops that achieve much higher per-acre yields are proprietary and hence unavailable to most farmers in developing countries.⁷² And mass media monopolies can help keep dictators in power. The decentralized Internet poses a fundamental challenge to authoritarian regimes because it raises the possibility that an eloquent dissident will be heard and echoed.⁷³

Most imaginatively, Benkler wonders about the possibility of something like *malariavaccine@home*, whereby computer users around the world devote excess computing capacity to the modeling and number-crunching that is essential to modern pharmaceutical research and development.⁷⁴ If market economics drive firms to invest in acne improvements rather than malaria, but people with computing resources to spare view malaria as the greater social problem, then distributed computing and social production might offset the marketplace's questionable priorities. Both of Benkler's arguments suggest that reforming domestic and international intellectual property laws can significantly reduce the rich-poor gap. I say much more about these claims in Part III.

Benkler's final chapters are more orthodox than the earlier ones. Essentially, Benkler takes the American and European governments to task for a series of policy decisions that privilege market production over social production. Here, Benkler weighs in on many contemporary debates: the Digital Millennium Copyright Act (he's against it); the Copyright Term Extension Act (he's against it); the litigation against peer-to-peer file swappers

authorize generic manufacturers to enter the domestic market, notwithstanding their inability to obtain a license from the patent holder. Because developing nations cannot credibly commit to a nonappropriation policy, pharmaceutical firms are deterred from investing in badly needed therapies.

71. *See id.* at 326.

72. *See id.* at 336-43.

73. *See id.* at 266-71.

74. *See id.* at 351-52.

(he's against it); trademark antidilution protection (he's against it); database protection (he's against it); and international intellectual property harmonization (he's against it, or at least against its recent manifestations). You get the idea. Benkler does not like much of what Congress has been doing in the realm of intellectual property protection, and he is equally skeptical that courts and international entities can get it right. He forthrightly says he does not know whether these policies will succeed in thwarting the social production revolution, but he worries that they will do a great deal of damage.⁷⁵

I agree with much of what Benkler says in these chapters, emphatically so in the case of the 1998 Copyright Term Extension Act. But Benkler's views about these subjects hardly differentiate him from the majority of intellectual property professors who write about these issues.⁷⁶ Many of us share Benkler's normative priors, empirical hunches, and dim view of recent congressional action. What is particularly interesting about these chapters is what Benkler fails to say.

Benkler sees the anti-social-production bias of congressional action as the product of naked interest group rent-seeking.⁷⁷ The creative industries have powerful lobbyists, and the public domain does not. Content creators can organize easily, but consumers cannot.⁷⁸ It is a familiar public choice refrain. Curiously, Benkler devotes chapter ten of his book to discussing the Internet's effect on social relations, arguing that the Internet actually strengthens ties among people. And Benkler painstakingly assembles evidence indicating that the Internet might help galvanize political action: "wired" neighborhoods seem to be fertile ground for political action;⁷⁹ blogosphere reactions have helped alter the national political discourse on several occasions;⁸⁰ and Meetup.com is a website that helps like-minded citizens find each other and organize

75. See *id.* at 471-72.

76. See, e.g., WILLIAM W. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT (2004); James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, LAW & CONTEMP. PROBS., Winter/Spring 2003, at 33; Dan L. Burk & Julie E. Cohen, *Fair Use Infrastructure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41 (2001); Lawrence Lessig, *The Architecture of Innovation*, 51 DUKE L.J. 1783 (2002).

77. See BENKLER, *supra* note 3, at 393.

78. See, e.g., *id.* at 407-08, 413-14.

79. See *id.* at 363.

80. See, e.g., *id.* at 220-25 (describing the blogosphere discussion of the Sinclair Broadcast Group's anti-John Kerry documentary); *id.* at 225-33 (the Diebold Election Systems controversy); *id.* at 263-64 (the Trent Lott scandal).

politically.⁸¹ In light of these trends, it is difficult to understand why Benkler shies away from the claim that social production will have as important an effect on political life as it has had on consumer culture.⁸² Indeed, Benkler devotes just a few sentences to Meetup, even though it was famously used by Howard Dean supporters in the 2004 presidential primaries to launch their candidate to the front of a crowded Democratic field.⁸³ As published, chapter ten seems like a puzzling detour from the core of Benkler's argument. Suggesting that the Internet will alter the political calculus in Washington and state capitals seems like the sensible means of connecting the dots.

Someone reading Benkler's analysis of social networks and social ties naturally will wonder whether Congress will have such an easy time re-extending the copyright term in 2018, when a vast swath of copyrights are set to expire. By that time, there will be, on Benkler's account, a large community of content producers who remix audio and video content and an even larger community of people to enjoy these remixes.⁸⁴ The Internet and subsequent communication technologies will have helped strengthen social ties, thus lowering the costs of assembling political movements. Every trend that Benkler identifies suggests that the political dynamics of copyright term extension in 2018 will be very different from what they were in 1998. But Benkler, who is rather optimistic about almost everything else, is curiously silent about whether social production will irreversibly alter the political balance of power.⁸⁵ It is an argument that others have embraced,⁸⁶ so its absence from Benkler's text is conspicuous. Maybe there is a strong basis for Benkler's uncharacteristic pessimism here, but having been persuaded by much of his analysis, I am dying to know his reasons.

81. See *id.* at 368.

82. For a brief discussion of the organizations that are currently blowing into the wind, see *id.* at 455-56.

83. See Matea Gold, *Where Political Influence Is Only a Keyboard Away*, L.A. TIMES, Dec. 21, 2003, at A41.

84. Cf. BENKLER, *supra* note 3, at 418-28 (discussing the rise of music sharing communities and the possible growth of video sharing communities).

85. See *id.* at 442-43.

86. See, e.g., JOHN ALDERMAN, SONIC BOOM: NAPSTER, MP3, AND THE NEW PIONEERS OF MUSIC 155-56 (2001); JOE TRIPPI, THE REVOLUTION WILL NOT BE TELEVISUED: DEMOCRACY, THE INTERNET, AND THE OVERTHROW OF EVERYTHING (2004); Jeffrey M. Ayres, *From the Streets to the Internet: The Cyber-Diffusion of Contention*, 566 ANNALS AM. ACAD. POL. & SOC. SCI. 132 (1999); Stephen M. Johnson, *The Internet Changes Everything: Revolutionizing Public Participation and Access to Government Information Through the Internet*, 50 ADMIN. L. REV. 277 (1998).

Before concluding this brief sketch of Benkler's argument, I want to mention a final reason why readers interested in intellectual property and information economics should read Benkler's book. It is free. Benkler has made his book available under a Creative Commons license, encouraging users to remix it, improve it, convert it to a book on tape, or merely read it without paying.⁸⁷ Benkler's decision is laudable and refreshing, and his ability to convince Yale University Press to abide by such an arrangement is a big deal. The publication of Benkler's book under these terms promises to set a precedent that will make similar arrangements more common in the future, and that is certainly a heartening development.

II. THE HEALTH OF NETWORKS: DANGERS FACED BY SOCIAL PRODUCTION

Benkler has chosen to write his book fairly early in the life cycle of communications-technology-driven social production. And his book is clearly bullish on social production, to the extent that he sometimes underestimates important pitfalls that social production is already facing or will face in the future. In this Part, I discuss several challenges to social production—those posed by changing user populations, economic responses by market producers who are competing with social producers, and the possibility that proprietary firms will appropriate the methods of social producers. Taken together, these challenges are daunting, and they might push social production to the peripheries of the new economy.

A. *March of the Trolls*

The success of many socially produced resources, such as open source programming projects, is explained by their targeting of highly sophisticated and skilled users for participation.⁸⁸ Peer-to-peer file swapping applications initially relied on goodwill and reciprocity to encourage uploading,⁸⁹ and then began mandating uploads or providing incentives to share content (via

87. At present, users can do so here: http://www.benkler.org/wealth_of_networks/index.php/Download_PDFs_of_the_book (last visited Mar. 27, 2007).

88. See Lerner & Tirole, *supra* note 22, at 204-07.

89. See Lior Jacob Strahilevitz, *Charismatic Code, Social Norms, and the Emergence of Cooperation on the File-Swapping Networks*, 89 VA. L. REV. 505, 547-75 (2003).

prioritized downloads for users who uploaded frequently).⁹⁰ Wikipedia, which Benkler discusses at length, initially let anyone add or edit encyclopedia entries, and then began requiring authors to register before adding entries, based on the fear that false, malicious, or libelous content was being posted by people with axes to grind.⁹¹ Internet chat rooms or blog comments began with useful discussions, and then saw their initial audience driven out by spammers, flammers, trolls, and know-nothings. It is a common tale, and it has afflicted a large portion of the Internet.

There is an important lesson in these trends. Benkler's colleague Henry Smith has noted that when society regulates a collective resource, it has two sorts of options: governance or exclusion.⁹² Suppose a community runs a weekend food festival in a public park. It can opt for a governance strategy, letting anyone set up a booth and then regulating the behavior of vendors (e.g., by having a health inspector conduct random checks of each vendor's operations, by regulating the fat content of food that can be served, or by controlling the profit margins of each vendor). Alternatively, it can choose an exclusion strategy, keeping out disreputable or unknown vendors but then giving vendors relatively free rein at the festival (e.g., by admitting only vendors affiliated with a Zagat-rated or Michelin-starred restaurant or by requiring every admitted vendor to be a member of the Better Business Bureau). Plainly, the optimal regulatory strategy will sometimes involve a mix of governance and exclusion, but Smith's chief insight has broad application: you can control what users of the resource do or, as a substitute, control what kinds of people get to use the resource.

What does our food festival have to do with Benkler's book? The reason so many Internet-based forms of social production seem initially promising has to do with selection effects. Many web-based discussion forums thrive based on the expertise of a small number of contributors. But if a forum achieves notoriety in the mass media via links from popular Internet portals, the successful forum will experience an inevitable increase in the quantity of posts and a decrease in the average quality of posts. Trolls will push out the sensible

90. See, e.g., Answers.com, File Sharing, <http://www.answers.com/topic/file-sharing> (last visited Mar. 27, 2007); Raymond, *How To Cheat BitTorrent Ratio by Spoofing*, Raymond.CC Blog, July 27, 2006, <http://www.raymond.cc/blog/archives/2006/07/27/how-to-cheat-bittorrent-ratio-by-spoofing/>.

91. See *Will Wikipedia Mean the End of Traditional Encyclopedias?*, WALL ST. J. ONLINE, Sept. 12, 2006, http://online.wsj.com/public/article/SB115756239753455284-A4hdSU1xZOC9Y9PFhJZV16jFILM_20070911.html.

92. See Henry E. Smith, *Exclusion Versus Governance: Two Strategies for Delineating Property Rights*, 31 J. LEGAL STUD. 453 (2002).

discussants in short order.⁹³ This will cause the proprietors of these websites to begin implementing onerous governance rules, such as deleting off-topic comments, instituting content guidelines, prohibiting anonymous posts, and the like. Pure social production can work very well for a relatively small group of people who toil obscurely. But once the product of their labors becomes economically valuable or politically influential, the riff-raff will be drawn in, and the quality of the collective resource might well decline as a result. More generally, quality-diminishing users tend to stay away from obscure or technical resources. After all, what is the point of being a troll where there are few people around to read your comments? If a socially produced resource matures and goes mainstream, it becomes an increasingly inviting target for attack.

An important question that Benkler does not adequately confront is whether socially produced resources are as resilient to malicious users as are market resources. The answer to that question is by no means clear. If a proprietary firm discovers that one of its employees is not contributing her fair share to the firm's bottom line, that employee can be fired. In egregious cases, involving employee sabotage and the like, blackballing and litigation provide further sanctioning opportunities, and the availability of these sanctions substantially constrains employee misbehavior. These strategies are not nearly as effective in preventing misbehavior within social production projects: the producers are not employees, they may well be anonymous or pseudonymous, and litigation will not be a practical option for various reasons.

Benkler addresses these important issues in his book, providing an interesting case study of Slashdot's largely successful strategy for filtering and accreditation, which is designed to marginalize the contributions of quality-diminishing users. To facilitate the removal of useless or off-topic commentary, Slashdot has developed a "karma" system, whereby users evaluate other users' comments for their contributions to the collective discourse. Comments deemed informative or humorous will generate good karma points for the users who post them, and comments deemed uninformative or off-topic will bring bad karma points.⁹⁴ Slashdot readers can then decide to filter their comments so that the posts of users with bad karma profiles will not appear on their screens. To be sure, some intelligent or funny comments will be suppressed through this system. Even a blind hog finds an

93. The account presented here is similar to an account of how MySpace went from "cool" to "lame" as its user base expanded. See Aman Batheja, *Overgrown Online: MySpace's Meteoric Growth Might Be Its Own Undoing*, FORT WORTH STAR-TELEGRAM, May 14, 2006, at 1F.

94. See BENKLER, *supra* note 3, at 76-80.

acorn now and again. Still, Slashdot's system is elegant, if cumbersome and underinclusive.

The Slashdot experience might not be generalizable, however. The karma system does a fine job of dealing with the occasional annoying troll, but a few dozen trolls, working together to rate each other's posts positively, could threaten the karma system. This objection has proven not to be an issue for Slashdot, which bills itself as a source of "news for nerds" and benefits from self-selection among its readers, who tend to be relatively intelligent and predisposed toward cooperation in the site's karma-scoring system.⁹⁵ Moreover, Slashdot has no natural predators. Because it threatens neither the business model of a large firm nor the ideological interests of a well-organized interest group, there is little chance of a coordinated attack on its karma system. The same cannot be said for other socially produced resources, which means that the Slashdot model might have limited applicability. Indeed, the modus operandi of websites like Digg.com, which uses a reputation system similar to Slashdot's, has been threatened by commercial interests using kickbacks to ensure that articles about their products are promoted by Digg users with very strong reputations.⁹⁶

Wikipedia, another socially produced resource, has faced several distinct types of threats. The primary threats consisted of pranksters and ideologues. The former wished to reduce the encyclopedia's accuracy as a way of having fun. The latter wished to alter the encyclopedia's content as a way of spreading their own beliefs about controversial subjects. Wikipedia has been able to mitigate these problems through a series of governance rules: barring anonymous edits and flagging as "controversial" material that was subject to frequent revision and re-revision. Wikipedia has also faced a threat much like the one that posed legal headaches for peer-to-peer networks: plagiarism by Wikipedia authors. Here, Wikipedia has relied on its readers to identify and police instances of plagiarism.⁹⁷ Wikipedia has had a somewhat easier time with this problem than have the peer-to-peer networks, for understandable reasons. Without the widespread availability of unlicensed copies of media content, few people would be interested in using peer-to-peer networks.

95. A slogan like "news for nerds" is a nice illustration of the "exclusionary vibe," whereby language is used to create a focal point for like-minded users. For a fuller discussion, see Lior Jacob Strahilevitz, *Information Asymmetries and the Rights To Exclude*, 104 MICH. L. REV. 1835, 1850-57 (2006).

96. See Dan Mitchell, *Stuffing the Electronic Ballot Box*, N.Y. TIMES, Dec. 23, 2006, at C5.

97. See Wikipedia: Copyright Problems, http://en.wikipedia.org/wiki/Wikipedia:Copyright_problems (last visited Mar. 27, 2007).

Wikipedia, however, would still provide an attractive resource even if all of its infringing content were removed.

Now suppose that Encyclopedia Britannica determined that Wikipedia's success was cutting into Britannica's profit margins. Suppose that the makers of Britannica began hiring people to implant objective errors into Wikipedia's text that might not get corrected by Wikipedia's editors but that would make some people who relied on those erroneous entries look foolish. Britannica might defeat Wikipedia's accreditation controls by hiring others to affirm the correctness of erroneous entries. To the best of my knowledge, this has not happened, and Britannica might suffer substantial reputational sanctions in the publishing industry if it tried this approach. Indeed, there might be legal liability for Britannica too, perhaps under an unfair competition cause of action.⁹⁸ This hypothetical Britannica example does have a real-world analogue, though. It is a close cousin to the strategy adopted by the Recording Industry Association of America against the peer-to-peer file swapping networks. In a process called spoofing, the recording industry hired various third parties to create corrupted versions of sound recordings and upload them repeatedly to the peer-to-peer networks, where they were passed along by unsuspecting users. This spoofing practice substantially raised the frustration costs associated with using the peer-to-peer networks and may have driven many users toward iTunes and other outlets for licensed copies of mp3 sound recordings.⁹⁹ In short, even social producers like Wikipedia that have not been confronted with well-organized, malicious campaigns can expect to encounter them as they pose increasing threats to the business models of proprietary firms.

B. Excess Capacity as Profit Opportunity

If Benkler's prognostications about the future are right, then social production will increasingly take "market share" away from firms following proprietary models. Benkler's analysis of how proprietary firms will respond focuses almost exclusively on their likely lobbying efforts, but their responses in the marketplace may be more potent than their legislative efforts. Some firms, like Britannica, will respond to the challenge by trying to build a better proprietary product or by informing consumers about the pros and cons of the

98. Wikipedia's status as a nonprofit entity might not be fatal to its pursuit of an intentional interference with business advantage cause of action. See *Am. Baptist Churches v. Galloway*, 710 N.Y.S.2d 12, 15-17 (App. Div. 2000).

99. See Strahilevitz, *supra* note 89, at 585.

proprietary and socially produced products. Other firms, like those in the recording industry, will attack their social production foes directly, through spoofing-like strategies.

There is a third type of strategy against social production that we can expect clever firms to pursue. Suppose that projects like SETI@home ultimately eat into the sales of IBM and other supercomputers. How might IBM respond? Recall Benkler's argument that large-scale social production can only arise when excess capacity exists in the system. Lots of people have extra computing resources and no ability to do anything with those resources, so they are all too happy to donate those resources to the search for little green men, a malaria cure, or whatnot. But suppose a new firm, Acme Networking, entered the market: Acme pays PC owners for their excess computing resources and then aggregates these resources for sale to proprietary pharmaceutical firms or defense contractors. A PC owner would now face a choice: she could download the SETI@home screensaver and give away her excess capacity, or she could sell that excess capacity to Acme for \$3, \$5, or \$15 a month. A few people would still donate their excess capacity, but many more would now sell it to Acme.

Benkler responds by arguing that the transaction costs of negotiating a contract between Acme and computer owners would exceed Acme's potential to profit from this arrangement.¹⁰⁰ I am not completely convinced,¹⁰¹ but even if Benkler is right, it is easy to imagine next-generation computing devices profoundly altering the calculus in a way that empowers the Acmes of the world. Excess capacity exists on PCs because a user can access data off his personal hard drive more quickly than he can access data from a remote server. But the rise of networked computing and broadband connections has substantially reduced the discrepancy between these methods of retrieving data. Further reductions in that differential could make the individual PC hard drive a thing of the past, thanks to economies of scale. As soon as that happens, it is easy to imagine firms offering computer users a pricing scheme that

100. See BENKLER, *supra* note 3, at 82-83, 109-10.

101. Benkler currently has the facts on his side, noting that "[o]nly two of about sixty projects active in 2004 were built on a pay-per-contribution basis, and these were quite small-scale by comparison to many of the others." *Id.* at 83. Still, one wonders why Berkeley did not just offer a \$1 million reward to the user whose computer happened to be the one that performed the calculations enabling Berkeley astronomers to notice the first signs of extraterrestrial life. Paying such a bounty would have been unlikely to "crowd out" altruistic contributions to the project, and the associated transaction costs would have been miniscule. Perhaps the early movers in distributed computing were unlikely to be proprietary firms because the stakes initially seemed too low, or perhaps nonprofit entities ran into too much red tape when they contemplated paying for contributions.

charges them for the amount of data that they actually process, not the amount of data that their system might store and access if operating at capacity. “Extra” hard drive space and processor capacity could become a relic of the past within the next decade.

Benkler’s analysis of social production, then, implies that money is being left on the table. When there is money on the table, startups like Acme eventually figure out ways to grab it. And, in this case, proprietary firms facing competition from social producers would have an incentive to underwrite Acme’s entry into the marketplace. How would SETI@home respond to this challenge? It’s hard to say. It might start paying people for their excess capacity. But at that point, it would no longer be in the social production “business.” It might survive with fewer contributions. But then it would no longer look like the wave of the future. Rather, it would exist as a nice way for a small, self-selecting group of do-gooders to donate a resource that most people managed to sell.

In essence, by identifying excess capacity as a key ingredient to social production, Benkler has simultaneously pointed to social production’s Achilles heel. Where we observe excess capacity, and social production is the only thing exploiting that capacity, a market opportunity exists. Once excess capacity becomes significant enough to engender substantial opportunities for doing good in the world, social production projects will face real competition from proprietary firms over that capacity. At present, computer users’ excess capacity remains largely untapped by the proprietary market. But make no mistake: this is a temporary situation, sure to change as technology evolves.

We are already seeing proprietary firms tap the sort of excess human capital that drives Wikipedia. Amazon has launched the “Mechanical Turk,”¹⁰² a “crowdsourcing” website that pays volunteers amounts ranging from a penny to several dollars for performing tasks that cannot be automated on a cost-effective basis.¹⁰³ Crowdsourcing entrepreneurs see their sites as a threat to Wikipedia and social networking websites at which users receive no monetary rewards for their contributions.¹⁰⁴ Of course, writing a Wikipedia entry may be more fun than responding to a survey, identifying faces in a photograph, or transcribing audio clips – tasks currently assigned to Mechanical Turk workers. Despite this, the website seems to attract “hobbyists” not too different from the

102. Amazon Mechanical Turk, <http://www.mturk.com> (last visited Apr. 3, 2007).

103. Gregory M. Lamb, *When Workers Turn into “Turkers,”* CHRISTIAN SCI. MONITOR, Nov. 2, 2006, at 13.

104. *See id.*

amateurs who would contribute to Wikipedia.¹⁰⁵ Indeed, competition from websites like Metacafe, which pays amateur video producers for content, has prompted YouTube to announce a revealing about-face; it will begin paying its more successful video content creators later this year.¹⁰⁶

The initial success of Mechanical Turk in paying people to contribute labor via the Internet raises one glaring question. Why hasn't my hypothetical Acme Corporation entered the market for excess physical capacity? In reality, a variant of the Acme business model has developed, though on an in-kind, rather than cash, basis. Aptly enough, it is the Acme model that has made peer-to-peer file swapping application development a potentially profitable enterprise. The business method pursued by Kazaa, Morpheus, and many other developers of peer-to-peer applications depended on bundling those desirable applications with undesirable spyware.¹⁰⁷ Users sometimes had to opt out of installing the spyware along with the peer-to-peer applications and other times lacked opt-out or uninstallation opportunities.¹⁰⁸ Spyware currently infects approximately 90% of all Internet-connected computers, and most computer users are unaware that spyware is running in the background, monitoring their online activities.¹⁰⁹ Spyware did two things: it tracked the online activities of people on whose computers it had been installed, and it absorbed large quantities of the users' excess computing capacity to do so. On many machines, bundled peer-to-peer spyware dramatically reduced available computing resources.¹¹⁰ Some spyware programs sucked away not only excess capacity, but necessary capacity that users relied on for basic applications, resulting in system crashes.¹¹¹

Benkler's book is plainly conflicted about the use of peer-to-peer applications. He loves the technology but disapproves of its use for the purposes of copyright infringement.¹¹² Yet the untold story of peer-to-peer

105. *See id.*

106. Bob Tedeschi, *New Hot Properties: YouTube Celebrities*, N.Y. TIMES, Feb. 26, 2007, at C1.

107. *See* Martin Boldt et al., *Exploring Spyware Effects* 6 (2004), http://psi.bth.se/mbo/exploring_spyware_effects-nordsec2004.pdf.

108. *See* Laxma Nandikonda, *Users Should Be Concerned of Spyware in Free P2P Software* 3-5 (Apr. 26-27, 2005), <http://www.tml.tkk.fi/Publications/C/18/nandikonda.pdf>.

109. *See* Boldt et al., *supra* note 107, at 2, 4.

110. *See id.* at 4.

111. *See* Nandikonda, *supra* note 108, at 5.

112. Compare Benkler's generally positive account of peer-to-peer technology on artists' pocketbooks and on information dissemination generally, *see* BENKLER, *supra* note 3, at 418-29, with his statements that "[p]eer-to-peer file sharing includes many instances of outright illegality practiced by tens of millions of Internet users," *id.* at 470, and that the plaintiffs'

networking is spyware bundling. There is no such thing as a free lunch, at least not after Napster. Users who downloaded unlicensed copies of mp3 sound recordings were paying for those files just as iTunes users were. The latter paid with cash, the former paid with computing resources, and many a functional PC was rendered virtually inoperable by bundled spyware and malware. Indeed, bundled spyware also imposed costs on social producers like SETI@home, by reducing the excess computing capacity that could be donated to worthy distributed computing projects.

There is a second wrinkle in the Acme story. This part of the story actually has to do with the weaknesses of intellectual property protection. Suppose that Merck wanted to purchase excess computing capacity from me, you, and others for the purposes of modeling new vaccines and crunching assorted numbers relating to the development of a new drug. This distributed-computing-based research and development would take place before Merck filed a patent application or sought FDA approval for its innovation. By contracting out computational tasks to numerous computers, Merck would be exposing ideas that could be misappropriated by a competitor firm, such as Pfizer, which might then seek to beat Merck to the punch and patent Merck's innovation out from under it. Contributing one or two computers to Merck's project would not permit Pfizer to glean much about Merck's research agenda. But analyzing the data from a few dozen computers might provide Pfizer with very valuable information.¹¹³

In principle, the law might protect Merck in these circumstances. If it turns out that Pfizer was able to reverse engineer Merck's new cancer therapy based on information gleaned from computer users' providing Merck with excess capacity, then Pfizer might be liable for trade secret misappropriation. Or it might not. A court could well hold that by disclosing proprietary information to strangers, Merck had failed to exercise the "reasonable precautions" that are the sine qua non of trade secret protection.¹¹⁴ Alternatively, even if Merck tried to protect itself by writing contracts that forbade users from peeking at the data that their machines were crunching, it would be relatively easy for Pfizer to cover its tracks, convincing a court that it arrived at the insights relating to

claims in the peer-to-peer litigation "seemed the most morally compelling" of the creative industry's various efforts to curtail social production, *id.* at 471.

113. For example, firms can gain a substantial market advantage by learning not only about a competitor's successful innovations, but also about "negative knowledge"—unsuccessful dead ends that a competitor invested in and then abandoned. For that reason, the law protects information about these dead ends as trade secrets. See *On-Line Techs., Inc. v. Perkin-Elmer Corp.*, 253 F. Supp. 2d 313, 323-24, 333 (D. Conn. 2003).

114. See *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 179-80 (7th Cir. 1991).

Merck's line of research through legally permissible independent invention and not by inducing contractual breaches. Intellectual property law thus might help explain not only social production, but the puzzling persistence of excess capacity as well. Nonprofit entities seeking to find extraterrestrial life do not need to worry too much about "competitors" misappropriating their findings via participation in a distributed computing project. Proprietary firms should, by contrast, worry a great deal about trade secret misappropriation.

C. If You Can't Beat Them, Appropriate Their Methods

At the close of 2006, Wikipedia founder Jimmy Wales made a telling announcement. He would be launching Wikiasari, a search engine that relied on human volunteers to help point computer users to the most relevant web pages. Wikiasari users who disagreed with the search engine's ranking of relevant responses to a query could propose an alternative ranking, which would then remain in effect until another user changed it.¹¹⁵ Wikiasari would closely resemble Wikipedia in that respect. There would be a crucial difference, though. Whereas Wikipedia is run by the nonprofit Wikimedia Foundation, Wikiasari would be managed by Wikia, a for-profit firm. Wikia had already begun raising seed money from investors, following a well-worn dot-com path.¹¹⁶

Though Berkeley's SETI@home and Wikipedia itself remain nonproprietary, many of the examples of social production that Benkler provides resemble Wikiasari in that they were organized by, and remain controlled by, profit-seeking firms. Benkler's examples of social production include Linden Lab, a proprietary software firm that developed Second Life, the massive multi-user online game in which users create much of the virtual world that players encounter;¹¹⁷ IBM, which has turned Linux-related service contracts into a major revenue stream;¹¹⁸ and Google, which has built a powerful search engine based on its own users' judgments of what search results are click-worthy.¹¹⁹

But these examples only scratch the surface. A large number of proprietary firms have duplicated Linden Lab's strategy of convincing their user bases to

115. Noam Cohen, *Something Wiki Is Coming to the Web Search Market*, N.Y. TIMES, Jan. 1, 2007, at C5.

116. *Id.*

117. See BENKLER, *supra* note 3, at 74-75.

118. See *id.* at 46-47.

119. See *id.* at 76.

engage in social production in service of the firms' bottom lines. MySpace has become a profitable social networking site with a successful business model, having convinced over 70 million users to create engaging content for free and having placed ads alongside that content.¹²⁰ YouTube follows a similar business model, pairing user-created video content with advertisements. Tripadvisor.com collects a wealth of information from its users about hotels, restaurants, airlines, and travel destinations, and then makes money by linking up users with the vendors being reviewed. Netflix collects millions of user evaluations of films and books, and then offers personalized recommendations to its users based on the predilections of those with similar tastes.¹²¹ Netflix also offers a "Friends" feature that allows users to see what DVDs their friends have watched and how well they liked them.¹²² iTunes lets users post and share lists of favorite songs—a new and improved version of a functionality that originally appeared on Napster. And the granddaddy of them all, eBay, has become enormously profitable thanks to a socially produced system of feedback rankings, whereby users evaluate each other's honesty, promptness, and courteousness.

Collectively, these examples suggest that social production is as likely to become a tool of market production as a competitor to it.¹²³ There is little reason to think that nonprofit entities will outcompete proprietary firms using the same decentralized, user-oriented production methods. This analysis suggests that some of the content that is currently socially produced will be brought back within the Coasean firm. For example, it is easy to imagine an ad-supported online encyclopedia, with some of its ad revenues diverted toward fact-checking and policing vandalism, displacing Wikipedia. Proprietary variants of open source programs are also easy to imagine, with firms making their source code available online and providing cash bounties to any contributor who can generate more elegant code or fix bugs. The nonproprietary sector may have been where social production first succeeded,

120. See Saul Hansell, *Making Friends Was Easy. Big Profit Is Tougher.: MySpace Is Ready for Its Members To Meet Advertisers*, N.Y. TIMES, Apr. 23, 2006, § 3 (Sunday Business), at 1.

121. Benkler discusses this phenomenon in the context of Amazon.com. See BENKLER, *supra* note 3, at 75.

122. It turns out that my colleague Adam Cox and I enjoy many of the same movies, with Netflix quantifying our tastes as "72% similar."

123. Cf. Lerner & Tirole, *supra* note 22, at 223-27 (discussing the efforts of various proprietary firms to benefit from open source programming projects or appropriate open source methods of production); Robert P. Merges, *A New Dynamism in the Public Domain*, 71 U. CHI. L. REV. 183 (2004) (observing that proprietary firms sometimes make strategic dedications to the public domain, so as to head off privatization of a collective resource and prevent the welfare losses that might result from an anticommons).

but the proprietary sector seems as likely to be the place where decentralized user production is perfected. Indeed, Netflix recently pursued just such a strategy, offering a million-dollar bounty to anyone who could help the company improve the accuracy of its algorithm for recommending films based on socially produced movie ratings.¹²⁴

If social production becomes a tool that is primarily employed by propriety firms, then it might no longer be appropriate to treat social production as a distinct analytical category.¹²⁵ To be sure, Linden Labs makes more money when a Second Life user creates a character or image that other users find compelling, and Netflix makes more money when its customers supply reliable movie ratings. Yet profit-seeking enterprises relied on their customers to create value long before the Internet was launched. A nightclub with a reputation for having stylish patrons attracts more paying customers. A real estate development reputed to have neighborly residents sees its property values rise. The rise of Second Life is in a sense not so different from the rise (and fall) of Studio 54.

III. THE PROGRESSIVITY OF NETWORKS

Benkler's application of transaction cost analysis to social production is a theme that was richly developed in his outstanding earlier work.¹²⁶ The really new and exciting part of *The Wealth of Networks* is Benkler's chapter on information policy as a tool for promoting global development. Here, Benkler champions social production as an effective force for closing the wealth gap that divides rich nations and people from poor nations and people.¹²⁷ To that end, he argues on behalf of numerous legal and political changes that will unleash the forces of social production, leaving the global economy transformed.¹²⁸

124. See *Netflix Offers \$1 Million Prize for Better Recommendations*, CHI. TRIB., Oct. 3, 2006, at 3. For earlier examples of this sort of behavior by proprietary firms, see Hilmar Schmundt, *Using the Internet To Solve R&D Problems*, SPIEGEL ONLINE INT'L, Dec. 19, 2005, <http://www.spiegel.de/international/spiegel/0,1518,392055,00.html>.

125. Recall Benkler's apparent definition of social production *supra* text accompanying note 6.

126. See, e.g., Benkler, *supra* note 45; Yochai Benkler, *Intellectual Property and the Organization of Information Production*, 22 INT'L REV. L. & ECON. 81 (2002); Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production*, 114 YALE L.J. 273 (2004).

127. See, e.g., BENKLER, *supra* note 3, at 308.

128. See *id.* at 317-55, 383-456.

Benkler's claims here are both categorical and specific. At the broadest level, Benkler notes the propensity for socially produced resources to be made available free of charge, enabling the poor to access basic information and marketplaces, which they would be unable to do if forced to pay, as is typically the case for proprietary resources.¹²⁹ More concretely, Benkler submits that social production has enormous potential to help the poor obtain life's necessities, such as pharmaceuticals and genetically engineered seeds,¹³⁰ as well as tools such as free software and educational texts that can help them compete in a global economy.¹³¹

Benkler's bold analysis runs into two major problems here, however. First, as proprietary firms increasingly employ the means used by social producers, we will see them roll out social production technologies that seem poised to divide the rich and the poor, rather than bring them together. Socially produced reputation systems seem as commercially promising as any of the socially produced resources that Benkler discusses, and these reputation systems' primary function is to reward the trustworthy and punish the untrustworthy. As society increasingly comes to rely on reputation and feedback, as the reliability of these mechanisms improves, and as reputations become transportable across platforms and applications, bad reputations will ensure that untrustworthy or discourteous people become and remain poor. At the same time, there is a real possibility that trustworthy and courteous residents of the developing world will have trouble succeeding in the global marketplace because of reputation-weighting measures designed to combat the fraudulent feedback problem.

Second, while Benkler is extremely well versed in transaction cost economics, his book neglects to grapple with a more recent, but nearly as important, development in law and economics: optimal redistribution analysis. Though facilitating growth in the developing world is a goal that policymakers should pursue, the literature on redistribution should make us wonder whether

129. *See id.* at 307. Some proprietary firms make their products available for free. These include ad-supported television broadcasters and online auctioneers like eBay (which charges no fee to buyers and takes a small cut out of sales prices). Indeed, it is plausible that eBay alone has helped lift more poor people out of poverty than the various social production projects Benkler has identified. The fact that eBay charges sellers a commission does not exclude the poor from participating in it, and the ambitious, small-time merchant probably does much better selling on eBay than she would do selling her wares on a socially produced auction site that did not charge a sales commission but, as a result, was less well run and did not have eBay's enormous base of buyers.

130. *See id.* at 311.

131. *See id.* at 320-28.

better tools than the ones Benkler has identified are available. Let us take these two arguments in order.

A. Reputation and Meritocracy

It is impossible to evaluate social production's net effect on economic inequality and global development without more fully understanding the socially produced resources that already exist or will be developed in the coming years. Reputation scoring is among the most important forms of social production to emerge in the last decade. Reputation scores are a socially produced resource under almost any definition—users of a network provide feedback about the performance of other network members and typically do not receive payment or other rewards in exchange for contributing to this valuable public good. eBay's feedback system has arguably revolutionized our economy as much as Linux and other open source programming projects have. In the coming years, we should expect to see the development of software applications that merge eBay-style feedback rankings with MySpace-style social networking capabilities. Current feedback systems will soon seem antiquated, and overall feedback scores like eBay's will be replaced with far more fine-grained data, allowing me to ask, for example, how well fellow University of Chicago professors or Berkley alumni rated a particular real estate agent, hair stylist, or tour guide. The rise of "wearable communities" might allow us to evaluate the reputations of strangers we encounter in public far more accurately than is currently possible.¹³² It seems plausible that within a short period of time, all of us, not just eBay sellers or restaurants, will be ranked and rated by our peers, and these reputation scores will be transportable across platforms, be they online or offline.

These socially produced ubiquitous reputation systems stand poised to generate enormous wealth. After all, they can help us reward the trustworthy and collectively deter or sanction the devious or opportunistic. Ubiquitous feedback networks will allow us to move beyond inaccurate snap judgments that lead us to trust someone or not based on her race, apparel, accent, name, or beauty. At the same time, these technologies could help ensure the persistence of a reputational underclass. Social production stands poised to make the structure of societal relations far more transparent than it currently is,

132. See Jerry Kang & Dana Cuff, *Pervasive Computing: Embedding the Public Sphere*, 62 WASH. & LEE L. REV. 93, 112-15, 134-36 (2005); Lior Jacob Strahilevitz, "How's My Driving?" for Everyone (and Everything?), 81 N.Y.U. L. REV. 1699, 1761 n.231 (2006).

and that transparency will facilitate forms of exclusion that are not currently possible.

In short, it is impossible to characterize the distributional consequences of social production without knowing more about the extent to which society will embrace socially produced ubiquitous feedback networks. If they succeed in weeding out false or biased feedback, such networks will reward merit, character, business savvy, and charm, in the process engendering both upward and downward mobility. At present, failures in the reputation information “marketplace” inappropriately prop up the undeserving rich and keep down the deserving poor. The implication for economic inequality seems clear in a world of accurate and ubiquitous socially produced reputation. Because there will always be people with deservedly poor reputations, there will always be poor people.¹³³

Some of this stratification is laudable. When a down-on-his luck conman cheats a well-off but naive senior citizen out of half of her retirement savings, we hardly want to applaud the wealth transfer for its progressivity. A chief advantage of well-functioning reputation and feedback systems is that they help solidify trust in the marketplace and encourage people to behave honestly and courteously. These benefits should be sufficient to alleviate our guilt about the effects that such systems have on the irredeemably dishonest and discourteous people among us. So whereas social production on the whole might increase economic inequality, its tendency to do so on meritocratic grounds should hardly render us hostile to the growth of social production.

One big question mark concerns the extent to which people in the developing world will be able to benefit from these socially produced reputation networks. An obvious shortcoming in the eBay feedback system is that all feedback is weighted equally. While eBay’s approach is in a sense more democratic, this weighting system ultimately makes feedback ratings less reliable. Second-generation reputation systems will assign more weight to feedback from users who themselves have received lots of positive feedback and

133. Benkler’s discussion of inequality begins with a survey of justice theories put forth by John Rawls, Ronald Dworkin, and Bruce Ackerman. See BENKLER, *supra* note 3, at 303-08. Benkler contrasts Rawls with Dworkin by arguing that Dworkin’s theory tolerates inequality that results from individuals’ personal choices and Rawls’s does not. See *id.* at 304. To the extent that socially produced reputation systems penalize those who make bad choices, this outcome may be tolerable under a Dworkinian framework and intolerable under a Rawlsian framework. At the very least, however, increased reliance on reputation systems could undercut Benkler’s claim that “[t]he networked information economy improves justice from the perspective of every single one of these theories of justice.” *Id.* at 305.

less weight to feedback from users with weaker reputations.¹³⁴ These same systems will allow me to assign extra weight to people whom I know, who are friends-of-friends, or who have some of the same institutional affiliations as me. These advances will be useful, but they may make it more difficult for an honest, capable entrepreneur in the developing world to attain the reputation capital necessary to trade with wealthy individuals in the developed world. If developing world residents encounter initially hostile feedback from westerners thanks to differing commercial norms or old-fashioned prejudices,¹³⁵ and this initial feedback scares away potential customers in the developed world, then reputation networks could ossify existing global wealth disparities.

The discussion so far has focused on the use of reputation systems in commercial settings. In the past year or so, a few developments have suggested the possibility of a new kind of social production revolution, one that employs that method of production to strengthen the enforcement of formal laws and informal norms. The Texas “virtual minutemen” project¹³⁶ may be an early sign of what is to come. An enterprising entrepreneur in New York City has allowed parents to slap “How’s My Nanny?” stickers on the backs of strollers, so that concerned citizens can report nanny misconduct to the parents of the affected children.¹³⁷ The Cincinnati Bengals football team has implemented a social production scheme to help maintain order at its games. Fans who witness hooliganism or rowdy behavior can call a telephone number and report it to stadium authorities, who will use cameras mounted all over the stadium to zoom in on the site of the report, verify the conduct, and take action against the offenders.¹³⁸ Similar Internet-based enterprises have sprung up recently to monitor, shame, and deter litterbugs, people who park illegally in disabled

134. See Bin Yu & Munindar P. Singh, *A Social Mechanism of Reputation Management in Electronic Communities*, in COOPERATIVE INFORMATION AGENTS IV: THE FUTURE OF INFORMATION AGENTS IN CYBERSPACE 154, 158 (Matthias Klusch & Larry Kerschberg eds., 2000).

135. Cf. Mark J.F. Lund & Steven McGuire, *Institutions and Development: Electronic Commerce and Economic Growth*, 26 *ORG. STUD.* 1743, 1753 (2005) (“As two studies of the South African furniture industry note, the existence of websites, and the willingness of managers to break into international markets, tells only part of the story. International customers often make demands in terms of product and support service quality that domestic customers do not make. The latter point is particularly important, for it draws attention to the human capital requirements for successful e-commerce.”).

136. See *supra* text accompanying note 1.

137. See Catherine Elsworth, *Pushchair Plates Spell Trouble for Bad Nannies*, *DAILY TELEGRAPH* (London), Oct. 21, 2006, at 6.

138. See Barrett J. Brunzman, *Bengals Get Tough on Boorish Fans*, *CINCINNATI ENQUIRER*, Aug. 8, 2006, at A1.

parking spots, and newspaper thieves.¹³⁹ These developments have not gone unnoticed in the legal academy. A young professor at a respectable school recently proposed the launch of a compulsory new social production system that would police aggressive and inconsiderate driving on urban roadways by requiring the installation of “How’s My Driving?” stickers on all passenger vehicles.¹⁴⁰

The enforcement of social norms has always been somewhat puzzling in light of the costs of sanctioning norm violators. Just as technology has facilitated the social production of creative content, these developments seem poised to facilitate the social production of law and norm enforcement. As a result, laws and norms will be enforced more efficiently, and those who violate laws or norms will be more readily identifiable. These sorts of developments may be worth applauding (or not),¹⁴¹ but it is difficult to argue that they will reduce inequality. It seems much more likely that by assisting in the identification and sanctioning of those who break the law or violate widely shared social norms, reputation and decentralized law enforcement systems will contribute to social and economic stratification.

B. Bill Gates Has Shoulders Too: Optimal Redistribution and Social Production

Let us assume, for the sake of argument, that the equality-promoting tendencies of social production that Benkler has identified trump the inequality-promoting tendencies that I have identified. Should we, as Benkler argues, promote economic equality by promoting social production? We can turn to the law and economics literature to help answer that question.

In 1994, Louis Kaplow and Steven Shavell published an important article in the *Journal of Legal Studies* arguing that distributive justice goals should be furthered not through the adoption of legal rules designed to help the poor, but through the tax system.¹⁴² Their argument was elegant and straightforward: “[E]ven though the income tax distorts work incentives, any

139. See Jennifer Saranow, *The Snoop Next Door*, WALL ST. J., Jan. 12, 2007, at W1.

140. See Strahilevitz, *supra* note 132. This “How’s My Driving?” regime depends on excess capacity—the extra time and attention that motorists stuck in gridlock or stopped at red lights can devote to reporting misconduct by fellow drivers.

141. I explore that question and examine how the legal doctrine should respond to the rise of ubiquitous reputation networks in an in-progress paper. See Lior Jacob Strahilevitz, *Reputation Nation: Law in an Era of Ubiquitous Feedback* (2007) (unpublished manuscript, on file with author).

142. Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994).

regime with an inefficient legal rule can be replaced by a regime with an efficient legal rule and a modified income tax system designed so that every person is made better off.”¹⁴³ Whenever the law embraces an inefficient legal rule for the sake of redistribution, resources are left on the table, and society is worse off than it otherwise might be.¹⁴⁴ Put another way, the tax system inevitably distorts less than legal rules do. While the tax system distorts incentives to work, an inefficient legal rule distorts labor incentives to the same degree, while simultaneously distorting incentives to engage in the conduct regulated by the legal rule. Although Kaplow and Shavell’s argument has been criticized by law and economics scholars,¹⁴⁵ it has held up rather well—so much so that many scholars now essentially take its conclusion for granted.¹⁴⁶

143. *Id.* at 669 (emphasis omitted).

144. Molly Shaffer Van Houweling has argued that this inefficiency may be tolerable in the copyright context because of the positive expressive externalities that result from speech. See Molly Shaffer Van Houweling, *Distributive Values in Copyright*, 83 TEX. L. REV. 1535, 1576–78 (2005). Essentially, she argued that society as a whole may be better off if a potential dissident expresses himself than if the dissident is bought off through a transfer payment, even if the dissident would prefer the cash to the expressive opportunity. See *id.* Whatever the merits of this argument in the domestic political context, it rings hollow in the global context, and Van Houweling has indicated a willingness to extend her argument beyond the borders of the nation-state. The global version of Van Houweling’s argument would be that an impoverished speaker may prefer to spend his money on food or medicine, but people in foreign countries would benefit more from his expression than his health, so he should not be able to accept payments for food or medicine in lieu of exercising his speech rights.

145. See, e.g., Ronen Avraham et al., *Revisiting the Roles of Legal Rules and Tax Rules in Income Redistribution: A Response to Kaplow & Shavell*, 89 IOWA L. REV. 1125 (2004); Chris William Sanchirico, *Taxes Versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. LEGAL STUD. 797 (2000).

146. Cf. Avraham et al., *supra* note 145, at 1127 (“In the mid-1990s, in what has come to be considered a classic article, Louis Kaplow and Steven Shavell made what seemed to be a decisive argument regarding the use of redistributive legal rules. They argued that income redistribution is *always* more efficiently accomplished through the tax-and-transfer system, even if the contracting-around and haphazardness issues are placed aside.”); Thomas S. Ulen, *A Crowded House: Socioeconomics (and Other) Additions to the Law School and Law and Economics Curricula*, 41 SAN DIEGO L. REV. 35, 52 (2004) (“[I]n a series of articles and now in an important book, Louis Kaplow and Steve Shavell have been arguing that it is more efficient to use the tax-and-transfer system than common law rules to redistribute income. This is an important claim that, in fact, has been and deserves to be taken seriously. And the claims of *Fairness Versus Welfare* are so extraordinarily far-reaching that the book has been and will continue to be reviewed extensively. My point is that this is not ideological advocacy on the part of Kaplow and Shavell; it is serious and important scholarship.”).

Kaplow and Shavell's basic argument has been applied to intellectual property¹⁴⁷ and international legal rules,¹⁴⁸ among other things.

We should apply this principle to Benkler's argument in two different ways. First, if the strong version of Benkler's empirical claim is right, and legal rules promoting social production are quite likely per se superior to legal rules promoting market production, then Benkler's analysis in chapter nine is unnecessary. The law should just embrace the purportedly efficient legal rules that Benkler has identified¹⁴⁹ and trust that doing so will create wealth that can make both the haves and the have-nots better off. If it turns out that social production promoting rules are wealth-maximizing but regressive, then society should redistribute some of the newly generated wealth to those made worse off by such rules.

If, however, the strongest version of Benkler's empirical conclusion is wrong, and legal rules that promote social production at the expense of proprietary production are sometimes inefficient, then by embracing those rules society could hinder economic progress in the developing world. Assuming social-production-promoting rules are wealth-diminishing but progressive, legislators and judges should instead adopt the most efficient legal rule and then promote redistribution of the surplus resources from the haves to the have-nots. This redistribution should be accomplished via the most efficient mechanism—direct transfer payments to the poor, regardless of where they live—or, as a second-best alternative, trade policies that are tailored to benefit poor countries.

There is likely a knee-jerk response to this second, more interesting, application of Kaplow and Shavell to Benkler. Namely, even if such wealth redistribution *could* occur, creating a Pareto-superior state of affairs, in reality it is unlikely to occur, resulting in a mere Kaldor-Hicks improvement over the inefficient but fairer pro-social-production legal rule. But it is not so crazy to imagine these transfers taking place. Such redistribution is occurring as you read these words.

The name "Bill Gates" does not appear in *The Wealth of Networks*, but his is the face most associated with the rise of the information economy. The world's richest person earned that title largely as a result of the incentives created by the intellectual property system. Gates and his spouse have announced that

147. See, e.g., Michael Abramowicz, *An Industrial Organization Approach to Copyright Law*, 46 WM. & MARY L. REV. 33, 70-71 (2004).

148. See, e.g., Howard F. Chang, *An Economic Analysis of Trade Measures To Protect the Global Environment*, 83 GEO. L.J. 2131, 2160-61 (1995).

149. See BENKLER, *supra* note 3, at 383-459.

they intend to devote the vast majority of their wealth to the Bill and Melinda Gates Foundation. That entity already has become the world's largest charitable foundation, with a \$33 billion endowment as of December 31, 2006,¹⁵⁰ and it has made fighting global poverty and disease its top priority.¹⁵¹ It seems unlikely that we can get more redistributive bang for our buck by tweaking intellectual property rules to promote social production than we can get by keeping the existing rules and facilitating the Gates Foundation's acquisition of an enormous pot of money to spend on the most promising anti-poverty programs it can identify. Assuming that social-production-promoting rules are not inherently more efficient than legal rules that promote market production, targeted assistance should dominate roundabout benefits.

The Gates Foundation example shows the complexity of the issues raised by chapter nine of Benkler's book. If we accept Benkler's premise that narrowing the gap between people in the developed and developing worlds is a moral imperative, but we are skeptical about Benkler's empirical claim that rules promoting social production are quite likely to be Pareto superior to rules promoting market production, then we must decide how best to further a laudable objective. It may well be that the adoption of efficient rules promoting market production is the best course of action because those rules enable the Microsofts of the world to amass enormous financial resources, which they then can and sometimes do redistribute in the service of the developing world. Failing that, tax-and-transfer policies and trade liberalization seem more likely to do the trick than altering domestic intellectual property laws.

Of course, there is nothing to guarantee that Bill and Melinda Gates will continue to devote their wealth to fighting global disease and poverty. They might donate their money to college athletic departments or well-endowed prep schools, as some other wealthy people do. But the same is true for social production. Much like tofu, social production has no taste of its own. Rather, it absorbs the preferences and values of its users. If participants in a social production network want to help keep poor Guatemalans from entering the rich United States in search of enhanced economic opportunities, they can do

150. Bill & Melinda Gates Found., Foundation Fact Sheet, <http://www.gatesfoundation.org/MediaCenter/FactSheet/> (last visited Apr. 5, 2007).

151. See Editorial, *Giving Rich Guys a Good Name: Buffett and Gates Conjure a Brilliant Philanthropic Merger*, MINNEAPOLIS STAR TRIB., July 1, 2006, at A18. The recently announced Google Foundation, Google.org, has also identified fighting poverty around the world as one of its primary objectives, and it seems particularly focused on fighting infectious diseases in the developing world. See Katie Hafner, *Philanthropy Google's Way: Not the Usual*, N.Y. TIMES, Sept. 14, 2006, at A1.

so. If computer owners want to spend their time looking for signs of alien life in outer space, and not disease cures for Earthlings, they can do so.

It is possible that average Joes have stronger abstract preferences for progressive resource redistribution than do wealthy entrepreneurs.¹⁵² But the available evidence does not seem to support that hypothesis. Rich Americans donate a higher percentage of their income to charity than do poor Americans,¹⁵³ and the nature of their contributions differs from those of the less affluent.¹⁵⁴ Survey evidence suggests relatively progressive goals among the very rich: multimillionaires identified educational improvements, poverty, inequality, hunger, affordable housing, and health care for the uninsured as the policy issues they most wanted to influence through their charitable giving,¹⁵⁵

152. The word “abstract” is key here. It should not be surprising if the have-nots are more favorably disposed to progressive income taxation than the haves, because unlike the haves, the have-nots would benefit from such redistribution.

153. See John J. Havens et al., *Charitable Giving: How Much, by Whom, to What, and How?*, in *THE NONPROFIT SECTOR: A RESEARCH HANDBOOK* 542, 545-46 (Walter W. Powell & Richard Steinberg eds., 2d ed. 2006). Of course, this hardly proves that the rich are more progressive. The rich may donate a higher percentage of their incomes because they have greater disposable income or because they benefit more from charitable contributions’ signaling function. On the latter, see POSNER, *supra* note 11, at 65-67; and Amihai Glazer & Kai A. Konrad, *A Signaling Explanation for Charity*, 86 *AM. ECON. REV.* 1019 (1996).

154. Poorer Americans overwhelmingly donate to religious organizations, whereas the wealthy are more likely to direct their money to educational institutions, health care causes, and human service organizations. Havens et al., *supra* note 153, at 558. It is not clear whether secular donations are more progressive (from a wealth redistribution perspective) than religious donations, and we would want to get a good handle on this data to answer definitively the comparative progressivity question. The available data suggest that American religious congregations spend approximately 3% of their annual budgets on assisting the poor, with expenditures on food, shelter, and clothing being the most common forms of redistribution. See Mark Cheves & William Tsitsos, *Congregations and Social Services: What They Do, How They Do It, and with Whom*, 30 *NONPROFIT & VOLUNTARY SECTOR Q.* 660, 670-71 (2001). It is worth noting that people often donate money to educational institutions or hospitals with which their families are not affiliated but rarely donate money to religious congregations to which they do not belong. This dynamic might suggest that religious donation is more closely connected with reciprocity than with progressivity. Cf. Lise Vesterlund, *Why Do People Give?*, in *THE NONPROFIT SECTOR*, *supra* note 153, at 568, 573 (comparing contributions to one’s own congregation to “a membership fee”).

155. Paul G. Schervish & John J. Havens, Boston Coll. Soc. Welfare Research Inst., Extended Report of the Wealth with Responsibility Study 16 (Mar. 2001), <http://www.bc.edu/research/swri/meta-elements/pdf/extendedwwr.pdf>.

though they seemed less committed to the cause of global development, relative to the Gates Foundation.¹⁵⁶

Finally, recent research into philanthropic motivations shows that money that is earned is much more likely to be donated to charity than money that is obtained via inheritance.¹⁵⁷ If intellectual property regimes are good at creating private wealth, then by extension they might be good at promoting progressive redistributions. In sum, if I have drawn the correct inferences from the available data, then the people who are made wealthy by exclusive rights to intellectual property may be more committed to combating resource inequality than are the millions of ordinary citizens who participate in social production projects.¹⁵⁸

CONCLUSION

Ponder for a moment the two stories I recounted at the outset.

The Governor of Texas uses social production to help keep job-seeking Latin American immigrants from entering the United States. This is an example of social production being used to reinforce existing economic inequality.

Telemarketers from the developing world begin using Skype, a VoIP network that had lowered the cost of voice communications to zero for many long-distance calls. As a result, Skype users stop accepting calls from people unknown to them, reducing much of the value of the communications network. The openness of the Skype network is threatened by the opportunistic new users, who do not share the values of the network's preexisting users.

These are two stories of social production, but they are stories with unhappy endings, at least if the relevant yardsticks are social equality, openness, and freedom. Such stories do not appear in *The Wealth of Networks*, but placing such stories alongside Benkler's sunnier account is essential if we

156. See *id.* There are problems with this reliance on Paul Schervish and John Havens's study because it found multimillionaires quite committed to tackling education and social welfare inequality, but it did not ask them to specify whether they wanted to improve those problems domestically, internationally, or both.

157. Havens et al., *supra* note 153, at 554.

158. Cf. *id.* at 560 (“[T]he high-tech boom of the 1990s created a great deal of wealth, especially among younger donors, whose entrepreneurial, investment orientation shaped the timing and form of their charitable giving. . . . [M]any recent foundations are the fruit of entrepreneurial and investment wealth accrued during the high-tech boom of the late[] 1990s.”).

are to understand the changes that social production and noncash market production will engender in the information age. There is no guarantee that, even if government stays on the sidelines, nonmarket production will displace market production as broadly as Benkler envisions. Indeed, serious obstacles will systematically confront social production enterprises, as if placed there by some invisible hand.

Let there be no mistaking my bottom line. Any reader will learn a great deal from Benkler's book, and his synthesis of economics, political theory, and intellectual property is extremely impressive. This book aspires to, and deserves, a place in the intellectual property canon. Benkler's analysis of intellectual property and global development issues is ambitious and will be profoundly influential. Yet we can learn a lot from this book's imperfections, too. Among these, two stand out.

First, Benkler seems insufficiently sensitive to the way selection effects and competitive pressures will govern the rise and fall of social production. Whenever social production creates a valuable resource that large numbers of citizens want to use, that resource becomes an attractive target for the mischief-makers, proprietary competitors, free-riders, sketchy opportunists, and well-meaning dolts whose arrival can drive away the cooperators who built the successful network. Social production networks tend to be open by nature, and that openness carries with it vulnerability to malicious attacks and proprietary appropriation. It is premature to write about the success of social production without analyzing how social production networks can respond to the threats posed by early successes. Social production in the hands of minutemen, telemarketers, trolls, and spyware developers is hardly worth celebrating.

Second, Benkler's approach to international development, while provocative and laudable, seems unduly roundabout and perhaps even misguided. If, as Benkler sometimes suggests, legal rules favoring social production are simply more efficient than rules favoring proprietary production, then Benkler's creative distributional arguments begin to resemble an academic exercise. But if legal rules that favor proprietary production are sometimes welfare-maximizing, then Benkler must explain why the standard assumption of law and economics analysis is inapplicable. Directed wealth transfers, not blunt legal rules, are presumptively the best means for accomplishing the ends of wealth redistribution.

These points in conjunction bring us to a rather odd ending place. There is a lot of economics and not a lot of law in *The Wealth of Networks*. And yet Benkler's book could use more of the former and less of the latter. The important looming threats to social production are basic economic forces, not legal constructs. If social production is as transformative as Benkler suggests it is, then the economic realities should alter the political calculus in short order.

Inefficient incumbent industries can only plug their fingers in the dikes for so long. But if Benkler's assessment of the economics of social production turns out to be too rosy, then nonmarket production will remain a fascinating but peripheral phenomenon that leaves the world mostly untransformed, regardless of what legislators and judges have to say about the matter.