Harvard Journal of Law & Technology
Volume 20, Number 1 Fall 2006

THE WEALTH OF NETWORKS: HOW SOCIAL PRODUCTION TRANSFORMS MARKETS AND FREEDOM

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NEW HAVEN, CT: YALE UNIVERSITY PRESS, 2006
PP. 515. $40.00 (HARDCOVER). ISBN: 0-300-11056-1

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I. INTRODUCTION

In Professor Yochai Benkler's book, *The Wealth of Networks*,[1] he argues that we are in the midst of a paradigm shift of tremendous significance as we enter a new economic era in which production takes place through distributed networks. Because of computers and the Internet, this networked mode of production can provide informational goods and services with increased efficiency, but without the financial constraints of traditional industrial production.

The Wealth of Networks is divided into three parts. Part One describes the characteristics and ramifications of the emerging networked information economy and argues that our current trajectory

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1. YOCHAI BENKLER, THE WEALTH OF NETWORKS (2006).

leads to its increased impact on society. Part Two focuses on the social, political, cultural, and global benefits to be reaped from the nonmarket and nonproprietary alternatives to industrial production. Together, Parts One and Two describe the networked information economy and suggest that its implications will be largely positive. Part Three discusses the continuing legal and political battles over the evolution of the networked information economy, largely in concert with other legal academic thinking.[2] This Note will focus on the first two parts, which contain Benkler's most novel and compelling argument.

II. THE EMERGING NETWORKED INFORMATION ECONOMY

In Part One of *The Wealth of Networks*, Benkler argues that the industrial information economy of the last half of the nineteenth century and all of the twentieth century is giving way to a new mode of production of goods and services: the networked information economy. Information, knowledge, and culture — which Benkler argues are "central to human freedom and human development"[3] — were once produced by centralized, industrial firms. The emerging networked information economy, in contrast, features decentralized production of information, knowledge, and culture, which occurs through what Benkler terms "commons-based" production and "peer production," and through other nonmarket, nonproprietary mechanisms.

A. What Is the Networked Information Economy?

Today's information economy is gradually replacing the industrial economy which revolved around physical goods and services. In the information economy, information, knowledge, and culture are themselves products and services that are produced, distributed, and consumed.

The information economy of the past 150 years produced information, knowledge, and culture through traditional industrial channels, and was "tightly linked throughout the twentieth century with controlling the processes of the industrial economy."[4] For example, radio, television, newsprint, and entertainment — all examples of information and culture — were mass-produced by large corporations and distributed through centralized channels. Benkler calls this "the

2. *See* JAMES BOYLE, SHAMANS, SOFTWARE, AND SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY 25–34 (1996); WILLIAM W. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW, AND THE FUTURE OF ENTERTAINMENT 82–133 (2004). *See generally* LAWRENCE LESSIG, FREE CULTURE (2003).

3. BENKLER, *supra* note 1, at 1.

4. *Id.* at 31.

industrial stage of the information economy," or simply, "the industrial information economy."[5]

Benkler uses the newspaper industry to illustrate the characteristics of industrial information production. First, there is a stark divide between producers and consumers. Those who write and produce the news control what is published and read. Second, information flows from central, commercial producers to passive, receptive audiences. Very little information content, if any, flows from the audience back to the producers. Third, the initial startup costs for production are high, but the subsequent marginal cost of production and distribution is minimal. Newspaper companies, for instance, are costly to build from scratch, but the cost of printing each additional newspaper is low. These three characteristics — the consumer-producer divide, one-way information flow, and high start-up costs — are common among virtually all models of industrial information production. The mass-media model, in particular, was increasingly successful and "easily adopted and amplified by radio, television, and later cable and satellite communications."[6]

Despite the pervasive success of the industrial mode of information production, economic and technological developments are destabilizing the industrial information economy and ushering in a new era of information production. This networked information economy inverts the characteristics of industrial information production: consumers are producers, information flows multi-directionally, and production start-up costs are minimal. Benkler highlights two developments most responsible for the destabilization. First, he argues that because the basic outputs of the economy have become information, people have more diverse motivations to produce these outputs than in an industrial world. Second, technology has yielded the growth of "a communications environment built on cheap processors with high computation capabilities"[7] — that is, the Internet. Benkler argues that this growth in technology has caused the basic physical capital inputs to production to become concentrated in the personal computer.[8]

1. Diversity of Production Incentives

The first force destabilizing the industrial information economy is the diversity of incentives for information production. Diverging from the most traditional theories of production incentives, Benkler argues that innovation and information production are driven only in small part by traditional intellectual property motivations. Intellectual prop-

5. *Id.* at 32.
6. *Id.* at 29.
7. *Id.* at 3.
8. *See id*. at 32.

erty rights are rooted in the belief that the market will not produce sufficient informational goods without a guarantee of exclusivity. The non-rival nature of information and cultural goods erodes the incentive to produce such goods.[9] Writers, musicians, scientists, and other producers of information and culture presumably will not continue to create if they cannot reap rewards from their efforts. To compensate, the Constitution authorizes Congress to provide an incentive to foster creation.[10] In exchange for creation, Congress grants temporary rights of exclusivity over the informational goods.[11] In contrast, Benkler sees innovation and information production arising from a wide array of motivations, many of which do not rely on the exclusivity granted by the traditional intellectual property regime. Under Benkler's theory, many informational goods would still be produced even without a grant of exclusive rights.

To illustrate the wide array of possible motivations, Benkler constructs a three-by-three grid showing nine permutations of production strategies with different inputs and outputs.[12] The grid structure is shown in simplified form in Table 1. Along the vertical axis are three options for information exclusivity. Benkler calls this gradation range "benefit acquisition," representing the various ways creators may reap rewards from their work. "Rights-based exclusion" entails leveraging traditional intellectual property protections such as patent or copyright to make money. "Market-based non-exclusion" entails selling informational goods under traditional conceptions of property, but not by exercising exclusive intellectual property rights. "Nonexclusion-nonmarket" involves releasing information freely, without a market transaction. [13] Along the horizontal axis are three possible sources of information inputs: "materials from the public domain," "materials the producer itself owns," or materials acquired "by sharing/bartering for information inputs owned by others in exchange for one's own information inputs."[14]

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9. *See* James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS. 33, 41 (2003).

10. U.S. CONST. art. I, § 8, cl. 8 (Congress may create laws to protect intellectual property in order "[t]o promote the Progress of Science and useful Arts.").

11. *See* Sony Corp. v. Universal City Studios, 464 U.S. 417 (1984) ("The monopoly privileges that Congress may authorize are . . . intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.").

12. BENKLER, *supra* note 1, at 43.

13. *Id.* at 42.

14. *Id.* At the intersection of these two axes are the nine different types of information production strategies, each of which Benkler names. For example, the "Romantic Maximizer" in Box 1 is a single artist, composer, or the like, who labors in expectation of royalties. *Id.* "Mickey" is the name for Box 2, and signifies firms like Disney that make derivative works from self-owned material. *Id.* at 42, 44. "Joe Einstein" is Benkler's name for Box 7, symbolizing those like professors who give away information in exchange for status. *Id.* at 43.

Table 1: Information Production Strategies

		Sources of information input		
		Public domain materials	Self-owned materials	Shared/ bartered materials
Degree of information exclusivity	Rights-based exclusion	*1*	*2*	*3*
	Market-based non-exclusion	*4*	*5*	*6*
	Nonmarket non-exclusion	*7*	*8*	*9*

Essentially, Benkler's chart shows that information producers are diversely motivated. Only three of the nine strategies, Boxes 1 through 3 on the chart, rely on traditional intellectual property rights for production incentives. Benkler concludes that recognizing the prevalence of nonmarket incentives "allows us to understand the comparatively limited role that production based purely on exclusive rights . . . has played in our information production system to this day."[15]

2. Technological Shifts

Technology, specifically the personal computer and the Internet, is the second of the two forces Benkler argues is destabilizing the industrial information economy. In the industrial information economy, the major barrier to market entry was the "high physical and financial capital costs involved in making [and distributing] a widely accessible information good."[16] With advances in technology, these costs have plummeted, thereby lowering substantially the barriers to entry. Specifically, by using readily available technology in a digitally net-

15. *Id.* at 48.
16. *Id.* at 51.

worked environment, anyone can participate in information production and distribution.[17]

Furthermore, technology has unveiled diverse incentives to produce. In the past, music, film, radio, and newspaper production relied on rights-based exclusion — Boxes 1 through 3 in Table 1[18] — for economic viability. Now, any person can afford to produce and distribute material for no commercial reason with only a personal computer, the Internet, and an expenditure of free time. Thus, technology opens non-exclusive production strategies — Boxes 4 through 9 in Table 1[19] — as viable modes of production.

Benkler predicts that, taken together, these two destabilizing forces, diverse motivations to produce information and the prevalence of personal computers and the Internet, will continue to drive the explosion in access to information, knowledge, and culture. According to Benkler, we should expect "an increase in the relative salience of nonmarket production models in the overall mix of our information production system," which will allow more information to "be available for its users at its marginal cost."[20] Moreover, individual observation, expression, and opinions about the world may now affect others at the same level that was once reserved for mass-media information outlets.[21] In essence, more information will be produced on a widely distributed scale and made freely available to all.

B. Commons-Based Production and Peer Production

The rise of nonmarket production caused by the networked information economy allows for increased participation in information production, not only on an individual basis, but also on a collaborative basis. The networked information economy makes possible information production on a "radically decentralized, collaborative, and nonproprietary" basis.[22] Benkler calls this phenomenon "commons-based production" and calls its cousin "peer production."

The "commons" of commons-based production refers to the public domain, in which "no single person has exclusive control over the use and disposition of any particular resource."[23] Commons-based production, then, is production without exclusion from its inputs or outputs. The production may be individual or collective, and commercial or noncommercial; the critical feature is that everyone is free to

17. *See* DAN GILLMOR, WE THE MEDIA 1–22 (2004).
18. *See supra* Part II.A.1.
19. *See supra* Part II.A.1.
20. BENKLER, *supra* note 1, at 56.
21. *See* GILLMOR, *supra* note 17, at 136–57.
22. BENKLER, *supra* note 1, at 60.
23. *Id.* at 61.

use all information, knowledge, and culture involved in the production.

Peer production is a particular type of commons-based production in which groups of people collectively produce information that is free for everyone to use. Peer production projects are large-scale, non-hierarchical, decentralized collaborations among multiple contributors. Commons-based peer production can be understood as "any coordinated, (chiefly) internet-based effort whereby volunteers contribute project components, and there exists some process to combine them to produce a unified intellectual work."[24]

The quintessential example of peer production is free and open source software.[25] Free software "depends on many individuals contributing to a common project, with a variety of motivations, and sharing their respective contributions without any single person or entity asserting rights to exclude either from the contributed components or from the resulting whole."[26] Benkler hails the success of free software as critical to the recognition of the peer production model as a viable alternative to industrial production. Apache HTTP Server,[27] for instance, is free software developed under a peer production model and represents about sixty percent of the web server software market.[28] Benkler offers a number of other examples of successful peer production projects, such as Wikipedia,[29] Slashdot,[30] and SETI@home.[31]

In order for a peer production project to succeed, it should possess characteristics Benkler calls "modularity" and "granularity." "Modularity" is "the extent to which [a project] can be broken down into smaller components, or modules, that can be independently produced before they are assembled into a whole,"[32] thus maximizing the autonomy and flexibility of contributors. "Granularity" is "the size of

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24. Aaron Krowne, *The FUD-based Encyclopedia*, FREE SOFTWARE MAGAZINE, Mar. 28, 2005, http://www.freesoftwaremagazine.com/articles/fud_based_encyclopedia.

25. There is a long-standing debate over the use of the terms "free software" and "open source" software. *See* Wikipedia, *Free Software*, http://en.wikipedia.org/wiki/Free_software#Usage (as of Oct. 13, 2006, 05:50 GMT).

26. BENKLER, *supra* note 1, at 63.

27. Apache HTTP Server Project, http://httpd.apache.org (last visited Nov. 28, 2006).

28. Netcraft, November 2006 Web Server Survey, Nov. 1, 2006, http://news.netcraft.com/archives/2006/11/01/november_2006_web_server_survey.html.

29. Wikipedia, a free online community-written encyclopedia, is a starring example of a commons-based collaborative enterprise. Internet users have written and edited the encyclopedia on a volunteer basis from its inception. *See* Wikipedia, http://www.wikipedia.org (last visited Nov. 28, 2006).

30. Slashdot, a user-written technology news website, provides another example of a successful collaborative enterprise. Each technology news story is submitted by a reader and is subjected to a process of filtering and accreditation by other readers. *See* Slashdot, http://slashdot.org (last visited Nov. 28, 2006).

31. The SETI@home project harnesses unused processor power by providing software that performs calculations while a personal computer is idle. *See* SETI@home, http://setiathome.berkeley.edu (last visited Nov. 28, 2006).

32. BENKLER, *supra* note 1, at 100.

the modules in terms of the time and effort that an individual must invest in producing them."[33] The predominant portion of a project's modules should be fine-grained; if not, the individual investment of time or energy would be too great to draw sufficient people into a project. [34]

Benkler argues that the shift to an information-focused economy has allowed collaborative production to succeed on a scale never before imagined. In the most successful peer production projects, "users construct together systems with capabilities far exceeding . . . the capabilities that even the best-financed corporations could provide."[35] Commons-based peer production, according to Benkler, is the dominant production mechanism arising from the networked information economy, and is not a mere fad, but a sustainable form of human production.[36]

C. Responses

Throughout Part One, Benkler describes the emerging networked information economy as increasingly prevalent and important in our society. The Internet and personal computers enable people to build projects together that would be impossible for them to create otherwise. This basic proposition rings true for most people who use e-mail or browse the web. Networks improve our ability to communicate with others, find information of interest to us, and post our own ideas for the world to see. Despite this obvious and pervasive impact of the Internet, the exact causes of the networked information economy and the extent to which peer production will change our economy remain unclear.

Benkler shows that, because information has become the primary output of the economy, diverse incentives to produce information contribute to "destabilizing"[37] the industrial stage of the information economy. He provides an illustrative example of each of the nine modes of production in Table 1.[38] He does not, however, inquire into the relative distribution of information production among the different modes. While a wide array of theoretical motivations exists, the relative prevalence of each motivation is unknown. Moreover, even if non-traditional motivations are growing in importance, the rate of

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33. *Id*.

34. *Id*. at 101. For example, Wikibooks, a site associated with Wikipedia that attempts to peer-produce open textbooks, has not been nearly as successful as its parent project because the minimum time commitment of each contributor is large (i.e., its modules are large-grained), limiting the number of contributors. *Id.* at 101–02.

35. *Id.* at 86.

36. *Id.* at 106.

37. *See supra* Part II.A.

38. BENKLER, *supra* note 1, at 43 tbl.2.1.

growth is unknown. Instead of providing empirical evidence of the trend, Benkler focuses on specific anecdotes. For example, to illustrate the nonmarket forms of information production, he describes an elementary school teacher who publishes a personal website containing extensive information on Viking ships.[39] He shows that networked information production is possible, but leaves the question of actual prevalence largely unanswered. As more evidence comes in from each new peer-production project, however, Benkler's discrete points of anecdotal evidence may become part of a larger pool of evidence that may provide greater insight into the relative importance of nonmarket production to the rest of the economy.

Similarly, Benkler provides several examples of peer production success stories and sketches some common characteristics, but peer production remains largely an elusive, spontaneous, and highly unpredictable phenomenon. Benkler declines to develop a theory of motivation, saying that "[a]ll that is required to outline the framework for analysis is recognition that there is some form of social and psychological motivation that is neither fungible with money nor simply cumulative with it."[40] However, Benkler has not provided a full account: the motivation must also outweigh other competing social and psychological motivations. The peer production project must be more interesting than other possible alternative uses of time and energy. Unfortunately, we do not yet have enough information to determine the magnitude of social and psychological motivation that would make a given peer production project successful.

III. THE EFFECT ON THE POLITICAL ECONOMY

In Part Two of *The Wealth of Networks*, Benkler explores the potential impact of the new networked information economy and commons-based peer production model on the political economy. He pronounces at the outset of the section that "[h]ow a society produces its information environment goes to the very core of freedom."[41] Benkler argues that the networked information economy "will improve the freedom" of those in the society, will make individuals "better able to do things for and by themselves," and will make them "less susceptible to manipulation by others than they were in the mass-media culture."[42] If freedom is a function of the information environment of a given society, the argument goes, then the society that lev-

39. *Id.* at 53; *see* Jim Cornish, Viking Ships, http://www.stemnet.nf.ca/CITE/vikingships.htm (last visited Nov. 28, 2006).

40. BENKLER, *supra* note 1, at 96.

41. *Id.* at 129.

42. *Id.* at 130.

erages the benefits of the networked information economy enjoys greater freedom than the society that does not.

The benefits of a networked information economy Benkler explores in Part Two include individual freedom, political freedom, cultural freedom, and global justice and development. Benkler uses a very broad conception of "freedom" to link together the benefits of the networked information economy in each of these spheres. By freedom, Benkler largely means "new behaviors made possible and effective by the networked information economy."[43] Newfound personal autonomy, applied to politics, culture, and global development, makes society freer than it once was.

A. Individual Freedom

Benkler's claim regarding individual freedoms is that through the networked information economy, "[w]e can live a life more authored by our own will and imagination than by the material and social conditions in which we find ourselves."[44] More specifically, a networked information economy "increases the range and diversity of things that individuals can do for and by themselves," "provides nonproprietary alternative sources of communications capacity and information," and "qualitatively increases the range and diversity of information available to individuals."[45] This conception of individual freedom and autonomy closely parallels the concept of "semiotic democracy"[46] — that is, the decentralized ability to create cultural meaning.

Benkler's chosen examples of new entertainment choices, however, illustrate the limitations of his concept of freedom. Benkler points to the ability of a twenty-six-year-old firefighter/paramedic to film and produce a *Star Wars*-like movie[47] and the prevalence of massively multiplayer online games.[48] These examples do represent taking a more active role in leisure activities compared with the passive consumption of television,[49] but compared to non-television activities such as volunteerism or community involvement, Benkler's examples do not support his proposition that the networked information economy offers substantial improvements in personal autonomy.

The most persuasive strand of the individual freedom argument is the increase in access to and production of information. As the lines

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43. *Id.* at 139.
44. *Id.*
45. *Id.* at 133–34.
46. *See* FISHER, *supra* note 2, at 28–31.
47. BENKLER, *supra* note 1, at 134; *cf. Mystery of Star Wars Phantom Edit*, BBC NEWS, June 7, 2001, http://news.bbc.co.uk/1/hi/entertainment/film/1375742.stm (discussing a re-edited version of *Star Wars: Episode One* created by an anonymous fan).
48. BENKLER, *supra* note 1, at 135.
49. *Id.* at 136.

between information consumers and producers blur, the traditional consumer is less confined to centralized, commercial sources of information. When every person may "choose to become an active producer of one's own information environment,"[50] society as a whole is no longer forced to accept television, radio, newspapers, and other commercially controlled information sources as its sole sources of knowledge.

B. Political Freedom

As a forum for public discourse and debate, the Internet offers significant benefits over traditional mass media. Benkler identifies five necessary characteristics of a healthy public sphere. First, a public sphere must accomplish "universal intake."[51] In other words, it must "capture the observations of all constituents," including their observations, opinions, and perceptions about the world.[52] Second, a public sphere must filter for political relevance so as to focus on "those matters that are plausibly within the domain of organized political action."[53] Third, it must also accomplish filtering for accreditation. This is different from relevance filtering in that some ideas are politically relevant but completely lack credibility.[54] Fourth, a public sphere must synthesize "public opinion" into "articulated positions amenable for consideration and adoption in the formal political sphere."[55] Finally, a public sphere must be independent from government control. Benkler argues that the networked information economy outperforms the mass media along each of these dimensions.

1. Criticisms of the Mass Media

The traditional mass media structure comprised

> a one-way, hub-and-spoke structure, with unidirectional links to its ends, running from the center to the periphery. A very small number of production facilities produced large amounts of identical copies of statements or communications, which could then be efficiently sent in identical form to very large numbers of recipients.[56]

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50. *Id.* at 165.
51. *Id.* at 182.
52. *Id.*
53. *Id.* at 183.
54. *Id.*
55. *Id.* at 184–85.
56. *Id.* at 179.

Importantly, the unidirectional flow did not allow for a "return loop" through which recipients could respond.[57]

Benkler offers several criticisms of the structure of the mass media, consistent with most prominent critics of mass media.[58] First, the intake of the public sphere "has been seen as too limited," leaving too many views unrepresented and unexplored.[59] Second, mass media "has been criticized as giving the owners too much power."[60] Finally, and perhaps most significantly, "the advertising-supported media needs to attract large audiences, leading programming away from the genuinely politically important, challenging, and engaging, and toward the titillating or the soothing."[61] More broadly, Benkler suggests that the core characteristic of mass media itself is responsible: "[c]ontent is produced prior to transmission in a relatively small number of centers, and when finished is then transmitted to a mass audience, which consumes it."[62] All five characteristics of a public sphere suffer under this radically centralized, commercialized, and controlled information production model.

2. The Internet as a Counterforce to Mass Media

The Internet offers concrete benefits over the mass media model. In the evolving world of participatory news[63] and citizen journalism,[64] the Internet is undoubtedly more transparent than centralized news production. Benkler argues that this increased transparency yields a more effective public sphere.

Benkler uses two stories to demonstrate how the "new, network-based media can exert a significant counterforce"[65] to the tremendous power wielded by traditional media. First, Benkler tells of Sinclair Broadcasting's decision to air what one Sinclair reporter called "blatant political propaganda" in important swing states during the 2004 elections.[66] Benkler tracks the backlash by participants of various political blogs and the corresponding impact on Sinclair Broadcasting's stock prices, concluding with a decision to pull the program off the air.[67]

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57. *Id.*
58. *See, e.g.*, GILLMOR, *supra* note 17.
59. BENKLER, *supra* note 1, at 197.
60. *Id.*
61. *Id.*
62. *Id.* at 209.
63. *See, e.g.*, Slashdot, http://slashdot.org (last visited Nov. 28, 2006).
64. *See generally* GILLMOR, *supra* note 17.
65. BENKLER, *supra* note 1, at 224.
66. *Id.* at 221 (quoting Elizabeth Jensen, *Sinclair Fires Journalist After Critical Comments*, L.A. TIMES, Oct. 19, 2004, at A13).
67. *Id.* at 221–23; *see* Wikipedia, *Sinclair Broadcasting Group: Kerry Film Controversy*, http://en.wikipedia.org/wiki/Sinclair_Broadcasting#Kerry_film_controversy (as of Oct. 14, 2006, 15:39 GMT).

Second, Benkler tells of Diebold Election Systems's attempt to suppress information about the failure of some of its electronic voting machines.[68] Internet communities and groups of college students pulled together to expose critical failures in Diebold's leaked software code and to fight Diebold's attempts to suppress this information.[69] Benkler argues that "[t]here was no single orchestrating power" in either the Sinclair or Diebold accounts.[70] Rather, there was "a series of uncoordinated but mutually reinforcing actions by individuals in different settings and contexts, operating under diverse organizational restrictions and affordances, to expose, analyze, and distribute criticism and evidence for it."[71]

3. Can the Internet Really Democratize?

The Internet has long been touted as a democratizing force. Recent literature has been more skeptical, and indeed critical, of the Internet's potential to equalize and democratize. Rather than offering a source of endless information and diversity, perhaps the Internet will become "the Daily Me,"[72] simply mirroring the interests of a given user and segmenting society further. Benkler responds to this criticism with an in-depth analysis of Internet structure, ultimately concluding that the Internet will not "plunge into the abyss of incoherent babble"[73] or simply replicate the mass media structure. Rather, through the Internet's spontaneous process of filtering and condensing, the initial cacophony will take on a usable structure. Similar to the concept of the "Long Tail,"[74] minority interests will continue to represented, and the best information will filter to the top for majority consumption.

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68. BENKLER, *supra* note 1, at 225–33.

69. *See id.*; Online Policy Group v. Diebold, Inc., 337 F. Supp. 2d. 1195, 1197–99 (N.D. Cal. 2004); *see also* Wikipedia, *Diebold Election Systems*, http://en.wikipedia.org/wiki/Diebold_Election_Systems (as of Oct. 31, 2006, 04:46 GMT) (stating that various academics have criticized Diebold's software and discussing Diebold's internal memoranda posted on various websites).

70. BENKLER, *supra* note 1, at 232.

71. *Id.*

72. *See* Cass Sunstein, *"The Daily Me" Carries Danger of Isolating Its Creator*, SEATTLE POST-INTELLIGENCER, Nov. 11, 2001, at E7, *available at* http://www.law.uchicago.edu/news/sunstein_dailyme.html.

73. BENKLER, *supra* note 1, at 255.

74. *See* Chris Anderson, *The Long Tail*, WIRED, Dec. 10, 2004, at 170–77, *available at* http://www.wired.com/wired/archive/12.10/tail.html (evaluating the ability of digital distributors to profit from selling less-popular music and movies along with the hits).

C. Cultural Freedom

As a specific form of information and knowledge, "[c]ulture, shared meaning, and symbols"[75] play a primary role in forming the lens through which we view our personal, social, and political worlds. Following Lawrence Lessig's work in *Free Culture*,[76] Benkler argues that "cultural production in the form of the networked information economy offers individuals a greater participatory role in making the culture they occupy, and makes this culture more transparent to its inhabitants," a reality that is "normatively more attractive" than the "industrial cultural production system typified by Hollywood and the recording industry."[77] As an anecdotal illustration, Benkler compares the encyclopedia entries for "Barbie" in various encyclopedias. Only *Wikipedia* and *Encyclopædia Britannica* focus on Barbie's controversial cultural impact, with *Wikipedia* providing vastly more content and discussion.[78] The highest level of cultural transparency, Benkler argues, may be achieved through peer production of culture and meaning, where all viewpoints can be vetted.[79]

Initially, it may seem difficult to compare cultural freedom directly with political freedom and individual autonomy. Political and individual freedoms are rooted in constitutional concepts of autonomy, personal choice, political transparency, and freedoms of speech and press. Cultural freedom, on the other hand, involves a less intuitive set of rights, not explicitly defined in the Constitution or the Bill of Rights. Despite these differences, Benkler elevates cultural freedom to the same level of significance as free speech and personal choice. This comparison is consistent with other scholars in the field and indicates the growing perception of cultural freedom as a constitutionally significant right.[80]

D. Justice and Development

Using the networked information economy to solve problems of "[h]unger, disease, and deeply rooted racial, ethnic, or class stratification"[81] seems like an impossible challenge compared with improving personal autonomy, the public sphere, or transparency of culture. Real world problems require tangible solutions such as food, clean water, and medicines. Despite the daunting nature of the problem, Benkler

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75. BENKLER, *supra* note 1, at 274.

76. LESSIG, *supra* note 2 (examining the Internet's effect upon how culture is made).

77. BENKLER, *supra* note 1, at 277.

78. *Id.* at 287–89.

79. Moreover, Benkler notes that Wikipedia articles are themselves transparent because anyone can view an article's evolution. *Id.* at 289.

80. *See* LESSIG, *supra* note 2, at 21–30.

81. BENKLER, *supra* note 1, at 301.

insists that the networked information economy can and will provide concrete benefits for human welfare and development around the world.

To categorize the ways commons-based strategies can help solve global problems, Benkler turns to the Human Development Report, which defines a Human Development Index measuring quality of life.[82] The index incorporates factors such as life expectancy, adult literacy, and GDP per capita, and Benkler neatly outlines existing and proposed commons-based strategies affecting each of the index factors.[83] In particular, the networked information economy already contributes to software, scientific publication, agricultural innovation, and access to medicines.

As with his explanation of producers' diverse motivations, Benkler outlines categories, gives an example for each category, and concludes that the networked information economy will yield solutions sufficient to make substantial change in each category.[84] Again absent from the analysis is the distributive perspective: what is the relative importance of commons-based production, and is its role increasing? In reality, commons-based projects improving justice and development show that in certain areas like basic human welfare, commons-based production will likely remain subordinate to traditional methods of production. Benkler acknowledges these difficulties but remains confident of the potential for commons-based solutions to provide components of global solutions to problems of justice and development.

IV. CONCLUSION

Throughout *The Wealth of Networks*, Benkler argues that we are at a crucial point of evolution from an industrial information economy to a networked information economy, where commons-based nonmarket production models will play a significant role. Balanced against past production models, the networked information economy promises to benefit society significantly. Although the actual rate at which our economy is evolving toward a truly networked mode of production is still unknown, Benkler provides a host of inspiring examples of what the future may hold.

Professor Benkler has allowed *The Wealth of Networks* itself to develop into an example of commons-based production. He released his book online, free for all to download, read, and print.[85] A wiki

82. *Id.* at 309.

83. *Id.* at 310–11.

84. *See supra* Parts II.A.1, II.C.

85. The Wealth of Networks WikiNotes: Read the Book, http://www.benkler.org/wealth_of_networks/index.php?title=Main_Page#Read_the_book (last visited Nov. 28, 2006).

devoted to the book allows readers to submit comments, discuss arguments, and access cited resources.[86] This contribution is a mark of leadership on the part of Professor Benkler in the evolution toward a networked information economy.

86. The Wealth of Networks WikiNotes, http://www.benkler.org/wealth_of_networks/index.php/Main_Page (last visited Nov. 28, 2006).